

# Application to DHCD Submitted through CAMS

County of Bland

Bland County Wireless (Hollybrook Expansion)

---

**Application ID:** 39711222016093117  
**Application Status:** In Progress - DHCD  
**Program Name:** Virginia Telecommunications Initiative  
**Organization Name:** County of Bland  
**Organization Address:** 612 Main Street  
Bland, VA 24315-5350  
**Profile Manager Name:** Kristi Blevins  
**Profile Manager Phone:** (276) 688-4622  
**Profile Manager Email:** kblevins@bland.org

**Project Name:** Bland County Wireless (Hollybrook Expansion)  
**Project Contact Name:** Kristi Blevins  
**Project Contact Phone:** (276) 688-4622  
**Project Contact Email:** kblevins@bland.org  
**Project Location:** 612 Main Street, PO Box 510, Suite 201  
Bland, VA, VA 24315-5350  
**Project Service Area:** Bland County

**Total Requested Amount:** \$192,141.00  
**Required Annual Audit Status:** No Current Audits Found

# Application to DHCD Submitted through CAMS

County of Bland

Bland County Wireless (Hollybrook Expansion)

---

## Budget Information:

| Cost/Activity Category          | DHCD Request        | Other Funding      | Total               |
|---------------------------------|---------------------|--------------------|---------------------|
| <b>Telecommunications</b>       | <b>\$192,141.00</b> | <b>\$86,000.00</b> | <b>\$278,141.00</b> |
| Construction                    | \$192,141.00        | \$0.00             | \$192,141.00        |
| Construction Related Soft Costs | \$0.00              | \$86,000.00        | \$86,000.00         |
| <b>Total:</b>                   | <b>\$192,141.00</b> | <b>\$86,000.00</b> | <b>\$278,141.00</b> |

## Budget Narrative:

Financial assistance is requested for the purchase of the equipment associated with the Bland County Wireless (Hollybrook Expansion) Project. The County of Bland has partnered with WVVA.net to provide 25Mbps/3Mbps wireless broadband internet, with no data caps, to the Hollybrook Community. The Hollybrook community has 376 households and covers approximately 24 sq miles. It is a mountainous community with several ridges with no large population center. The County of Bland and WVVA.net will partner together in the labor costs associated with the construction of the system in Hollybrook. Since the community does not have access to any broadband at the 10Mbps speed, it is anticipated that more than 200 customers will join the system.

## Questions and Responses:

### 1. Project Area

A map and description of the proposed geographic area including specific boundaries of the project area e.g.; street names, local and regional boundaries, etc. Explain why and how the project area(s) was selected. Attach a copy of your Map(s)

#### Answer:

The area selected for this project is the Hollybrook community of Bland County. This project area has 376 households. This project area is not included in the Connect America Fund area. A detailed map of the area is included.

### 2. Describe population both in terms of absolute numbers within the project area and the likely users that will be served by the proposed project. Indicate the numbers of residential, businesses and community anchor institutions the proposed project will pass in the project area. Estimate the overall expected subscriber projections for the

# Application to DHCD Submitted through CAMS

County of Bland

Bland County Wireless (Hollybrook Expansion)

---

project and the basis for the projections.

**Answer:**

Bland County is a rural county located in southwest Virginia with a population of 6,850 (2010 Census). The county has a mountainous terrain, with 1/3 of the county (78,000 acres) being in the Jefferson National Forest. Interstate 77 splits the county as it runs north and south. A unique trivia point is that Bland County has the distinction of visitors entering and leaving the county via interstate tunnels through Big Walker and East River Mountains. Due to the rugged mountainous terrain, the county does not have access to natural gas or rail. Because of the small population and sparseness of its residents, extensive investment in the county has not been attractive for telecommunications companies. The interstate corridor is the primary location of infrastructure and amenities. Bland County citizens must travel outside of the county for many services and employment.

The project area is the Hollybrook Community. This community covers approximately 24 square miles and 376 households. The community includes the Hollybrook Fire Department, Hollybrook Community Center, a water bottling company, convenience store, and several cattle, dairy, and logging/saw mill operations. Tourists also extensively visit the area due to the Dismal Falls, access to the Appalachian Trail, the Jefferson National Forest, and a vast horseback riding trail system located in the National Forest.

The area does not have access to broadband internet. While not part of this project, the community also does not have access to cell phone service, thus the community has limited communication access. A map of the project area is included. It is anticipated that a minimum of 200 customers will utilize the system.

3. Has the locality where the proposed project area is located been designated to receive funding through Connect America? The applicant must provide supporting documentation proving the VATI project area is NOT to be served by Connect America Funding.

**Answer:**

The selected project area is not designated to receive funding through Connect America. A project area map is included which shows the overlay of the Connect America Funding areas.

4. Discuss the benefits to the community. For example, the applicant should discuss how broadband availability will help foster economic development and how the use of broadband applications is relevant to residents, businesses, telemedicine, teleworking/telecommuting, public schools, distance learning, e-commerce, e-government, public safety, tourism, entertainment, etc.

**Answer:**

Bland County is home to over 56 miles of the Appalachian Trail, approximately 78,000 acres of Jefferson National Forest, Dismal Falls, signature cycling trails, horseback riding trails, scenic bi-ways, fishing streams, golf, and other outdoor activities. However, due to the mountainous terrain and sparse population, limited investment in broadband has occurred. The county does have Interstate 77 bisecting the county, which provides tremendous

# Application to DHCD Submitted through CAMS

County of Bland

Bland County Wireless (Hollybrook Expansion)

---

access to visitors. However, thousands pass through the county daily, not knowing what the county has to offer.

As with many small communities, Bland County has experienced slow to no growth over the last 40 years. When the interstate came through in the early 1970s, Bland County had several small businesses, grocery stores, dealerships, and a vibrant local economy. Over time, those businesses began to close and eventually, the residents of the county found themselves having to leave the county to find employment, medical and educational services, entertainment, and full service grocery store.

Over the past six years, the county has been working to reverse this decline with focus on improving upon the broadband, water, sewer, and educational infrastructure. The challenge to fostering a stronger economy was that there was limited to no infrastructure to build upon and the tax base in Bland County is so small, that a 1% increase to the real estate levy generates approximately \$26,000. Therefore, the county began working on securing grant funding and partnerships to build infrastructure projects.

Because of the rural nature of the county and its limitations regarding access to services, improving broadband access is a major goal of the county. In 2013, the county went out to bid and a partnership was developed with WVVA.net to provide broadband services in the county. The county works with WVVA.net by providing access and sharing resources with the goal of improving access to broadband throughout the county. The baseline for speed has been set at 25 Mbps because access to broadband is important, but if the speed is not there, then there is little benefit to the user. It does not matter if the user is a small business or a resident, speed is vital. A student taking an online course or a patient participating in telemedicine cannot have a successful experience if the speed of their connection is not adequate.

In other infrastructure projects, the county recently completed a \$7 million wastewater project, is currently working on a \$2.4 million water project in the Bland community, and currently working on \$1.1 million greenway project in the Rocky Gap community. The revitalization in investment has already begun to pay off. Bland County can now state that it has a full service grocery store, which was completed in 2014.

## 5. Need

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 <10 Mbps/1 Mbps. Provide a list of the broadband service providers, if any, currently serving the area the applicant proposes to serve and the available broadband speeds.

**Answer:**

The Hollybrook community is currently underserved by the defined speeds of <10Mbps/1Mbps. The area has no cable infrastructure or wireless communications networks. The area is served by Verizon with landline phone

# Application to DHCD Submitted through CAMS

County of Bland

Bland County Wireless (Hollybrook Expansion)

---

service but broadband internet is not available. Residents and businesses in the Hollybrook community have no access to a broadband internet connection. A copy of a denial of service from Verizon is attached. This was obtained by using an address in the Hollybrook community along the main road, Wilderness Road/State Route 606.

## 6. Project Description

A statement whether the proposed project is targeting the “last mile,” “middle mile,” or “backbone” portion of the broadband infrastructure. This statement should also indicate whether the facilities involved would be owned, rented or leased.

### Answer:

The project consists of backhaul upgrades and last mile infrastructure into the Hollybrook community. The map enclosed titled Primary Backhaul with Hollybrook Expansion, shows how the main towers in Bland County connect to the WVVA.net network. The project includes the upgrade of the primary backhauls on the mountain towers of East River, Southgap, Dismal, and Big Walker. To improve redundancy of the system, two new backhauls will be created between Dismal / Big Walker and Big Walker / Morris Knob. The Hollybrook community will be served via the Crandon Tower. The backhauls from Big Walker Tower to the towers that serve Crandon Tower will be replaced as well. The improvement in backhauls will increase redundancy as well as capacity.

The Hollybrook community is also referred to as the "Wilderness" in terms of mapping and tower locations. State Rte. 606 that travels through the community is known as Wilderness Road.

The equipment on the towers in Bland County will remain the property of the County of Bland. No additional agreements on the existing towers are needed, since the project proposes upgrading existing equipment. Bland County will own the new 150' guyed tower as well. The county has met with the landowner and the landowner is willing to allow the county to install the tower. The county is currently working on a formal agreement with the landowners regarding the tower site.

A new 150' guyed tower will be placed on Prices Ridge in Hollybrook. From that tower, 16 microsites will be fed, and from there, straight to the customers. A microsite will be a 30' utility pole with solar arrays and radio equipment. A map of the Hollybrook expansion with microsites is included. The project derivation of costs breaks down the equipment needed for the site as well as costs. The tower on Prices Ridge as well as the microsites will be solar powered. Due to the remoteness of the community, running power to all the sites makes the project too expensive.

The equipment on the towers in Bland County will remain the property of the County of Bland. No additional agreements on the existing towers are needed, since the project proposes upgrading existing equipment. Bland County will own the new 150' guyed tower as well. The county has met with the landowner and the landowner is willing to allow the county to install the tower.

# Application to DHCD Submitted through CAMS

County of Bland

Bland County Wireless (Hollybrook Expansion)

---

7. A description of the broadband service to be provided, including estimated download and upload speeds, whether that speed is based on dedicated or shared bandwidth, and the technology that will be used. This description should be illustrated by a map or schematic diagram, as appropriate.
  - i. If the application proposes a wireless broadband service, provide a list of all broadband service providers that overlap the footprint of the proposed wireless broadband project. If known, provide an estimate of the customers within the proposed footprint that are served by competing broadband service providers.
  - ii. If the application proposed a wireless broadband service, provide a list of all facilities-based landline telecommunications providers that overlap the footprint of the proposed wireless broadband project. Describe the extent to which any facilities-based landline telecommunications providers are currently offering a digital subscriber line (DSL) or cable broadband service within the footprint of the proposed wireless broadband project.

**Answer:**

The project proposes the development of a wireless broadband service network in the Hollybrook community. The download and upload speeds offered wirelessly will be 25 Mbps download and 3 Mbps upload. Higher speeds will be available depending upon customer needs. The fiber option was looked at during the planning process, however, the cost was too expensive. With nearly 30 miles of road in that area, the project would quickly exceed \$1 million dollars and would make the project undoable. Using wireless, the project is feasible and gets the price per connection to approximately \$1,390.

There are currently no wireless service providers or cable broadband service in the Hollybrook community. Verizon provides landline phone service to the area but does not provide broadband internet.

8. 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. Also describe specific advantages of using this technology.

**Answer:**

The system is fed by two points of presence. The two locations are fiber optic services from two different providers and located in separate geographic locations. This enables full redundancy of the internal network from outside network issues beyond our control. The fiber at each location provides 1Gbps symmetrical service to the network and has the ability to be upgraded to 10Gbps.

Each POP is connected to the network via PTP licensed and non-licensed equipment and designed in a ring to give even further redundancy. These links currently connect to the Southgap Tower located in northern Bland County. There are 3 "hops" or microwave links on one side of the ring and 4 on the other side of the ring to the Southgap

# Application to DHCD Submitted through CAMS

County of Bland

Bland County Wireless (Hollybrook Expansion)

---

tower. Latency is well below 20ms and all links up to SouthGap are currently capable of between 500Mbps - 1Gbps speeds. From the Southgap tower inward the County network currently only has capacity of around 75Mbps. To be able to handle the increased capacity needs of this project those links will need to be upgraded. The new links are capable of an aggregate of 1.5Gbps. The current and planned equipment used for these backhauls are sourced from both Mimosas Networks and Ubiquiti Networks. Routing is handled by Mikrotik Cloudcore routers. Each tower location on the ring is DC powered and has battery banks and generators to provide near 100% uptimes for the network. An additional two links are being built to provide a Bland County ring. This will insure uptimes and additional future capacity for the network.

From Southgap inward, 5 links are required to get service into the project area. Four of these already exist but need upgraded and one is new. The new link will connect to a newly built tower. This tower will serve as the hub of the project network and provide service to several customers directly as well as provide 5 "legs" to additional microsite locations. Each leg is capable of 500Mbps speeds.

Customer radios are a mixture of Fixed LTE 3.65 and Fixed 5.8 radios. LTE technology is used on the hub tower to provide 100Mbps speeds. LTE was chosen for this site to provide further tree penetration and enhance the coverage. The 16 microsite locations will utilize Mimosas 5.8ghz technology. These radios max at approximately 500Mbps to the customer but require a more line of site and close range condition to achieve those speeds. Overall the project will provide initial offerings up to 100Mbps to the customer with the ability to extend those plans to beyond 100Mbps in the future.

Fixed wireless was chosen over other technologies for two main reasons. The first is cost. Being rural, fiber to the premise or any wireline connectivity would be extremely expensive. There's approximately 30 miles of road coverage in the area and FTTP costs would exceed \$600,000 (not including backhauls). The area also has no dated cable and phone lines, leaving the only alternative for broadband to be fixed wireless. The second is performance. Fixed wireless technologies have significantly improved in performance over the past few years and will continue in the years to come, to offer fiber like speeds to the home for a fraction of the cost.

## 9. Project Timeline

# Application to DHCD Submitted through CAMS

County of Bland

Bland County Wireless (Hollybrook Expansion)

---

What is the current state of project development (i.e. planning, preliminary engineering, final design, etc.). Prepare a detailed project timeline or construction schedule, which identifies specific tasks, staff, contractor responsible(s), collection of data, etc., and estimated start and completion dates. The timeline should include all activities being completed by June 20, 2017

**Answer:**

This project is ready to move to construction and deployment. Attached is a timetable identifying the stages of the project. County staff will assist WVVA.net in hosting community meetings regarding connectivity and the project throughout the spring of 2017. The project will be completed and operational by June 20, 2017.

The project has four main segments: Upgrading backhauls to provide capacity and reliability to the Hollybrook community, construction of a 150' guyed tower, construction of 16 microsites and installation of client equipment.

Upon notice of award, the County will collaborate with WVVA.net to install backhaul upgrades. All backhauls should be upgraded by April 2017.

Construction of the Prices Ridge Tower will begin in February/March depending on the winter weather. County staff will work with WVVA.net staff as needed to assist in the construction of the Prices Ridge Tower. The tower should be completed by May 2017.

Microsites will also begin construction in February/March 2017 and will be completed by May 2017.

Client equipment installations will begin in May/June 2017 with the system becoming operational.

County staff will assist WVVA.net in hosting community meetings regarding connectivity and the project throughout the spring of 2017.

**10. Project Budget**

Applicants shall provide a detailed budget as to how the grant funds will be utilized, including an itemization of equipment and construction costs and a justification of proposed expenses.

**Answer:**

Attached is the derivation of costs for the project. The derivation is detailed with costs associated with equipment as well as labor. Financial assistance is requested for the purchase of equipment associated with this project. The County of Bland and WVVA.net will provide the labor and any soft costs.

# Application to DHCD Submitted through CAMS

County of Bland

Bland County Wireless (Hollybrook Expansion)

---

11. A summary showing the revenue source, including estimated VATI grant funds and matching funds, for each expenditure itemized above.

**Answer:**

See Attachment.

12. Matching funds: A description of the matching funds the applicant and co-applicant will invest in the proposed project, (VATI funding cannot exceed 80% of total project cost)

- i. For each element of matching funds in the description, indicate the type of match (cash, salary expense, or in-kind contribution).
- ii. Identify whether the applicant or co-applicant is responsible for providing each element of the proposed matching funds.

**Answer:**

The total project cost is \$278,141. The County of Bland is requesting a grant in the amount of \$192,141. \$86,000 will be the match. Thus, VATI funding is requested at 69% of the project cost.

VATI funds will be used to purchase equipment associated with the project. WVVA.net will provide the labor and technical expertise regarding the installation of the tower backhauls, electronic equipment, microsites, Prices Ridge tower site, and installation of client equipment. WVVA.net will provide all technical assistance and customer service to clients. The County of Bland will provide labor and assistance with the construction of Price Ridge tower and any site work that is needed with that tower site. The county will also include all tower and tower equipment that is part of this project under the county's property insurance. WVVA.net will operate and maintain the system in collaboration with the County of Bland.

13. Applicant and Co-Applicant: A description of the public-private partnership involved in the project.

- i. If the partnership is formalized in a written agreement provide a copy of that agreement.
- ii. If the partnership has not been formalized, provide a short description of the project management role, financial commitment, or other contribution to the project for the applicant and co-applicant and any additional partners.

**Answer:**

The partnership has been formalized in a written agreement and a copy has been attached.

14. Identify key individuals, including name and title, who will be responsible for the management of the project. Describe their role and responsibilities for the project. Present this information in table format.

# Application to DHCD Submitted through CAMS

County of Bland

Bland County Wireless (Hollybrook Expansion)

---

## Answer:

- Project Lead: Eric Workman, Ed.D., County Administrator, Bland County, will oversee the implementation and deployment of the project to include serving as the financial officer.
- Project Grant Coordinator: Kristi Blevins, Project Coordinator, Bland County, will compile project documentation and compose any needed reporting.
- Internet Service Provider: Michael Clemons, President, WVVA.net/Gigabeam Networks, will coordinate with the project lead in the construction of the network and deployment of broadband services.

15. A description of applicant and co-applicant's history or experience with managing grants and constructing broadband communications facilities in the Commonwealth of Virginia and elsewhere.

## Answer:

The County of Bland and its administrative staff are familiar with the management grants and construction projects. The County of Bland has managed a variety of projects including a \$7 million dollar wastewater project and a \$2.4 million dollar water project in the Bland community, a \$1.1 million dollar greenway project in the Rocky Gap community. The county staff is familiar with constructing broadband communications projects, having managed a Community Connect Project in the Mechanicsburg area of the county in 2010.

## 16. Service

Describe the Internet service offerings to be provided after completion of this project and your price structure for

# Application to DHCD Submitted through CAMS

County of Bland

Bland County Wireless (Hollybrook Expansion)

---

these services. The service offerings should include all relevant tiers.

**Answer:**

The same price structure will be offered to the Hollybrook community as with all customers of WVVA.net:

| Download   | Upload | Data Cap | Monthly Fee |
|--|--------|----------|-------------|
| 10 Mbps  | 1 Mbps | None     | \$39.00     |
| 25 Mbps  | 3 Mbps | None     | \$59.00     |
| We anticipate to be also able to offer the 50 Mbps package currently offered by WVVA.net |        |          |             |
| 50 Mbps  | 5 Mbps | None     | \$79.00     |

17. Any other equitable factor that the applicant desires to include.

**Answer:**

This project is ready to go to construction. The County of Bland and WVVA.net are ready to proceed as soon as we are given notice. The Hollybrook community is excited about the possibility to obtain broadband service and we anticipate this being an excellent project for the businesses and the residents of the area. The project is simple and direct. We plan to upgrade and install the equipment needed. Upon the completion of this project, we hope to be able to demonstrate that broadband projects can be implemented in rural communities with public-private partnerships at an affordable price with very fast speeds and good customer service.

**Attachments:**

Derivation of Costs

BlandCountyWirelessHollybrookExpansionDerivationCost12201612212016120732.pdf

Project Management Plan

BlandCountyWirelessManagementPlanHollybrook12201612212016120741.pdf

# Application to DHCD Submitted through CAMS

County of Bland

Bland County Wireless (Hollybrook Expansion)

---

Supporting Documentation of Cost Estimates

BlandCountyWirelessHollybrookExpansionCostEstimates12212016122918.pdf

Map(s) of project area, including proposed infrastructure

BlandCountyWirelessHollybrookExpansionBackhaulandCommunityMap11221201645753.pdf

Map(s) of schematic of existing broadband providers (inventory of existing assets)

StatementofHollybrookBroadbandProviders1221201613625.pdf

Documentation of relationship between applicant and co-applicant (formal or informal)

BlandCountyWirelessAgreementExtensionWVVAnet661612212016123054.pdf

Audited Financial Statement/Reviewed Financial Statement of Balance Sheet

BlandCountyFinancialReport630151221201615136.pdf

Two most recent Form 477 submitted to FCC

WVVAnetform477BlandCounty1212201612657.pdf

Documentation for in-kind contribution, including value(s)

BlandCountyWirelessHollybrookExpansionInkindcertification121920161221201610951.pdf

Documentation of source of match funding

BlandCountyWirelessHollybrookExpansionWVVAAgreementInKind1261612212016123321.pdf

Documentation that proposed project area is unserved based on VATI criteria

verizonnoserviceBlandCountyWirelessHollybrookExpansion1221201610508.jpg

# Application to DHCD Submitted through CAMS

County of Bland

Bland County Wireless (Hollybrook Expansion)

---

Documentation that the proposed project area is not designated for Connect American Funding (CAF) or does not have other state or federal resources for construction

CAFIIAcceptedFundingAreasincludingWildernessProject12212016125927.pdf

(Optional) || Map of Project Coverage Area

BlandCountyWirelessHollybrookExpansionCoverageArea12212016124730.jpg

(Optional) || Question 11 - Revenue Source

RevenueSource1221201650851.pdf