

Albemarle Broadband Authority (ABBA) Operating Impact

Project Highlights:

Historically in Albemarle County Broadband Expansion has occurred based on seven high level options:

1. Funded completely by the private sector
2. Funded in part by Federal Funds
3. Funded in part by State Funds
4. Any combination of the above including access to government property (primarily public safety)
5. Funded by Local, State, or Federal Government (primarily public safety; also, School LTE project fits here)
6. Funded by citizen expense for a direct connection
7. Funded in part by a cost share between the private sector, business, and citizen groups.

The Albemarle Broadband Authority (ABBA) is requesting \$200,000 in one time funds to support options five and seven. The funds may be used to increase public safety access in the highest need area of the County through the construction of a multi-use telecommunications tower and the deployment of private sector owned fiber to the tower to provide internet back haul. In addition, after ABBA review and approval, and after BOS approval; ABBA intends to use these funds to offset the citizen and business costs involved in option seven. ABBA has heard from internet service providers and citizens that a cost share model can work and ABBA believes availability of funding through ABBA will be an effective way to increase the number of cost share deployments. More than anything else, availability of funds is an indicator that ABBA function best in support of the BOS strategic plan.

Funding Request Status:	New
Project Type:	Acquisition – Equipment and Services
Request Origin:	Albemarle Broadband Authority
PMD Assistance:	No
Fiscal Agent:	County
Budget Code:	New, Dept. TBD

Project Descriptions:

PROJECT 1: TOWER SITE

There are several potential tower sites in southern Albemarle which if deployed would provide a significant boost in public safety. If this option is reviewed and selected for pursuit; the ABBA Board of Directors will provide a strategic plan to include potential sites (including government owned sites used as a “ground lease” similar to the arrangement at Albemarle High School); details on ownership and fiscal responsibilities; a review of the permitting process; and examples of potential lease arrangements and partnerships.

In unserved and underserved areas of the County where there are no County or public safety towers, new towers could be erected and offered to wireless service providers. Increased coordination among public safety uses, broadband use, and the planned expansion of towers on County school property (e.g. Yancey Elementary School) could also reap benefits, with fewer towers providing better services for public safety, K12 broadband use, and general residential and business use. In addition, many of the existing public safety/first responder “dead zones” could be eliminated while simultaneously expanding rural broadband access.

Any placement of new towers should be preceded by a careful viewshed analysis (how much area/users are likely to be able to receive service). Site acquisition and site preparation costs can affect the overall cost of such a project. Existing County properties (e.g. fire/rescue stations, County parks, schools, etc.) may be candidates for towers. Tower space

leased to wireless service providers (WISPs) can generate a small revenue stream, but the high cost of acquiring new wireless customers and the relatively low profit margins in the wireless business will require only modest fees at best. The payback for the initial cost of a new tower could be fifteen years or more.

OWNERSHIP AND GOVERNANCE

New County or Authority owned towers would not require extensive day to day management. If generators are placed at tower sites (recommended), inexpensive monthly or quarterly generator maintenance is required. ABBA intends to use one time funds to offset the initial costs of the build and doesn't intend to maintain or operate the site. This activity would be contingent on one of the service providers who locate equipment on the site.

TOWER PLACEMENT (figure 1 – one example of placement suggestions from the 2016 Broadband Strategies Plan)

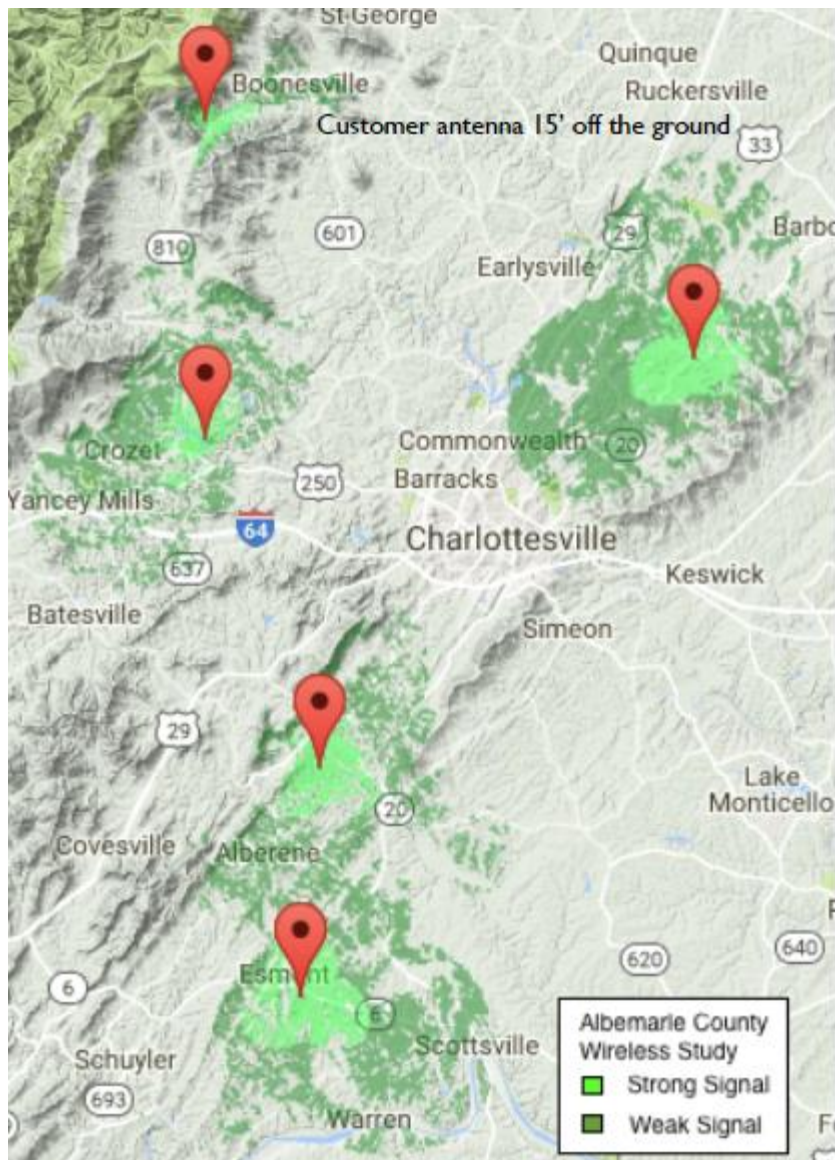


Figure 1 depicts the potential coverage areas for 180 foot towers in the rural parts of the county. These sites could be used for mobile wireless (public safety access, cellular service) and or fixed wireless services. The map shown above depicts fixed wireless service coverage for the customer receiving antenna located 15 feet off the ground. ABBA would either new to partner with or contract with a mobile wireless provider (e.g. AT&T) to produce a similar map for mobile wireless coverage.

TOWER COSTS (figure 2 from the 2016 Broadband Strategies Plan)

NEW TOWER COST TABLE

1	ITEM/PROJECT	UNITS	UNIT COST	TOTAL
2	Small Telecom Cabinet	1	\$3,000.00	\$3,000
3	10kW Liquid Propane Generator	1	\$6,000.00	\$6,000
4	Cabinet Foundation and Installation	1	\$800.00	\$800
5	New Power Service / Installation	1	\$1,250.00	\$1,250
6	180' Self Supporting Tower Construction Materials	1	\$22,000.00	\$22,000
7	Spare Fuses	1	\$20.00	\$20
8	Power System Installation Materials	1	\$40.00	\$40
9	Samlex 1000W Inverter	1	\$450.00	\$450
10	Samlex SEC1230-UL Battery Charger	1	\$300.00	\$300
11	100ah 12v Non Spillable Backup Battery	1	\$350.00	\$350
12	DC Voltage Monitoring Device	1	\$60.00	\$60
13	Unmanaged Rack Mount PDU (60)	1	\$45.00	\$45
14	Tower Site Land Clearing and Site Development	1	\$12,500.00	\$12,500
15	180' Self Supporting Lattice Tower Construction Labor	1	\$26,000.00	\$26,000
16	Cabinet Installation Labor	1	\$1,000.00	\$1,000
17	Power System Installation Labor	1	\$500.00	\$500
18	Generator Installation Labor	1	\$1,700.00	\$1,700
19	FCC License Coordination	1	\$1,500.00	\$1,500
20	Construction Total:			\$77,515
21	Project Management, Network Engineering, Testing			\$23,260
22	Site Engineering, Surveying, viewshed analysis Etc.			\$9,500
23	Misc Fees, Technical Services			\$7,500
24	Bookkeeping and Administration			\$5,000
25	Contingency			\$12,280
26	TOTAL:			\$135,055
27	<p>Notes/Assumptions:</p> <p>Site work - Land acquisition and leases are not included in tower estimate. Site preparation is estimated and assumes a typical site with some small vegetation and work needed. If a site will require more extensive land clearing or road improvement work it should be estimated on a site by site basis.</p> <p>Generator - a small liquid propane generator is included in the estimate for this tower. The estimate does not include a tank and tank install because in our experience this cost is typically covered by the local gas company as long as there is a service contract.</p> <p>Cellular Carriers and Upgrades - Towers at this size must be specifically engineered for their location and equipment load. The pricing shown above is estimated at a size which will support WVSP and Public Safety equipment. Designing to accommodate cellular providers should be expected to increase the cost by \$75,000 to \$150,000.</p>			

New towers have a range of configurations and cost options. If located on existing County property, the time needed to plan for construction can be shortened. If site acquisition or a site lease (of private property) is required, purchase or lease negotiations can add several months to the process.

The intent is for the Albemarle Broadband Authority to share in the costs of construction of the selected tower site; rather than fund the entire project.

PROJECT 2: COST SHARING STRATEGY

The Albemarle Broadband Authority is also requesting funds to support a 3 way cost sharing strategy. Mirroring a program in use in Seattle, Washington; ABBA intends to coordinate a program where interested citizens and small business can apply together for ABBA funds to help offset the costs of expanded internet service.

ABBA considers this a creative local funding option to Create Public | Private | Partnerships | with Citizens (P3C); while ABBA has work to do to finalize the P3C process – having the funding available guarantees that completing the work will be a high priority. ABBA is working on the following aspects of the P3C:

- a. Develop P3C Scoring Matrix
- b. Public Input on P3C Projects Process Development
- c. P3C Funding Request; this document
- d. Finalize Fiduciary Arrangements.

Broadband project ranking and equitable distribution of funds to qualifying P3C projects is a goal of the Albemarle Broadband Authority.

What determines a qualifying P3C project?

- # of locations to be served
- # of those locations licensed as a business
- # of those locations with at risk or low-income seniors
- # of those locations with at risk or low-income students not being served by some other broadband program
- Cost proposed for at risk and low-income subscribers
- Positive impact on public safety (e.g. reduction in public safety “dead-zones”)

ABBA understands the verification of the #'s above require receipt of confidential survey data and requisite secure handling of such.

ABBA will develop the P3C project ranking plan, ensure secure data handling, fine tune the project ranking matrix, develop a proposed funding model, and after the BOS approves the work - decide how to propose identification of projects. In this process ABBA intends to answer the following questions:

1. Do the ISPs determine the P3C projects; or does ABBA?
2. How much P3C funding should be made available?
3. What are the funding sources? – Presently one-time funds from FY17 positive year end variance
4. Does the Broadband Authority collect citizen data or do the ISPs?
5. How does ABBA working alongside Public Safety and Public Schools determine the positive impact on both entities?

Given we have multiple providers interested in working in the County; ABBA will complete the following:

1. Find Eligible Projects
2. Collect Coverage Maps
3. Inventory Verizon Landline Phone Customers
4. Provide Citizen Engagement for Broadband P3C Programs
5. Define a Scoring Matrix for Submitted Projects
6. Determine Funding Options
7. Have a backup plan using Local Funds
8. Field Test One or More Projects

Project Justifications

Both projects are justified since we know that both public safety and several rural areas of the County are underserved by what is considered an essential utility. It cannot be understated the need for improved wireless access in the southern parts of Albemarle County. Citizens and First Responders are in harm's way without access to a reliable cell signal on many of our rural roads.

Project Schedules

- Timeframe: January 2018 – January 2019
- Phasing: See above for descriptions

Project Revenues

The sources of funding for this project request are one time funds from the FY 17 positive year-end variance.

Operating Impacts

The operating impacts are to be determined. The funds may be managed by the Albemarle Broadband Authority Board of Directors; through the elected Treasurer, Rick Randolph with staff assistance from Andy Herrick, Mike Culp, and Bill Fritz. Or the funds may be managed by the County acting as Fiscal Agent for ABBA.

Requestor: Albemarle Broadband Authority (ABBA)

Contact: Mike Culp, x5891

Form Updated: Initials: MJC

Date: 10/29/2017