I. Statement of Need

Albemarle County is committed to ensuring community sustainability and competitiveness in the global marketplace via comprehensive planning for broadband deployment. Achieving this goal can only be accomplished by developing a telecommunications plan that supports existing and future economic, educational and cultural assets. The plan will act as a guide for directing future investments in developing the stages of broadband infrastructure in the County.

Current Broadband Availability and Usage: Clarifying broadband availability and usage will be a focus of the telecommunications plan that will be developed. Mapping provided by the Center for Innovative Technology (CIT) and citizen input are providing us with a reasonable representation of the current broadband status. CIT is a statewide nonprofit responsible for, among others, advocating and developing a statewide Broadband strategy. CIT's Broadband Advisory Council includes Virginia legislators, citizen members, the Secretary of Technology, and the Secretary of Commerce and Trade. In October of 2013 a group was convened to hold a discussion among County employees (general government and schools), citizens and private telecommunication providers. The objective was to brainstorm how reliable, high-speed broadband services could be extended to underserved parts of the County. As a result of this roundtable, a Broadband Task Force was established in late 2013. Committees met and public meetings where held to address ease of provider access, identification of demand, and options for meeting capital costs. As part of the committee work, a survey was conducted with the assistance of the Center for Innovative Technology (CIT). Staff from the CIT participated in the roundtable and subsequent Task Force, lending their expertise to the process. A full Task Force report presented to the Board in August of 2014 resulted in the decision to pursue development of a county-wide telecommunications plan. A CDBG Telecommunications Plan application has also been submitted, focused on rural broadband for agri-business.

A predominately online survey conducted by the Task Force returned 1,781 responses from 37,549 households and collected information about household and business Internet use. Of those returned, 513 were from rural areas. From this small sample size, we learned most households in the rural areas connect to the Internet using DSL enabled phone lines (maximum 1.5 Mbps), land or satellite wireless connection and dial-up telephone lines, with only wireless possibly approaching speeds meeting the 25 Mbps upload definition of broadband, as defined by the FCC in January of 2015.

From the preliminary information it does appear that while households and businesses have Internet connections, broadband is not readily available, if at all. Several sets of responses show that businesses and employees are using the Internet. 66% of respondents used the Internet to telework and 50% are using the Internet from home to complete education or for job training. 23% of respondents have a home-based business. Of the 23% of respondents that own a business, 92% use the Internet to support the business. 23% of the business owners have hired new staff within the past 12 months and employers reported between 5% to 100% of new jobs were directly attributable to use of the Internet in their business. Business used the Internet for sales (21%), customer support (24%), marketing (25%) and research (30%). 10% to 100% of sales were through online transactions.

A more detailed assessment will be conducted as part of the development of the telecommunications plan. However, businesses are already seeing increased productivity and job creation associated with the diverse use of the Internet. Businesses are telling the Board of Supervisors that broadband will bring them even greater benefits. Citizens are also making their voices known, expressing desire for broadband services.

The comprehensive telecommunications plan resulting from this effort will offer direction to the Board of Supervisors in meeting the needs for business as well as public safety, educational and cultural needs of citizens.

Current Providers: CIT has provided a list of providers, the technology used for broadband, and the speeds offered. There are 10 companies providing service listed by type of technology: 3 Fixed Wireless, 2 Fiber, 3 DSL, 1 Cable, and 1 Copper. The speeds range from 1.5Mbps to greater than 1Gbps. All providers quoted prices based on the address of the premises, presumably since different types of service and speeds have different costs based on availability. A chart listing download and upload speeds is included in Attachment A. The telecommunications plan will offer insight in to how best to compare costs of these services.

Maps made available from the state are thought to be overstated. Several methods have been used to assess citizen experiences with access to broadband and slower Internet speeds. The following map is provided by CIT based on the data provided. The orange dots represent confirmed "dead spots" or no service; areas in gray also have no cable or DSL service and instead rely on wireless or satellite services with data caps and limited availability. We continue to gather data from citizens through input and speed tests to create a more accurate picture of broadband availability. We will rely on the development of the telecommunications plan to locate in-ground and aerial assets in order to craft the plan on current data.

Albemarle County
Dead Zones, Cable Wireline and DSL Wireline Coverage

Staunton

Waynesboro

Charlottesville
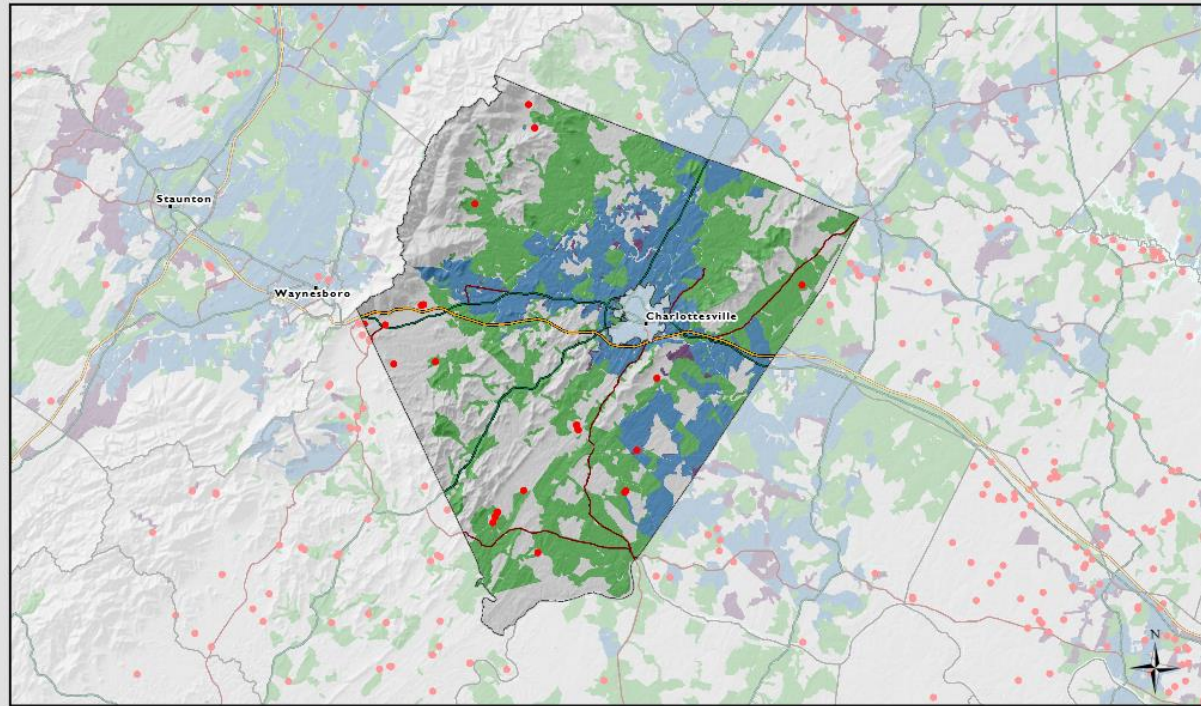
Total population of Albemarle County as of 2010: **98,970**

■	**Cable Wireline**	
■	**DSL Wireline**	
■	**Both**	
●	**Dead Zone**	

Coordinate System: NAD 1983 HARN Virginia Lambert
Data Sources: USGS, CIT, VGIN, VITA, US Census Bureau
Data Current as of October 2014

1:495,830

0   18 Miles

Cable Wireline Providers Maximum Advertised Speeds
Download: Varies by locality, 3Mbps - 1Gbps
Upload: Varies by locality, 200 Kbps - 25 Mbps
DSL Wireline Providers Maximum Advertised Speeds
Download: Varies by locality, 768 Kbps - 50 Mbps
Upload: Varies by locality, 200 Kbps - 25 Mbps

Virginia Broadband Map... http://gismaps.vita.virginia.gov/broadband
Virginia Office of Telework Promotion and Broadband Assistance... http://www.wired.virginia.gov/
CGIT Broadband Planning and Analysis Toolbox.................... http://www.cgit.vt.edu/broadband/

*Data may not be complete or comprehensive

Community Development Applications:

Business and Industry: Market studies have guided Albemarle to focus on four core industry clusters - Bioscience and Medical Devices/Health Services; Business and Financial Services; Information Technology and Defense Security; and Agribusiness and Food Processing. Attributes that attract these industries to Albemarle include good broadband service, quality of workforce, quality of life and in some cases, proximity to Washington, DC.

The Bioscience and Medical Devices/Health Services industry group is primarily driven by start-ups and commercialization opportunities emerging from research activities at the University of Virginia. Direct and indirect patient care activities including advances in telemedicine are centric to the University of Virginia Health Systems and the Sentara Martha Jefferson Hospital. Quality broadband is fundamental to ensuring these economic assets remain and flourish in Albemarle.

Business and Financial Services are keeping pace with rapid increases in the use of electronic payments including use of mobile technologies, return of foreign outsourced services to the US and compliance with regulatory provisions associated with healthcare and pension plans. Small-sized enterprises continue to thrive while larger scale data hosting structures, commonly known as "data centers" face challenges in meeting ready access to trunk line broadband capacity, along with source water to cool stacked computers and dual-power to protect from losses of power.

Information Technology and Defense Security industries can build upon two large federal defense and intelligence installations located in Albemarle along with more than 10 federal contractors. In addition, long time employers like GE and Northrop Grumman are well positioned to expand and recruit select sectors for the industry group. Strong future markets are expected due to product developments like battery back-up systems, open-road intelligent transportation systems and mobile medical monitors. Growth is expected in the semiconductors market for consumer electronics, use of electronics in the transportation industry and increased downstream demand for sophisticated measuring and monitoring systems from the energy, military, health and biotechnology sectors. Locations to accommodate these enterprises need highway access for truck deliveries, broadband for secure communications, and water and sewer, along with adequate building footprint.

Agribusiness and Food Processing and Related Technology rely on close proximity between agricultural production and the local and regional markets such as Richmond, DC Metro, Norfolk and Raleigh-Durham. The cluster includes wineries, breweries, perishable prepared food manufacturing, growers, and value-added foods. Also included are the supporting industries such as the local food aggregators such as Relay Foods, Horse & Buggy and the Local Food Hub; sellers of local foods to local and regional food markets from multiple local producers. Access to broadband provides rural businesses with the competitive edge necessary to compete with the urban ring businesses that typically rely heavily on broadband for selling, purchasing, regulatory compliance and general operating. Some contend that broadband is fundamental to the preservation of America's rural farms as it provides a mechanism to not only compete locally but globally. Without successful market penetration, farms who fail subdivide and sell.

Libraries, Hospitals, Schools, Public Safety: There are 8 libraries in the region, with 4 located in Albemarle. All but one are served with fiber to the premises but at this time only 2 reach the speeds considered broadband by today's definition; one in Nelson County and the other Central in Charlottesville. Hospital systems will be explored as part of the telecommunications plan development. Albemarle County Public Schools (26) are served by 1Gbps fiber to all public schools. Access from students' homes requires further study as does access available to the 15 private schools in the County. The Public Safety system is shared with Albemarle, Charlottesville and the University of Virginia emergency services. The system is described in detail in Attachment A. The telecommunications plan will assess the capacity and the feasibility of the potential for shared use of these systems.

Design, Regional and Demand Aggregation: The first step in strategic broadband planning is to identify the County's broadband goals and define the role the County wants to hold in any broadband initiative. The Board of Supervisors is currently undertaking a more formal discussion on setting these priorities with the expectation that they are subject to modification once the telecommunications plan is completed. The Albemarle Comprehensive Plan was modified in January 2015 to include a strategy that reflects the County's desire to have Internet service speeds appropriate for educational, business, and residential purposes in all parts of the County. The strategy includes language to consider additional or modified strategy amendments following the completion of the telecommunication plan. The next update of the Albemarle Comprehensive Plan with this language included is expected to be approved during the summer of 2015.

The Board of Supervisors plans on evaluating how best to expand access for all citizens, and create an environment that stimulates economic development, one which presents an attractive environment for businesses and entrepreneurs. Having a prioritized list of goals will aid in working more efficiently towards developing a plan that can guide the County in leading expansions based on their understanding of the needs

and potentially build infrastructure to facilitate those expansions. Alternatively, the County may not want to directly invest in infrastructure construction and leave all expansions to the private sector and instead facilitate these through information sharing. Or, the County may want to take a more active role and form public-private partnership(s) with private provider(s) and prioritize areas for expansion and share assets. Clarification on these options will offer guidance to the consultant procured to develop a telecommunications plan that details the best deployment pattern and use of technology types as well as choices for operating a system. The County plans on procuring a consultant experienced in developing telecommunication plans and also expects to continue to be assisted by Thomas Jefferson Planning District Commission (TJPDC) in plan development.

Completing the telecommunications plan for Albemarle County will contribute to what has become a regional effort to deploy broadband, facilitated by the Thomas Jefferson Planning District Commission (TJPDC). Nelson County and Louisa County have completed plans and are pursuing broadband deployment through Broadband Authorities. Greene County and Fluvanna County are also moving in the direction of planning for broadband deployment. Each of the regions has conducted a Target Market Study under the auspices of Central Virginia Partnership for Economic Development, therefore are in a position to make a similar analysis of broadband market demand that has been provided herein. Once completed, we expect the plan to recommend optimal deployment in the County and detail how best to interconnect with other broadband deployments that will ensure a robust, redundant broadband system. The region is working toward developing broadband deployment that is based on demand aggregation from all sectors.

II. Prior Experience with Telecommunication Planning

Funds are requested to procure a consultant to produce Albemarle County's first telecommunications plan. The resulting plan will outline or define broadband deployment that directs construction of new systems and that utilizes existing infrastructure where feasible. Beginning in the fall of 2013, the Albemarle Broadband Task Force represents the ongoing work toward planning for broadband deployment. That effort includes representatives from government, the TJPDC, public schools, citizens, public safety, Internet service providers, businesses, and other interested parties. The **Task Force Report is included with this submission**. Also maintained is the County's website for broadband: http://www.albemarle.org/broadband

III. Collaboration and Community Support

A broadband community meeting was held on the evening of May 19, 2015. As part of our outreach for this community meeting, a Press Release was issued on Wednesday, May 6th to a list of over 45 local media personalities. As a result of that release, Albemarle County Board of Supervisors Chair Jane Dittmar and IT Director Michael Culp were invited to be part of a local news talk radio program on Tuesday, May 19th at 9:15 am to discuss the purpose of the event and to encourage community participation.

Additionally we utilized our e-newsletter service and social media outlets including Facebook and Twitter to attempt to reach a broader audience. A newsletter was sent to a list of approximately 2700 recipients on Wednesday, May 6th and a reminder was sent to the same list on Friday, May 15th. Both email blasts were accompanied by posts on Facebook and Twitter, and two additional posts were made on Facebook and Twitter on May 19th. All told, our efforts on Facebook reached nearly 700 people with Twitter reaching nearly 1000 people. The event was also advertised in the local newspaper.

The turn-out for the meeting was good. A head-count of participants totaled 42, which included elected officials (2), government staff (4), Internet Service Providers (6 - from Verizon Wireless, CenturyLink, and Ting/Blue Ridge Internet) and the media (TV and print). Most were from the southern areas of the County but some were from the other three areas (N, W, and E). Of the 30 citizens who signed-in as attending, 21 offered written comments on the Internet service they use. 10 use DSL characterized as very slow to nonexistent and expensive; 3 use mobile phone access; 5 report slow, expensive, and unreliable service but do not identify the provider; 1 identifies only expensive satellite service available from one of 3 vendors; 1 "piggy-backs" on a neighbor's service; and 1 relies on dial-up service. During the comment period, participants were engaged with questions, expressing their experiences and the need for broadband in their homes and businesses. New issues arose from the discussion. One person shared he has several rental properties that remain vacant because prospective tenants want broadband so they go elsewhere since it is not available. Some reported having trouble selling properties or walking away from purchases because of lack of broadband. One person objected to "phased-in broadband" if it meant her children would be out of school before broadband is deployed and another lamented schools requiring Internet access for homework when all areas do not have Internet, at any speed. In addition to the "sparkplugs" already serving, two new citizens expressed interest in joining the Management Team. **Advertisement, sign-in sheets, power-point presentation and minutes, for the meeting are attached.**

IV. Stakeholders

A Management Team (MT) has been formed, including stakeholders representing a cross section of all potential broadband users and beneficiaries. All but representatives from workforce development, service sector (banking or insurance) and professional (legal, engineering or accounting) and the two citizen members expressing interest in joining have committed to serve on the Management Team (MT). The MT also includes an Industry Sub-Committee of ISPs and Phone representatives. Many of the MT members have been active in the Broadband Task Force. We expect to meet monthly and actively interact with the procured consultant to develop the telecommunications plan. **A roster is attached**.

Closing

Albemarle County looks forward to a positive review of our letter of interest and the 4 related attachments below and if invited plans to attend the Kick off/How to Apply Session in the coming months. Thank you for the opportunity; and please don't hesitate to contact me if there are questions or points of clarification.

Sincerely,

Michael J. Culp

Mike Culp
Director, Information Technology
Albemarle County
401 Mcintire Road
Charlottesville, Virginia 22902
mculp@albemarle.org
(434) 296-5891

List of Attachments: Attachment A – Details Addressing the areas outlined in the Invitation to submit a Letter of Interest as well as from Invitation Appendix; Attachment B - Management Team Roster; Attachment C – Various Information from the May 22 Broadband Community Meeting; Attachment D – August 2014 Broadband Task Force Report

Attachment A - Albemarle County VATPI LOI Details Supporting Response

1) **Economic characteristics:**

   Albemarle County per capita income is slightly higher than the state average and the poverty level is slightly lower. The number of persons 65 and over residing in Albemarle is slightly than the state average, attributable to the area being highly rated as a favorable retirement destination.

   a) **Income, age, population characteristics, households, ethnicity, employment, education,**

Income	Albemarle	Virginia
Per capita income in past 12 months (2013 dollars), 2009-2013	$37,239	$33,493
Median household income, 2009-2013	$67,725	$63,907
Persons below poverty level, percent, 2009-2013	10.2%	11.3%
US Census: Quickfacts for Albemarle County – retrieved 05-05-2015		
Age Distribution		
Persons under 5 years, percent, 2013	5.5%	6.2%
Persons under 18 years, percent, 2013	21.1%	22.6%
Persons 65 years and over, percent, 2013	16.0%	13.4%
Female persons, percent, 2013	52.2%	50.8%
US Census: Quickfacts for Albemarle County – retrieved 05-05-2015		
Population	**Albemarle**	**Virginia**
Population, 2014 estimate	104,489	8,326,289
Population, 2013 estimate	103,014	8,270,345
Population, percent change - April 1, 2010 to July 1, 2014	5.5%	4.1%
Population, percent change - April 1, 2010 to July 1, 2013	4.1%	3.4%
US Census: Quickfacts for Albemarle County – retrieved 05-05-2015		
Households		
Households	37,964	3,022,739
Persons per household 2009-2013	2.47	2.6
Housing units, 2013	43,500	3,412,460
Homeownership rate, 2009-2013	66.1%	67.3%
US Census: Quickfacts for Albemarle County – retrieved 05-05-2015		
Race & Ethnicity Distribution		
White alone, percent, 2013 (a)	82.7%	70.8%
Black or African American alone, percent, 2013 (a)	9.8%	19.7%
American Indian and Alaska Native alone, percent, 2013 (a)	0.4%	0.5%
Asian alone, percent, 2013 (a)	4.7%	6.1%
Native Hawaiian & Other Pacific Islander alone, percent, 2013 (a)	0.1%	0.1%
Two or More Races, percent, 2013	2.4%	2.7%
Hispanic or Latino, percent, 2013 (b)	5.7%	8.6%
White alone, not Hispanic or Latino, percent, 2013	77.8%	63.6%
(a) Includes persons reporting only one race.		
(b) Hispanics may be of any race, so also are included in applicable race categories		
US Census: Quickfacts for Albemarle County – retrieved 05-05-2015		
Employment		
Private nonfarm establishments, 2012	2,506	192,730[1]
Private nonfarm employment, 2012	36,930	3,089,241[1]
Private nonfarm employment, percent change, 2011-2012	1.1%	2.0%[1]
Nonemployer establishments, 2012	8,481	529,636
1: Includes data not distributed by county.		

US Census: Quickfacts for Albemarle County – retrieved 05-05-2015				
Unemployment rate for March 2015		4.1%		4.9%
		Virginia Employment Commission		May 5, 2015
Education	**Albemarle**		**Virginia**	
8th Grade or Less	2,576	3%	288,789	5%
Some High School	3,884	5%	491,869	8%
High School Grad/GED	15,191	19%	1,610,932	26%
Some College	16,512	21%	1,433,453	23%
Associate's Degree	4,187	5%	412,109	7%
Bachelor's Degree	18,992	24%	1,202,486	19%
Graduate or Professional Degree	17,725	22%	805,001	13%
		Virginia Employment Commission		May 5, 2015

b) List important local economic clusters, and

Target Markets Report: – Bioscience and Medical Devices/Health Services; Business and Financial Services; Information Technology and Defense Security; and Agribusiness and Food Processing

c) Describe local economic strengths and weaknesses.

Attributes that attract these industries to Albemarle include good broadband service, quality of workforce, quality of life and in some cases, proximity to Washington, DC. This underscores the importance of developing a plan that guides deployment of high quality, county-wide access to broadband.
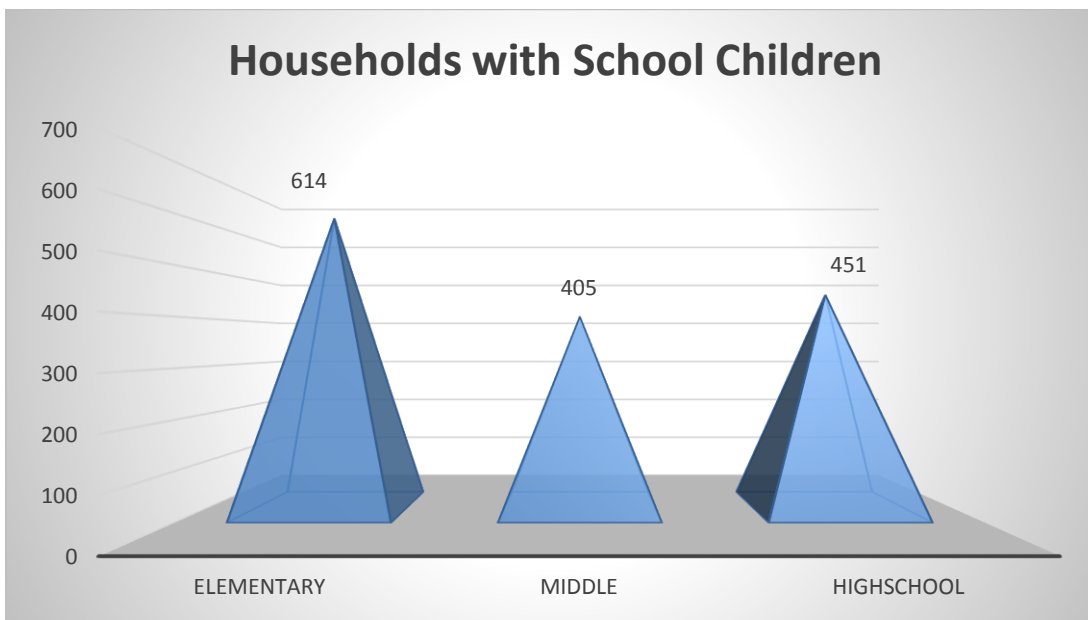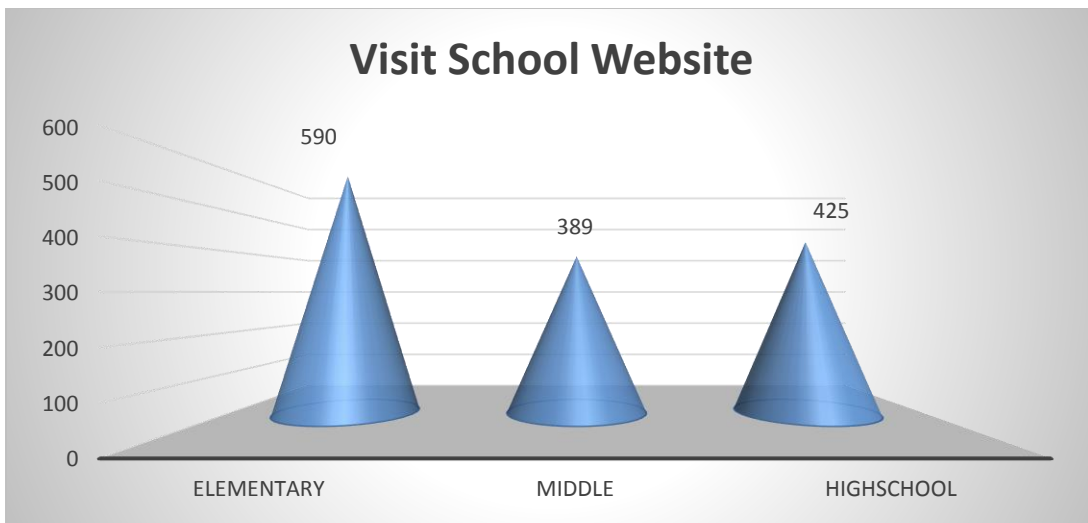
2) **Educational needs:**

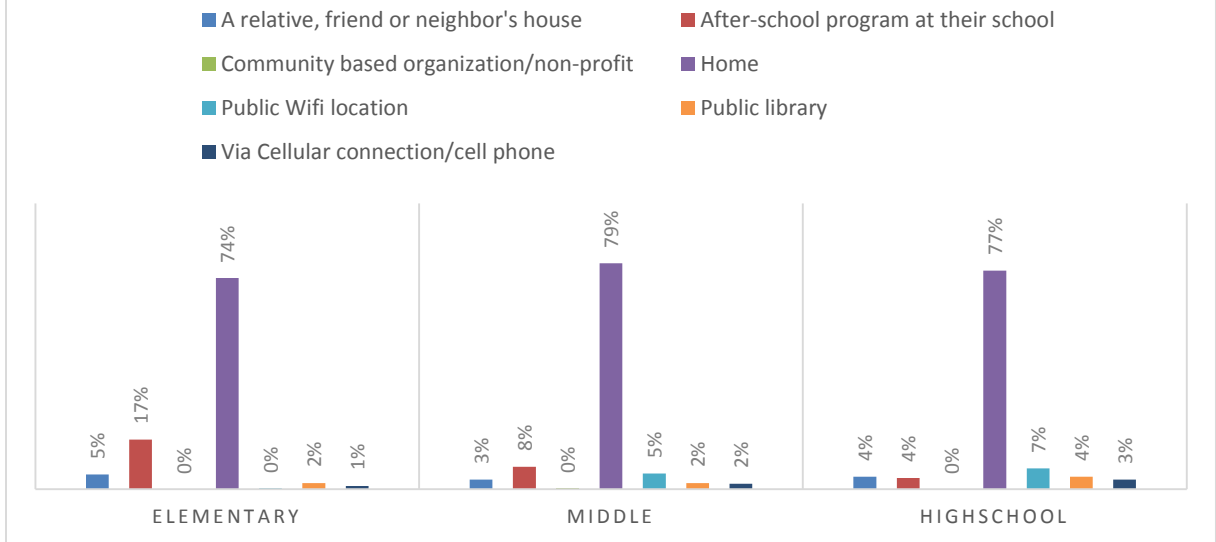a) **Please attach any surveys of local education needs,**

In 2014, the County of Albemarle conducted a broadband citizen survey in April and May. The following are the analytical findings from survey participants. It should be noted there were 1,781 responses to the question about broadband access, representing 1.7% of the County population. Of those respondents, 94% or 1,674 reported having broadband service which at that time was measured as 4Mbps download and 1Mbps upload. Access for 41% was via DSL enabled phone line or dial-up, technology that cannot enable broadband. As of January 2015, the FCC has upgraded the definition of broadband to reflect speeds of 25Mbps upload and 3Mbps download, citing 80% of Americans have access to broadband at that speed[1]. Therefore, the results do not reflect the availability of broadband. However the results are useful in determining the potential enhanced educational uses if broadband were available.

As part of this survey, participants were asked a number of questions related to Internet access, as it relates to their children's educational needs. The following data is the result of those questions and gives response to how many participants- visit the school's website, the number of households with school children, internet access after school, and the frequency at which their children are asked to use the Internet for homework assignments. There were a total of 1,866 responses to the educational needs questions, providing a significant statistical sample size for the county. **21%-26% of students must access the internet from outside their home.**

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[1] "The FCC has changed the definition of broadband," The Verge, January 29, 2015; accessed online 5/20/2015

Visit School Website

Category	Value
ELEMENTARY	590
MIDDLE	389
HIGHSCHOOL	425

Households with School Children

Category	Value
ELEMENTARY	614
MIDDLE	405
HIGHSCHOOL	451

WHERE DOES YOUR CHILD ACCESS THE INTERNET AFTER SCHOOL?

Legend:
- A relative, friend or neighbor's house
- After-school program at their school
- Community based organization/non-profit
- Home
- Public Wifi location
- Public library
- Via Cellular connection/cell phone

ELEMENTARY
- A relative, friend or neighbor's house: 5%
- After-school program at their school: 17%
- Community based organization/non-profit: 0%
- Home: 74%
- Public Wifi location: 0%
- Public library: 2%
- Via Cellular connection/cell phone: 1%

MIDDLE
- A relative, friend or neighbor's house: 3%
- After-school program at their school: 8%
- Community based organization/non-profit: 0%
- Home: 79%
- Public Wifi location: 5%
- Public library: 2%
- Via Cellular connection/cell phone: 2%

HIGHSCHOOL
- A relative, friend or neighbor's house: 4%
- After-school program at their school: 4%
- Community based organization/non-profit: 0%
- Home: 77%
- Public Wifi location: 7%
- Public library: 4%
- Via Cellular connection/cell phone: 3%

HOW OFTEN IS YOUR CHILD ASKED TO USE THE INTERNET TO COMPLETE A HOMEWORK ASSIGNMENT?

Legend: Elementary, Middle, High

	Elementary	Middle	High
1 to 2 times per week	171	113	58
3 to 4 times per week	127	141	191
Don't Know	62	33	45
Everyday	92	108	154
Never	162	10	3
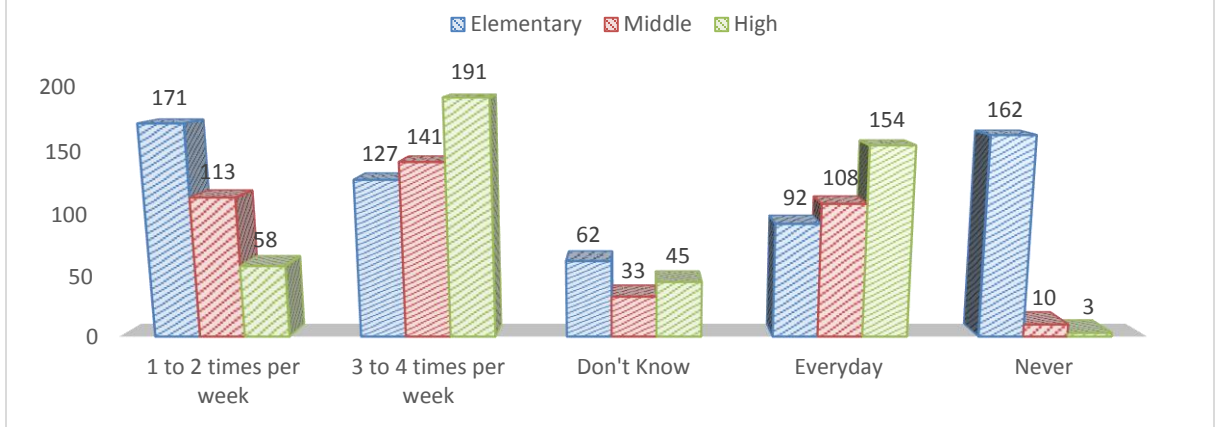
b) **Number of school districts and facilities in each,**

Albemarle County has one district with 13,600 students in 26 schools.

c) **Student enrollment by grade and district,**

Within the 26 schools there is

- 1 Alternative Education Center;
- 1 Engineering Lab School, an ACPS/Charlottesville City Public Schools/ University of Virginia partnership (6-8);

- 1 Vocational Technical Center (9-12);
- 3 STEM/STEM-H Academies (9-19) including the Environmental Studies Academy, Health and Medical Sciences Academy and Math, Engineering and Science Academy.

Fall enrollment for school year 2014-2015 by grade follows:

Elementary	Students	Middle School	Students	High School	Students
PK	284	06	974	09	1,170
KG	1,089	07	999	10	1,052
01	1,063	08	994	11	1,009
02	1,081	Total	2,967	12	990
03	937			Total	4,221
04	1,036				
05	1,002				
Total	6,492				

In addition, there are 15 private schools in Albemarle County. Information from these schools will be gathered as part of the development of the telecommunications plan.

d) Number of facilities by district with broadband and their speed,

Information pertaining to the private schools will be requested as part of the plan development.

	Mbps down	Mbps up	Provider	Technology
Elementary Schools (16)	1gbps	1gbps	CenturyLink	Fiber
Middle School (6)	1gbps	1gbps	CenturyLink	Fiber
High Schools (4)	1gbps	1gbps	CenturyLink	Fiber
Private Schools				
1) American National University				
2) Blue Ridge School				
3) Charlottesville Catholic School				
4) Charlottesville Day School				
5) Charlottesville Waldorf School				
6) Community Christian Academy				
7) Covenant School – Upper Campus				
8) Field School of Charlottesville				
9) Free Union Country School				
10) Little Keswick School				
11) Miller School of Albemarle				
12) Mountaintop Montessori				
13) North Branch School				
14) Peabody School				
15) Tandem Friends School				

e) Number of public libraries in region, and

There are 8 public libraries in the region.

f) Number of public libraries with broadband and their speed.

There are four libraries in Albemarle County: Central, Crozet, Northside, and Scottsville. In the region, there are a total of eight libraries under the Jefferson Madison Regional Library consortium and they include Gordon, Greene, Louisa, Nelson and the aforementioned libraries in Albemarle County Crozet, Northside, Scottsville and Central.

Albemarle County Branches	Mbps down	Mbps up	Provider	Technology
1) Crozet/Western Albemarle Library	10	10	Centurylink	Fiber to building
2) Scottsville Library	10	10	Centurylink	Fiber to building
3) Northside Library	10	10	Centurylink	Fiber to building
Charlottesville Branches				
4) Central Library	50	50	Centurylink	Fiber to building
5) Gordon Avenue Library	10	10	Centurylink	Fiber to building
Nelson County				
6) Nelson Memorial Library	50	10	Blue Ridge Internetworks	Fiber to building
Louisa County				
7) Louisa County Library	3	3	Centurylink	2 T1 copper pairs to building
Greene County				
8) Greene County Library	10	10	Centurylink	Fiber to building

3) Health care needs:

a) Please attach any surveys of local health care needs,

The region is fortunate to be well served by health care. We expect to gather more specific information about what is needed as part of the plan development.

b) List of hospitals in the region and speed of broadband service,

Note the first three hospitals listed are separate building but part of the UVA Health System: UVA Transitional Care Hospital, University of Virginia Hospital, UVA Children's Hospital, and Martha Jefferson (Sentara) Hospital. Speeds will be determined as part of the plan development.

c) Number of clinics, physicians and other healthcare agencies in region,

Given the presence of the University of Virginia Health System and the Sentara Martha Jefferson Hospital, there are at least hundreds of clinics, physicians and healthcare regions in the area. As part of the plan development, we will confer with the Virginia Department of Health Professions, the Virginia licensing agency, to obtain a more specific number as needed.

d) Number of health care sites that are able to participate in tele-health services.

Central Virginia is home to the University of Virginia (UVA)Health System complex, a medical school, Level I Trauma Center (highest level) and other specialty hospitals; the Martha Jefferson Hospital, now a Sentara facility; and hundreds of clinics, physicians and other healthcare agencies.

UVA and Martha Jefferson are in the best position to provide tele-health services. We expect to learn more about the delivery of theses services through our Management Team member Eugene Sullivan, Program Manager of the Office of Telemedicine at UVA Hospital.

4) **Public safety needs:**

   a) **Please attach any surveys of local public safety needs,**

   This information will be gathered as part of the plan development as well as level of need. There are known wireless dead zones through the county. One of the goals of the plan is to professionally evaluate and provide measurements on each. This is a critical need as first responders become increasingly reliant on wireless data for situational awareness.

   b) **Number of public safety facilities in region, e.g., fire or police, and**

   The County of Albemarle, VA shares a centralized Emergency Communications Center (ECC) with the University of Virginia and City of Charlottesville. The network connections at the ECC are in the process of upgrade to provide redundant 1 Gbps fiber network to the backup ECC located at the County's 5th Street Office Building (COB 5th) which also serves as Police Department Headquarters. The ECC is served by Centurylink as its local exchange carrier (LEC.)

   The Internet connectivity at the ECC is primarily provided by a fiber optic Ethernet connection to the University of Virginia campus at the ECC's Ivy Road facility. Backup connectivity is provided at Ivy Road via a Comcast Business cable modem. The ECC intends to install a dedicated Internet connection at the Fifth Street facility for 9-1-1 and New World Systems maintenance connections, which may also serve as a tertiary Internet backup for the main Ivy Road facility, reached via Centurylink Ethernet between the facilities.

   c) **Number with broadband and their speed.**

   In addition the ECC, the County has 3 County owned Fire Stations on a private Wide Area Network (WAN), and 1 Leased Fire Station on the private WAN. The administrative offices for both Police, Fire Rescue, and the Sheriff's all connect to the central office and ECC through the private fiber WAN supported by CenturyLink. Each of these locations has access to a dedicated internet pipe with synchronous speed of 200mbps through fiber. 12 additional volunteer stations connect to the central office and ECC through VPN. A listing of the technologies in use is included:

   Public Safety Facilities:

   MAIN County Wide Area Network (WAN) Fiber Locations

   - County Office Building (COB) on Mcintire Road. 1gbps fiber connection to WAN; 200mbps Dedicated Internet Port through the fiber connection
   - County Office Building on 5th Street 1gbps fiber connection to WAN, 200mbps Dedicated Internet Port through the fiber connection
   - CourtHouse Complex on Court Square (3 interconnected buildings) 1gpbs fiber connection to WAN, access to 200mbps Dedicated Internet Port through the fiber connection to COB

- ECC on Ivy Road 1gbps fiber connection to WAN, Internet access through a fiber connection to the University of Virginia

Fire only and combined Fire Rescue stations

Station #	Station name	Comcast Business Class Cable
2	East Rivanna	CenturyLink ADSL
3	North Garden	Comcast Business Class Cable
4	Earlysville	Comcast Business Class Cable
5	Crozet	CenturyLink ADSL
6	Stony Point	CenturyLink ADSL
7	Scottsville	CenturyLink ADSL and Comcast Business Class Cable
8	Seminole Trail	County WAN, 200mbps dedicated internet through fiber
11	Monticello	County WAN, 200mbps dedicated internet through fiber
12	Hollymead	County WAN, 200mbps dedicated internet through fiber
15	Ivy	Comcast Business Class Cable
16	Pantops	at Martha Jefferson Hospital; use their network with VPN

Rescue only stations

WARS	Crozet	Comcast Business Class Cable
Rescue8	Rescue station for Seminole Trail	Comcast Business Class Cable
SVRS	Scottsville	CenturyLink ADSL

5) Residential customers' needs:
 a) Please attach any surveys of local residential customer needs,

  Broadband Task Force Report attached which includes survey results.

 b) Providers, type of services and speeds offered in the region for residential customers, and

  Beyond the Task Force Report, more detailed information will be gathered as part of the plan development.

 c) Describe any gap analysis for residential broadband service that you have performed.
  Beyond the Task Force Report, more detailed information will be gathered as part of the plan development.

6) Business customer needs:
 a) Please attach any surveys of local business needs,

  Broadband Task Force Report attached which includes survey results.

 b) Providers, type of services and speeds offered in the region for business customers, and

  Beyond the Task Force Report, more detailed information will be gathered as part of the plan development.

 c) Describe any gap analysis for business broadband service that you have performed.
  Beyond the Task Force Report, more detailed information will be gathered as part of the plan development.

7) Current broadband services in the locality/region:
 a) Broadband providers in your locality/region, and

  Are listed the table below.

 b) Cost and speed of broadband services available from each provider.
  The Center of Innovative Technology provided the following information. A review of the web pages for each provider did not readily return the costs for services. All providers quoted prices based on the address of the premises, presumably since different types of service and speeds have different

costs based on availability. Cost of service will be explored as part of the development of the telecommunications plan. We expect the Management Team members representing CenturyLink and Blue Ridge Internetworks (Ting) will be instrumental in helping identifying the cost for services.

Provider	Technology	Download	Upload
Blue Ridge Internetworks (Ting)	Fiber	> 1 Gbps	> 1 Gbps
Centurylink	DSL	25 Mbps - 50 Mbps	10 Mbps - 25 Mbps
Comcast	Cable	100 Mbps - 1 Gbps	100 Mbps - 1 Gbps
Cvalink Broadband	Fixed Wireless	10 Mbps - 25 Mbps	3 Mbps - 6 Mbps
Highspeedlink	Fixed Wireless	10 Mbps - 25 Mbps	10 Mbps - 25 Mbps
Level 3 Communications, Llc	Fiber	> 1 Gbps	> 1 Gbps
Lumos Networks Inc	DSL	6 Mbps - 10 Mbps	768 Kbps - 1.5 Mbps
Stewart Computer Services	Fixed Wireless	10 Mbps - 25 Mbps	6 Mbps - 10 Mbps
Verizon Virginia, Inc.	DSL	3 Mbps - 6 Mbps	768 Kbps - 1.5 Mbps
Xo Communications Services, Inc. (Affiliated Entity)	Copper	1.5 Mbps - 3 Mbps	1.5 Mbps - 3 Mbps

Attachment B - Management Team Roster

Albemarle Broadband Planning Management Team

as of 5/19/15

Jane D. Dittmar, Chair
Supervisor, Scottsville District
Albemarle County Board of Supervisors
401 McIntire Road
Charlottesville, VA 22902
Phone: 434-296-5843
Email: jdittmar@albemarle.org
Sector: Elected Government Official

Liz A. Palmer, DVM, Vice Chair
Supervisor, Samuel Miller District
Albemarle County Board of Supervisors
401 McIntire Road
Charlottesville, VA 22902
Phone: 434-964-7876
Email: lpalmer@albemarle.org
Sector: Elected Government Official

Thomas A. Hanson, Executive Director
Charlottesville-UVA-Albemarle County
Emergency Communications Center
2306 Ivy Road
Charlottesville VA 22903
Phone: 434-970-1098
Email: thanson@albemarle.org
Sector: Public Safety – police and emergency services

Vincent Scheivert, Chief Information Officer Albemarle
County Public Schools
Department of Accountability, Research, and
Technology
401 McIntire Road
Charlottesville VA 22902
Phone: 434-872-4569
Email: vscheivert@k12albemarle.org
Sector: Public Schools

Frank Friedman, President
Piedmont Virginia Community College
5010 College Drive
Charlottesville VA 22902-7589
Phone: 434-977-1620
Email: ffriedman@pvcc.edu
Sector: Higher Education

Eugene Sullivan, Director
Office of Telemedicine
University of Virginia
P.O. Box 800707
Charlottesville, VA 22908-0707
Phone: 434-924-5076
Email: genes@virginia.edu
Sector: Health System

Laura Brown
Kristen Suokko
Local Food Hub Charlottesville
P.O. Box 4647 Charlottesville, VA 22905
Phone: 434-244-0625
Email: info@localfoodhub.org
Sector: Small business/entrepreneurs (Retail Local Food)

Mark Lieberth , Stephanie Meyers
New Branch Farm (CSA)
1070 Bishop Hill Road Charlottesville VA 22902
www.newbranchfarm.com
Phone: 434-296-2108 x 15
Email: newbranch@ntelos.net
Sector: Small business/entrepreneurs (CSA – Small Farm)

Pat Groot, Grants Administrator
Thomas Jefferson Planning District Commission
401 East Water Street
Charlottesville, Virginia 22902
Phone: 434-979-7310 x 102
Email: pgroot@tjpdc.org
Sector: Planning District Commission

Susan Stimart
Economic Development Facilitator
401 McIntire Road Charlottesville VA 22902
Phone: 434-980-0100
Email: sstimart@albemarle.org
Sector: Economic Development Office

Mike Culp, IT Director
County of Albemarle, VA
mculp@albemarle.org
401 McIntire Road Charlottesville VA 22902
434-296-5891
Sector: County Government Staff

Sectors being recruited (invitations extended):
- **Workforce development**
- **Service sector (banking or insurance)**
- **Professional (i.e., legal, engineering, or accounting)**

Required Internet Services Provider and Telephone Company Subcommittee:

Industry Sub-Committee (ISPs and Phone)

Taylor Laughlin
Comcast Xfinity Account Executive 2
Construction – New Build
Phone: 434-951-3775
Email: taylor_laughlin@cable.comcast.com

Monica Webb, Government Relations
Ting Networks
Phone: 413-717-0703
Email: monica@ting.com

Dave Keller
ValleyNet General Manager
Phone: 540-946-3525
Email: kellerdj@valleynet.com

Baylor Fooks
Blue Ridge Internetworks/TING
Phone: 434-817-0707
Email: baylor@briworks.com

Glenn Butler
Network Planning CenturyLink
Phone: 434-971-2260
Email: glenn.a.butler@centurylink.com

Andrew Draper
Director Network Services CenturyLink
Engineering and Construction
Phone: 434-974-1355
Email: Andrew.Draper@centurylink.com

Dan Meenan
NTELOS
Phone: 434-760-7602
Email: meenand@ntelos.com

Attachment C – Various Information from the May 22 Broadband Community Meeting

For the May 19, 2015 Community Meeting on Broadband, Albemarle County sent 2 e-mails to a group of e-mail subscribers numbering 2700. Here are links to the e-mails:

1.   http://t.co/8R8MhSPWuC
2.   http://t.co/7eMvR8jHNH

In the Letter of Interest we summarized the various other connection techniques we used to promote the meeting. Here is an example e-mail:

GENERAL COUNTY NEWS
Friday, April 3, 2015

Community Meeting: Broadband

Supervisors Jane Dittmar (Scottsville District) and Liz Palmer (Samuel Miller District) will be hosting a community meeting on broadband (high speed internet) in Albemarle County on Tuesday, May 19, from 6:30 - 8:00 pm in the media center at Monticello High School.

Albemarle County is applying for grant funding to develop a comprehensive telecommunications plan that will provide guidance on developing the elements of a successful community broadband network that can be deployed in both the rural and urban areas. The event will begin with a presentation by Albemarle County's IT Director, Michael Culp, and the Thomas Jefferson Planning Commission's Grand Administrator, Pat Groot, who have been working in partnership to develop strategies and partnerships to expand access to broadband to unserved and underserved areas of the County. A community discussion will follow.

Access to broadband is limited in the rural areas of Albemarle County by the large geographic area, low population density, and difficult terrain. The community benefits of universal broadband access are many - in expanding educational opportunities to students, providing access to health care and workforce development tools to residents, enhancing marketing and communication outlets for businesses, and

WHEN:
Tuesday, May 19
6:30 - 8:00 pm
WHERE:
Monticello High School
Media Center
1400 Independence Way
Charlottesville, VA
QUESTIONS:
Contact Michael Culp at
434-296-5891 or send an
email:
broadband@albemarle.org

ensuring connectedness of first responders. Learn more about what Albemarle County is doing to expand broadband access and provide your input on coverage issues and solutions during this important community discussion.

To learn more about Albemarle County's Broadband efforts, please visit www.albemarle.org/broadband.

We also posted numerous Facebook and Twitter Updates. Here are examples:

County of Albemarle @AlbemarleCounty · May 19
Come out & join the community conversation on broadband at 6:30 tonight at Monticello High School's media center. albemarle.org/broadband

County of Albemarle @AlbemarleCounty · May 19
Big turnout for this evening's broadband discussion.

County of Albemarle
Posted by Hootsuite [?] · May 19 at 3:52pm · 🌐

Come out & join the community conversation on broadband at 6:30 tonight at Monticello High School's media center.
http://www.albemarle.org/broadband

Albemarle County, VA Official Website

Official Website of the County of Albemarle, Virginia, USA

WWW.ALBEMARLE.ORG

71 people reached   **Boost Post**

Albemarle County Hosting Community Meeting on Broadband

CONTA.CC

261 people reached

Boost Post

And on the day of the event we advertised in the local newspaper:

ALBEMARLE COUNTY

COMMUNITY MEETING
On Broadband Access

TONIGHT!
TUESDAY, MAY 19, 2015
6:30 P.M.
Monticello High School

Albemarle County Board of Supervisors Jane Dittmar and Liz Palmer will host a community meeting on broadband (high-speed internet) access in the County on Tuesday, May 19 at 6:30 pm at the Media Center at Monticello High School. A presentation by the Albemarle County Broadband Task Force will be followed by a community discussion. Your feedback is important to this effort.

Albemarle County is working to develop a comprehensive telecommunications plan that will provide guidance on developing the elements of a successful community broadband network that can be deployed in both the rural and urban areas. The goal of this effort is to develop strategies and partnerships to expand access to broadband to unserved and underserved areas of the County. Learn more about what Albemarle County is doing to expand broadband access and provide your input on coverage issues and solutions during this important community discussion.

If you cannot make the meeting but would like to learn more, please contact Mike Culp, 434-296-5801 or broadband@albemarle.org.

May 19, 2015 Broadband Community Meeting Notes

Issues Noted

- Students can't do homework
- Does tax revenue decrease as a result of lower home values due to lack of broadband?
- Rental value negatively affected.
- HughesNet – now paying 2X what was quoted, service is spotty, frequently interrupted by weather, interference from leaves, etc.

Possible Solutions

- Long-term bonds (bond referendum) to fund
- Create authority, charge broadband fees to all residents
- What's the role of private business? Endowments? Employers who want to support telecommuters?
- Connect America fund
- Communication technique: gain buy-in using the carrot – Netflix, educational opportunities for children, etc.

Other Concerns

- What's plan "b"?
- Creates more disparity – people who don't have reasonable access have a disadvantage

Action Items

- Contact US Cellular

Presentation Slides from the May 19, 2015 Community Broadband Meeting

Slide 1

May 19, 2015
Community
Broadband Meeting

Hosted by:

Jane D. Dittmar, Chair
Supervisor, Scottsville District
Albemarle County Board of Supervisors

Liz A. Palmer, DVM, Vice Chair
Supervisor, Samuel Miller District
Albemarle County Board of Supervisors

Introductions
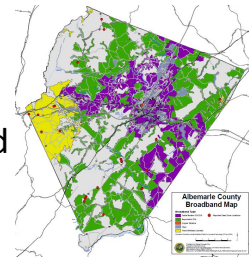
- County Staff
- Industry Representatives
- Members of the Broadband Task Force
- Community Leaders (all of you)

Please sign in using the sign in sheet

Slide 3

Agenda

- At Anytime
  - Add a dot to the map
  - Ask a question; we want to hear your feedback
- Meeting Purpose
- Telecommunications Planning
- Broadband Benefits
- Albemarle Areas Without Broadband
- Next Steps

Slide 4

Meeting Purpose

- Broadband Task Force Update
- Developing a Broadband Plan
- Funding Options
  - FCC Federal Communications Commission
  - USDA US Dept. of Agriculture
  - DHCD Va. Dept. of Housing and Community Development
    - CDBG Community Development Block Grant
    - VATPI Va. Telecommunications Planning Initiative
  - Corporate or Business Contributions
- VATPI Details
- Hear from you

?

VATPI Deadlines

May 19, 2015
Community Broadband
Meeting
May 22, 2015
Submittal of Letter of Interest
June 1, 2015
Notification of Acceptance to
Submit Full Proposal
July 17, 2015
Submittal of Full Proposal
August 2015
Notification of Award

Slide 5

Albemarle Broadband Milestones

• **Spring 2010:**
Albemarle County and The Thomas Jefferson Planning District Commission submit joint application to the USDA Rural Utilities Service to initiate a broadband study. **Also,** Albemarle County Public Schools initiates an innovative program to build a fiber network to all schools (As of 2014 this is 50% complete.)

• **Fall 2013:**   Albemarle County Broadband Task Force Formed
• **Spring 2014:**   Albemarle County Broadband Survey

• **Fall 2014:** Broadband Task Force Report
                         For Albemarle County
• **Feb. 2015:**
Albemarle authorizes a match for a Virginia Department of Housing and Community Development Telecommunications Planning Grant

➢ **April 2015**: DHCD Informs Albemarle about the availability of funding in a new program named Virginia Telecommunications Planning Initiative.

Why Plan

- Identify Areas of Focus
- Design Cohesive Network
- Identify Areas of Partnership
- Understand Options and Costs
- First Step Toward More Funding
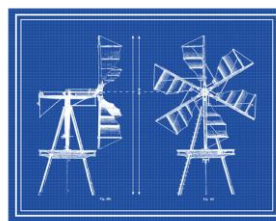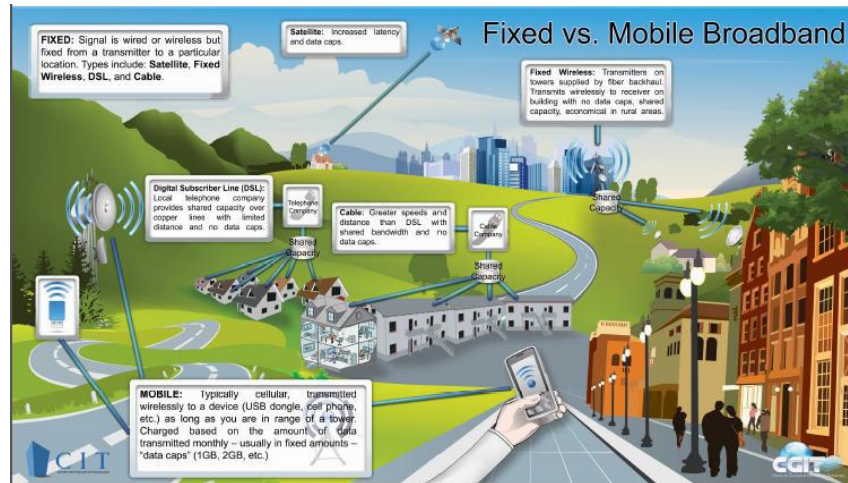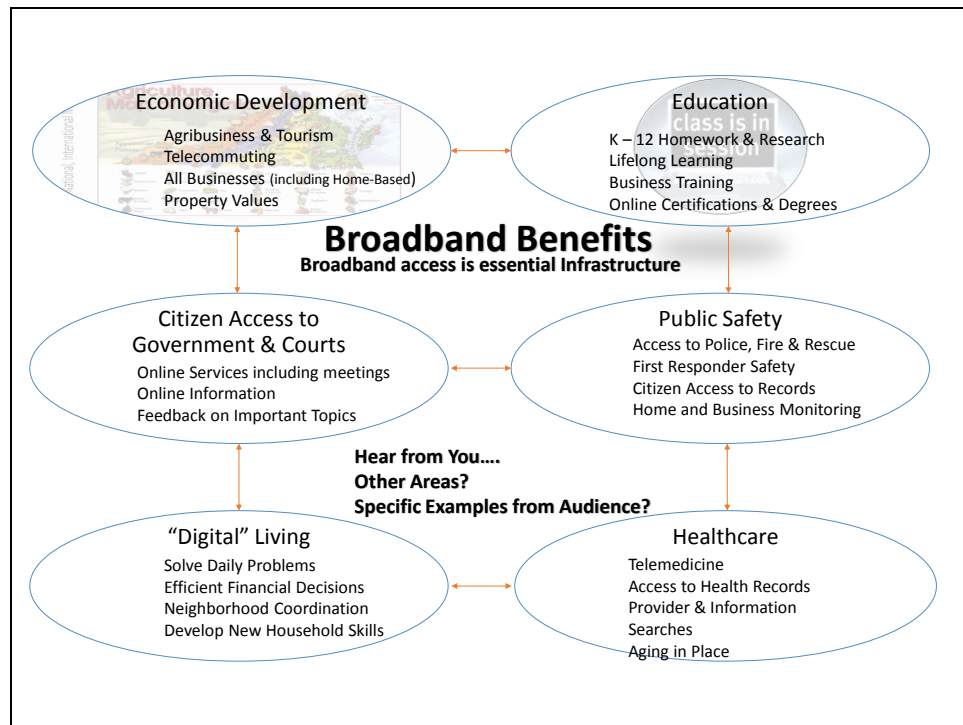
Slide 8
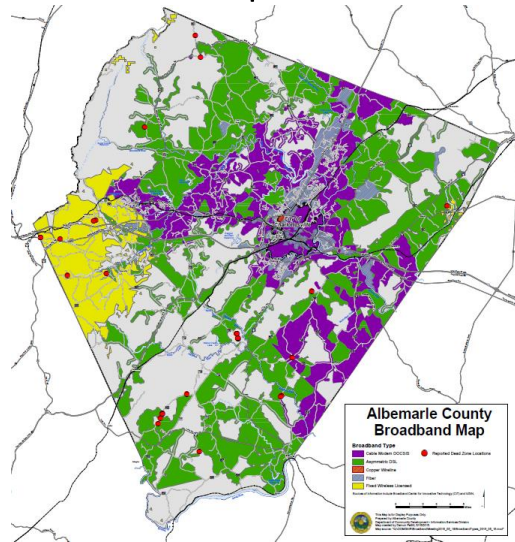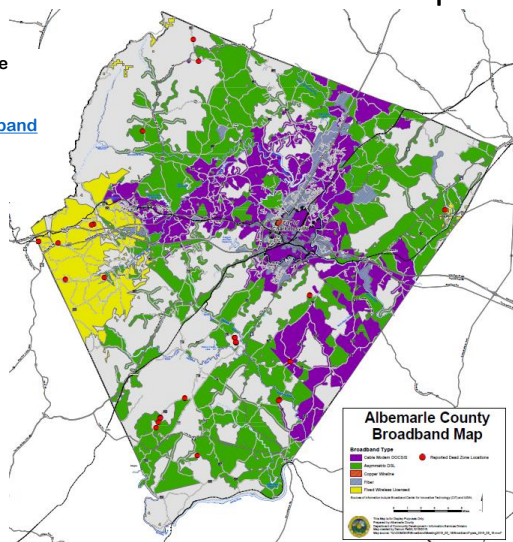
Broadband Challenges

- At night our speed significantly slows
- *My neighbor has DSL but I can't get it*
- The satellite service I have is too expensive
- *We have fixed wireless but weather (and leaves) impact the quality/reliability*
- I see all sorts of work, but I am bypassed since the work is for the next county
- *I'm told we're next for upgraded service but it never happens*
- Bought into 4g LTE (wireless) but 6 months later the service dropped
- *Brief Statements from Attendees*

What's Next

- Sparkplugs – talk the initiative up in the community
- Management Team Formed
- Contracted Planning Services
- Management of the Planning Process
- Plan Approval
- All the while keeping an eye out for other options; innovative solutions
- Your questions and comments
- Thanks!

Meeting Attendees Sign In Sheets

MEETING SIGN-IN SHEET

Project:	Broadband Community Meeting		Meeting Date:	Tuesday, May 19, 2015
Facilitators:	Mike Culp / Pat Groot		Location:	Monticello High School Media Center

Name	Service Issue	Service Location	Email Address	Did you place a dot on the online map? (Y/N)
✓ Bucky Walsh	DSL Speed	Earlysville	walshbucky@hotmail.com	N
✓ Nate Harrison	DX Speed	Earlysville	dj_neight@hotmail.com	N
✓ Stephen Waller	Mobile access to Broadband	Rivanna	stephen.waller@pluster.com	N
Anne Novak	Cell wireless/Backhaul	near batesville	jamess.novak@yahoo	
✓ Andrew Tapscott	DSL nonexistent	scottsville	andytapscott@gmy.on	N
✓ Paul Coleman Jr	slow speeds	scottsville	Peanut1397@G-mail.com	N
Ross BARTH	slow	earlysville	RBARTH@mmkp.com	N
✓ Dan Kudravetz	slow	Earlysville	dKUDRAVETZ@MKPr.com	
✓ Simone Alley		C'ville	simonalley@centurylink.com	
Tommy Garland		White Hall	tom.g@ashlandhome.net	N
✓ Debra Karr	DSL speed	Esmont No Garden	deb@edgemont farm.com	
✓ Baylor Fooks				

STAY CONNECTED: Sign up for A-mail at www.albemarle.org/amail | visit the project website at www.albemarle.org/broadband.

MEETING SIGN-IN SHEET

Project:	Broadband Community Meeting		Meeting Date:	Tuesday, May 19, 2015
Facilitators:	Mike Culp / Pat Groot		Location:	Monticello High School Media Center

Name	Service Issue	Service Location	Email Address	Did you place a dot on the online map? (Y/N)
Alessandra Cortese de Bosis	neighbors	Greater Scottsville	Acdebosis@gmail.com	N
Bruce Lugn	Greater Scottsville, Esmont Schuyler etc		brulugn@yahoo.com	N
MICHAEL GESJET	Slow DSL DuB10's cell FT	Carrsbrook	MGESJET@GMAIL	N
Peter				
Tim SCRUBY	SLOW; RESTRICTED BANDWIDTH, EXPENSIVE	Dick Woods Rd	tmscruby@gmail.com	Y
Andrea Brown	Slow DSL No Service 1" Schuyler			N

STAY CONNECTED: Sign up for A-mail at www.albemarle.org/amail | visit the project website at www.albemarle.org/broadband.

MEETING SIGN-IN SHEET

Project:	Broadband Community Meeting		Meeting Date:	Tuesday, May 19, 2015
Facilitators:	Mike Culp / Pat Groot		Location:	Monticello High School Media Center

Name	Service Issue	Service Location	Email Address	Did you place a dot on the online map? (Y/N)
LINDA & KELVIN Parker	EXPENSIVE - only choices Hughes Net, Direct, DISH	Batesville	Kparker225@aol.com	
KHADIRA & CARL WISE	VERY SLOW DSL	RIVANNA	CARLWISE@ICLOUD.COM	
CRISTINA Ales	VERY Slow DSL	Schuyler Albemarle Co	ceailes@gmail.com	N
JOEY LAWSON	VERY SLOW DSL (512K)	Schuyler Albemarle co.	CJLAWSON@VT.edu	UNSURE
ROBERT Gest III	EXPENSIVE; CUTS OFF	CHARLOTTESVILLE	RXGEST@COMCAST.NET	N
Alice Scruby	EXPENSIVE - Unreliable	Afton/Albemarle	ascruby@gmail.com	N
Paul & Virginia Coleman	Very Very Slow	Scottsville/Esmont	vcoleman8761@gmail.com	N
Richard Lloyd		RIVANNA Dist	Richard-L-Lloyd@MSN.com	N
Diane Easley	Dial up normal service Verizon mifi PwNotan	Samuel Miller	richcove1739@gmail.com	yes
Mike/Pat				

STAY CONNECTED: Sign up for A-mail at www.albemarle.org/amail | visit the project website at www.albemarle.org/broadband.

Attachment D – August 2014 Broadband Task Force Report

The August 2014 Broadband Task Force Report can be found online:

http://www.albemarle.org/upload/images/Forms_Center/Departments/Board_of_Supervisors/Forms/Agenda/2014Files/0903/17.a_BroadbandAttachA.pdf

And as a separate attachment to the e-mail accompanying this letter.