

# Application to DHCD Submitted through CAMS

Campbell County

Campbell County Shentel Broadband Application 2022

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**Application ID:** 86509102021133110  
**Application Status:** Pending  
**Program Name:** Virginia Telecommunications Initiative 2022  
**Organization Name:** Campbell County  
**Organization Address:**

**Profile Manager Name:** Frank Rogers  
**Profile Manager Phone:** (434) 332-9525  
**Profile Manager Email:** fjrogers@campbellcountyva.gov

**Project Name:** Campbell County Shentel Broadband Application 2022  
**Project Contact Name:** Frank Rogers  
**Project Contact Phone:** (434) 332-9525  
**Project Contact Email:** fjrogers@campbellcountyva.gov  
**Project Location:** PO Box 100 47 Courthouse Ln  
Rustburg, VA 24588-9701  
**Project Service Area:** Campbell County

**Total Requested Amount:** \$5,443,000.00  
**Required Annual Audit Status:** No Current Audits Found

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## Budget Information:

<b>Cost/Activity Category</b>	<b>DHCD Request</b>	<b>Other Funding</b>	<b>Total</b>
<b>Telecommunications</b>	<b>\$5,443,000.00</b>	<b>\$10,107,617.00</b>	<b>\$15,550,617.00</b>
Construction	\$5,443,000.00	\$10,107,617.00	\$15,550,617.00
<b>Total:</b>	<b>\$5,443,000.00</b>	<b>\$10,107,617.00</b>	<b>\$15,550,617.00</b>

### Budget Narrative:

Total Project Cost is \$15,550,617. Cost per passing is \$4,549. County contribution is \$3,265,538 (21%). Shentel contribution is \$6,842,079 (44%). VATI contribution is \$5,443,000 (35%). Project calls for construction of a hybrid solution to provide universal broadband coverage to Campbell County. 1,995 homes will be passed with fiber. 1,423 will be passed with wireless. Total homes covered 3,418.

## Questions and Responses:

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## 1. Project Description and Need

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

### Answer:

This project is designed to achieve universal broadband coverage in Campbell County. The project area is any area of Campbell County where there are unserved homes with no funded coverage (ie RDOF or CAF) commitment. The area was determined through a collaborative, multi-stage approach drawing on many different sources of data to identify all existing unserved homes. Local knowledge, historical service requests, surveys, 477 data and internal engineering analysis were used to estimate the unserved addresses irrespective of drop length. Because this area is in and around Shentel's existing service footprint, they have extremely detailed information on the locations of many of the unserved homes. County staff have routinely interacted with citizens to help identify unserved homes. Combining this knowledge with 477 maps, speed test data, and engineering estimates, Shentel was able to create a detailed list of unserved areas and propose a strategy to extend service.

Due to the nature of the 477 data, which counts a census block as served if there is even one home in that block served, thoughtful analysis allows granular coverage estimates to be developed from the 477 data. Census blocks with no broadband coverage reported and no federal funding commitment were considered to be truly unserved. For census blocks that were reported as served, especially those on the edge between served and unserved areas, Shentel analyzed for home density and distance from the roadway. Homes that were far enough away from the roadway to require special construction costs were considered unserved. Additionally, for cable providers with franchise agreements that stipulate coverage at certain density levels, anything below those density levels was also considered unserved. Together Shentel and the County local knowledge, along with 477-based density analysis yielded an estimate of all unserved locations lacking a federal or state funding commitment. The unserved locations then determined the project area.

Specific to this application, the Shentel proposal compliments the work of firefly broadband and Riverstreet Networks (both RDOF recipients) by offering coverage outside of the RDOF areas. Taken in concert with those areas already awarded to firefly and Riverstreet, the Shentel proposal will achieve universal broadband coverage in the County. This is in keeping with the universal fiber to the home plan developed for Campbell County and desired by the Board of Supervisors. To describe the geographic area specifically, this application will provide coverage to all unserved locations outside of RDOF award areas in Campbell County. Please see Attachment 17 for a visual representation of the universal broadband plan.

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:

Shentel has worked closely with the County to ensure there is minimal overlap with other providers that offer reliable broadband speeds of 25/3 or greater in the project area. The County has helped to coordinate communication with existing providers and other VATI grant applicants to achieve the most efficient path to universal coverage with respect to existing service areas as well as other federal and state grant projects. For most wireless service providers, Shentel was unable to determine actual service areas and so they are largely unaccounted for in the unserved analysis. This approach was taken to ensure true universal coverage rather than ignoring potentially unserved homes in general areas where wireless service providers advertise service. When possible Shentel utilized its wireless expertise to create a conservative estimate for areas where wireless service providers likely provide 25/3 service and removed those homes from this application. B2X (advertised up to 25Mbps) and SCS Broadband (advertised up to 50Mbps) advertise operations in Campbell County, but without detailed propagation data it is impossible to discern specific service areas. Verizon advertises DSL speeds up to 15Mbps in portions of the project area and Centurylink advertises up to 100Mbps, but citizen feedback has routinely indicated that such speeds are drastically overstated. There are no known wireline providers in the project area.

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

**Answer:**

Given the universal nature of this project and the extensive federal grant funding that has already been awarded across the country, there are naturally areas adjacent to this project area with federal grant program awards. This project area is near areas that have received federal grant funding. As noted, this project will serve to compliment those efforts by filling in the areas that have not received federal funding. In this way, this project leverages those federal dollars and works to close any remaining gap in order to achieve universal coverage. The map included as Attachment 2 will show the complementary nature of the strategy. Federally funded areas are not included (with the exception of satellite award) in this proposal. Shentel has worked collaboratively with representatives from firefly and Riverstreet to insure that among the three providers there is no overlap in service area.

The goal of the project is to provide functional universal coverage in keeping with the Governor's goal. Therefore, some unserved locations which are in close proximity to areas which have received federal funding are included in this project. Except for some small federal grant award areas, however, Shentel did typically create a buffer around those federal grant areas so long as the federal grant awardee worked with the County to include those adjacent locations in their coverage plans. Per VATI guidelines, satellite awards were not considered. This project will provide coverage to those areas that have not received RDOF or CAF funding. As such, it will enable the County to reach universal coverage.

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

**Answer:**

There are no RDOF funded blocks included in this VATI application area. All RDOF award areas were identified and removed from our analysis. The County does have RDOF areas covered by Riverstreet and CVEC/firefly that will be incorporated in other, separate, applications.

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

**Answer:**

The anticipated service overlap for this project is below the allowable 10% for wireline and 25% for wireless. Shentel has gone through a lengthy process for identifying unserved locations and has designed its network to cover those unserved homes, which form the project area for this application. Due to the fact that the unserved areas are estimates in some cases, and the nature of wireless technology, Shentel estimates a 5%-10% margin of overlap, and remains committed to keeping overlap below the allowable thresholds. If any additional incidental overlap emerges, Shentel has many different options to ameliorate it. As detailed engineering design and site acquisition is carried out, Shentel has flexibility in the placement of wireless sites as to minimize overlap. Furthermore, there may be opportunities to substitute wireless for wireline service as new efficiencies emerge through the unique partnerships Shentel is exploring with local power companies and co-ops.



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

**Answer:**

- Residential: 3,418. Business (non-home): 81; Business (Home): 0; Community Anchors: 4; Non-Residential: 6. Total Passings 3,509. There are 4 community anchors that include public schools, public safety, libraries and other public facilities. There are 91 non residential passings.
  - Not Applicable to this request.
  - d. There are 1,527 homes included with fiber drops in excess of 300 feet. Based upon historical FTTH builds in underserved and unserved areas, Shentel projects that 65% of homes requiring long drops will take service. The costs for that 65% of the fiber long drops is reflected in the overall cost of the project and captured in the cost breakout in Attachment 13. In order to create as comprehensive a project as possible, Shentel included unserved homes within 2,000 feet of their fiber route as part of this project and included the necessary cost to serve these homes with long drops above standard installation rates. Of the 65% of long drops anticipated to take service, and estimated 248 of them are estimated to be low to moderate income households.
  - There are an estimated 1,766 homes in the project area with access to speeds of less than 10/1 in Campbell County. This estimate is based off of 477 data for DSL providers.
7. **For wireless projects only:** Please explain the ownership of the proposed wireless infrastructure. Please describe if the private co-applicant will own or lease the radio mast, tower, or other vertical structure onto which the wireless infrastructure will be installed.

**Answer:**

The fixed wireless portion of this application will utilize a carrier grade, standards based wireless network utilizing up to 60 MHz of both licensed and Generally Authorized Access 3.5 GHz spectrum in a dense, fiber-fed small cell network. Rather than a macro site architecture, this project utilizes a wireless drop methodology where fixed wireless is only relied upon for connections a mile or less away from a fiber-fed small cell where FTTH is cost-prohibitive. These small cells will be placed on utility poles between 50 and 120 feet tall depending on geography and topography, utilizing existing infrastructure (utility poles, water towers, tall buildings, etc.) wherever practicable. Shentel conservatively estimates that for the majority of the small cells it will need to build new wood poles. In these instances, Shentel would own the pole, but whenever it is able to attach to existing infrastructure it will enter into a lease agreement. The wireless equipment placed on the new poles or existing infrastructure will be owned by Shentel.

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

**Answer:**

This project will adopt a hybrid fiber/fixed wireless approach to maximize cost efficiency and speed to market, while maintaining a clear upgrade path to full FTTH. Shentel estimates that approximately 58% of the proposed locations will be served by FTTH and the remaining 42% will be served by wireless drops. Current pricing is as follows: 25Mbps/25Mbps: Fiber \$50; 50Mbps/50Mbps: Fiber \$65/Wireless Drop \$60; 150Mbps/150Mbps: Fiber \$80/Wireless Drop \$80; 1Gbps/1Gbps: Fiber \$110/Wireless Drop 100Mbps/20Mbps \$110. Shentel plans to offer its FTTH service as a prepaid plan to better reach those customers who may be credit challenged. No credit check will be required and the service is for 30 days with an option to auto-renew.

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

**Answer:**

Shentel is proposing a hybrid solution that will deploy a fiber network that expands to within a mile of the unserved homes in Campbell County. The homes not passed by fiber, typically either those with long drops well in excess of 2,000 feet or in scenarios where density falls below 5 homes per mile, will be reached via a wireless drop. This approach creates a scalable, cost-effective solution with superior speed to market. The wireless drop methodology allows service to residents that cannot wait another 3 or more years to receive service. Furthermore, relying on a wireless drop where it is most practical reduces costs and allows the County to achieve universal broadband coverage within existing budget constraints. Taken together, this hybrid approach is a fast and efficient way to deliver high-quality broadband to the entire County. Additionally, the project is scalable. As fiber is pushed further and further into unserved areas, Shentel and the County will be in an excellent position to continue expanding that fiber to additional homes through both natural growth and future federal, state and local subsidy opportunities. Additional detail is available in Attachment 20.

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

**Answer:**

The Board of Supervisors understands the critical need for this service and has identified it as a top priority. This believe has been amplified by the recent experiences during the pandemic. This project achieves universal coverage in keeping with the Campbell County Broadband Expansion Plan commissioned by Campbell County and completed by Riverstreet Networks. The plan is available online at <http://www.campbellcountyva.gov/DocumentCenter/View/7539/Campbell-Co-Va-BEP-Report-March-2021> . That plan provides a strategic vision for reaching universal coverage. To implement the plan, Campbell County issued a solicitation to private providers seeking partners to achieve universal coverage. In response, the County accepted proposals from CVEC/Firefly; Riverstreet Networks and Shentel. The plan is achieved through a three-prong approach in partnership with these three internet providers. The Shentel proposal compliments other grant request from firefly and Riverstreet to leverage federal RDOF award funds in their respective areas. The Shentel strategy then closes in the remaining service gap area in the County to achieve universal coverage. The project achieves that universal coverage by designing a network to reach the unserved locations that lack existing service or federal, state, or locally funded coverage commitments. In conjunction with the VATI applications from firefly and Riverstreet, this application will achieve universal coverage in Campbell County.

Shentel's project--rather than being tied to a specific geographic area--is designed to reach the remaining identified unserved homes. While a small number of homes will likely remain unreached, those homes are the extreme outliers where density falls below 5 homes per mile, long drops are required well in excess of 2,000ft. and/or terrain makes even a wireless drop untenable. That being said, the County will continue to partner with private providers to extend fiber into remote areas to reach these remaining addresses. This effort will build off existing expansion projects in the County as well as refined broadband maps being developed at the state and federal level. The CVEC/firefly, Riverstreet and Shentel projects will address Campbell's known broadband needs and as more information is obtained in the future the County will be excellently positioned with an extensive and complete set of fiber networks that will be able to address any further broadband holes. Attachment 17 provides an illustration of how these strategies align to provide universal coverage.

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## 11. Project Readiness

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

### Answer:

Based on Shentel's existing assets and relationships, this project is in a very favorable state of development. A high level network design is in place with planned fiber routes and small cell search rings. This network design is bolstered by Shentel's existing infrastructure, which will facilitate both project construction and management. A significant portion of the fiber that Shentel plans to deploy will be overlashed to existing infrastructure. This opportunity reduces construction costs and risk in the overall build timeline for these portions since the need for make-ready work and permitting is not required as it merely requires a modification to what is already in place. Shentel's typical permitting and easement process is as follows:

- Shentel will complete a full review of the planned fiber route to validate and refine the route to include determining feasibility, costs and challenges for construction. Shentel staff will visually inspect the entire planned fiber route.
- Shentel will adhere to the existing attachment guidelines and permit all utility pole owners for any overlash (only when required) or new pole attachments. For any new permitted utility pole that is located on private property, Shentel would follow the Virginia and Federal codes that would allow Shentel to use existing like-kind utility easements.
- VDOT permits would be submitted in those locations where Shentel plans to place fiber in the VDOT right-of-way. All other permits would be permitted as required.
- Shentel will provide contact information to any agency that will be involved in permitting for the project.

Furthermore, Shentel's long-term presence in the County and strong partnership and relationships with County staff, VDOT and pole owners means that the needed easements and permitting processes are all well understood and can be processed in a timely manner. Shentel is already positioned with required attachment agreements with the existing pole owners and bond securities established with VDOT. Shentel's longstanding relationships with qualified contractors coupled with the large volume of both aerial and underground work Shentel has proposed across Campbell, Bedford and Franklin counties places Shentel in an ideal position to bid these contracting resources.

Across its cable, fiber and fixed wireless services, Shentel has expanded broadband service to over 58,000 homes since mid-2020 and that number is constantly growing. This robust proven growth, along with Shentel's long history in Campbell County clearly demonstrates Shentel's ability to design and deploy a wide array of broadband networks.

This project was designed with an innovative hybrid FTTH/wireless drop architecture to provide robust universal broadband connectivity in a quick, efficient and affordable manner. This architecture allows Shentel to deploy broadband service across significant areas quickly. As such, Shentel estimates in conjunction with its proposals in Bedford and Franklin counties that the project will be completed within 24 months from contact execution. A detailed project timeline can be found in attachment 7. The draft MOU is attachment 8.

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

**Answer:**

Campbell County has not received any VATI grants to date.

Shentel has applied for VATI grants in the past but has not been awarded funding. Shentel has used this experience to develop a better understanding of VATI's goals, and to develop a plan for 2021 submissions. Shentel is a trusted partner in the communities. While not having received VATI grants, Shentel has worked with Campbell to expand service using CARES Act funds.

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

**Answer:**

Please see Attachment 9 and 10.

Campbell County has submitted its local share of funding sufficient to meet the local match requirement, but will also be providing significant in-kind support in the way of grant management, fiscal agent services, legal support, service promotion etc.

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

**Answer:**

Applicant Provided Leverage: Campbell County will be providing grant administration for the project. This will include project management and fiscal agent responsibilities. In addition, the County will insure that existing local permitting processes are expedited as necessary to implement the project within the proposed timeline. In addition to these efforts, County staff will work to facilitate community awareness of service availability to positively impact take rates once the network is constructed. The project as a whole is designed to leverage the efforts and funding of three different providers by utilizing CVEC/firefly; Riverstreet and Shentel to achieve universal coverage. In doing so, the respective assets (both physical and financial) of each firm is leveraged to bring federal, state, local and private investment together to achieve universal coverage.

Co-Applicant Provided Leverage: Shentel will provide leverage in several different forms to support this project. Shentel has a local office location and customer support center located in Rustburg Virginia, the Campbell County seat. This office will provide convenience to customers who prefer to do business in-person and excellent local customer support to all customers across Campbell and the region. This existing resource will allow Shentel to effectively manage the network and serve the customers in the project area. Shentel's existing local support and management capabilities also reduce fixed costs, as these important business elements do not need to be newly developed.

Another significant benefit to the Shentel local presence is the amount of infrastructure already in place. Shentel will be able to leverage its existing pole attachments to attach via overlash, rather than having to go through the entire permit and make-ready process. This will both reduce costs and increase deployment speed. Shentel will also be able to leverage its existing PoP, further decreasing costs and increasing deployment speed. This PoP connection will also ensure high quality services by linking this network to Shentel's existing fiber network with redundant Tier 1 peering points located in Ashburn, Virginia and Atlanta, Georgia.

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Marketing: Describe the broadband adoption plan.

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

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

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a. Shentel has a strong and constantly improving marketing strategy, driven by its expansive growth in recent years. Our marketing plan utilizes public relations, mass media, social media, digital advertising, direct mail, email, printed collateral and merchandising pieces. All of these tactics are reinforced by a robust website, a dedicated customer service team and Sales & Marketing representatives on the ground, in market. Shentel's existing Fiber to the Home business involves many customer touchpoints both before and after construction. Before construction begins, Shentel uses staged digital and direct mail announcements to alert customers of the upcoming service. This advance notice serves to both alert residents to the service that will be available to them and to give them advance warning of impending construction.

Advertising then continues through the construction phase. These construction alerts and coming soon ads help to continue to keep residents aware of the reason for the construction work that may involve work in rights of way or easements near their home. They also bolster awareness and excitement surrounding new services being delivered. Throughout this process, door to door sales will be employed to maintain clear communication with residents. All contacts or pre-registrations that take place during and before construction will then be followed up with after construction is complete and service is available. At that time, installations begin, which will continue to drive increased awareness of available services. As time goes on, take rates will be closely monitored and further advertising will be developed and deployed as necessary. Campbell County will assist in efforts to facilitate community awareness of service availability in unserved areas as the service comes on-line. Shentel believes 50% to 70% of the homes passed will subscribe to internet within 5 years of availability. Shentel has seen similar take rates in underserved areas with their current offerings. In Frederick County, Virginia for example a previously unserved area has a 69% take rate after 7 months of service being made available.

For the wireless drop component of the service that Shentel plans to make available, a more targeted advertising approach is taken. Shentel plans to promote customer take rate through an integrated marketing plan that utilizes multiple reinforcing tactics that are deployed well before and after new coverage areas go "live". For examples of marketing materials and processes, see Attachment 15.

b. Campbell County Public Library System (CCPLS) provides numerous digital literacy outreach efforts and programs. CCPLS provides a range of digital literacy programs and services. For adults, we offer a menu of in-person technology classes, including basic computer and internet literacy, intro courses for popular software programs (such as Microsoft Word, Excel, and PowerPoint), and intro courses for common social media platforms (Facebook, Twitter, etc). Our "How to Delete Yourself from the Internet" dives into privacy concerns on the web and teaches patrons how to protect their personal information. For those that wish to take courses online, we subscribe to a service called Universal Class, which offers online, self-paced instructor facilitated courses, including the Google suite and computer programming. A menu is available here: <https://campbellva.universalclass.com> One-on-one assistance with a Librarian is available to the public by appointment for basically any technology, device, or digital literacy topic and is tailored to the individual patron's needs. A flyer is attached that summarizes our offerings. For children, we have offer a monthly STEAM after-school program at each branch called, Labrary. This program regularly incorporate Spheros which allow children to experiment with coding using a friendly app based user interface. See attachment

Shentel is a certified ETC carrier and is actively participating in the Emergency Broadband Benefit (EBB) program. This offers up to \$50 off broadband costs for low income homes. Shentel is therefore ideally positioned and fully intends to continue its participation in the replacement programs currently being considered in the pending Infrastructure Bill. As an ETC carrier, Shentel is able to offer a \$10 lifeline discount to eligible homes and, in concert with its EBB participation, is developing several different subsidy options for low income homes.

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

**Answer:**

County Grant Management Team

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**Name**

**Position**

**Responsibility**

Frank Rogers

County Administrator

Project Management

Ronna Johnson-Davis

Director, Management Services

Fiscal Agent/Budget

David Kerr

GIS Manager

Mapping

Kristin Wright/Tripp Isenhour

Staff Attorney/County Attorney

Legal Review/Support

Co-Applicant's Team

**Employee**

**Title**

**Role**

**Qualifications**

Harris Duncan

Vice President Wireline Engineering & Planning

Executive oversight of the Fiber to the Home deployment and Core integration & support

Executive with over twenty years of diverse telecommunications management experience inclusive of wireline fiber networks, fixed and cable television.



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Dan Meenan

Vice President Wireless Engineering & Construction, Fixed Wireless Network

Executive oversight of the Fixed Wireless deployment and support

Executive with over twenty years of diverse telecommunications management experience inclusive of wireless mobility networks, fixed wireless networks, and cable television.

Brith Osinkosky

Sr Manager OSP Engineering & Construction, Outside Plant Engineering

Responsible for Fiber to the Home engineering and deployment

Accomplished leader with twenty years of experience in Outside Plant engineering, construction and operations, specializing in large-scope projects, and broadband acquisitions/overbuilds/upgrades. Currently managing 20,000+ miles of Shentel's OSP network. Extensive experience with FTTH designing and implementation.

Paul Lopez

Director of RF Engineering

Responsible for all RF Engineering related to Fixed Wireless deployment and support

Director of RF Engineering, currently managing a wireless CDMA-EVDO-LTE network of approximately 2,000 cell sites in seven states. Throughout his career has designed and optimized more than 2,000 cell sites and managed more than 7,000.

Bill Gilliam

Director of Broadband Operations

Responsible for all customer installation and support for both Fiber to the Home and Fixed Wireless

Industry leader with over 20 years of diverse telecommunications management experience. Former Vice President and General Manager for Time Warner Cable and Bright House Networks in Central Florida. Responsible for the upgrade, launch, and ongoing operations of the company's Broadband service networks across Virginia, West Virginia, Maryland, Pennsylvania and Kentucky.

Jessica Wilmer

Site Acquisition Manager

Responsible for pre-construction deployment of Fixed Wireless cell sites

20 years of wireless telecommunications industry real estate acquisition and site development experience. Currently manage a wireless mobility network comprised of approximately 2,000 cell sites in seven states. In her

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career, has developed over 500 new cell sites. Former Zoning Administrator in Augusta County. Extensive experience with Zoning and Planning, the Wireless industry, and governmental affairs.

Brad Bays

Construction Manager

Responsible for construction deployment of Fixed Wireless cell sites

Currently managing a wireless mobility network comprised of approximately 2,000 cell sites in seven states. In my career have built, and managed 6,000 wireless sites since 1999.

As a local government, Campbell County has a long, successful history of grant management and administration. Staff have the necessary skills, abilities and experience to successfully manage and implement VATI grants. Shentel is one of the largest regional internet service providers in the Mid-Atlantic. They have a 119 year operating history and an extensive fiber network that spans more than 7,000 miles and supports its rapidly growing and multi-faceted broadband services in Virginia. With broadband service delivered to more than 58,000 homes in the past 12 months and nearly 600 miles of fiber laid thus far in 2021, Shentel has the clear and tangible financial and operational experience to not only construct, but also operate and manage the project proposed in this grant application. Shentel is currently operating and expanding its legacy cable markets, while also managing two highly successful broadband initiatives in its GloFiber FTTH service and its BEAM fixed wireless service. Launched in 2019, GloFiber is an XGS-PON FTTH network that is currently live and serving customers with symmetrical multi-gigabit speeds in Harrisonburg, Winchester, Front Royal, Staunton, Lynchburg, Roanoke and Salem with engineering and construction underway in several more markets in Virginia.

Meanwhile, Shentel launched its BEAM fixed wireless service in 2020 and now has service live in Albemarle, Augusta, Buckingham, Clarke, Frederick, Goochland, Greene, Louisa, Orange, Nelson, Page, Rockingham, and Shenandoah counties in Virginia. This service is targeted to bring broadband service to unserved homes in rural, hard to reach areas and currently provides that service to thousands of homes.

## 17. **Project Budget and Cost Appropriateness**

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

### **Answer:**

Shentel is a 119 year old telecommunications company that has served Campbell County for many years. Shentel is currently laying hundreds of miles of fiber per year to support expanding its cable, FTTH and Fixed Wireless services. As shown in attachments 12 and 13, all cost estimates are based off of a long and active history in both the wireless and wireline industry. While attachment 12 shows a high level roll-up of costs in alignment with DHCD guidance, attachment 13 provides detailed cost breakouts and supporting documentation from various vendor relationships for both wireline and wireless services.

# Application to DHCD Submitted through CAMS

Campbell County

Campbell County Shentel Broadband Application 2022

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

a. Total VATI funding request

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

**Answer:**

a. \$5,443,000

b. 3,509

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

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

- a. Businesses, community anchors, or other passings in the proposed project area that will have a significant impact on the locality or region because of access to broadband.
- b. Unique partnerships involved in the proposed project. Examples include electric utilities, universities, and federal/state agencies.
- c. Digital equity efforts to ensure low to moderate income households in the proposed project area will have affordable access to speeds at or above 25/3 mbps.

### Answer:

a. Access to universal, quality broadband service in rural areas such as Campbell County is a significant economic development tool for small business, home occupations, and the agricultural community as well as community anchors such as churches, non-profits and educational institutions. As reflected in the letters of support, there is broad based need for this service to reach all corners of Campbell County. Of note, letters of support show endorsements from the County's Economic Development Manager, but also a local business owner who both recognize the critical importance of broadband for a thriving business community. The Superintendent of Schools and President of the local Community College have both also addressed letters of support reflecting the critical need the educational system recognizes for broadband to enable the continued intellectual and skill development of the County's workforce and youth. In addition, letters of support from the Library Director and Director of Social Services illuminate the human service sector's endorsement of this grant application. It is clear that universal broadband is necessary to level the playing field to provide equal access and equal opportunity for every household in Campbell County. The pastor of a local church even remarked "The possibility of having access to Shentel's broadband internet service represents an exciting development for our church, and especially our Timberlake Child Development Center, which serves hundreds of families every year. We rely on the internet for nearly every aspect of our ministry, including communication with parents and staff, searching for qualified employees, and responding to the recent health care crisis in our community. To be candid, our current service is woefully insufficient. Its instability and unreliability make our work difficult and at times, impossible. Higher speed, more reliable service would be a game-changer for us." Rev. Brad McMullen, Lead Pastor-- Timberlake United Methodist Church.

Most recently Campbell County has worked with Shentel and B2X to expand access to internet service in the community. Taken together, the County has invested approximately \$2 million to enhance service availability throughout the County.

b. Shentel has a variety of unique partnerships planned to cost effectively construct the proposed network. For example, over the last 15 years, Shentel has developed an extensive partnership with MBC and is one of the largest customers of MBC fiber. As part of this grant, Shentel will consider leveraging a similar contractual relationship to share fibers with MBC. We also look forward to working with Appalachian Electric Power (AEP). We have signed an NDA with AEP and are collaborating on network plans and designs.

c. As noted in question 16 Campbell County has a robust program to address digital equity and works diligently to provide opportunities to all regardless of location or socio-economics. Free internet access is available at all library branches. Shentel currently partners with Campbell County on a dedicated internet access circuit. Shentel also plans to participate in E-Rate bidding contracts for the Campbell County Public School System for future WAN needs. As mentioned in question 15, Shentel is actively participating in the Emergency Broadband Benefit (EBB) Program, which offers up to \$50 off broadband costs for low-income homes. In addition to this program, as discussed in question 6, Shentel is also leveraging this project to bring service to Low-to-Moderate residents who may not otherwise be able to receive it. Long drops are a notorious roadblock for low to moderate income residents to receive broadband service. Shentel has included as part of the cost of this project long drop capital for approximately 206 long drops for homes that are believed to be Low to Moderate Income.

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## 20. Additional Information

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

Label Additional Attachments as:

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

### Answer:

Please see attached.

### Attachments:

Map(s) of project area, including proposed infrastructure

ATTACHMENT1CampbellProjectMap913202150456.pdf

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

ATTACHMENT2CampbellDocumentationofFederalFundingArea913202150515.pdf

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

ATTACHMENT3CampbellDOCUMENTATIONOFRDOFAWARDEDAREAINCLUDEDINVATIAPPLICATION913202150528.pdf

Documentation that proposed project area is unserved based on VATI criteria

ATTACHMENT4CampbellDocumentationUnservedAreaVATICriteria913202150545.pdf

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Passings Form (Use template provided)

Attachment5CampbellCountyPassingsFormv29142021113339.pdf

Propagation Map if Wireless Project

ATTACHMENT6CampbellPropagationMap913202150602.pdf

Timeline/Project Management Plan

ATTACHMENT7CampbellTimelineProjectManagementPlan913202150618.pdf

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

ATTACHMENT8MOU913202151437.pdf

Funding Sources Table (Use template provided)

ATTACHMENT9CampbellFundingSourcesTable913202150637.pdf

Documentation of Match Funding

ATTACHMENT10CampbellDocumentationofMatchFunding913202150655.pdf

Letters of Support

Attachment11CampbellLettersofSupport914202110706.pdf

Derivation of Cost/Project Budget (Use template provided)

ATTACHMENT12CampbellDerivationofCosts913202150752.pdf

Documentation of Supporting Cost Estimates

ATTACHMENT13FOIAExemption9142021123541.pdf

Two most recent Form 477 submitted to the FCC or equivalent

ATTACHMENT14CampbellTwomostrecentForm477submittedtoFCC913202150914.pdf

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

ATTACHMENT15CampbellCountyPointandPolygonShapeFilesv29142021113415.zip

# Application to DHCD Submitted through CAMS

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

ATTACHMENT16FOIAExemption9142021123548.pdf

Optional

Attachment17CCVATIProposedCoverage20210907914202195739.pdf

Optional

Attachment18CCPLSTechMenuDigitalLiteracy914202195801.pdf

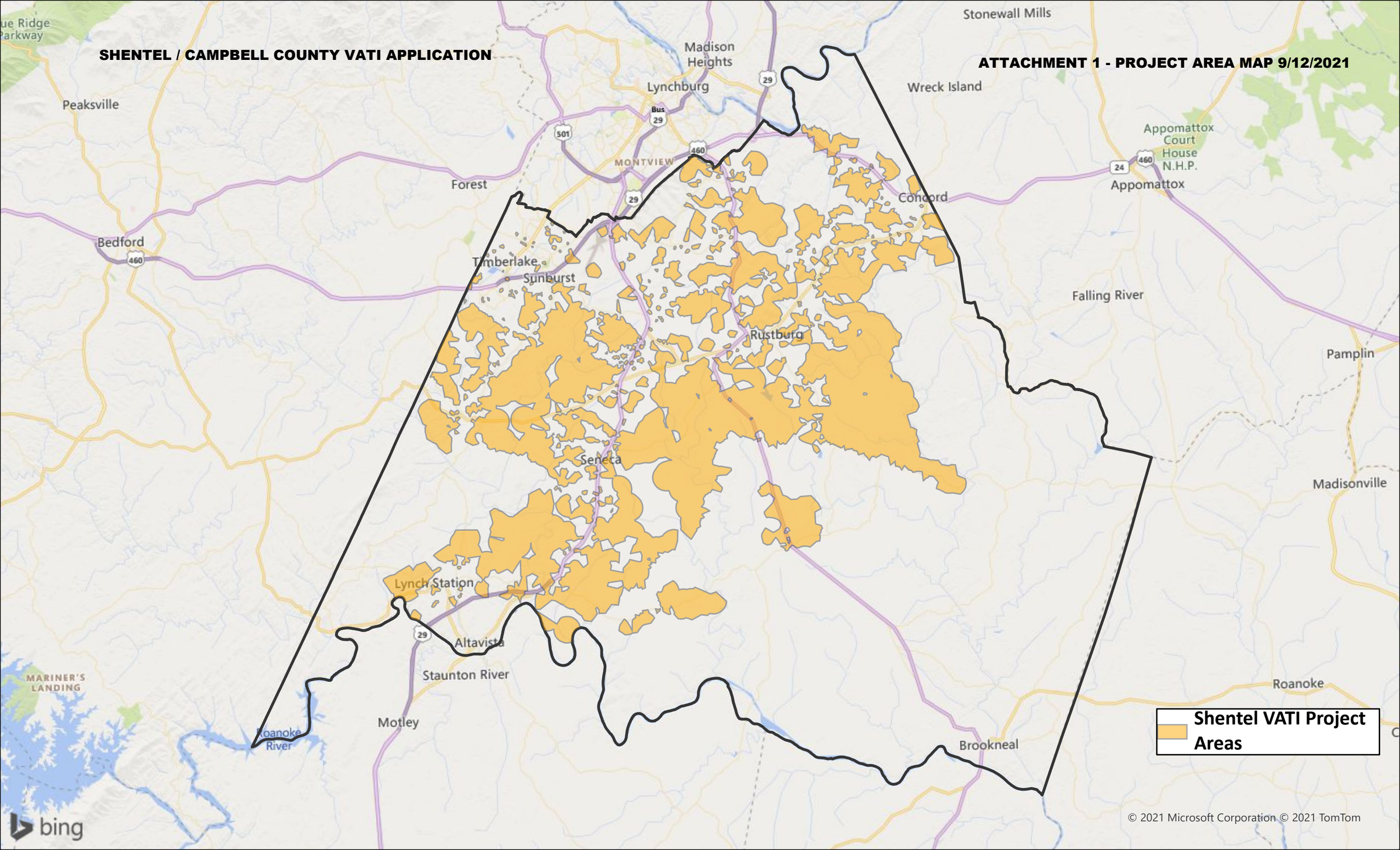
Optional

ATTACHMENT19CampbellMarketingandCitizenEngagementPlan914202195833.pdf

Optional

ATTACHMENT20NetworkDesignCampbellCounty914202115620.pdf

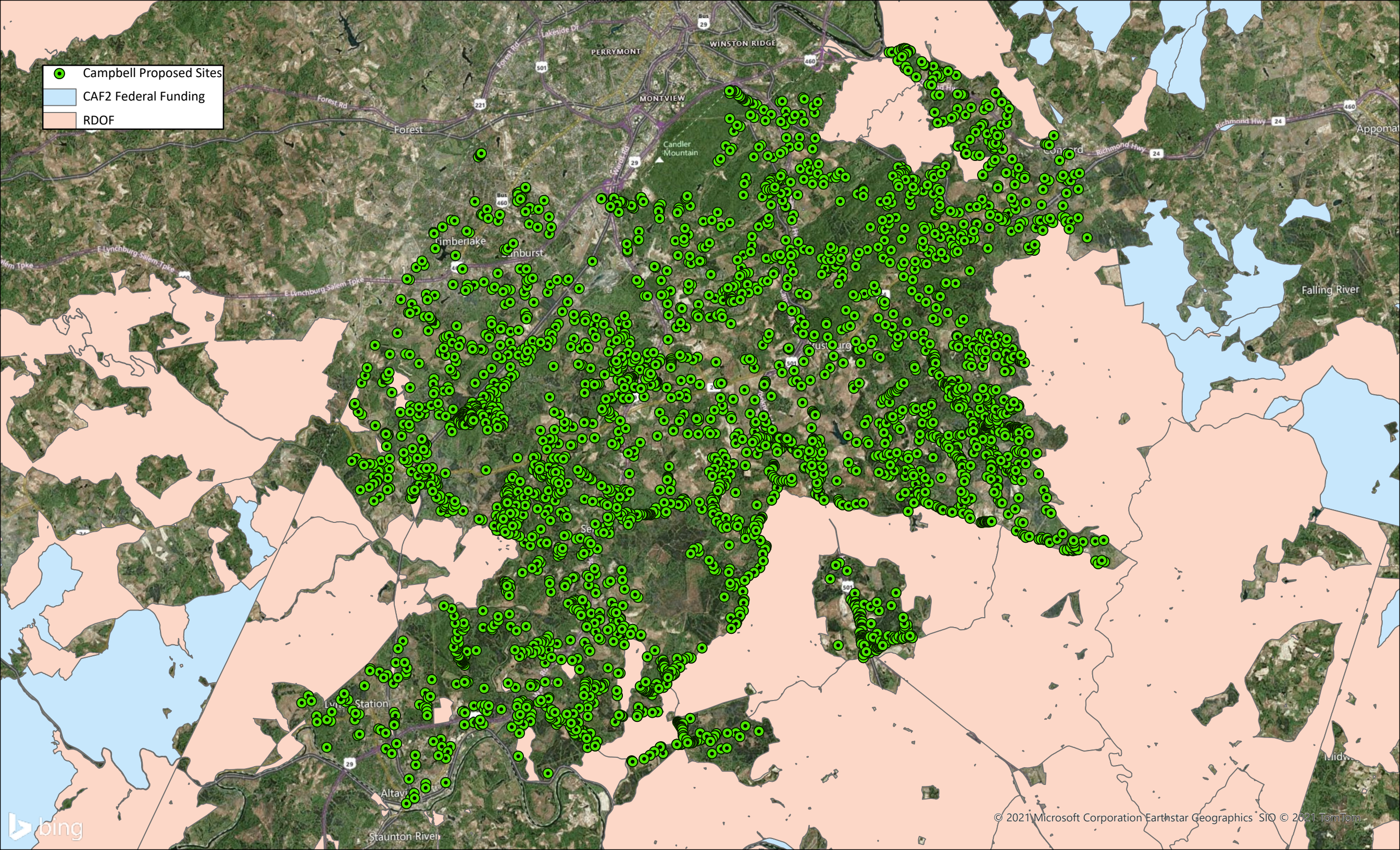




**Shentel VATI Project Areas**



● Campbell Proposed Sites  
CAF2 Federal Funding  
RDOF





**ATTACHMENT 3 – DOCUMENTATION OF RDOF AWARDED AREA INCLUDED IN  
VATI APPLICATION**

Not applicable to this project.

## **ATTACHMENT – 4 Documentation of Unserved Area VATI Criteria**

Shentel has defined its project area through an iterative and collaborative process of identifying unserved homes. The only homes included in Shentel's VATI application are believed to be unserved. As such, Shentel anticipates no overlap other than possible incidental overlap for two reasons. First, the process for identifying unserved is complicated and involves several different data sources as well as local knowledge and citizen feedback. As such, there are possible holes in the estimate that may lead to a small amount of overlap. Second, the nature of the wireless drop portion of Shentel's proposed project naturally leaves room for incidental overlap. Wireless technology is not as precise and controllable as wireline technology. Cell site location can be constrained by available infrastructure, such as utility poles, fiber connectivity, and utility power, as well as geography, terrain, and topology considerations. Because of these constraints, there may be situations where the only way to reach unserved locations is to place a site that has some incidental service overlap. Due to these considerations, Shentel has estimated a 5-10% overlap percentage.

Furthermore, Shentel is committed to continuing to minimize overlap throughout the life of this project. As the high-level design is refined and planned out in detail, there will be many opportunities to improve the accuracy of Shentel's wireless drop service. Specific cell sites will be determined based on existing search rings, and there is flexibility in this process to determine sites that will minimize overlap. Shentel may also use directional antennas to further target only unserved locations and avoid overlap. Finally, there may be opportunities to substitute wireless connections with wireline connections, eliminating overlap concerns. Shentel has gone through an extensive process to identify unserved addresses and worked with County partners to minimize overlap in keeping with VATI guidance. Shentel is furthermore committed to reasonably closing any gaps where previously unidentified overlap comes to light, and remaining below the allowable VATI overlap threshold.

## 2022 Virginia Telecommunication Initiative (VATI) Passing Form

Type of Passings	Total Number of Passings in the Project Area <sup>1</sup>	Passings in the Project Area, without Special Construction Costs Required <sup>2</sup>	Passings with Special Construction Costs budgeted in the Application <sup>3</sup>	Number of Passings with Speeds at 10/1 or below in Project Area <sup>4</sup>
Residential	3,418	1,891	1,527	1,766
Businesses (non-home based)	81	81	0	0
Businesses (home-based)	0	0	0	0
Community Anchors	4	4	0	0
Non-residential	6	6	0	0
<b>Total</b>	<b>3,509</b>	<b>1,982</b>	<b>1,527</b>	<b>1,766</b>

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

**Note:** Do not include passings in RDOF awarded areas that were awarded to the co-applicant; these passings should be included in the RDOF Passings Form. Passings included in this application in RDOF awarded areas that were not awarded to the co-applicant, unless successfully challenged, are considered unserved and should be counted as passings in this form.

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

<sup>2</sup> The number of structures in the project area that will not require special construction costs to provide service to. These passings fall within the broadband provider's standard service connection drop length and do not require nonstandard equipment or any additional fees above normal service connection fees required to provide broadband access to a premise.

<sup>3</sup> The number of structures in the project area with all construction costs budgeted in the application. These passings will not require any additional special construction costs beyond those budgeted for in the VATI application.

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

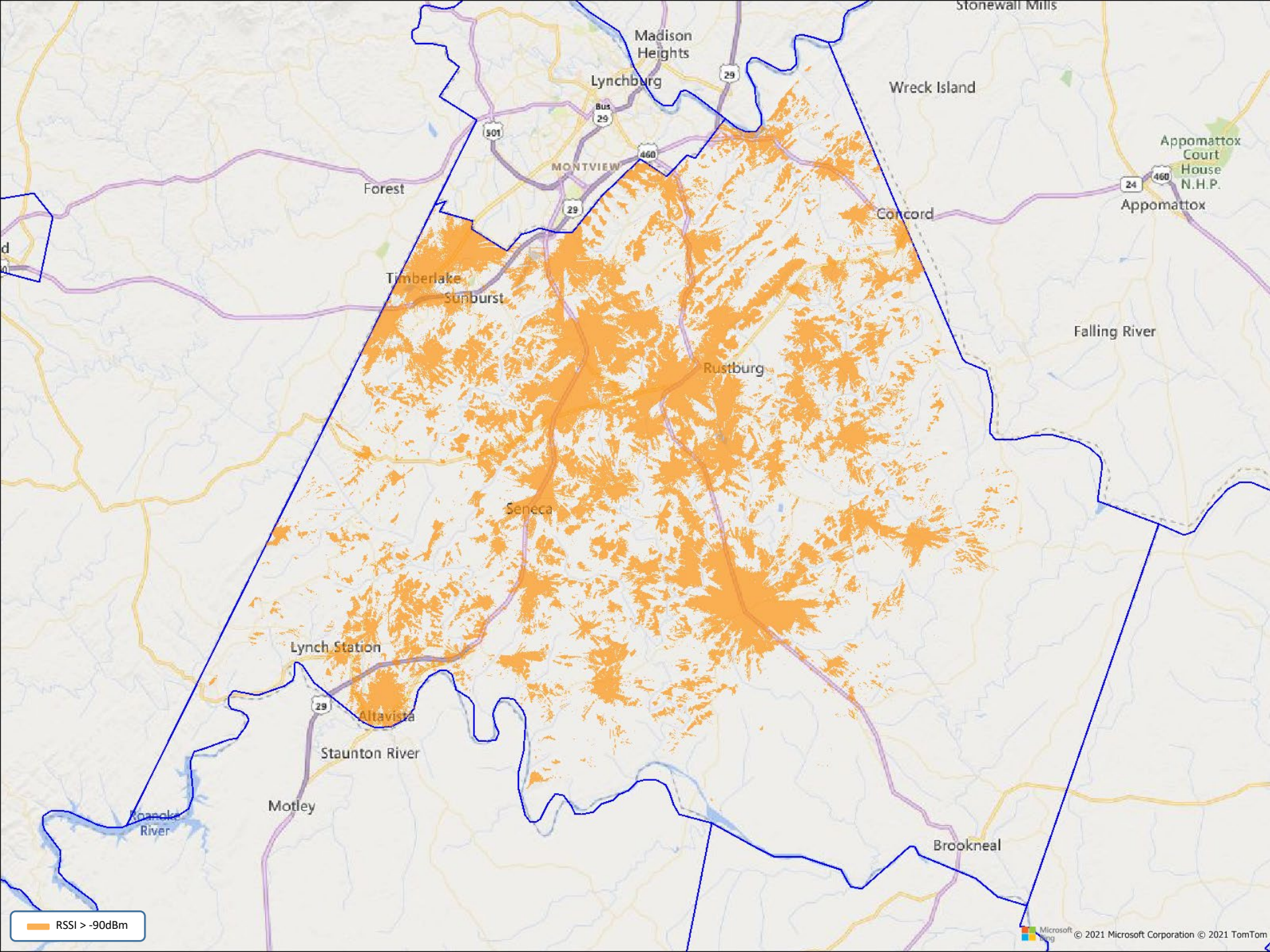
## Definitions

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

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

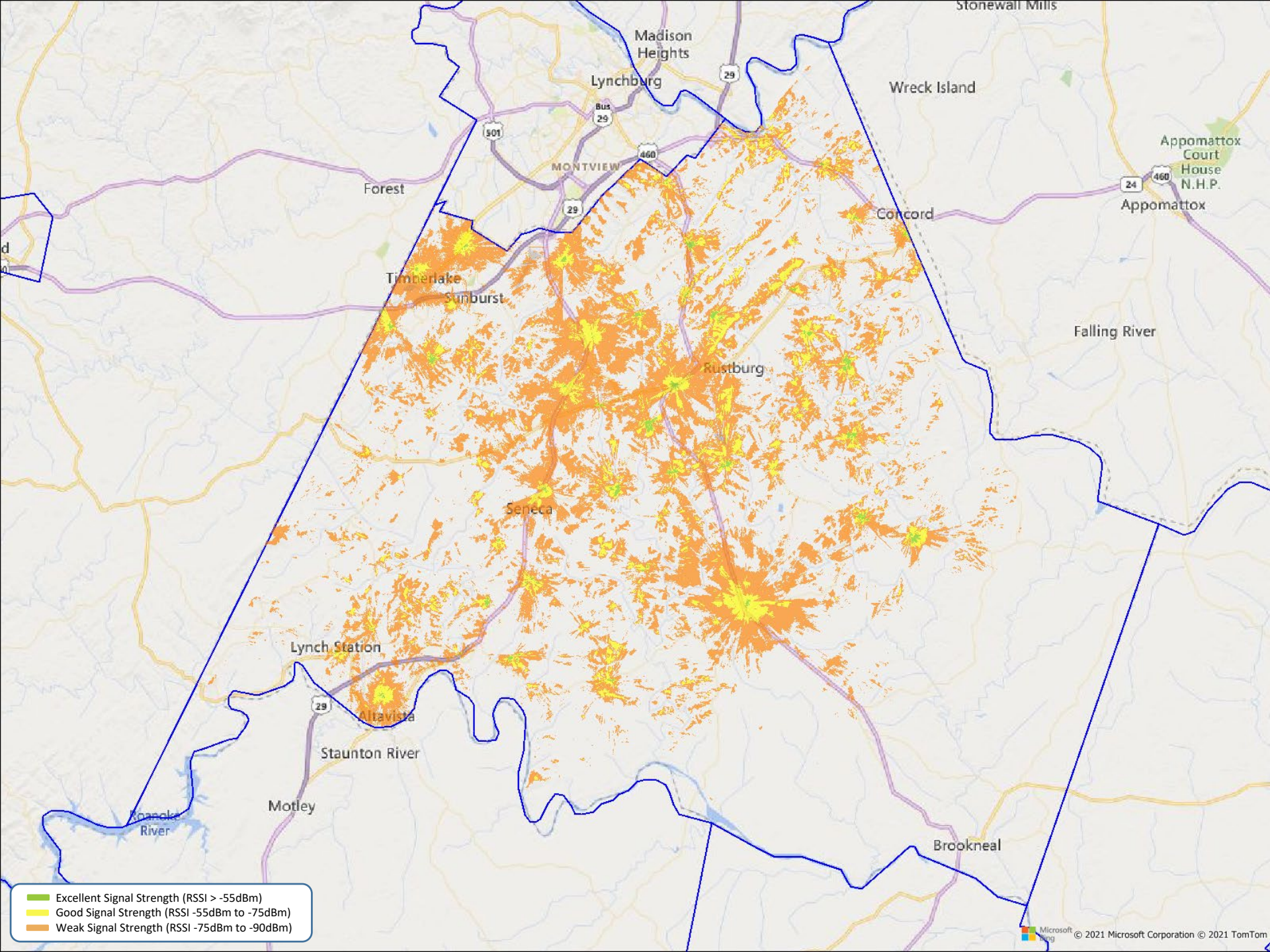
**Community Anchor** - schools, libraries, medical and health care providers, public safety entities, community colleges and other institutions of higher education, and other community support organizations and agencies that provide outreach, access, equipment, and support services to facilitate greater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

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



RSSI > -90dBm





- Excellent Signal Strength (RSSI > -55dBm)
- Good Signal Strength (RSSI -55dBm to -75dBm)
- Weak Signal Strength (RSSI -75dBm to -90dBm)

# Shentel Attachment 7 – Project Timeline

## ATTACHMENT 7 (Question 11 Project Readiness)

<b>Project Timeline</b>																								
Month 1 = Contract Award Notification and Contract Fully Executed																								
Project Deadline = December, 2024 (24 months)																								
<b>Hybrid Broadband (includes FTTH and Fixed Wireless)</b>																								
	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24
Performance Milestones	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
Field Engineering - Phased	█	█	█	█	█																			
Design Engineering - Phased			█	█	█	█	█																	
Search Ring Release - Phased				█	█	█	█	█	█															
Site Acquisition - Phased					█	█	█	█	█	█	█	█	█	█	█	█	█	█	█					
Permitting - Phased						█	█	█	█	█	█	█	█	█	█	█	█	█	█	█				
Final Project Review - Phased							█	█	█	█	█	█	█	█	█	█	█	█	█	█				
Construction - Phased								█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	
Customer Installation Commencement - Phased																█	█	█	█	█	█	█	█	
Project Close-out - Phased																	█	█	█	█	█	█	█	█
																		Target Completion						Project Deadline

Detailed description of each of the aforementioned Performance Milestones for both Fiber to the Home and Fixed Wireless technologies are as follows:

### Performance Milestones – Fiber to the Home

#### Field Engineering – Phased

- Outside Plant:
  - Shentel shall complete a full review of the planned fiber route to determine feasibility, costs, and challenges for construction. This review shall consist of Shentel personnel visually inspecting the entire planned fiber route. Shentel typically follows utility routes



## Shentel Attachment 7 – Project Timeline

such as power or telephone, with those utilities for new pole attachments when there is not existing Shentel attachment to allow overlash.

- Shentel shall make a determination to go underground if the utility routes are deemed unfavorable or contain challenges that would result in high costs to construct.
- Shentel shall collect all pole information and route information and prepare the proper permits to pole owners and VDOT.

### Design Engineering – Phased

- Outside Plant:
  - Shentel shall complete a detailed Engineering Package that includes the entire defined fiber build route, as well as a complete list of all required materials to complete the fiber build.
  - Engineering Package shall consist of geospatial drawings of the physical route (aerial versus buried), list all physical structures and other possible obstructions, provide required materials and their physical placement, and note key requirements that construction is required to follow to complete the project.
- Inside Plant:
  - Shentel shall complete a full design and procure all required equipment and ancillary hardware to support all planned services.

### Permitting – Phased

- Outside Plant:
  - Shentel shall permit all utility pole owners for any overlash or new pole attachments.
  - For any new permitted utility pole that is located on private property, Shentel shall follow the Virginia and Federal code that would allow Shentel to utilize existing like-kind utility easements. Shentel shall engage the County to aid in any dispute that would arise from a landowner denying Shentel access to utility easements.
  - Shentel shall submit all other permits such as city, town, railroad, or VMRC permits as required.

### Construction – Phased

- Outside Plant:
  - Shentel shall complete all construction requirements as outlined and defined in the Engineering Package once all permits have been approved.
  - Required changes during construction shall be communicated and approved before construction can be completed.

## Shentel Attachment 7 – Project Timeline

- Shentel shall complete end-to-end fiber characterization and testing of fiber to determine if fiber passes all defined criteria. Any noted problems are corrected at the time of testing.
- Inside Plant:
  - Shentel shall configure, deploy, and install all equipment and ancillary hardware.
  - Shentel shall complete end-to-end testing and certification to validate the service.

### Customer Installation Commencement – Phased

- Operations:
  - Release of addresses to sales database
  - Shentel shall complete the installation, test, and turn-up of all customer CPE (Customer Premise Equipment) at the home/business to support the service.

### Project Close-Out – Phased

- Shentel shall complete a full review of the completed construction against the Engineering Package to verify that all requirements have been completed.
- Shentel shall complete a full review of all received equipment and ancillary hardware to complete verify that all materials have been received and placed into service.
- Shentel shall complete a full review of all vendor invoices against their completed work and materials to verify billing accuracy.
- Shentel shall complete all financial true-ups and closeouts to complete the project.

## Performance Milestones – Fixed Wireless

### Field Engineering – Phased

- Reconfirm previous analysis of unserved or underserved homes
- Competitive analysis of other providers

### Design Engineering – Phased

- Prediction modelling using InfoVista Planet platform
- Targeted coverage review/analysis

## Shentel Attachment 7 – Project Timeline

- Site configuration – macro vs. small cell
- Prediction and analysis of home counts

### Search Ring Release – Phased

- Creation of designated search ring area

### Site Acquisition – Phased

- Property Acquisition
- Prediction modelling using InfoVisto Planet platform of specific site candidates
- Regulatory Review/Title Review
- Lease/Easement acquired
- Construction Drawings
- Structural Analysis Review
- Environmental Review

### Permitting – Phased

- Zoning/Permitting with jurisdiction
- Land Use Permit filing with VDOT

### Final Project Review – Phased

- Notice to proceed issued
- Materials and equipment order finalized

### Construction – Phased

- Civil construction (includes backhaul, power and BTS set)
- Tower construction
- Integration of equipment/activation of site

### Customer Installation Commencement – Phased

- Release of addresses to sales database

## Shentel Attachment 7 – Project Timeline

- CPE (Customer Premise Equipment) installation at home/business

### Project Close-out – Phased

- Shentel shall complete a full review of the completed construction against the Engineering Package to verify that all requirements have been completed.
- Shentel shall complete a full review of all received equipment and ancillary hardware to complete verify that all materials have been received and placed into service.
- Shentel shall complete a full review of all vendor invoices against their completed work and materials to verify billing accuracy.
- Shentel shall complete all financial true-ups and closeouts to complete the project.

## **MEMORANDUM OF UNDERSTANDING**

This Memorandum of Understanding ("MOU") entered into on September 8, 2021 2021, by and between SHENTEL., located at 500 Shentel Way Edinburg, VA 22824, hereinafter referred to as the "Shentel," and the County of Campbell, Virginia, located at 47 Courthouse Lane, Rustburg, VA 24588, hereinafter referred to as the "County" (Shentel and County are collectively referred to as the "Parties"), for the purpose of establishing and achieving various goals and objectives relating to the project contemplated by the Parties.

WHEREAS, Shentel has been awarded an opportunity to partner with Campbell County to apply for a VATI grant to extend broadband service to specific unserved or underserved locations in the County ("the Project"); and

WHEREAS, the Parties are desirous to enter into this Memorandum to set forth the working arrangements that both Parties agree shall be necessary to pursue their efforts to bring the Project to fruition;

### **MISSION**

The Project is intended to provide the areas of the County that are the subject of the RDOF funding with access to broadband Internet access service ("Broadband"), in order to meet the future needs of residents and businesses in those areas of the County.

### **PURPOSE AND SCOPE**

The Parties intend for this Memorandum to outline the structure for any binding contracts which the Parties may enter into in the future related to the Project.

### **OBJECTIVES**

The Parties agree to work together to attempt to secure funding and establish policies and procedures that will promote and sustain a market for Broadband availability and intend to work toward delivering a product and/or services that meet or exceed business and industry standards.

### **RESPONSIBILITIES AND OBLIGATIONS OF THE PARTIES**

The Parties agree to work together in good faith and collaboratively in an effort to bring the Project to successful completion. This Memorandum does not create any legal or equitable obligations or rights on the part of either Party and no such obligations or rights shall exist unless and until such time as the Parties may enter into a written agreement signed by both Parties.

### **SERVICES COOPERATION**

The goal of the Project is to provide the following services in the areas of the County contemplated in the Project, which services include, but are not necessarily limited to:

## Broadband Internet access services

**Phase 1** (beginning after MOU execution): The Parties will work together to apply for Virginia Telecommunication Initiative (“VATI”) grant(s). The Parties anticipate that VATI guidelines will require contributions by Shentel and by the County as matching funds to secure a FY2022 VATI Grant through the Virginia DHCD. DHCD funding shall not exceed 80% of Project costs. The Parties’ VATI grant application may be a part of a regional application made together with other Virginia counties.

The total budget for the Project is expected to be \$15,550,000. The County agrees to provide a minimum match not to exceed \$3,500,000 in funding for the Project. Shentel agrees to provide a minimum match of \$6,842,000 in funding for the Project. The amount of the VATI Grant to be requested for the Project will be at least \$5,131,000, and the total number of homes projected to be passed by the Project shall be at least 3,418.

**Phase 2** (beginning after Phase 1): Shentel will work with the County to continue Project planning and the Parties will seek additional Federal, State and local funding to expand the availability of Broadband service in the County.

### **TIMELINE**

The above outlined scope and objective shall be contingent on the Parties’ ability to obtain the necessary funding required for the Project, as described in any applicable grant or business loan application. Responsibilities with regard to commencement and completion of the Project will be established in any future agreement between the Parties, and may coincide with the period specified in connection with any grants awarded in connection with the Project.

### **TERM**

This MOU shall remain in effect, subject to the termination provisions in this MOU, up until the Parties mutually determine whether they are able to move forward with the Project.

If the Parties are successful in securing sufficient grant funding that they are both willing to move forward with the Project, then they agree to use good faith efforts to negotiate, execute and deliver a formal contract regarding the Project (“Project Agreement”). The Parties contemplate that a Project Agreement will contain terms and conditions, representations, warranties, covenants, and other provisions that are customary in service arrangements of the sort contemplated in this MOU. If the Parties are unable to agree on the terms and conditions of a Project Agreement within 60 days of receiving notice of the award of such grant funding, then either Party may give notice of the termination of this MOU. In that event, the Parties shall have no further obligations to

each other under this MOU except for any obligations which are specifically provided to survive a termination of this MOU. If the Parties receive no grant funding upon which further joint efforts can be made within 1 year after the execution of this MOU, the MOU will terminate without further action by the Parties. This MOU does not create any legal or equitable obligations or legal rights.

#### **AMENDMENT OR CANCELLATION OF THIS MEMORANDUM**

This Memorandum may be amended or modified at any time in writing by mutual agreement of both Parties.

In addition, this MOU may be cancelled by either Party without cause on sixty (60) days advance written notice. This MOU may be terminated for cause, where cause for termination may include, but is not limited to, a material breach of any of the provisions contained herein, upon delivery of written notice of such termination to the other Party.

#### **GENERAL PROVISIONS**

The Parties acknowledge and understand that they must be able to fulfill their responsibilities under this MOU in accordance with the provisions of the law and regulations that govern their activities. Nothing in this Memorandum is intended to negate or otherwise render ineffective any such provisions or operating procedures. The Parties assume full responsibility for their performance under the terms of this Memorandum.

If at any time either Party is unable to perform its duties or responsibilities under this MOU consistent with such Party's statutory and regulatory mandates, the affected Party shall immediately provide written notice of such to the other Party and, if possible, establish a date for such performance.

#### **LIMITATION OF LIABILITY**

No rights or limitation of rights shall arise or be assumed between the Parties as a result of the terms of this MOU.

#### **ARBITRATION/MEDIATION DISPUTE RESOLUTION**

The Parties to this MOU agree that should any dispute arise regarding any aspect of their relationship or the Project, including, but not limited to, any matters, disputes or claims, the Parties shall confer in good faith to promptly resolve any such dispute. In the event that the Parties are unable to resolve the issue or dispute between them, then the matter shall be mediated and/or arbitrated in an attempt to resolve any and all issues between the Parties.

The Parties agree that any claim or dispute that arises from or through this MOU, if not resolved through mediation, shall then go to and be resolved through final and binding

arbitration. Any decision reached by the Arbitrator shall be final and binding and, if required, may be entered as a judgment in any court having jurisdiction.

In the event that any court having jurisdiction should determine that any portion of this MOU to be invalid or unenforceable, only that portion shall be deemed invalid and not effective, while the balance of this MOU shall remain in full effect and enforceable. This MOU shall be interpreted and governed by and in accordance with the Federal Arbitration Act, 9 U.S.C. §§ 1-16.

#### **NOTICE**

Any notice or communication required or permitted under this MOU shall be sufficiently given if delivered in person or by certified mail, return receipt requested, to the address set forth in the opening paragraph or to such address as one may have furnished to the other in writing.

#### **GOVERNING LAW**

This MOU shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia.

#### **SEVERABILITY CLAUSE**

In the event that any provision of this Memorandum shall be deemed to be severable or invalid, and if any term, condition, phrase or portion of this Memorandum shall be determined to be unlawful or otherwise unenforceable, the remainder of the Memorandum shall remain in full force and effect, so long as the clause severed does not affect the intent of the Parties. If a court should find that any provision of this Memorandum to be invalid or unenforceable, but that by limiting said provision it would become valid and enforceable, then said provision shall be deemed to be written, construed and enforced as so limited.

#### **ASSIGNMENT**

Neither Party may assign this Memorandum without the prior written consent of the non-assigning Party, whose approval shall not be unreasonably withheld or conditioned. Notwithstanding the foregoing, Shentel shall have the right to assign this MOU without the County's consent to any parent, subsidiary, affiliate, or any person, firm, or corporation that shall control, be under the control of, or be under common control with Shentel, or to any entity into which Shentel may have merged or consolidated or which purchases all or substantially all of the assets of Shentel.

#### **ENTIRE UNDERSTANDING**

This MOU reflects the entire understanding and agreement of the Parties pertaining to all matters contemplated hereunder.



## **MOU SUMMARIZATION**

The Parties to this MOU have mutually acknowledged and agreed to the following:

- The Parties to this MOU shall work together in a cooperative and coordinated effort, and in a manner and fashion intended to bring about the achievement and fulfillment of the goals and objectives of the Project.
- It is not the intent of this MOU to restrict the Parties from their involvement in or participation with any other public or private individuals, agencies or organizations or opportunities.
- The Parties to this MOU shall mutually contribute and take part in any and all phases of the planning and development of the Project, to the fullest extent possible.
- This MOU is not a binding contract, and it is not the intent or purpose of this MOU to create any rights, benefits, obligations and/or trust responsibilities by or between the Parties.
- This MOU shall in no way hold or obligate either Party to supply or transfer funds to maintain and/or sustain the Project or the effort to bring it to fruition.
- Should there be any need or cause for the reimbursement or the contribution of any funds to or in support of the Parties' efforts relating to the Project, then such shall then be done in accordance with applicable Virginia laws, regulations and/or procedures, and any Project Agreement which the Parties may enter into in the future.
- In the event that it should become necessary to provide funding for the effort to develop the Project, then any such endeavor shall be addressed in a separate and mutually agreed upon written agreement signed by the Parties or their representatives, in accordance with applicable laws and regulations, and in no way does this MOU provide such right or authority or obligate any Party to provide any such funding.
- The Parties have the right to individually or jointly terminate their participation in this MOU provided that advanced written notice is delivered to the other Party as provided for herein.

**AUTHORIZATION AND EXECUTION**

The signing of this Memorandum of Understanding does not constitute a formal undertaking, and as such it simply reflects the intentions of the Parties to undertake preliminary efforts to achieve the goals and objectives stated in this MOU.

IN WITNESS WHEREOF, the Parties hereto have set their hands as of the day and year first above written.

**SHENTEL COMMUNICATIONS OF VIRGINIA, INC.**

By: \_\_\_\_\_

Chris Kyle

Vice President

**CAMPBELL COUNTY, VIRGINIA**

By: \_\_\_\_\_

Frank Rogers, IV

County Administrator

**ATTACHMENT 9 – FUNDING SOURCES TABLE**

## VATI FUNDING SOURCES TABLE

Please fill in the chart below with a description of the project funding source (local, federal, state, private, other), the amount from that source, the percentage of total project funding that source represents, and a description of the current status of the funds (pending, secured, etc.).

Source	Amount	%	Status
REQUESTED VATI	\$ 5,442,563	35%	Pending
SHENTEL	\$ 6,842,079	44%	SECURED
CAMPBELL COUNTY	\$ 3,265,538	21%	SECURED
<b>TOTAL</b>	<b>\$ 15,550,180</b>	<b>100 %</b>	



Shentel is prepared to provide all necessary match funding in alignment with this grant application. All VATI grant projects will be accounted for in the annual budget and funded to the necessary level. Furthermore, Shentel is committed to the proposed projects and has more than adequate financial backing to support their completion.

A handwritten signature in blue ink that reads "Chris Kyle". The signature is fluid and cursive, with the first letters of "Chris" and "Kyle" being capitalized and prominent.

Chris Kyle  
Vice President, Industry Affairs & Regulatory

## ITEM 6. SELECTED FINANCIAL DATA

The following table sets forth selected consolidated financial data for the years presented and at the dates indicated below. Our historical results are not necessarily indicative of our results in any future periods. The summary of our consolidated financial data set forth below should be read together with our consolidated financial statements and related notes, as well as the sections entitled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," included elsewhere in this Annual Report on Form 10-K. All periods reflect the operating results, cash flows, and financial position, related to our Wireless operations as discontinued operations. Additionally, those assets and liabilities which are expected to transfer in the sale of our discontinued Wireless operations are presented as held for sale in our Consolidated Balance Sheets.

	Years Ended December 31,		
	2020	2019	2018
<i>(in thousands, except share and per share amounts)</i>			
Revenue	\$ 220,775	\$ 206,862	\$ 192,683
Operating expenses	221,922	207,581	195,652
Operating loss	(1,147)	(719)	(2,969)
Income tax (benefit) expense	(586)	173	(1,343)
Income from continuing operations	2,626	2,388	2,077
Income from discontinued operations, net of tax	124,097	53,568	44,518
Net income	\$ 126,723	\$ 55,956	\$ 46,595
Shareholder Information:			
Shares outstanding	49,867,676	49,670,603	49,630,119
Net income per share, basic and diluted:			
Basic - Income from continuing operations	\$ 0.05	\$ 0.05	\$ 0.04
Basic - Income from discontinued operations, net of tax	\$ 2.49	\$ 1.07	\$ 0.90
Basic net income per share	<u>\$ 2.54</u>	<u>\$ 1.12</u>	<u>\$ 0.94</u>
Diluted - Income from continuing operations	\$ 0.05	\$ 0.05	\$ 0.04
Diluted - Income from discontinued operations, net of tax	\$ 2.48	\$ 1.07	\$ 0.89
Diluted net income per share	<u>\$ 2.53</u>	<u>\$ 1.12</u>	<u>\$ 0.93</u>
Cash dividends per share	\$ 0.34	\$ 0.29	\$ 0.27
Years Ended December 31,			
	2020	2019	2018
Cash and cash equivalents	\$ 195,397	\$ 101,651	\$ 85,086
Assets held for sale	\$ 1,133,294	\$ 1,196,575	\$ 910,596
Total assets	\$ 2,031,707	\$ 1,898,902	\$ 1,487,488
Liabilities held for sale	\$ 452,202	\$ 422,335	\$ 46,487
Total liabilities	\$ 1,449,313	\$ 1,426,474	\$ 1,043,254
Capital expenditures	\$ 120,450	\$ 67,048	\$ 56,631



COMMONWEALTH OF VIRGINIA  
HOUSE OF DELEGATES  
RICHMOND

KATHY J. BYRON  
MINORITY CAUCUS CHAIR

POST OFFICE BOX 900  
FOREST, VIRGINIA 24551

TWENTY-SECOND DISTRICT

COMMITTEE ASSIGNMENTS:  
FINANCE  
LABOR AND COMMERCE  
COMMUNICATIONS, TECHNOLOGY  
AND INNOVATION

September 14, 2021

Dr. Tamarah Holmes  
Director, Office of Broadband  
Virginia Department of Housing & Community Development  
600 E Main St Ste 300  
Richmond VA 23219-2430

RE: Campbell County VATI grant Request

Dear Dr. Holmes:

I am writing to encourage the approval of the VATI grant application, filed jointly by Campbell County and Shentel Telecommunications Company, to expand broadband service in Campbell County's rural areas.

Having sponsored the successful legislation that accelerated the expansion of broadband to unserved and underserved portions of the Commonwealth, I know the cost per household of these expansions is much greater due to the topographical challenges. Having spearheaded a solution that involved those most qualified and experienced at meeting such challenges, private communications firms, I also know that a public-private approach produces the best results at the lowest cost with no deficiencies.

These grants requests are also a regional project because County Governments are working together to deliver universal coverage in the counties through multiple providers. Regional projects will make use of its existing network and leveraging unique partnerships like MBC will help to do these projects more cost effectively, similar to the successful projects that have been done through the Tobacco Commission delivering connections to thousands of households and businesses.

Now, with the unprecedented levels of funding these projects are receiving from the federal government, I would hope applications are being approved promptly. Expediently approving these grants will quickly ameliorate the "digital divide" long afflicting rural areas of the commonwealth.

Those living in the rural areas of Bedford, Campbell and Franklin County have long experienced the effects of this inequity. That situation has become more pronounced during the

COVID pandemic, with many businesses requiring employees work from home and most schools requiring remote learning. In rural regions, the disruption occurring throughout America because of the pandemic was exacerbated by the lack of access to reliable broadband service. Ultimately, this deficiency affected every aspect of life in unserved regions, making a difficult situation nearly impossible to address.

I have enjoyed working with you to build on the VATI program success and I am excited that the federal funding opportunities will help to move these projects forward.

The prompt approval of the Campbell County VATI grant application will be of tremendous benefit to the people of Campbell County. I ask that you give it your serious consideration for approval.

Sincerely,

A handwritten signature in cursive script that reads "Kathy J. Byron". The signature is written in black ink and is positioned above the printed name and title.

Kathy J. Byron, Member  
Virginia House of Delegates  
22<sup>nd</sup> District



COMMONWEALTH OF VIRGINIA  
HOUSE OF DELEGATES  
RICHMOND

C. MATT FARISS  
243-C LIVESTOCK ROAD  
RUSTBURG, VIRGINIA 24588

FIFTY-NINTH DISTRICT

COMMITTEE ASSIGNMENTS:  
APPROPRIATIONS  
PUBLIC SAFETY

September 13, 2021

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

Re: 2022 Virginia Telecommunication Initiative (VATI) Grant

Dear Dr. Holmes,

I am writing this letter in full support of the application for grant funding through the 2021 Virginia Telecommunication Initiative (VATI) of the Virginia Department of Housing and Community Development, submitted by Campbell County and Shentel, to expand and improve broadband services to the citizens of Campbell County, Virginia.

The expansion of broadband internet access throughout the rural areas of Campbell County will be of great benefit to county residents and businesses alike. Many rural Campbell County schools and businesses currently lack the high-speed internet. Expanded broadband access will benefit the youth of the county and help promote economic development and growth.

Thank you kindly for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "C. Matt Fariss".

C. Matt Fariss, Member  
VA House of Delegates  
59<sup>th</sup> District





# Campbell County

Virginia

**Office of the County Administrator**  
**Frank J. Rogers**  
P.O. Box 100, Rustburg, VA 24588  
[administration@campbellcountyva.gov](mailto:administration@campbellcountyva.gov)  
Phone: 434-332-9525; 592-9525; 283-9525  
Fax: 434-332-9617

September 3, 2021

**Dr. Tamarah Holmes**  
**Director, Office of Broadband**  
**Virginia Department of Housing & Community Development**  
**VATI Program**  
600 East Main Street, Suite 300  
Richmond, Virginia 23219

Dear Dr. Holmes

I am writing in support of Campbell County's VATI applications to expand broadband internet service to Campbell's rural and un-served areas of the County. Campbell County has been working diligently to address this critical need and additional resources are necessary to make universal coverage a reality. The County routinely receives inquiries from citizens in need of this service for any number of reasons: educational access; participation in online economic opportunities; business development; and quality of life to name a few.

The County Board of Supervisors is working proactively to expand service offerings in the County. We have completed a plan to provide universal coverage. VATI funds are necessary to make that plan a reality.

The Commonwealth has made broadband coverage a priority and we agree that it is a critical infrastructure need for everyone. I strongly encourage your support of the Campbell County applications. Thank you for your consideration.

Sincerely



Frank Rogers

County Administrator

**Governing with Vision**  
*to be the most collaborative, professional, value-driven locality in Virginia*  
[www.campbellcountyva.gov](http://www.campbellcountyva.gov)





OFFICE OF THE SUPERINTENDENT

684 Village Highway, P.O. Box 99, Rustburg, VA 24588 • [www.campbell.k12.va.us](http://www.campbell.k12.va.us)

September 2, 2021

Dr. Tamarah Holmes  
Director, Office of Broadband  
Virginia Department of Housing & Community Development  
VATI Program  
600 East Main Street, Suite 300  
Richmond, Virginia 23219

Dear Dr. Holmes,

I am writing in support of Campbell County's VATI applications to expand broadband internet service to Campbell's rural and un-served areas of the County. Campbell County is working collaboratively with three separate applicants to achieve universal coverage. Doing so will enhance the opportunities for citizens of the County in immeasurable ways.

The absence of this critical internet service has limited the ability of individuals, households, and businesses to avail themselves of necessary resources, information and opportunities that are readily available with adequate internet service. During the on-going pandemic, the need for sufficient internet connection to facilitate commerce, communication and a sustainable quality of life has been particularly evident.

We recognize the importance of broadband to our citizens. The proposed investment in broadband utilizing VATI grant funds is vital to the continued vitality of the County. I strongly encourage your support of the Campbell County applications.

Thank you for your consideration.

Robert L. Johnson, Superintendent

*Empowering Students Today for Endless Opportunities Tomorrow*

Telephone Numbers: Altavista & Brookneal - 1-888-332-3558; Lynchburg & Rustburg - 434-332-3458; Fax - 434-332-6562



# Campbell County

Virginia

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September 3, 2021

Dr. Tamarah Holmes  
Director, Office of Broadband  
Virginia Department of Housing & Community Development  
VATI Program  
600 East Main Street, Suite 300  
Richmond, Virginia 23219

Dear Dr. Holmes

I am writing in support of Campbell County's VATI applications to expand broadband internet service to Campbell's rural and un-served areas of the County. Campbell County is working collaboratively with three separate applicants to achieve universal coverage. Doing so will enhance the opportunities for citizens of the County in immeasurable ways.

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We recognize the importance of broadband to our citizens. The proposed investment in broadband utilizing VATI grant funds is vital to the continued vitality of the County. I strongly encourage your support of the Campbell County applications.

Thank you for your consideration.



Jordan Welborn, Director of Citizen Engagement and Quality of Life  
Campbell County, VA





**Central Virginia  
Community College**

*Where your future begins*

3506 Wards Road, Lynchburg, VA 24502-2498

434-832-7601 • FAX: 434-386-4600 • [www.centralvirginia.edu](http://www.centralvirginia.edu)

OFFICE OF THE PRESIDENT

September 3, 2021

Dr. Tamarah Holmes  
Director, Office of Broadband  
Virginia Department of Housing & Community Development  
VATI Program  
600 East Main Street, Suite 300  
Richmond, Virginia 23219

Dear Dr. Holmes:

I am writing to endorse Campbell County's VATI application to expand broadband internet service. Broadband availability is critical to individuals, households, and businesses; it is key to community and economic development. As a community college educator, however, I am especially concerned with its importance to educational accessibility, advancement, and equity—all of which depend upon access to broadband.

COVID-19 has magnified the inequities that exist among our students and in our communities, Campbell County included. The gaps in broadband coverage, in particular, have created a chasm that puts large groups of students at a disadvantage and disrupts their progress—in some cases, even preventing them from pursuing a higher education. While broadband may have been advantageous to students before, it is essential to higher education today.

The truth of that statement is reflected in enrollment statistics. During spring 2020, Central Virginia Community College (CVCC) was forced to suspend all face-to-face programming and move all its courses and services to a remote environment. Those with access to broadband were able to continue their education; those who lacked access were relegated to patching together temporary access points or, worse, abandoning their education altogether. The statistics speak for themselves. Enrollments at CVCC among Campbell County students fell from 714 in fall 2019—a pre-pandemic period—to 600 in fall 2020 when the college was still operating primarily in a virtual environment. No doubt other factors contributed to that decrease; however, we can be sure that limited access to broadband was a major factor.

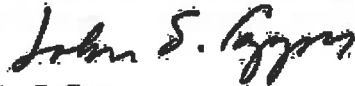
With online access to higher education being so important, citizens without broadband are at a profound disadvantage as they strive to further their education. It is a disadvantage that has employment consequences for individuals and economic consequences for communities. Students from low-income households and rural areas that lack broadband are especially vulnerable. Increasing coverage to these households creates an on-ramp to higher education, making community college more affordable and accessible. From that standpoint, access to broadband is not a merely luxury. It is a necessity—an imperative that is crucial to personal, community, and economic development.



September 3, 2021  
Page Two

The "new normal" is going to be our familiar reality for a long time to come, resulting in far-reaching and transformational effects on how we approach teaching and learning in the years ahead. Online learning—and the access that broadband affords to online learning platforms—will become more and more important as more coursework is adapted to virtual delivery. Universal access to broadband is therefore not just a practical issue, critical to educational and economic advancement. It is also a moral mandate since it promotes equity and inclusion among all citizens. For all these reasons, I endorse Campbell County's proposal to expand broadband internet service throughout the county.

Sincerely,



John S. Capps  
President

# CAMPBELL COUNTY

*Be Cultivated.*

Virginia

*Be Sustained.*

Est. 1781

*Economic Development*

***Economic Development***

**Nina Reza**

**Manager, Economic Development**

**PH: (434) 332-9676**

**Fax: (434) 332-9693**

**[nreza@cocampbell.va.us](mailto:nreza@cocampbell.va.us)**

September 2, 2021

Dr. Tamarah Holmes  
Director, Office of Broadband  
Virginia Department of Housing & Community Development  
VATI Program  
600 East Main Street, Suite 300  
Richmond, Virginia 23219

Dear Dr. Holmes

I am writing in support of Campbell County's VATI applications to expand broadband internet service to Campbell's rural and un-served areas of the County. Campbell County is working collaboratively with three separate applicants to achieve universal coverage. Doing so will enhance the opportunities for citizens of the County in immeasurable ways.

The absence of this critical internet service has limited the ability of individuals, households and businesses to avail themselves of necessary resources, information and opportunities that are readily available with adequate internet service. During the on-going pandemic, the need for sufficient internet connection to facilitate commerce, communication and a sustainable quality of life has been particularly evident.

We recognize the importance of broadband to our citizens. The proposed investment in broadband utilizing VATI grant funds is vital to the continued vitality of the County. I strongly encourage your support of the Campbell County applications.

Thank you for your consideration

Respectfully,



**Nina Reza**  
Economic Development Manager

Campbell County Economic Development  
P.O. Box 100 ♦ Rustburg, VA 24588



**September 1**

**Dr. Tamarah Holmes  
Director, Office of Broadband  
Virginia Department of Housing & Community Development  
VATI Program  
600 East Main Street, Suite 300  
Richmond, Virginia 23219**

**Dear Dr. Holmes**

**I am writing in support of Campbell County's VATI applications to expand broadband internet service to Campbell's rural and un-served areas of the County. Campbell County is working collaboratively with three separate applicants to achieve universal coverage. Doing so will enhance the opportunities for citizens of the County in immeasurable ways.**

**The absence of this critical internet service has limited the ability of individuals, households and businesses to avail themselves of necessary resources, information and opportunities that are readily available with adequate internet service. During the on-going pandemic, the need for sufficient internet connection to facilitate commerce, communication and a sustainable quality of life has been particularly evident.**

**We recognize the importance of broadband to our citizens. The proposed investment in broadband utilizing VATI grant funds is vital to the continued vitality of the County. I strongly encourage your support of the Campbell County applications.**

**Thank you for your consideration**

**Dean Monroe**

**Chairman Campbell Co. Planning Commission.**

**and employer of over 50 people in Campbell Co.**





# Campbell County

Virginia

**Department of Social Services**  
*Lisa C. Linthicum, Director*  
P.O. Box 860, 69 Kabler Lane  
Rustburg, VA 24588  
Phone: 434-332-9585; 592-9585; 203-9585  
Fax: 434-332-9699

September 7, 2021

Dr. Tamarah Holmes  
Director, Office of Broadband  
Virginia Department of Housing & Community Development  
VATI Program  
600 East Main Street, Suite 300  
Richmond, Virginia 23219

Dear Dr. Holmes:

I am writing in support of Campbell County's VATI applications to expand broadband internet service to Campbell's rural and unserved areas of the County. Campbell County Social Services has long been an advocate and support of universal broadband coverage. On a daily basis, we see missed opportunities, citizens shut out or marginalized because they are in an underserved or unserved area for broadband coverage. This opportunity for expanded broadband will bring crucial, pivotal services and resources along with an improved quality of life to those who are most vulnerable.

In the current *Information Age*, the need for broadband service in order to function in society is clear. The following are areas in which our clientele (and staff as well) in rural/unserved areas have been left behind: school children's participation in virtual classes; ability of the homebound, disabled persons to conduct telemedicine doctor's visits; job search and job application for those seeking self-sufficiency; ability of citizens to apply for benefits and provide documentation online, which can expedite the process for basic life needs such as medicine, food and shelter; ability of citizens to access community resources and services online; capacity to upload documents related to various applications to research updated public policy and manuals and to telework; opportunities for isolated citizens, especially the elderly and infirm, to stay in contact and have virtual visits with their family and loved ones; access to increased security for victims of domestic violence and adult or child abuse who are not able to use security cameras and live feed platforms for personal protection. These examples are just a few of the unmet needs that expanded broadband coverage will address.

Thank you for considering the lives of ALL of our citizens in this vital pursuit of VATI grant funds. Our Commonwealth, our community, will only become stronger in ensuring the highest quality of life when every person has access to broadband service.

With kind regards, I am

Very Truly Yours,  
  
Lisa C. Linthicum  
Director

LCL/jg



**ATTACHMENT 12 - Derivation of Costs**

Product	Total 100%	VATI 35%	Non-VATI 65%	Source of Estimate	Date
Fiber Plant Build	\$ 7,677,340	\$ 2,687,069	\$ 4,990,271	Shentel - please see Attachment 13 for supporting documentation	9/12/2021
Fixed Wireless Small Cells	\$ 4,550,000	\$ 1,592,500	\$ 2,957,500	Shentel - please see Attachment 13 for supporting documentation	9/12/2021
Long Drops at Customer Premise	\$ 2,572,840	\$ 900,494	\$ 1,672,346	Shentel - please see Attachment 13 for supporting documentation	9/12/2021
Core Network Capacity Additions	\$ 750,000	\$ 262,500	\$ 487,500	Shentel - please see Attachment 13 for supporting documentation	9/12/2021
	\$ -	\$ -	\$ -		
<b>PROJECT TOTAL</b>	<b>\$ 15,550,180</b>	<b>\$ 5,442,563</b>	<b>\$ 10,107,617</b>		
	<b>100%</b>	<b>35%</b>	<b>65%</b>		



Attachment 13 provided separately in accordance with FOIA exemption granted.

Attachment 16 provided separately in accordance with FOIA exemption granted.

***Good morning VATI Applicant:***

***You are receiving this email as a requestor of FOIA exemption for Virginia Telecommunication Initiative (VATI) application materials, or if you have been approved for FOIA exemption for materials you plan to submit as a part of your VATI application.***

***This email serves as a reminder that all materials that have been approved for FOIA exemption should not be submitted through CAMS. Instead, these documents must be submitted to DHCD at [vati@dhcd.virginia.gov](mailto:vati@dhcd.virginia.gov), with a subject line denoting FOIA exempt materials.***

***Please do not hesitate to ask questions for clarification,***

***DHCD Team***

(RETAIN FOR YOUR RECORDS)  
Form 477 Filing Summary

FRN: 0002064145 | Data as of: Dec 31, 2020 | Operations: Non-ILEC | Submission Status: Original - Submitted | Last Updated: Mar 12, 2021 14:44:20

**Filer Identification**

Section	Question	Response
<b>Filer Information</b>	Company Name	Shentel
	Holding Company Name	Shenandoah Telecommunications Company
	SAC ID	
	499 ID	
<b>Data Contact Information</b>	Data Contact Name	Christina Price
	Data Contact Phone Number	(540) 984-5350
	Data Contact E-mail	christina.price@emp.shentel.com
<b>Emergency Operations Contact Information</b>	Emergency Operations Name	Shentel NOC
	Emergency Operations Phone Number	(540) 984-5531
	Emergency Operations E-mail	shentel-noc@shentel.net
<b>Certifying Official Contact Information</b>	Certifying Official Name	Ed McKay
	Certifying Official Phone Number	(540) 984-5303
	Certifying Official E-mail	ed.mckay@emp.shentel.com

**Data Submitted**

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	CLEC_Broadband_Coverage.csv	Mar 12, 2021 08:39:53	40195
Fixed Broadband Subscription	CLEC_Broadband_Subscription.csv	Mar 10, 2021 19:01:30	2625
Fixed Voice Subscription	CLEC_Voice_Subscription.csv	Mar 10, 2021 18:57:27	321

**Fixed Broadband Deployment**

**Census Block Counts by State, DBA Name and Technology**

State	DBA Name	Technology	Blocks
<b>Kentucky</b>	Shentel	Cable Modem – DOCSIS 3.1	369
		Optical Carrier/Fiber to the End User	238
<b>Maryland</b>	Shentel	Cable Modem – DOCSIS 3.1	578
		Optical Carrier/Fiber to the End User	784
<b>Pennsylvania</b>	Shentel	Optical Carrier/Fiber to the End User	1375

State	DBA Name	Technology	Blocks
Virginia	Beam	Terrestrial Fixed Wireless	4530
	Glo Fiber	Optical Carrier/Fiber to the End User	1690
	Shentel	Cable Modem – DOCSIS 3.1	9320
		Optical Carrier/Fiber to the End User	8520
West Virginia	Canaan Cable TV	Cable Modem – DOCSIS 3.0	141
	Shentel	Cable Modem – DOCSIS 3.0	298
		Cable Modem – DOCSIS 3.1	6099
		Optical Carrier/Fiber to the End User	6253
<b>Total</b>			<b>40195</b>

## Fixed Broadband Subscription

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

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Kentucky	Cable Modem	41	2160	88	2248
Maryland	Cable Modem	45	2205	228	2433
	Optical Carrier/Fiber to the End User	19	0	38	38
Pennsylvania	Optical Carrier/Fiber to the End User	15	0	29	29
Virginia	Cable Modem	1023	62554	6337	68891
	Optical Carrier/Fiber to the End User	606	6103	870	6973
	Terrestrial Fixed Wireless	28	80	0	80
West Virginia	Cable Modem	650	17824	2260	20084
	Optical Carrier/Fiber to the End User	198	3249	382	3631
<b>Total</b>		<b>2625</b>	<b>94175</b>	<b>10232</b>	<b>104407</b>

### Fixed Broadband Subscriptions by Bandwidths and End-user Type

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
1.000	0.512	5	0	5
1.000	1.000	0	3	3
1.500	0.512	0	28	28
3.000	0.768	2813	3	2816
4.000	1.500	64	0	64
5.000	1.000	9336	639	9975
5.000	5.000	0	9	9
6.000	1.000	4	0	4

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
8.000	1.500	115	0	115
10.000	2.000	7369	1910	9279
10.000	5.000	36	0	36
10.000	10.000	1608	1554	3162
15.000	3.000	0	107	107
15.000	10.000	2	1138	1140
15.000	15.000	383	10	393
20.000	20.000	0	57	57
22.000	5.000	244	0	244
25.000	3.000	28	0	28
25.000	5.000	3909	903	4812
25.000	10.000	0	1360	1360
25.000	25.000	418	65	483
30.000	30.000	0	28	28
40.000	40.000	0	7	7
50.000	5.000	229	0	229
50.000	10.000	36131	1164	37295
50.000	50.000	343	216	559
60.000	60.000	0	2	2
70.000	70.000	0	3	3
75.000	75.000	0	6	6
80.000	80.000	0	2	2
95.000	95.000	0	1	1
100.000	10.000	2	0	2
100.000	100.000	133	243	376
101.000	10.000	277	382	659
150.000	10.000	22473	93	22566
150.000	150.000	0	44	44
200.000	200.000	47	76	123
250.000	250.000	0	22	22
300.000	10.000	3652	0	3652
300.000	300.000	2480	13	2493
350.000	350.000	0	2	2

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
400.000	400.000	0	3	3
500.000	500.000	0	20	20
700.000	700.000	0	1	1
750.000	750.000	0	4	4
1000.000	10.000	401	15	416
1000.000	1000.000	1672	58	1730
2000.000	2000.000	1	6	7
3000.000	3000.000	0	6	6
5000.000	5000.000	0	7	7
6000.000	6000.000	0	2	2
7000.000	7000.000	0	2	2
10000.000	10000.000	0	18	18
<b>Total</b>		<b>94175</b>	<b>10232</b>	<b>104407</b>

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

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
<b>Cable Modem</b>	1.000	0.512	5	0	5
	1.500	0.512	0	24	24
	3.000	0.768	2721	3	2724
	4.000	1.500	64	0	64
	5.000	1.000	8855	577	9432
	5.000	5.000	0	5	5
	6.000	1.000	4	0	4
	8.000	1.500	115	0	115
	10.000	2.000	6973	1894	8867
	10.000	5.000	36	0	36
	10.000	10.000	1608	1398	3006
	15.000	3.000	0	106	106
	15.000	10.000	1	1068	1069
	15.000	15.000	383	0	383
	22.000	5.000	244	0	244
	25.000	5.000	3637	901	4538
25.000	10.000	0	1291	1291	

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	25.000	25.000	418	24	442
	50.000	5.000	1	0	1
	50.000	10.000	33852	1134	34986
	50.000	50.000	342	15	357
	100.000	100.000	132	14	146
	101.000	10.000	251	356	607
	150.000	10.000	21212	85	21297
	200.000	200.000	47	0	47
	250.000	250.000	0	7	7
	300.000	10.000	3462	0	3462
	1000.000	10.000	380	11	391
<b>Optical Carrier/Fiber to the End User</b>	1.000	1.000	0	3	3
	1.500	0.512	0	4	4
	3.000	0.768	92	0	92
	5.000	1.000	481	62	543
	5.000	5.000	0	4	4
	10.000	2.000	396	16	412
	10.000	10.000	0	156	156
	15.000	3.000	0	1	1
	15.000	10.000	1	70	71
	15.000	15.000	0	10	10
	20.000	20.000	0	57	57
	25.000	5.000	272	2	274
	25.000	10.000	0	69	69
	25.000	25.000	0	41	41
	30.000	30.000	0	28	28
	40.000	40.000	0	7	7
	50.000	5.000	178	0	178
	50.000	10.000	2279	30	2309
	50.000	50.000	1	201	202
	60.000	60.000	0	2	2
	70.000	70.000	0	3	3

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	75.000	75.000	0	6	6
	80.000	80.000	0	2	2
	95.000	95.000	0	1	1
	100.000	100.000	1	229	230
	101.000	10.000	26	26	52
	150.000	10.000	1261	8	1269
	150.000	150.000	0	44	44
	200.000	200.000	0	76	76
	250.000	250.000	0	15	15
	300.000	10.000	190	0	190
	300.000	300.000	2480	13	2493
	350.000	350.000	0	2	2
	400.000	400.000	0	3	3
	500.000	500.000	0	20	20
	700.000	700.000	0	1	1
	750.000	750.000	0	4	4
	1000.000	10.000	21	4	25
	1000.000	1000.000	1672	58	1730
	2000.000	2000.000	1	6	7
	3000.000	3000.000	0	6	6
	5000.000	5000.000	0	7	7
	6000.000	6000.000	0	2	2
	7000.000	7000.000	0	2	2
	10000.000	10000.000	0	18	18
<b>Terrestrial Fixed Wireless</b>	25.000	3.000	28	0	28
	50.000	5.000	50	0	50
	100.000	10.000	2	0	2
<b>Total</b>			<b>94175</b>	<b>10232</b>	<b>104407</b>

## Fixed Voice Subscription

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

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Kentucky	0	0	800	724

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Maryland	0	0	833	502
Pennsylvania	0	0	133	0
Virginia	0	0	18683	8122
West Virginia	0	0	11138	8339
<b>Total</b>	<b>0</b>	<b>0</b>	<b>31587</b>	<b>17687</b>

**Fixed Voice  
Subscription  
(iVoIP)**

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

State	Total	Consumer	Business / Govt
Kentucky	0	0	0
Maryland	0	0	0
Pennsylvania	0	0	0
Virginia	0	0	0
West Virginia	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>

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

State	Total	by End-user Type		by Bundle		by Last-mile Medium			
		Consumer	Business / Government	Sold w/ Internet	Sold w/o Internet	FTTP	Coax	Fixed Wireless	Copper
Kentucky	800	724	76	712	88	0	800	0	0
Maryland	833	502	331	637	196	0	833	0	0
Pennsylvania	133	0	133	133	0	0	133	0	0
Virginia	18683	8122	10561	10869	7814	238	18445	0	0
West Virginia	11138	8339	2799	9276	1862	1140	9998	0	0
<b>Total</b>	<b>31587</b>	<b>17687</b>	<b>13900</b>	<b>21627</b>	<b>9960</b>	<b>1378</b>	<b>30209</b>	<b>0</b>	<b>0</b>



# Form 477 Filing Summary

FRN:  
0002064145

Data as of:  
Jun 30, 2021

Operations:  
Non-ILEC

Submission Status:  
Original - Submitted

Last Updated:  
Aug 30, 2021 04:04  
PM

## Filer Identification

Section	Field	Response
Filer Information	Company Name	Shentel
	Holding Company Name	Shenandoah Telecommunications Company
	Filing Type	Non-ILEC
	SAC ID	N/A
	499 ID	829505
Data Contact Information	Data Contact Name	Christina Price
	Data Contact Phone Number	(540) 984-5350
	Data Contact E-mail	christina.price@emp.shentel.com
Emergency Operations Contact Information	Emergency Operations Name	Shentel NOC
	Emergency Operations Phone Number	(540) 094-5531
	Emergency Operations E-mail	shentel-noc@shentel.net
Certifying Official Contact Information	Certifying Official Name	Rick Mason
	Certifying Official Phone Number	(540) 984-5164
	Certifying Official E-mail	rick.mason@emp.shentel.com

## Data Submitted

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	CLEC Broadband Coverage.csv	Aug 30, 2021 09:02 AM	45,616
Fixed Broadband Subscription	CLEC Broadband Subscription.csv	Aug 29, 2021 03:26 PM	2,953
Fixed Voice Subscription	CLEC Voice Subscription.csv	Aug 29, 2021 03:27 PM	330

## Fixed Broadband Deployment

### Census Block Counts by State, DBA Name and Technology

State	DBA Name	Technology	Blocks
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State	DBA Name	Technology	Blocks
Kentucky	Shentel	Cable Modem – DOCSIS 3.1	369
		Optical Carrier/Fiber to the End User	238
Maryland	Shentel	Cable Modem – DOCSIS 3.1	578
		Optical Carrier/Fiber to the End User	787
Pennsylvania	Shentel	Optical Carrier/Fiber to the End User	1,437
Virginia	Beam	Terrestrial Fixed Wireless	7,453
	Glo Fiber	Optical Carrier/Fiber to the End User	2,473
	Shentel	Cable Modem – DOCSIS 3.1	9,348
		Optical Carrier/Fiber to the End User	9,868
West Virginia	Beam	Terrestrial Fixed Wireless	204
	Shentel	Cable Modem – DOCSIS 3.0	439
		Cable Modem – DOCSIS 3.1	6,103
		Optical Carrier/Fiber to the End User	6,319
<b>Total</b>			<b>45,616</b>

## Fixed Broadband Subscription

### Fixed Broadband Subscriptions by State, Technology and End User Type

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business/Govt.	Total
Kentucky	Cable Modem	46	2,172	85	2,257
Maryland	Cable Modem	46	2,294	226	2,520
	Optical Carrier/Fiber to the End User	23	0	33	33
Pennsylvania	Optical Carrier/Fiber to the End User	21	0	23	23
Virginia	Cable Modem	1,079	62,352	8,425	70,777
	Optical Carrier/Fiber to the End User	749	9,717	997	10,714
	Terrestrial Fixed Wireless	81	488	0	488
West Virginia	Cable Modem	693	18,660	2,360	21,020
	Optical Carrier/Fiber to the End User	215	3,398	415	3,813
<b>Total</b>		<b>2,953</b>	<b>99,081</b>	<b>12,564</b>	<b>111,645</b>

### Fixed Broadband Subscriptions by Bandwidths and End User Type

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business/Govt.	Total
--------------------------------	------------------------------	----------	----------------	-------

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business/Govt.	Total
1.000	0.512	5	0	5
1.000	1.000	0	2	2
1.500	0.512	0	28	28
3.000	0.768	2,464	3	2,467
4.000	1.500	104	0	104
5.000	1.000	8,337	568	8,905
5.000	5.000	0	5	5
6.000	1.000	3	0	3
8.000	1.500	102	0	102
10.000	2.000	6,438	3,032	9,470
10.000	10.000	0	2,240	2,240
15.000	3.000	368	96	464
15.000	10.000	3	1,075	1,078
15.000	15.000	0	9	9
20.000	20.000	0	52	52
22.000	5.000	359	0	359
25.000	5.000	4,712	1,212	5,924
25.000	10.000	0	1,344	1,344
25.000	25.000	0	21	21
30.000	30.000	0	29	29
40.000	40.000	0	6	6
50.000	5.000	197	0	197
50.000	10.000	39,242	1,373	40,615
50.000	50.000	6	217	223
60.000	60.000	0	2	2
70.000	70.000	0	8	8
75.000	75.000	0	5	5
80.000	80.000	0	2	2
95.000	95.000	0	1	1
100.000	10.000	10	142	152
100.000	20.000	156	14	170
100.000	100.000	1	248	249
101.000	10.000	198	364	562

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business/Govt.	Total
150.000	10.000	24,299	86	24,385
150.000	150.000	0	63	63
200.000	20.000	0	6	6
200.000	25.000	53	0	53
200.000	200.000	0	81	81
250.000	20.000	0	43	43
250.000	250.000	0	20	20
300.000	10.000	4,355	2	4,357
300.000	300.000	3,851	16	3,867
350.000	350.000	0	1	1
400.000	400.000	0	5	5
500.000	20.000	0	10	10
500.000	500.000	0	31	31
700.000	700.000	0	1	1
750.000	750.000	0	7	7
1,000.000	10.000	526	13	539
1,000.000	1,000.000	3,289	48	3,337
2,000.000	2,000.000	3	7	10
2,500.000	2,500.000	0	1	1
3,000.000	3,000.000	0	5	5
5,000.000	5,000.000	0	5	5
6,000.000	6,000.000	0	2	2
7,000.000	7,000.000	0	3	3
10,000.000	10,000.000	0	10	10
<b>Total</b>		<b>99,081</b>	<b>12,564</b>	<b>111,645</b>

### Fixed Broadband Subscriptions by Technology, Bandwidths and End User Type

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business/Govt.	Total
Cable Modem	1.000	0.512	5	0	5
	1.500	0.512	0	24	24
	3.000	0.768	2,385	3	2,388
	4.000	1.500	104	0	104
	5.000	1.000	7,905	506	8,411

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business/Govt.	Total
	5.000	5.000	0	4	4
	6.000	1.000	3	0	3
	8.000	1.500	102	0	102
	10.000	2.000	6,083	2,962	9,045
	10.000	10.000	0	2,097	2,097
	15.000	3.000	368	95	463
	15.000	10.000	3	1,001	1,004
	22.000	5.000	359	0	359
	25.000	5.000	4,207	1,185	5,392
	25.000	10.000	0	1,276	1,276
	50.000	10.000	36,329	1,311	37,640
	100.000	10.000	0	133	133
	100.000	20.000	155	14	169
	101.000	10.000	180	337	517
	150.000	10.000	22,638	77	22,715
	200.000	20.000	0	6	6
	200.000	25.000	53	0	53
	250.000	20.000	0	41	41
	300.000	10.000	4,102	2	4,104
	500.000	20.000	0	9	9
	1,000.000	10.000	497	13	510
Optical Carrier/Fiber to the End User	1.000	1.000	0	2	2
	1.500	0.512	0	4	4
	3.000	0.768	79	0	79
	5.000	1.000	432	62	494
	5.000	5.000	0	1	1
	10.000	2.000	355	70	425
	10.000	10.000	0	143	143
	15.000	3.000	0	1	1
	15.000	10.000	0	74	74
	15.000	15.000	0	9	9
	20.000	20.000	0	52	52

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business/Govt.	Total
	25.000	5.000	353	27	380
	25.000	10.000	0	68	68
	25.000	25.000	0	21	21
	30.000	30.000	0	29	29
	40.000	40.000	0	6	6
	50.000	5.000	197	0	197
	50.000	10.000	2,596	62	2,658
	50.000	50.000	5	217	222
	60.000	60.000	0	2	2
	70.000	70.000	0	8	8
	75.000	75.000	0	5	5
	80.000	80.000	0	2	2
	95.000	95.000	0	1	1
	100.000	10.000	0	9	9
	100.000	100.000	1	248	249
	101.000	10.000	18	27	45
	150.000	10.000	1,655	9	1,664
	150.000	150.000	0	63	63
	200.000	200.000	0	81	81
	250.000	20.000	0	2	2
	250.000	250.000	0	20	20
	300.000	10.000	252	0	252
	300.000	300.000	3,851	16	3,867
	350.000	350.000	0	1	1
	400.000	400.000	0	5	5
	500.000	20.000	0	1	1
	500.000	500.000	0	31	31
	700.000	700.000	0	1	1
	750.000	750.000	0	7	7
	1,000.000	10.000	29	0	29
	1,000.000	1,000.000	3,289	48	3,337
	2,000.000	2,000.000	3	7	10

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business/Govt.	Total
	2,500.000	2,500.000	0	1	1
	3,000.000	3,000.000	0	5	5
	5,000.000	5,000.000	0	5	5
	6,000.000	6,000.000	0	2	2
	7,000.000	7,000.000	0	3	3
	10,000.000	10,000.000	0	10	10
Terrestrial Fixed Wireless	25.000	5.000	152	0	152
	50.000	10.000	317	0	317
	50.000	50.000	1	0	1
	100.000	10.000	10	0	10
	100.000	20.000	1	0	1
	150.000	10.000	6	0	6
	300.000	10.000	1	0	1
<b>Total</b>			<b>99,081</b>	<b>12,564</b>	<b>111,645</b>

## Fixed Voice Subscription

### VGE Lines and VoIP Subscriptions by State and End User Type

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Kentucky	0	0	783	700
Maryland	0	0	842	503
Pennsylvania	0	0	169	0
Virginia	0	0	20,339	8,200
West Virginia	0	0	11,162	8,339
<b>Total</b>	<b>0</b>	<b>0</b>	<b>33,295</b>	<b>17,742</b>

## Fixed Voice Subscription (iVoIP)

### Over-the-Top VoIP Subscriptions by State and End User Type

State	Total	Consumer	Business/Govt.
Kentucky	0	0	0
Maryland	0	0	0
Pennsylvania	0	0	0

State	Total	Consumer	Business/Govt.
Virginia	0	0	0
West Virginia	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>

### All Other VoIP Subscriptions by State, End User Type, Bundle and Last-Mile Medium

State	Total	by End User Type		by Bundle		by Last-Mile Medium			
		Consumer	Business/Govt.	Sold w/ Internet	Sold w/o Internet	FTTP	Coax	Fixed Wireless	Copper
Kentucky	783	700	83	614	169	0	783	0	0
Maryland	842	503	339	673	169	0	842	0	0
Pennsylvania	169	0	169	169	0	169	0	0	0
Virginia	20,339	8,200	12,139	17,868	2,471	1,456	18,883	0	0
West Virginia	11,162	8,339	2,823	7,673	3,489	2,038	9,124	0	0
<b>Total</b>	<b>33,295</b>	<b>17,742</b>	<b>15,553</b>	<b>26,997</b>	<b>6,298</b>	<b>3,663</b>	<b>29,632</b>	<b>0</b>	<b>0</b>

**Reminder: You must continue to use Census 2010 geographic codes in FCC Form 477.**

For help or assistance, please contact (877) 480-3201 or (717) 338-2834 (TTY) or you may submit an [online e-support ticket](#).

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Form 477 Filing Summary

FRN: 0002072668 | Data as of: Dec 31, 2020 | Operations: ILEC | Submission Status: Revised - Submitted | Last Updated: Mar 8, 2021 13:49:25

**Filer Identification**

Section	Question	Response
<b>Filer Information</b>	Company Name	Shenandoah Telephone Company
	Holding Company Name	Shenandoah Telecommunications Company
	SAC ID	190250, 197251
	499 ID	802200
<b>Data Contact Information</b>	Data Contact Name	Danielle Brooks
	Data Contact Phone Number	(540) 984-5389
	Data Contact E-mail	danielle.brooks@emp.shentel.com
<b>Emergency Operations Contact Information</b>	Emergency Operations Name	Harris Duncan
	Emergency Operations Phone Number	(540) 984-5838
	Emergency Operations E-mail	Harris.Duncan@emp.shentel.com
<b>Certifying Official Contact Information</b>	Certifying Official Name	Ed McKay
	Certifying Official Phone Number	(540) 984-5303
	Certifying Official E-mail	ed.mckay@emp.shentel.com

**Data Submitted**

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	ILEC Broadband Coverage_Deployment.csv	Mar 8, 2021 13:41:33	4997
Fixed Broadband Subscription	ILEC Broadband Subscription.csv	Mar 8, 2021 13:46:36	160
Fixed Voice Subscription	ILEC Voice Subscription.csv	Mar 8, 2021 13:41:33	16

**Fixed Broadband Deployment**

**Census Block Counts by State, DBA Name and Technology**

State	DBA Name	Technology	Blocks
Virginia	Shentel	ADSL2	2012
		Optical Carrier/Fiber to the End User	973
		Other Copper Wireline	2012
<b>Total</b>			<b>4997</b>

**Fixed  
Broadband  
Subscription**

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

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Virginia	Asymmetric xDSL	94	6620	463	7083
	Optical Carrier/Fiber to the End User	65	191	118	309
	Other Copper Wireline	1	0	1	1
<b>Total</b>		<b>160</b>	<b>6811</b>	<b>582</b>	<b>7393</b>

**Fixed Broadband Subscriptions by Bandwidths and End-user Type**

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
0.384	0.128	29	3	32
0.768	0.512	58	2	60
1.500	0.512	393	18	411
1.500	1.500	0	1	1
3.000	0.768	1665	104	1769
5.000	0.768	1249	204	1453
5.000	1.000	8	0	8
10.000	1.000	1609	107	1716
10.000	10.000	0	21	21
15.000	1.000	1654	25	1679
15.000	15.000	0	11	11
20.000	20.000	0	22	22
25.000	5.000	10	0	10
25.000	25.000	0	10	10
30.000	30.000	0	1	1
50.000	10.000	111	0	111
50.000	50.000	0	28	28
70.000	70.000	0	1	1
100.000	100.000	0	13	13
101.000	10.000	18	0	18
125.000	125.000	0	1	1
150.000	10.000	6	0	6
200.000	200.000	0	5	5
300.000	300.000	0	1	1
1000.000	10.000	1	0	1

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
1000.000	1000.000	0	4	4
<b>Total</b>		<b>6811</b>	<b>582</b>	<b>7393</b>

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

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
Asymmetric xDSL	0.384	0.128	29	3	32
	0.768	0.512	58	2	60
	1.500	0.512	393	18	411
	3.000	0.768	1665	104	1769
	5.000	0.768	1249	204	1453
	10.000	1.000	1583	107	1690
	15.000	1.000	1643	25	1668
Optical Carrier/Fiber to the End User	5.000	1.000	8	0	8
	10.000	1.000	26	0	26
	10.000	10.000	0	21	21
	15.000	1.000	11	0	11
	15.000	15.000	0	11	11
	20.000	20.000	0	22	22
	25.000	5.000	10	0	10
	25.000	25.000	0	10	10
	30.000	30.000	0	1	1
	50.000	10.000	111	0	111
	50.000	50.000	0	28	28
	70.000	70.000	0	1	1
	100.000	100.000	0	13	13
	101.000	10.000	18	0	18
	125.000	125.000	0	1	1
	150.000	10.000	6	0	6
	200.000	200.000	0	5	5
	300.000	300.000	0	1	1
	1000.000	10.000	1	0	1
	1000.000	1000.000	0	4	4
Other Copper Wireline	1.500	1.500	0	1	1
<b>Total</b>			<b>6811</b>	<b>582</b>	<b>7393</b>

**Fixed Voice  
Subscription**

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

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Virginia	12070	8749	0	0
<b>Total</b>	<b>12070</b>	<b>8749</b>	<b>0</b>	<b>0</b>

**Fixed Voice  
Subscription  
(VGE Lines)**

**VGE Lines Provided to Unaffiliated Providers by State**

State	Wholesale	UNE-L
Virginia	0	0
<b>Total</b>	<b>0</b>	<b>0</b>

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

State	Total	by Bundle		by Product Type			
		Sold w/ Internet	Sold w/o Internet	Consumer		Bus-Govt	
				& No PIC	& PIC	& No PIC	& PIC
Virginia	12070	4473	7597	1656	7093	628	2693
<b>Total</b>	<b>12070</b>	<b>4473</b>	<b>7597</b>	<b>1656</b>	<b>7093</b>	<b>628</b>	<b>2693</b>

**VGE Lines Provided to End Users by State, Ownership and Last-mile Medium**

State	Total	by Ownership			by Last-mile Medium			
		Owned	UNE-L	Resale	FTTP	Coax	Fixed Wireless	Copper
Virginia	12070	12070	0	0	1753	0	0	10317
<b>Total</b>	<b>12070</b>	<b>12070</b>	<b>0</b>	<b>0</b>	<b>1753</b>	<b>0</b>	<b>0</b>	<b>10317</b>

# Form 477 Filing Summary

FRN:  
0002072668

Data as of:  
Jun 30, 2021

Operations:  
ILEC

Submission Status:  
Revised - Submitted

Last Updated:  
Aug 31, 2021 09:56  
AM

## Filer Identification

Section	Field	Response
Filer Information	Company Name	Shenandoah Telephone Company
	Holding Company Name	Shenandoah Telecommunications Company
	Filing Type	ILEC
	SAC ID	190250,197251
	499 ID	802200
Data Contact Information	Data Contact Name	Danielle Brooks
	Data Contact Phone Number	(540) 984-5389
	Data Contact E-mail	danielle.brooks@emp.shentel.com
Emergency Operations Contact Information	Emergency Operations Name	Shentel NOC
	Emergency Operations Phone Number	(540) 984-5531
	Emergency Operations E-mail	shentel-noc@shentel.com
Certifying Official Contact Information	Certifying Official Name	Rick Mason
	Certifying Official Phone Number	(540) 984-5164
	Certifying Official E-mail	rick.mason@emp.shentel.com

## Data Submitted

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	ILEC Broadband Coverage.csv	Aug 31, 2021 09:49 AM	5,016
Fixed Broadband Subscription	ILEC Broadband Subscription.csv	Aug 31, 2021 09:52 AM	158
Fixed Voice Subscription	ILEC Voice Subscription.csv	Aug 31, 2021 09:49 AM	16

## Fixed Broadband Deployment

### Census Block Counts by State, DBA Name and Technology

State	DBA Name	Technology	Blocks
-------	----------	------------	--------

State	DBA Name	Technology	Blocks
Virginia	Shentel	ADSL2	2,012
		Optical Carrier/Fiber to the End User	992
		Other Copper Wireline	2,012
<b>Total</b>			<b>5,016</b>

## Fixed Broadband Subscription

### Fixed Broadband Subscriptions by State, Technology and End User Type

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business/Govt.	Total
Virginia	Asymmetric xDSL	92	6,398	440	6,838
	Optical Carrier/Fiber to the End User	66	230	124	354
<b>Total</b>		<b>158</b>	<b>6,628</b>	<b>564</b>	<b>7,192</b>

### Fixed Broadband Subscriptions by Bandwidths and End User Type

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business/Govt.	Total
0.384	0.128	25	3	28
0.768	0.512	52	2	54
1.500	0.512	347	14	361
1.500	1.500	0	1	1
3.000	0.768	1,463	99	1,562
5.000	0.768	1,132	189	1,321
10.000	1.000	1,621	108	1,729
10.000	10.000	0	17	17
15.000	1.000	1,758	25	1,783
15.000	15.000	0	6	6
20.000	20.000	0	21	21
25.000	5.000	20	2	22
25.000	25.000	0	5	5
30.000	30.000	0	5	5
50.000	10.000	183	0	183
50.000	50.000	0	35	35
70.000	70.000	0	1	1

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business/Govt.	Total
100.000	100.000	0	17	17
101.000	10.000	21	1	22
125.000	125.000	0	1	1
200.000	200.000	0	6	6
300.000	10.000	3	0	3
300.000	300.000	0	3	3
1,000.000	10.000	3	0	3
1,000.000	1,000.000	0	3	3
<b>Total</b>		<b>6,628</b>	<b>564</b>	<b>7,192</b>

### Fixed Broadband Subscriptions by Technology, Bandwidths and End User Type

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business/Govt.	Total
Asymmetric xDSL	0.384	0.128	25	3	28
	0.768	0.512	52	2	54
	1.500	0.512	347	14	361
	3.000	0.768	1,463	99	1,562
	5.000	0.768	1,132	189	1,321
	10.000	1.000	1,621	108	1,729
	15.000	1.000	1,758	25	1,783
Optical Carrier/Fiber to the End User	1.500	1.500	0	1	1
	10.000	10.000	0	17	17
	15.000	15.000	0	6	6
	20.000	20.000	0	21	21
	25.000	5.000	20	2	22
	25.000	25.000	0	5	5
	30.000	30.000	0	5	5
	50.000	10.000	183	0	183
	50.000	50.000	0	35	35
	70.000	70.000	0	1	1
	100.000	100.000	0	17	17
	101.000	10.000	21	1	22
	125.000	125.000	0	1	1
	200.000	200.000	0	6	6



Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business/Govt.	Total
	300.000	10.000	3	0	3
	300.000	300.000	0	3	3
	1,000.000	10.000	3	0	3
	1,000.000	1,000.000	0	3	3
<b>Total</b>			<b>6,628</b>	<b>564</b>	<b>7,192</b>

## Fixed Voice Subscription

### VGE Lines and VoIP Subscriptions by State and End User Type

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Virginia	11,659	8,468	0	0
<b>Total</b>	<b>11,659</b>	<b>8,468</b>	<b>0</b>	<b>0</b>

## Fixed Voice Subscription (VGE Lines)

### VGE Lines Provided to Unaffiliated Providers by State

State	Wholesale	UNE-L
Virginia	0	0
<b>Total</b>	<b>0</b>	<b>0</b>

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

State	Total	by Bundle		by Product Type			
		Sold w/ Internet	Sold w/o Internet	Consumer		Business/Govt.	
				& No PIC	& PIC	& No PIC	& PIC
Virginia	11,659	4,158	7,501	1,580	6,888	596	2,595
<b>Total</b>	<b>11,659</b>	<b>4,158</b>	<b>7,501</b>	<b>1,580</b>	<b>6,888</b>	<b>596</b>	<b>2,595</b>

### VGE Lines Provided to End Users by State, Ownership and Last-Mile Medium

State	Total	by Ownership			by Last-Mile Medium			
		Owned	UNE-L	Resale	FTTP	Coax	Fixed Wireless	Copper
Virginia	11,659	11,659	0	0	1,839	0	0	9,820
<b>Total</b>	<b>11,659</b>	<b>11,659</b>	<b>0</b>	<b>0</b>	<b>1,839</b>	<b>0</b>	<b>0</b>	<b>9,820</b>

**Reminder: You must continue to use Census 2010 geographic codes in FCC Form 477.**

For help or assistance, please contact (877) 480-3201 or (717) 338-2834 (TTY) or you may submit an [online e-support ticket](#).

Federal Communications Commission  
445 12th Street SW, Washington, DC 20554  
[Phone: 1-888-225-5322](tel:1-888-225-5322)

[TTY: 1-888-835-5322](tel:1-888-835-5322)

[Videophone: 1-844-432-2275](tel:1-844-432-2275)

[Fax: 1-866-418-0232](tel:1-866-418-0232)

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Attachment 13 provided separately in accordance with FOIA exemption granted.

Attachment 16 provided separately in accordance with FOIA exemption granted.

***Good morning VATI Applicant:***

***You are receiving this email as a requestor of FOIA exemption for Virginia Telecommunication Initiative (VATI) application materials, or if you have been approved for FOIA exemption for materials you plan to submit as a part of your VATI application.***

***This email serves as a reminder that all materials that have been approved for FOIA exemption should not be submitted through CAMS. Instead, these documents must be submitted to DHCD at [vati@dhcd.virginia.gov](mailto:vati@dhcd.virginia.gov), with a subject line denoting FOIA exempt materials.***

***Please do not hesitate to ask questions for clarification,***

***DHCD Team***

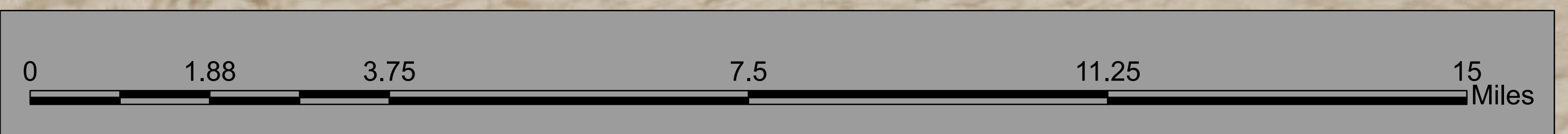
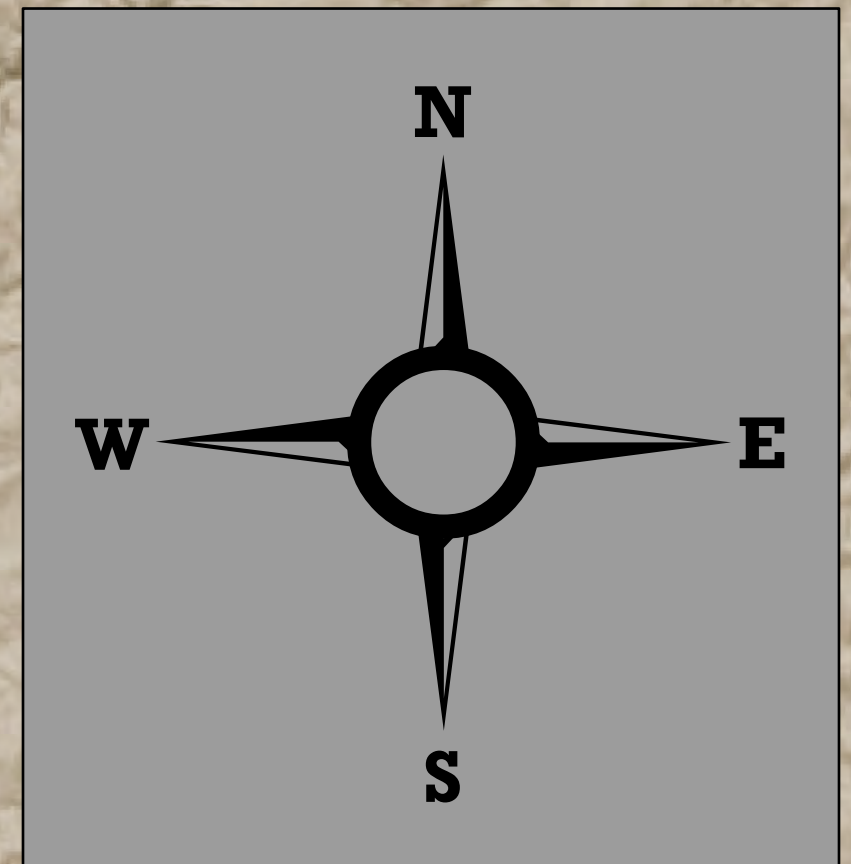
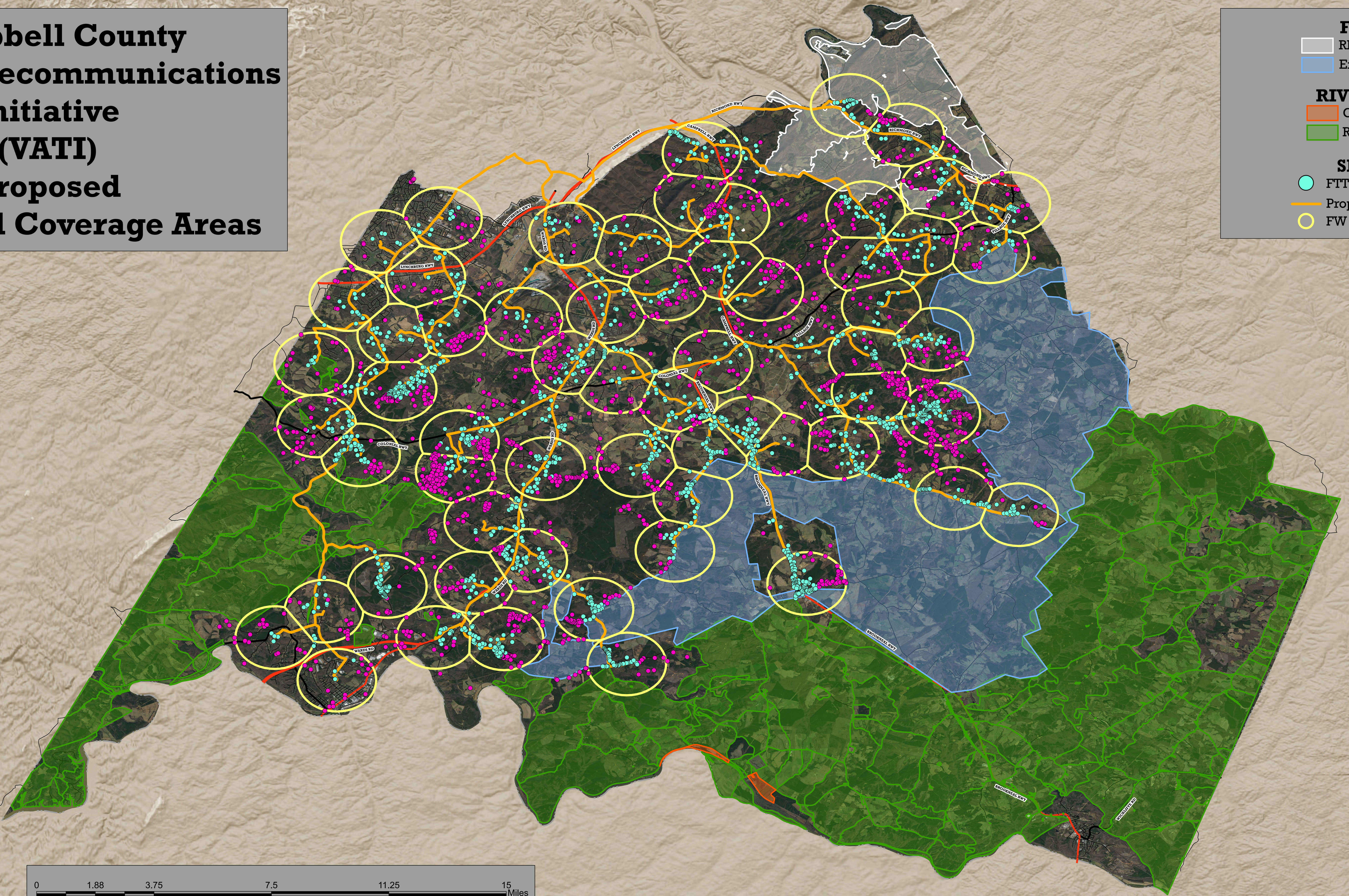


# Campbell County Virginia Telecommunications Initiative (VATI) Proposed Broadband Coverage Areas

**FIREFLY**  
 RDOF Award Area  
 Expanded Proposal

**RIVERSTREET**  
 CAF Award Area  
 RDOF Award Area

**SHENTEL**  
 FTTH FWA  
 Proposed Fiber Routes  
 FW Rings (1 mile)





# CONTACT US

---

## Campbell County Public Library (Main Branch)

684 Village Hwy  
Rustburg, VA 24588  
rb@co.campbell.va.us  
(434) 332-9560

## Patrick Henry Memorial Library

204 Lynchburg Ave  
Brookneal, VA 24528  
phml@co.campbell.va.us  
(434) 376-3363

## Staunton River Memorial Library

500 Washington St  
Altavista, VA 24517  
srml@co.campbell.va.us  
(434) 369-5140

## Timbrook Library

18891 Leesville Rd  
Lynchburg, VA 24501  
tbl@co.campbell.va.us  
(434) 592-9551

# BOOK A CLASS

---

Book your free course today!

<https://tinyurl.com/CCPLS-TechClasses>



PO Box 310  
Rustburg, VA 24588



## Campbell County Public Library System

[campbellcountylibraries.org](http://campbellcountylibraries.org)

 @CampbellCountyLibrary

 @ccplibraryva

 @campbellcountypubliclibraryva

#ccplsreads

# TECH CLASSES OFFERED

## TECH 101

No computer experience required! These courses are intended to be taken in order, so you can build upon your skills.

### Intro to Computers:

What is a computer? Learn about types of computers and their hardware and software.

### Navigating the Computer:

What is an operating system? Discover information about programs, files, and folders, and practice navigating a Windows system.

### Navigating the Internet:

What is the Internet? How does it work? Figure out how to connect to the Internet, learn what you can do online, and how to use a web browser. Email is also covered.

### Tech 101:

In a single two-hour class, learn Intro to Computers, Navigating the Computer, and Navigating the Internet.

## TECH 201

Some technology experience is required for these courses, as they involve topics covered in Tech 101. These concepts will be explained in full. Questions are welcome!

### Managing Digital Files/Photos:

This course covers basic file organization, deleting photos from a digital camera, and uploading files to an online storage site or cloud-based service. (1 hr)

### Intro to Google Drive:

Understand Drive and how you can use it to your advantage. Includes a brief overview of Docs, Sheets, and Slides. (1.5 hrs)

### Deleting Yourself From the Internet:

Learn best practices for getting your personal information out of the public eye. (0.5 hr presentation, 1-on-1 help)

### Intro courses for...

- Microsoft Word / Google Docs (1 hr)
- Microsoft Excel / Google Sheets (1 hr)
- Microsoft Powerpoint / Google Slides (1 hr)
- Graphic Design on a Dime (1.5 hr)

## INTRO TO...

All of these courses are available through one of our library databases. Go to [www.campbellcountylibraries.org/learn](http://www.campbellcountylibraries.org/learn) to browse or ask us for help!

- **Computer basic, typing practice**
- **Windows and Mac systems**
- **How to use certain software (ex. Microsoft Excel, Adobe Photoshop, QuickBooks)**
- **Basics in photography and electronics**
- **How to use sites like eBay**
- **Google products**
- **Programming and website languages (HTML, CSS, etc.)**

## 1-ON-1 HELP

You can schedule a 1-hour appointment with your librarian! Schedule in advance so you have dedicated training based on your needs. Topics include:

- **Device help (smartphones, tablets, e-readers)**
- **Help with our online resources**
- **Creating a resume**
- **Learning how to fill out job applications**
- **Job interview simulations**
- **Reference/genealogy questions**

# Marketing & Citizen Engagement Plan



# Marketing & Citizen Engagement Plan

## Timeline

**Franchise agreement signed:** Press Release

**90 Days prior to construction:** post on our Glo Fiber social media pages

**60 Days prior to construction:** Direct Mail to LCPs announcing Glo Fiber beginning construction

**60 Days prior to construction:** Media efforts

**30 Days prior to construction:** Launch Press Release

**30 Days prior to construction:** Construction door tags

**3-Days prior to construction:** Construction imminent door tags

**Construction Start Date:** Coming Soon Digital Ads

**Construction Start Date:** Email to pre-registered leads

**30 Days before LCP is Active:** Direct Mail to LCPs with special offer

**Construction progress:** Email to pre-registered leads

**Service Available:** Email to pre-registered leads

**Installation:** Yard stake



# Marketing & Citizen Engagement Plan

90 days prior to construction

## Social Media

- Post on Glo Fiber Facebook and Instagram pages
- Text with post would provide more detail of availability
- Image provided to municipality to post on their social media pages



Sample

# Marketing & Citizen Engagement Plan

60 days prior to construction

## Direct Mail

- Sent to all households in the LCP slated for construction in the next 60 days
- Introduction to Glo Fiber
- 6x9 double-sided, folded mail piece

Front

PRESORTED  
STANDARD  
MAIL PERMIT  
NO. 1000  
U.S. POSTAGE  
PAID  
GLOFIBER

**glo fiber**  
internet of you  
20 S Mason Street  
Harrisonburg VA, 22801

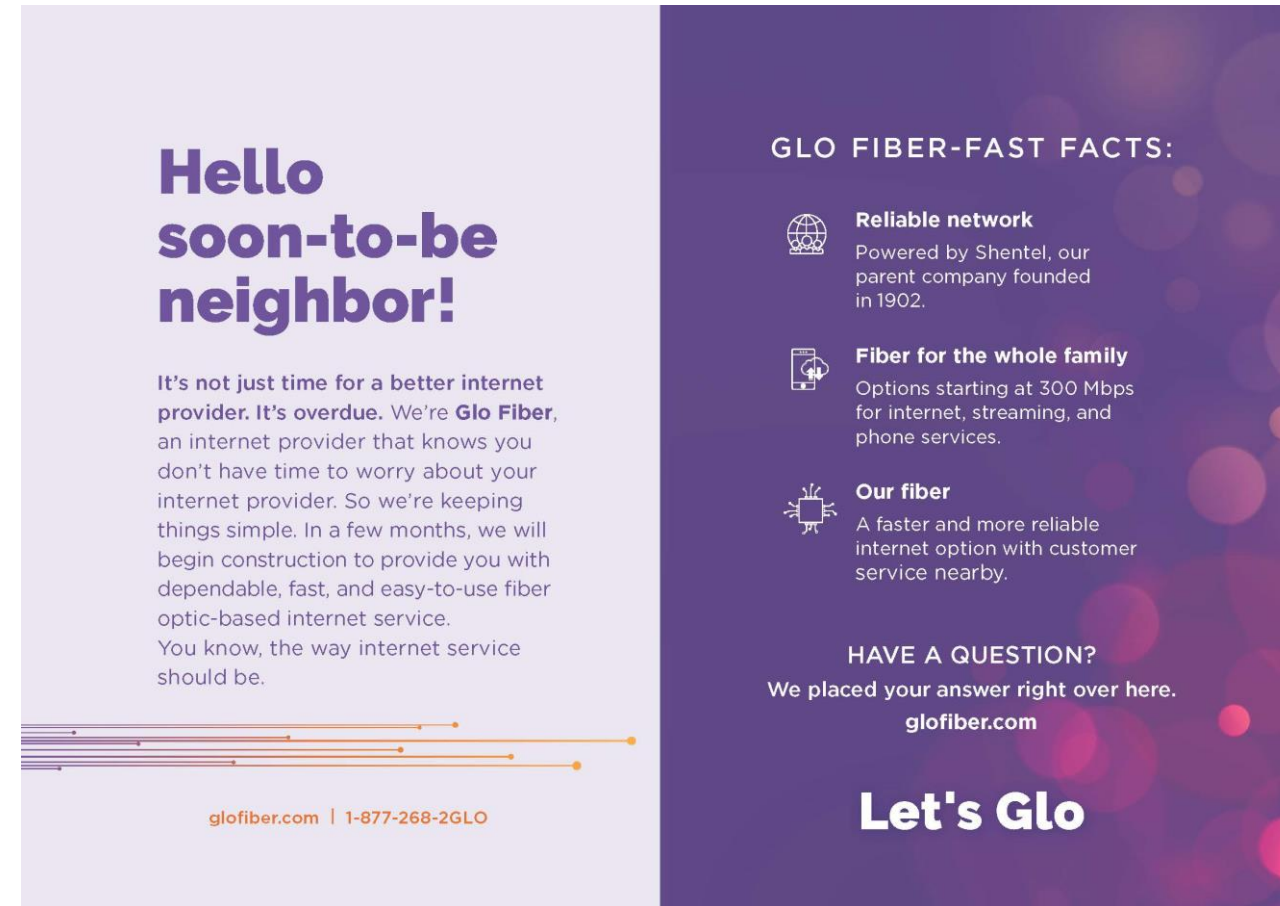
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<IMB\_barcode>

\*Service not available in all areas. Subject to eligibility guidelines and other restrictions may apply.  
©2020 Glo Fiber. All rights reserved.

GLO\_20



Back



# Marketing & Citizen Engagement Plan

30 days prior to construction

## Door Tags

- Deployed by D2D team
- All households in the LCP slated for construction in the next 30 days are tagged
- Provides basic overview of construction process and service offerings
- Website listed on door tag will provide more detailed information

**glo fiber**

We will start upgrading your neighborhood in the next 2-3 weeks  
Ready to experience fiber optic internet at the speed of light?

**Construction Steps:**

- Step 1:** Glo Fiber works with your local municipality to design the fiber-optic route.
- Step 2:** Glo Fiber or a Glo Fiber Contractor will be working on or around your property to place fiber optic lines. All work performed on private property is completed within a utility easement or public right-of-way. If our equipment or lines are located in a backyard utility easement, crews may require access to that easement. Flags and paint marking the existing utilities and digging will be required.
- Step 3:** Glo Fiber returns to splice the fiber that will connect your home. Glo Fiber then tests the connection.
- Step 4:** When you request service, Glo Fiber connects the fiber to your home in preparation for your install.

**Fiber Internet**

- Internet speeds that fit your lifestyle, up to 2 Gbps.
- Fiber to the home connection provides a high speed, bandwidth rich network. Get upload speeds as fast as your download speeds making the sharing of content faster.
- Wall to wall WiFi blankets your home in fast, reliable WiFi.

**Streaming TV**

- App based TV allows you to bring your own device. Use your Apple TV, Amazon Fire TV, mobile devices or some Smart TVs without the need for an additional cable box.
- Tailored show recommendations and parental controls.
- Watch your recordings and some of your channels on the go. Set recordings from your phone.

**Fiber Phone**

- Keep your existing number
- Crystal clear conversations
- Premium features come standard like call waiting, unlimited long distance, 3 way calling and robocall blocker.

To learn more, please visit:  
[glofiber.com/construction](http://glofiber.com/construction)

**glo fiber**



# Marketing & Citizen Engagement Plan

3 days prior to construction

## Door Tags

- Deployed by Construction team
- All households in the LCP slated for construction in the next 3 days are tagged
- Provides update construction process and what to expect during that time
- Website listed on door tag will provide more detailed information

**glo fiber**

**Get Ready!**

**Construction is about to begin in your area!**

In the next few days, Glo Fiber or a Glo Fiber Contractor will be working on or around your property to place fiber optic lines. All work performed on private property is completed within an easement or right-of-way. Crews may need access to a backyard if it falls within that easement.

You may notice flags and/or paint markings indicating the proposed path of the new cable and the location of the existing utilities on your property. These markings are required by law.

Please be advised that private lines are unable to be marked. If you have any private underground lines, you will need to mark those lines to avoid any damage to those facilities.

Our goal is to perform the work safely and cause as little disruption as possible. Our typical work hours are Monday through Saturday 7:30 am to 5 pm.

For more information, please visit or call  
**glofiber.com/construction**  
**540-984-5510**

brought to you by Shentel



### Fiber Internet

- Internet speeds that fit your lifestyle, up to 2 Gbps.
- Fiber to the home connection provides a high speed, bandwidth rich network. Get upload speeds as fast as your download speeds making the sharing of content faster.
- Wall to wall WIFI blankets your home in fast, reliable WIFI.

### Streaming TV

- App based TV allows you to bring your own device. Use your Apple TV, Amazon Fire TV, mobile devices or some Smart TVs without the need for an additional cable box.
- Tailored show recommendations and parental controls.
- Watch your recordings and some of your channels on the go. Set recordings from your phone.

### Fiber Phone

- Keep your existing number.
- Crystal clear conversations.
- Premium features come standard like call waiting, unlimited long distance, 3 way calling and robocall blocker.

# Marketing & Citizen Engagement Plan

Construction start date

## Coming Soon Digital Ad

- Geotargeted to zip codes/neighborhoods that will be getting Glo Fiber
- Learn more button linked to Glo Fiber website for more information. User can check for serviceability and pre-register for updates

Digital Ad - Sample



# Marketing & Citizen Engagement Plan

Various stages throughout construction process

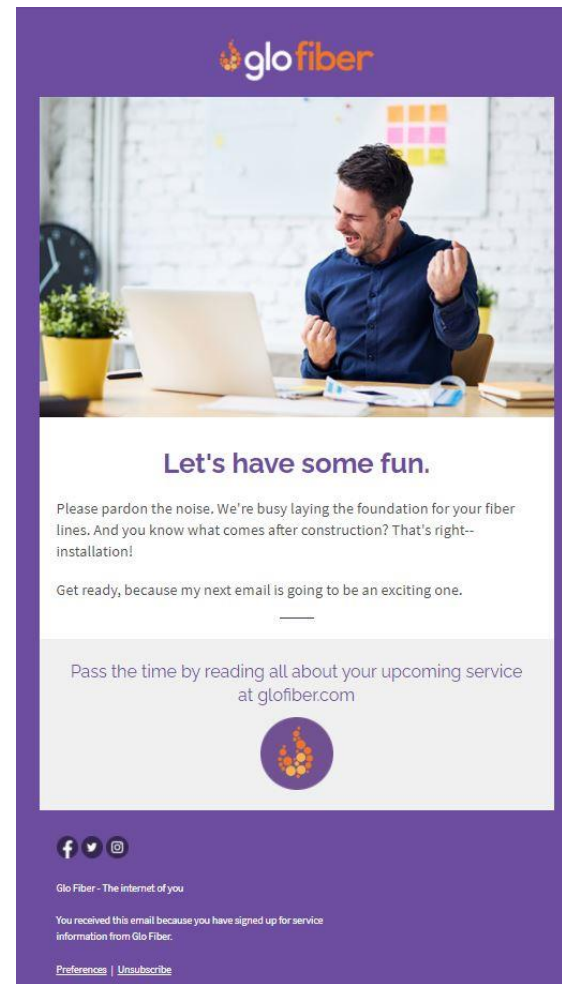
## Email notifications

- Sent to those that pre-register on Glo Fiber website informing of construction progress

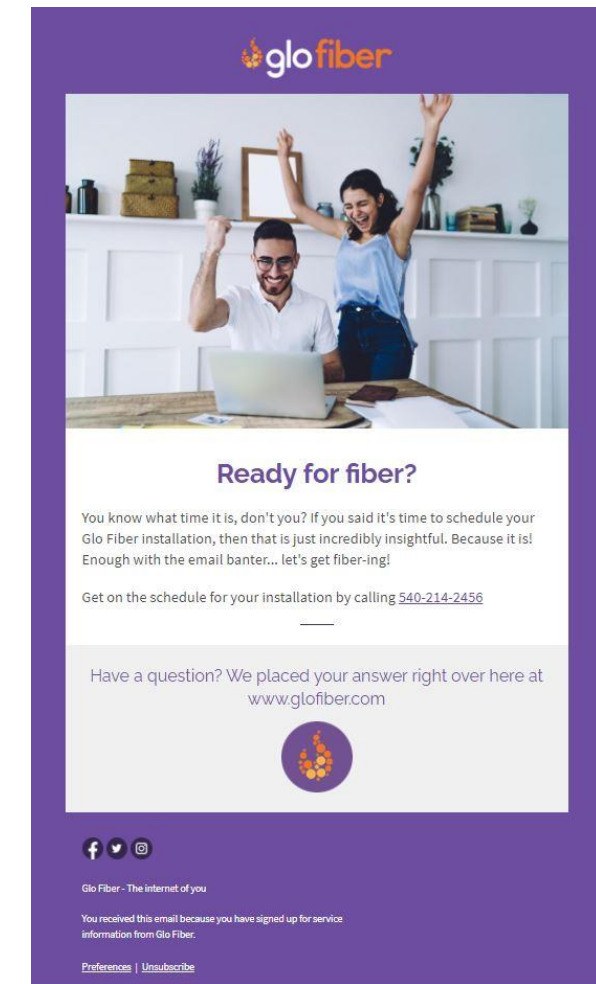
Construction start date



Construction in progress Email



Service Available





# Marketing & Citizen Engagement Plan

30 days before LCP is active

## Direct Mail

- Sent to all households in the active LCP
- Special offer as incentive to try Glo Fiber
- 6x9 double-sided, folded mail piece

Front



Back



# Marketing & Citizen Engagement Plan

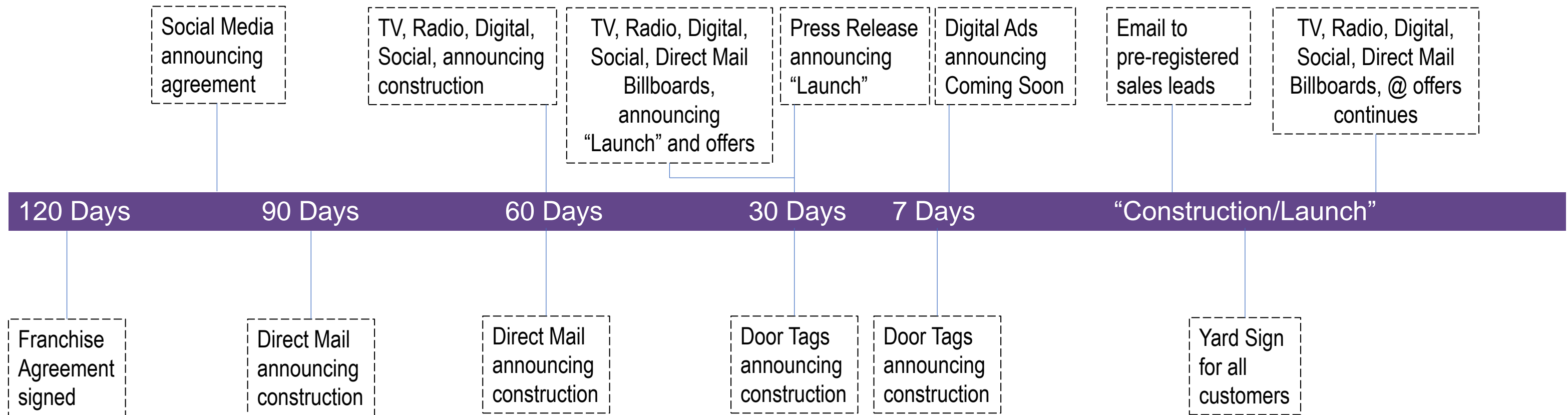
## Installation

### Yard Stake

- Used after installation in homeowner's yard
- Homeowner approval required







# Marketing & Citizen Engagement Plan



# Marketing & Citizen Engagement Plan

## Timeline

- **30 - 60 days prior to launch:** PR outreach to local media outlets & social media posts on local pages announcing coverage areas that will soon be launched.
- **30 days prior to launch:** Digital ad campaign geo fenced to focus on the coverage area, utilizing a “Coming Soon” theme. Social Media also shifts in its messaging.
- **At launch:** Direct mail letters are sent, targeting serviceable households in the new coverage area. Digital ads, social media, Online search terms, billboards, updated press release and local marketing representatives place flyers and signs in public areas and businesses.
- **Post launch:** In the weeks and months that follow, a second direct mail campaign is launched targeting the new coverage area, digital ads and social media continue, as does the placement of yard stake signs and marketing materials in local businesses and other public gathering places.

# Marketing & Citizen Engagement Plan

30 - 60 Days prior to launch

- **Public Relations Local Outreach**
- PR agency reaches out to local media outlets with pre-launch information about Beam.
- PR agency also pitches providing access to key Subject Matter Experts at Shentel for follow-up questions and additional news content and articles.
- Local newspaper(s), TV, radio stations, Chamber of Commerce, etc.



# Marketing & Citizen Engagement Plan

30 Days prior to launch

- **Social Media**
- Post on Beam Facebook and Instagram pages.
- Posts would provide additional details regarding benefits and availability.
- Posts can link to the Beam website, where local addresses can be checked for serviceability and pre-registration.



Pre-launch graphic example.



# Marketing & Citizen Engagement Plan

30 Days prior to launch

- **Coming Soon Digital Ads**
- Geo-targeted to zip codes/neighborhoods that will be getting Beam.
- Learn more button linked to the Beam website for more information. User can check for serviceability and pre-register.



# Marketing & Citizen Engagement Plan

30 Days prior to launch

- **Coming Soon Social Media Posts**
- Geotargeted to zip codes/neighborhoods that will be getting Beam
- Learn more button linked to the Beam website for more information. User can check for serviceability and pre-register



Pre-launch graphic example.

# Marketing & Citizen Engagement Plan

## At launch

- Direct Mail
- Traditional letter to provide thorough content and frequently asked questions & answers.
- Sent to all households in the new coverage area.
- Provides a strong call to action and follow-up contact information.

**beam-**  
internet by shentel

Hey Neighbor,

We're bringing a new high-speed internet option to your area. Say hello to **Beam Internet, by Shentel**.

We believe everyone should have access to high quality and reliable high-speed internet, regardless of where they live. That's why Shentel is working to expand affordable high-speed internet options in the areas we serve. We'll beam a signal directly to your house, so you can have reliable connectivity without paying a fortune.

Beam offers three service options. You can get speeds up to **25 Mbps for \$60 a month**, up to **50 Mbps for \$80 a month**, or up to **100 Mbps for \$160 a month**. These prices include all of your equipment and your service, so you won't get any surprises on your bill.

Sincerely,  
*Angela T. Washington*  
Angela T. Washington  
Vice President of Marketing

**Wanna learn more?**  
Visit [iwantbeam.com/hello](http://iwantbeam.com/hello)  
or call **(866) 583-1730**

### How It Works

- 1. Inspection**  
A technician will come measure the Beam signal strength around your home to figure out which speeds are available to you, and where equipment would need to be placed to receive the best possible signal.
- 2. Installation**  
Our technician will install a receiver the size of a small pizza box on your home. We'll work with you to find the best place for it, based on your preferences and signal strength. We'll also install a WiFi router and power supply inside your home. All of this equipment is included at no additional cost to your monthly rate.
- 3. Experience**  
We'll help you connect your devices to your new WiFi network, so you can begin enjoying faster internet speeds than you may have ever thought possible!

**beam-**  
internet by shentel

500 Shentel Way  
Edinburg, VA 22824

A new option for fast, reliable internet in your area!

Plans starting at **\$60/month**  
Speeds up to **100 Mbps**

**beam-**  
internet by shentel

**What is Beam?**  
Beam is a brand new high-speed internet service. We beam a signal to your house wirelessly from a nearby tower. This enables Beam's internet signal to reach people who haven't been eligible for other internet services in the past.

**Who can get it?**  
To be eligible for Beam Internet, your home needs to be within range of one of our towers. Before you pay anything, we'll send out a technician to make sure your home can get a strong signal.

**How is this better than DSL?**  
DSL usually has a maximum speed of 15 Mbps for users. Depending on your location, Beam can provide speeds from around 25 Mbps up to 100 Mbps.

**I've heard about these kinds of services before. What makes Beam different?**  
Other providers use a shared spectrum, which can make internet access spotty and unreliable when a large number of people, businesses and electronic devices are using that spectrum at the same time. To solve this issue we have invested in our own licensed spectrum, so you won't be competing for internet access because only Beam customers are on our network. Plus, with Beam's high powered network, external interference and most weather conditions won't affect your internet access.

**How reliable is the service?**  
Reliability is our first priority. We work hard to keep you from dealing with service interruptions, and pride ourselves in being able to offer a reliable product. However due to the technology used, sometimes things outside of our control can occasionally cause your internet speed to vary. Therefore you will likely not see the maximum speeds at all times.

**Do I need a clear line of sight to a tower?**  
Not necessarily. The signal we use can beam through many obstacles. However, there are some things that will block service, such as rock, metal buildings and dense tree growth. We can't be 100% certain about availability until a technician tests the signal strength at your house.

**What speed is best for me?**  
Every household is different and has different internet needs.

- Our entry-level service (up to 25 Mbps) is great for homes with a few internet users who only need basic web browsing and email.
- The mid-level package (up to 50 Mbps) is better for households that'll be streaming, gaming, learning, or working from home and have a few connected devices.
- Our fastest package (up to 100 Mbps) keeps families with a lot of streaming, gaming, and smart home devices connected without compromise.

**What about other services?**  
We're currently focused on building a high quality, high-speed internet network for those who need it most. However, we are looking to provide phone service in the near future.

**How long have you been in business?**  
Shentel, our parent company, has been offering telecommunications services for over 100 years. Everything we do is based on our core belief that everyone deserves access to high-quality services, regardless of where they live. Beam is the next step in this Shentel tradition, expanding options for reliable high-speed internet to places that couldn't get it before.

**Reach Out To Us**  
To sign up, or for more info call **(866) 583-1730**.

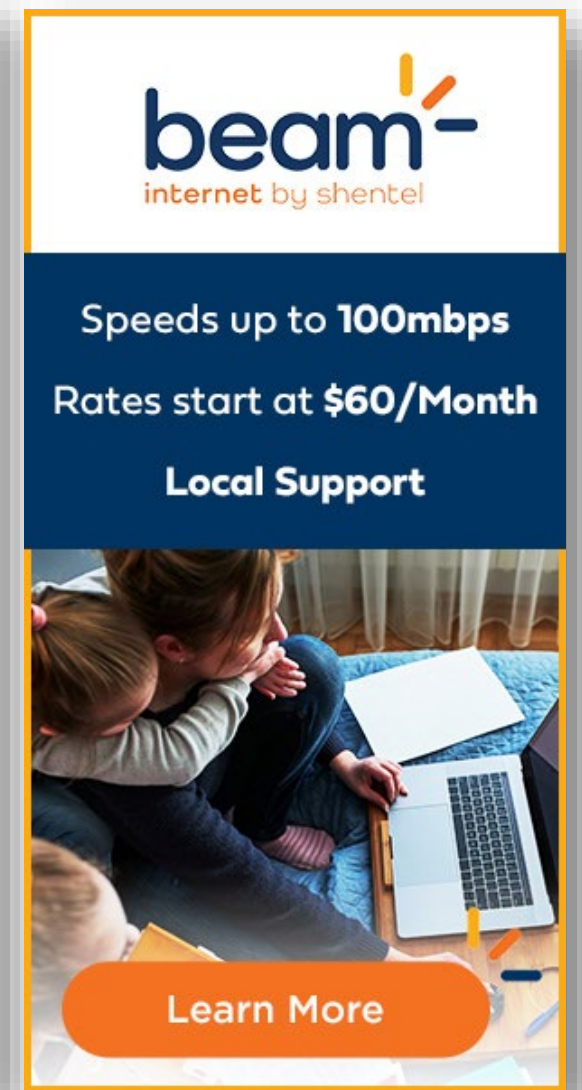
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# Marketing & Citizen Engagement Plan

At launch

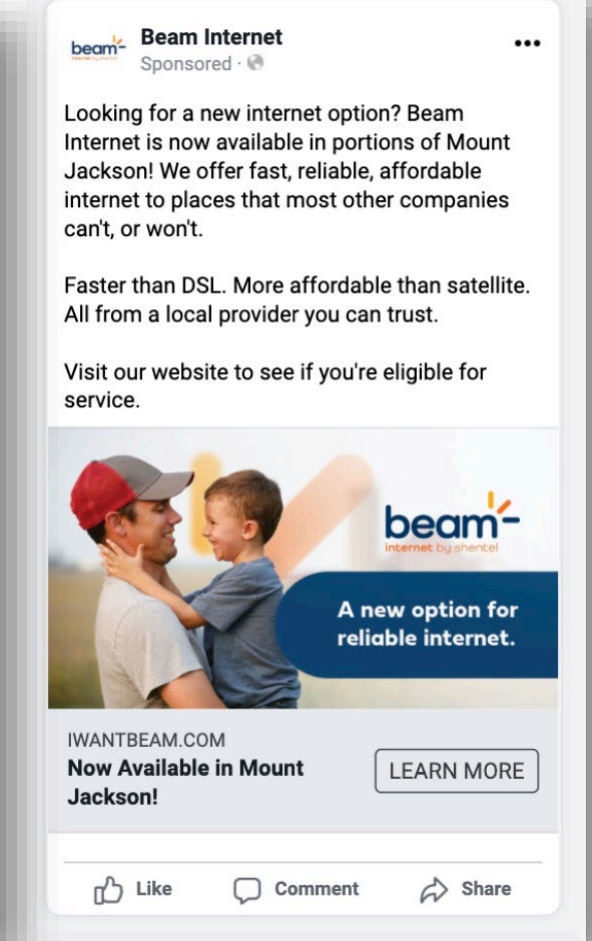
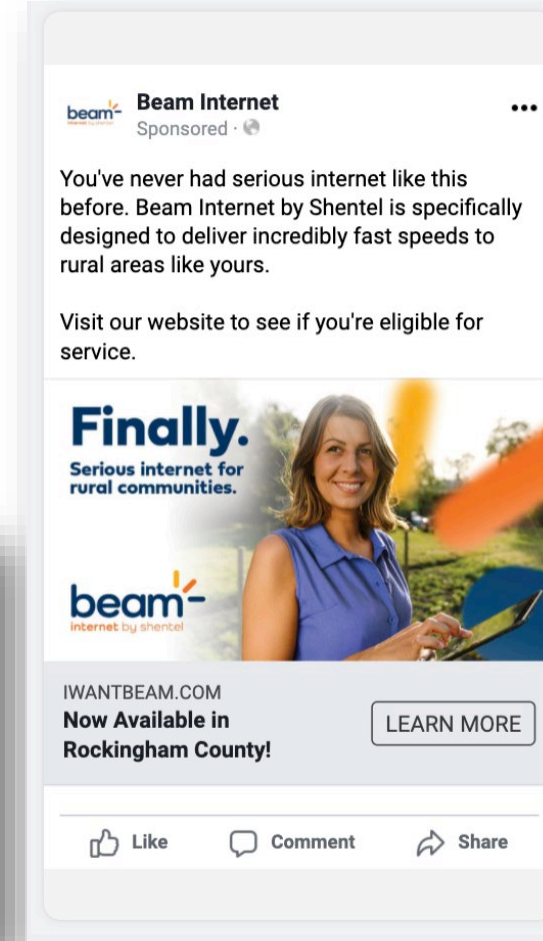
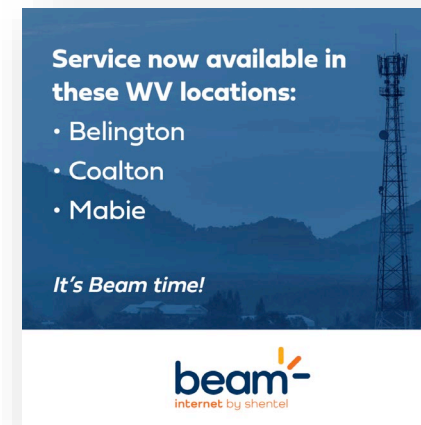
- **Digital Ads**
- Geo-targeted to zip codes/neighborhoods that will be getting Beam.
- Learn more button linked to the Beam website for more information. User can check for serviceability and pre-register.



# Marketing & Citizen Engagement Plan

At launch

- **Social Media**
- Post on the Beam Facebook and Instagram pages as well as paid advertising through Facebook.
- Posts would provide more details regarding benefits and availability.
- Posts can link to the Beam website, where local addresses can be checked for serviceability and pre-registration.

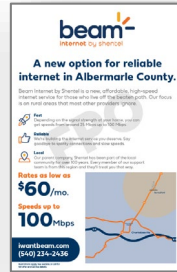




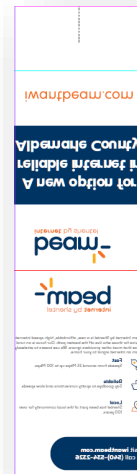
# Marketing & Citizen Engagement Plan

At launch

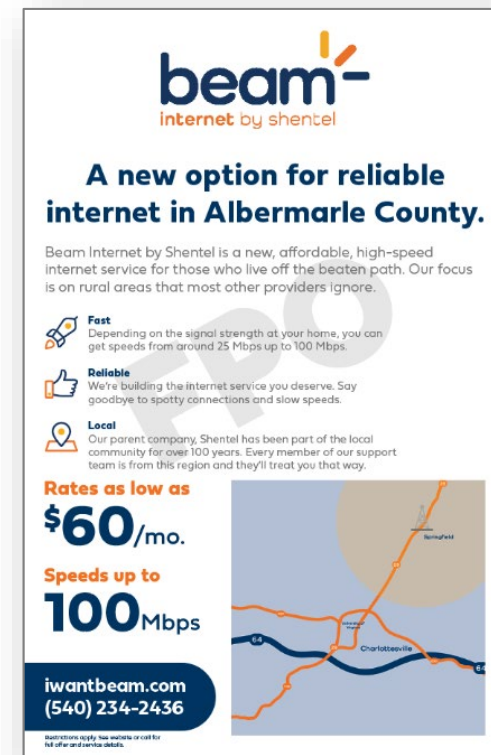
- **Local Marketing**
- Visit local businesses and common gathering places to introduce them to Beam and ask for permission to leave local marketing materials:
  - Flyers
  - Table Tents
  - Small Posters
  - Yard Signs



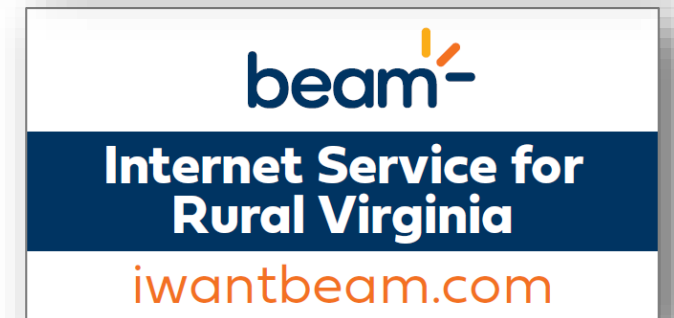
- 5"x7" Flyer, for local business countertops, pizza box toppers, etc.



- Table Tent for restaurants and local business countertops



- 11"x17" Customizable Poster

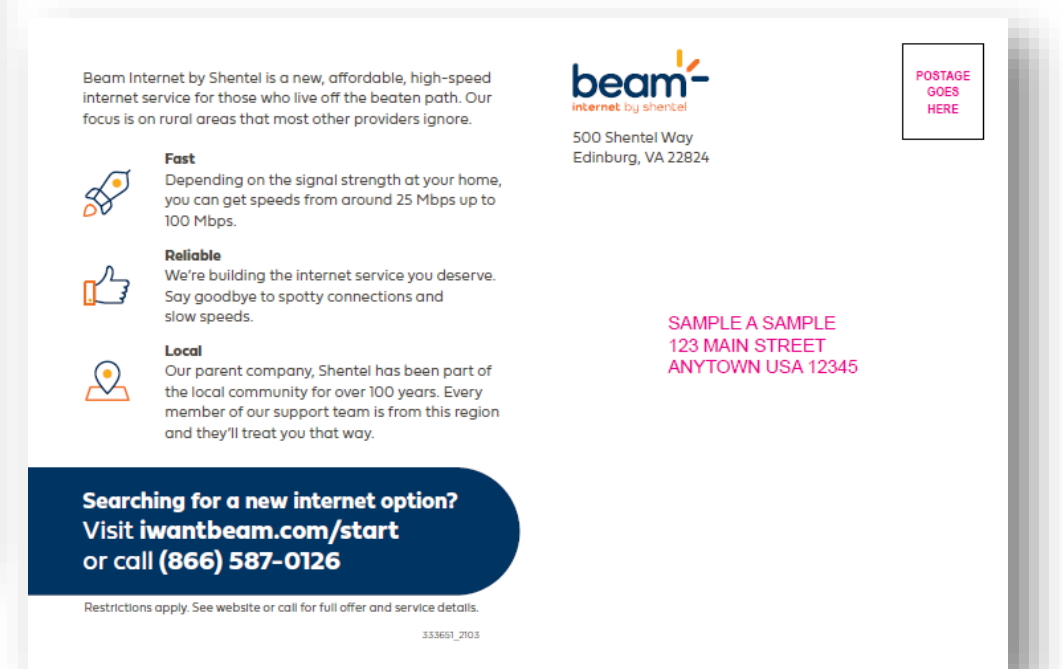


- 24"x48" Yard Stake Signs

# Marketing & Citizen Engagement Plan

Two weeks after launch

- **Direct Mail**
- Sent to all households in the active coverage area as a follow-up reminder of Beam service being available
- 6x9 postcard



# Marketing & Citizen Engagement Plan

90 Days prior to launch

- **Yard Stake**
- Placed in the homeowner's yard after service installation is complete.
- Promotes Beam to both the neighbors & all local traffic.
- Homeowner approval required.

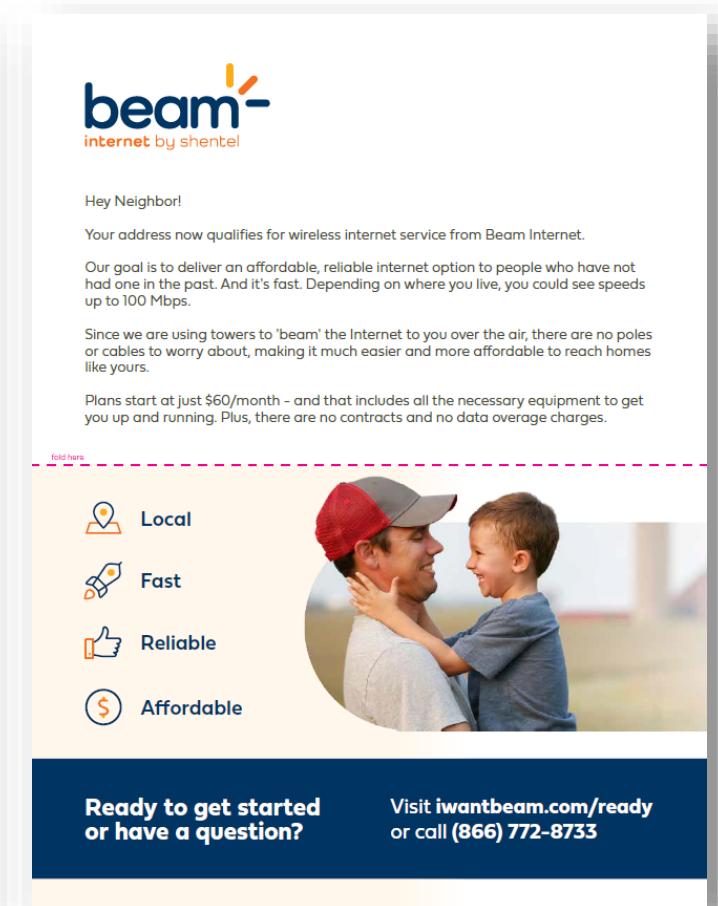
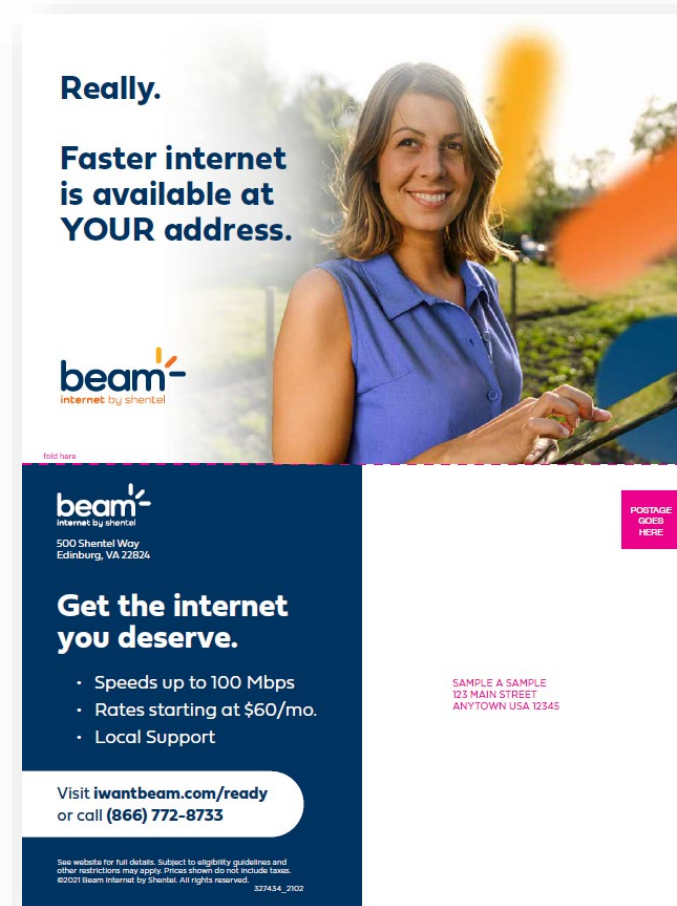




# Marketing & Citizen Engagement Plan

## Post launch

- **Direct Mail**
- Sent to all households in the new coverage area around 90 days after launch.
- Introduction to Beam, the service benefits and the next steps to take to learn more & sign up.
- Large folded postcard that merges the primary content from the traditional Beam letter and the Beam postcard.



## Network Design (Continued from question 9)

### **Fiber To The Home Network Description**

Shentel intends to develop a new fiber network in Campbell County in support of its residential Fiber to the Premise (FTTP) service. Just like its existing cable network, this FTTH network will be connected to Shentel's expansive multi-state fiber network with redundant Tier 1 peering points located in Ashburn, VA and Atlanta, GA.

Shentel deploys XGS-PON for its FTTP product. XGS-PON is an advanced standard for Passive Optical Networks (PON). This network can provide multi-gig speeds today and is scalable to support 10Gbps symmetrical data. As such it provides more than enough bandwidth to meet current needs and is able to scale up to stay ahead of demand for many years to come. By contrast, earlier PON networks are extremely limited in the amount of downstream and upstream capacity available to the end user. Although XGS-PON requires significant investment, the growing demand for symmetrical broadband makes the investment in XGS-PON the best choice. XGS-PON deployments are built around centralized fiber split topology and designed to allow a single fiber the ability to maintain an efficient point-to-multipoint broadband connection for multiple end users.

Shentel typically utilizes a dedicated fiber split from the Local Convergence Point (LCP) out to the Customer Premise. Each LCP is fed with feeder fiber from a Central Office (CO) or Point of Presence (POP). Shentel will leverage their existing PoP in Campbell. This robust fiber infrastructure allows us to accommodate commercial sales opportunities and provide improved service to businesses and community anchor institutions within the project area. A centralized fiber split also provides a more dedicated and direct approach to ensuring that fiber capacity, technology, and plant records can be easily managed.

### **Primary Network Vendors – FTTP**

1. LCP – Nokia 7360 Optical Line Terminal (OLT) - Each FTTP market is deployed with a dedicated Nokia 7360 OLT and connected back to Shentel's dedicated multiple 100Gbps core network that is powered by Cisco's NCS-55A/5501 platforms.
2. Optical Network System (ONS) - Cisco's ONS 15454 Series Multiservice Transport Platform and the Network Convergence System (NCS) 2000. The coherent ONS provides the transport layer of Shentel's backbone Network with 100Gbps and 200Gbps wavelengths.
3. Optical Fiber - Shentel will utilize G.625.D compliant optical fiber. Shentel's preferred suppliers are Commscope, Corning and OFS.
4. P-Route Core - Cisco's NCS-55A and NCS-5501 platforms. The Core network is composed of ten Core devices and two 100Gbps paths between each device. The dual 100Gbps architecture provides both physical diversity and resiliency if a network failure or fiber cut occurs. This is extended to the PE network as well. Each device interfaces with two separate P routers, which provides Shentel the best option for diversity.

5. PE-Route Distribution Network - Cisco's ASR-90xx and ASR-99xx platforms. The Distribution Network is made up of many platforms deployed throughout Shentel's service footprint. Although the Core is the primary element within Shentel's topology, it is the actual Distribution network that is the workhorse of the network.

### Customer Premise Equipment – FTTP

At the Customer Premise, a Network Interface Device (NID) is placed on the outside of the residence to serve as a transition point between Outside Plant Fiber and Inside Plant Fiber. For FTTP broadband services, a Nokia XS-250X-A or Nokia XS-020X-A Optical Network Terminal (ONT) is utilized. Customers have the option of purchasing wall to wall WiFi service which utilizes a wireless mesh network to provide coverage and in home WiFi speeds nearing 1Gbps over WiFi and multi-gigabit when using cat 5.

### Wireless Drop Network Description

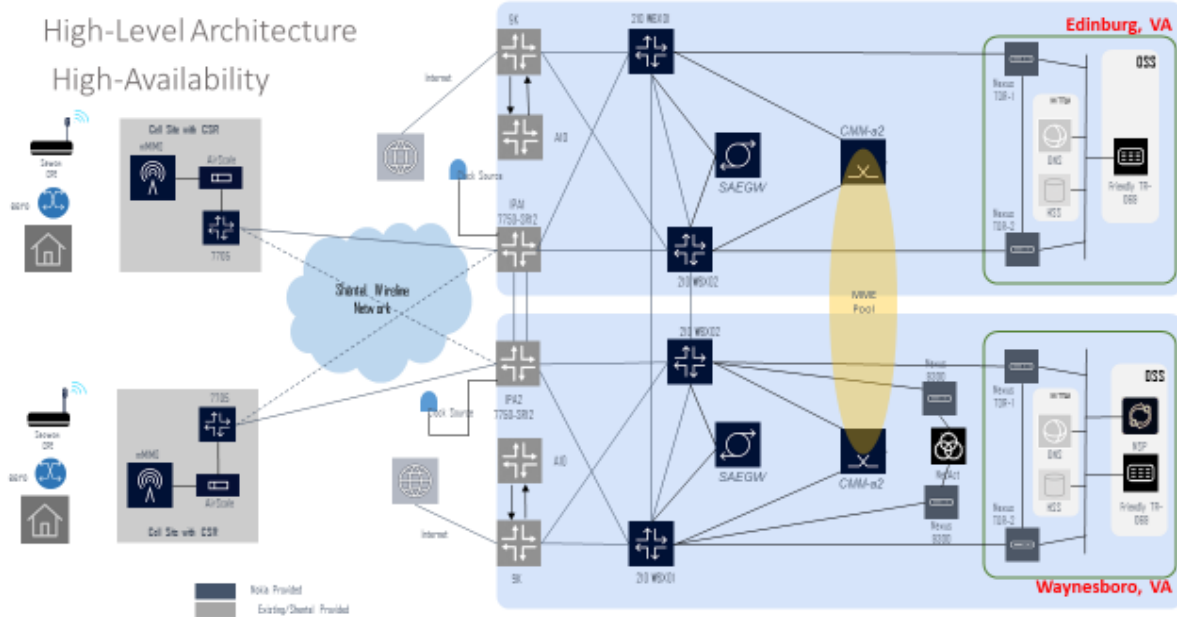
#### Scalability- Building for the Future

The Shentel Fixed Wireless network focuses on these components when it contemplates capacity and scalability: Evolved Packet Cores, Spectrum, Cell Site Backhaul, and Radio Access Network (RAN). Shentel uses currently measurable performance (not theoretical performance) of these components for capacity planning. This highly conservative approach helps ensure that network capacity will exceed demand.

#### Evolved Packet Cores

Shentel's two geo-redundant Evolved Packet Cores (EPC's) were built to exclusively support our Beam Fixed Wireless cell sites. One EPC is located in Waynesboro, VA and the other EPC is located in Edinburg, VA. These two EPS's support 4G LTE via the 3GPP standard, and these EPC's gracefully scale to support 5G with a simple software upgrade when capacity or functionality require. Please see a depiction of Shentel's EPC topology as follows:





### Spectrum

Shentel recently acquired valuable 3.5 GHz licensed wireless spectrum commonly referred to as Citizens Band Radio Service or CBRS (specifically, 3550-3700 MHz). Shentel acquired this 3.5 GHz mid-band spectrum to support its Beam Fixed Wireless Broadband network. Total purchase price of this spectrum was approximately \$16 million. This acquired spectrum covers Campbell County, VA, as well as 73 other counties across rural parts of Virginia, West Virginia, Maryland and Pennsylvania. Shentel has priority access to use 40 MHz of this licensed spectrum in Campbell County, VA. Coupled with 20 MHz of Generally Authorized Access channels, Shentel can dedicate a full 60 MHz of 3.5 GHz CBRS spectrum to cell sites. Shentel firmly believes that its priority right to use this vast amount of robust spectrum is a key differentiator from other Fixed Wireless providers.

### Radio Access Network (RAN)

Shentel's cell site deployment plan includes the following for small cell sites:

- 4G LTE Small Cell (Nokia FW2QQF) – this self-contained unit is carrier-grade and standards based.
- Omni High-Gain Antennas (Alpha Wireless AW3825)
- Cell Site Router (Nokia 7705 Service Aggregation Router) - this ground-based equipment is carrier-grade and standards based. The router can support up to 10G of throughput traffic connecting each cell site to Shentel's EPC's.

## Backhaul

The Fixed Wireless small cells will connect directly back to the EPC's via Shentel Fiber. Each cell site will initially enjoy over 1G of backhaul capacity, and can easily scale to 10G with simple back-office provisioning changes.

## Customer Premise Equipment

At the customer premise location, Shentel will professionally install a directional exterior antenna (Outdoor Unit or "ODU"), and up to two interior WIFI units. The ODU will be approximately 12" x 12" and will be typically mounted near the eave of the customer's roof. The ODU's are manufactured by Seowon Intech, a South Korean company. The ODU's comply with the 3GPP 4G LTE Advanced standard, and feature a 15 dBi high gain antenna resulting in EIRP of 39 dBm. These LTE Category 15 ODUs support the very latest in customer premise equipment advances:

### Downlink

- Up to 580 Mbps
- 4x4 MIMO
- Up to 4 Carrier Aggregation (both intra and inter)
- 256 QAM
- Transmission Mode 8 (multi-user MIMO)

### Uplink

- Up 30 Mbps
- Up to 2 Carrier Aggregation (intra)
- 64 QAM
- Transmission Mode 8 (multi-user MIMO)

The in-home WiFi units are produced by Eero, an Amazon company, and support unlicensed WiFi in the 2.4 GHz and 5.8 GHz spectrum bands. Specifically, Shentel's Beam customers enjoy the Eero 6 dual-band WIFI routers. Each Eero 6 unit in the wireless mesh network covers up to 1,500 square feet inside the home. These Eero devices offer a fast and easy set-up process - the Eero app walks the customer through setup and empowers the customer to manage the home network from anywhere. The Eero 6 connects compatible devices on the customer's home network with Alexa, so there is no need to buy a separate smart home hub for each device. The Eero 6 uses a TrueMesh technology, which optimizes connections and reduces drop-offs. Eero devices also get better over time - they have automatic updates that bring the latest Eero features while also keeping the home network safe and secure.

## Advanced RF Engineering - Targeting the Underserved

Small cell tower locations are planned with highly accurate propagation models down to 10-meter accuracy. Actual locations to be served are derived from building footprints that are extracted from LiDAR or photogrammetry with rooftop-level accuracy. Leveraging our mobility wireless experience, Shentel has empirical propagation data covering more than 7 years of 4G LTE operational history.

The accurately predicted Reference Signal Receive Power (RSRP) and Signal to Interference and Noise Ratio (SINR) translate directly to 3GPP Modulation and Coding Schemes (MCS) which correlate to actual down link and uplink throughput. The Beam network is designed to support the Beam service plans with a margin of error sufficient to overcome historically observed seasonal propagation changes, weather impact, and the propagation model's observed error margin.

### Defining Homes Passed and Wireless Risk

It is important to note that Wireless Networks differ from a traditional fiber or coaxial cable networks (a/k/a "Wireline Networks"). While comparably more costly to build, Wireline Networks rarely have "serviceability risk" with respect to targeted households – if they plan to build to a household, they can usually always get service to the household. By contrast, Wireless Networks are comparably less costly to build and have much faster speed to market, but they have a higher "serviceability risk" because computer simulations of radio frequency propagation can never be 100% accurate given foliage and other last mile variables. However, to minimize "serviceability risk" in our Beam Fixed Wireless Network, Shentel uses advanced engineering technologies (e.g., Light Detection and Ranging a/k/a LiDAR, InfoVista Planet Radio Frequency modelling platform, etc.), advanced and carrier-grade 4G LTE cell site equipment (e.g., massive and multi-user MIMO, antenna beam forming, carrier aggregation, etc.) and highly trained local engineers. Shentel has taken a conservative position in designating serviceable homes in this proposal. As an example, Shentel has conservatively assumed that only 85% of the wireless long drop homes will actually be serviceable. This 15% fallout assumption is already reflected in the projected passings.

## Fixed Wireless Small Cell Equipment (Nokia FW2QQF)

### Outdoor Multi Band TD LTE Small Cell

Specification	First Band Details	Second Band Details
TDD LTE Access	Band Class 48: UL: 3550 – 3700 MHz DL: 3550 – 3700 MHz	Band Class 48: UL: 3550 – 3700 MHz DL: 3550 – 3700 MHz
RF Output Power	100mW to 2W per Tx Path	100mW to 2W per Tx Path
Bandwidth Support	10, 15, 20 MHz	10, 15, 20 MHz
LTE Carriers	Up to 3 Carriers (60 MHz DL / 40 MHz UL) Max 2 carriers per RF Module	
Physical Size	Volume: ~12L / Mass: ~12 Kg 220 x 380 x 153 mm	
Optional	Optional dual-band integrated Nokia Wi-Fi access 2.4GHz / 5GHz 802.11b / g / n / ac	
Synchronization	RF GPS, 1588v2 (frequency, time, phase), SyncE	
Backhaul	4 Ports, combination of copper/fiber	
Antenna	Configuration: 2 Tx / 2 Rx per band Types: Remote (Customer Provided Antennas)	
Operating Temperature	-40°C to +55°C	
Input Power	90-264VAC	
3GPP Specification	TS36.104 Rev13 Medium Area	



**FW2QQF** LTE Only

**FW2QQWF** LTE + WiFi

### RAN Capacity & Performance

- The RAN equipment and CPE are both capable of 2-carrier aggregation in the downlink (40 MHz channel) and 2-carrier aggregation in the uplink (40 MHz channel). Carrier aggregation is both contiguous and non-contiguous.
- With carrier aggregation of 40 MHz of spectrum in the downlink and 40 MHz of spectrum in the uplink, the network is capable of more than 200 Mbps downlink and 40 Mbps uplink to a single user.
- Current latency is in the 30-50ms range and declining as 5G standards evolve.
- Shentel uses currently measurable performance (not theoretical performance) for capacity planning. This highly conservative approach helps ensure that network capacity will exceed demand.