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APPLICATION FORM

All applications must include the following information. Separate applications must be submitted for each eligible program. **Deadline: July 1, 2020.** Please include this application form with electronic entry. If you do not receive an email confirming receipt of your entry within 3 days of submission, please contact Gage Harter.
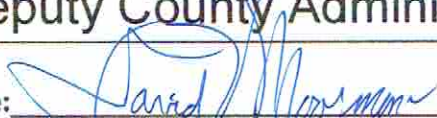
PROGRAM INFORMATION

County: **Botetourt County**

Program Title: **Botetourt Broadband Strategy**

Program Category: **Community and Economic Development**

CONTACT INFORMATION

Name: **Cody Sexton**

Title: **Assistant to the County Administrator**

Department: **County Administration**

Telephone: **(540) 928-2010**   Website: **botetourtva.gov**

Email: **csexton@botetourtva.gov**

SIGNATURE OF COUNTY ADMINISTRATOR OR DEPUTY/ASSISTANT COUNTY ADMINISTRATOR

Name: **David Moorman**

Title: **Deputy County Administrator**

Signature: *David P. Moorman*   6-30-2020

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Virginia Association of Counties Achievement Awards Application 2020
Botetourt County – Broadband Strategy
<u>Executive Summary</u>

Broadband is the tool we use to connect to the world. Now more than ever, as the world has had to develop new ways to conduct business, visit the doctor, educate, and socialize, broadband connections are the arteries and veins of the lifeblood of the information age. Communities that lack consistent and widespread access to broadband have been lagging behind their competitors.

Beginning in 2017, Botetourt County began to understand the broadband problem more fully in the County. A consultant was hired to survey residents and businesses of their broadband needs, reporting a high demand for broadband. Technical studies concluded that, officially, approximately 30% of the County did not have Internet access; although, County officials knew this to be understated.

The County then developed its two-fold strategy. The first part was to create a local Broadband Commission to lead the County's efforts to increase broadband deployment. The second part was to host a Broadband Summit that would bring together the best minds in the country to help solve the rural broadband problem.

After those two things happened, the milestones came one after another. In 2019, the County and Craig-Botetourt Electric Cooperative (CBEC) won a Virginia Telecommunications Initiative (VATI) grant to bring fiber-to-the-home to a large unserved part of the County. That fiber is ready to go into the ground in 2020. And, other providers are ready to launch as well. BARC Electric Cooperative, Lumos, and Blue Ridge Towers have all coordinated with the Broadband Commission to work to find solutions to deploy more fiber in the County.

The goals of the Botetourt Broadband Strategy continued to be met. As the County powers through 2020, our partnerships with the Roanoke Valley Broadband Authority, private companies, and the state continue to reap rewards for the residents and businesses in the County. We have turned the ship and our broadband future is bright.

Botetourt County is a mostly rural county spanning 542 square miles of rolling farmland and mountains in the Roanoke Valley. A housing boom in the 1990s and early 2000s accelerated the County's reputation as a bedroom community for the Roanoke Valley and as a retirement location for many across the country. This led to rapid growth in the southern end of the County around Daleville, Cloverdale, and Blue Ridge. This growth, as expected, brought increased infrastructure to these areas and made it easier to deploy emerging technological infrastructure, such as broadband. Meanwhile, the more rural northern parts of the County continued without that increased infrastructure.

As the 2010s progressed and the country began to emerge from the Great Recession, development returned to the County in force, and the need for broadband began to increase. Smartphones and tablets, online shopping, Netflix, online learning, telemedicine, and even smart appliances all demonstrated how vital broadband was becoming to the modern world. The divide between the fast world and the slow world was hastening, and that divide was happening in the middle of Botetourt County. And, our residents and businesses were telling us regularly that their needs were going unmet.

As a result, in 2017, Botetourt County took the first step to understand its broadband problem. The County contracted with a local firm to conduct a survey of businesses and residents regarding their broadband needs. According to the report, "in the end, both surveys reflected an overwhelming community concern that more needed to be done to address telecommunication needs in the County. The majority of both business and residential respondents reported that faster, high-quality internet connections and more reliable cell phone service coverage were needed, desirable, and important to keep the region competitive." This confirmed the high level of demand and need that existed in the County.

Other reports from around that time indicated that approximately 30% of the County did not have internet access. This number was likely significantly understated because federal reporting guidelines allow providers to overstate their coverage based on census blocks. This made it difficult to accurately

gauge the true extent of the problem of broadband coverage in the County because private providers have an incentive to show more coverage than they may actually have. Moreover, the large deployment costs of broadband, especially in rural communities, make it less desirable and less profitable to expand broadband without an immediate return on investment.

This confluence of external economic and social forces, lack of widespread infrastructure, and resident and business demands were calls for the County to act. So, spearheaded by a member of the Board of Supervisors, County officials set about coming up with a solution.

The Program

The Board, County Administration, Economic Development, and Community Development put their heads together to find an innovative solution to the problem at hand. It was immediately apparent that both a short and long-term approach would be needed to tackle the need of rural broadband. The County would need to develop its own organizational infrastructure while also finding a way to draw significant attention to the problem.

The first step of this program was to create the Botetourt County Broadband Commission. Led by Board of Supervisors member Dr. Mac Scothorn and appointed by the Board, the Broadband Commission was the first such commission in the Roanoke Valley to bring together local government leaders and regional technology leaders to tackle broadband deployment in a locality. The past and current members of the Commission represent broad fields of expertise in medicine, information technology, transportation and logistics, government, economic development, education, and business and finance. They touch nearly every piece of life that has a reliance on or need for broadband. The members have also been the greatest champions and advocates for the County's broadband efforts.

From the beginning, however, the Broadband Commission knew that its own expertise would not be enough move the ball forward. Moreover, the Commission readily understood that the County could not be the entity to actually put the fiber into the ground and light up homes and businesses. The

Commission immediately created partnerships with local providers, such as Lumos, the regional electric cooperatives, such as Craig-Botetourt Electric Cooperative (CBEC) and BARC Electric Cooperative, Blue Ridge Towers, and the Roanoke Valley Broadband Authority. Through consistent and concerted efforts to bring each of these stakeholders to the table on a regular basis, the Broadband Commission began defining itself as the key problem-solvers in the County.

This is where the second step of the strategy came into play. The Commission and the County needed to do something to ignite the spark of excitement more broadly. The goals of the Commission would only be met when the partners were both expanded and convinced that the County was serious about its efforts. The idea for a Broadband Summit was born!

In September 2018, after months of planning Botetourt County hosted the BOCO Summit for Rural Broadband Technology Solutions. The two-day summit was held in Botetourt in order to provide a connective path to the implementation of advanced, affordable, high capacity internet for all areas of Botetourt County. The speakers and guest list were extensive, bringing together some of the best thinkers and strategists for broadband from across the state and country. Virginia Tech, the Department of Housing and Community Development, the Center for Innovation and Technology, the Roanoke Valley Broadband Authority, private providers, state and local government leaders, and regional business leaders all came together in Botetourt County to learn about emerging trends in rural broadband development, understand the County's position and need for broadband, and build partnerships in ways that were unheard of in the field. The spark was lit, the community was engaged, and the County was ready to take off!

Taking the success of the Summit, the Botetourt County Broadband Commission took the new-found partnerships and began building many of the connections that emerged from the Summit. The most significant partnership as a result of the Summit came with Sandie Terry, Principal at Rural Broadband Consulting, LLC. She created the map (also found on the Board of Supervisors' website at

botetourtva.gov/your-government/board-of-supervisors) that laid out the path of where the Broadband Commission wanted to go. Sandie Terry's work gave the Broadband Commission the key strategic tool it has used to implement success in the wake of the BOCO Summit. By identifying the areas of need and allowing the Commission to take a logical phased approach to deployment, the Commission has systematically attacked the problem with continued success. (An attached report highlights the efforts the BOCO Summit and Sandie Terry's work.)

<u>Resources and Staffing</u>

The initial ideas for the Broadband Commission and the BOCO Summit came from Board members, County Administration, Economic Development, and Community Development. Multiple senior staff members met and discussed ways to bring broadband to the County in ways that the Board had envisioned in order to meet community demand. Moving forward, the Broadband Commission has continued to be staffed by County Administration and Economic Development with other staff called in as needed to support various projects, especially Finance staff. The BOCO Summit was developed by both Broadband Commission members and staff. Staff and other volunteers provided assistance to guests and speakers during the Summit. Follow-up connections were made by staff and Broadband Commission members.

Funding for the Broadband Commission primarily comes from the County general fund with some assistance from time to time from the Botetourt County Economic Development Authority. The County has pursued grants from the state in partnership with private entities in order to help finance projects to expand broadband availability in the County.

<u>Results and Next Steps</u>

The results of the Broadband Commission and BOCO Summit have been tangible for residents and businesses of Botetourt County. The greatest success came in April 2019 when Governor Northam announced that Botetourt County and CBEC were the recipients of a 2019 VATI Grant from Virginia's

Department of Housing and Community Development. The competitive grant provided nearly $760,000 for building fiber-to-the-home for 621 homes and 52 businesses, covering one third of CBEC's members in western and southern Botetourt County. The County provided partial matching funds to support the project and help ensure some of the least connected areas of the County will start having access to broadband. In June 2020, CBEC has mobilized equipment and ordered the fiber to begin building out this project. The Broadband Commission and CBEC anticipate a groundbreaking ceremony for the project later in the summer.

The Broadband Commission has also had other wins for the community. Lumos has received federal funding to expand fiber-to-the-home in its existing service area. With the partnership of the County, Lumos applied for a VATI grant to have even greater expansion. Although that grant was unsuccessful, the County preserved the funds to match the grant for future applications. BARC Electric Cooperative is working to bring fiber to the norther part of the County with input from the Commission. Blue Ridge Towers has also coordinated with the Broadband Commission when building new towers in the County in order to ensure that they can tap into existing middle-mile broadband infrastructure and bring competitive internet options to residents and businesses throughout the County.

Looking forward, the effects of the global pandemic have made the work of the Broadband Commission even more vital and imminent than previously conceived. A partner from the very beginning, the Roanoke Valley Broadband Authority has been working with the Commission most recently in order to leverage existing infrastructure assets in the County in meaningful ways for residents and businesses. The County is also investigating the use of federal CARES Act funding to be used to help deploy broadband in the community. This money must be spent by the end of 2020, so results from these efforts could be immediately forthcoming. County leaders and the Broadband Commission have engaged state and federal officials in order to determine the best approach to using the CARES Act money in a meaningful way for broadband deployment. All of these efforts demonstrate the high level of commitment from partners at

all levels of government who have become engaged thanks to the efforts of the Broadband Commission and the BOCO Summit.

Conclusion

The goals of the Botetourt Broadband Strategy have been exceeded and continue to be realized in real time. From the earliest conception of the needs of the community to the full realization that the County could take an active role in shaping its broadband future, the strategy developed to solve our broadband crisis has been one of key partnerships and active engagement to ensure that our residents and businesses can be fully engaged in the 21st century. The Broadband Commission and the BOCO Summit have helped to ensure the County's vision of a prosperous and connected community can be achieved sooner than any originally thought possible.

Botetourt County, Virginia- "BoCo:" A Pacesetter Among Broadband Networks

Here's Where We Are   Here's Where We're Going
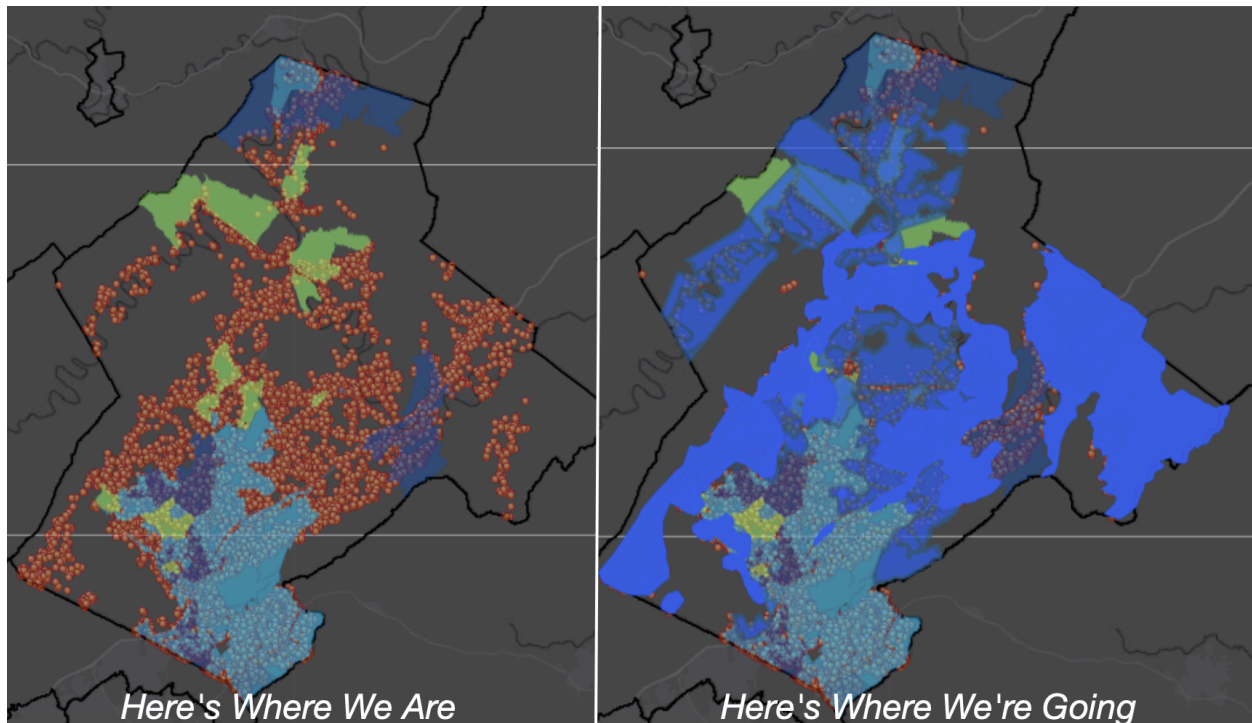
Authored by:

Craig Settles
CJ Speaks

January 2019

Thanks to the determination, drive, innovation, and the forward thinking of its citizens Botetourt County (BoCo), VA is among the pacesetters of community broadband networks. Thanks also to the "leave no stone un-turned" philosophy of partnership development, the BoCo network will be a hotbed of innovation thanks to the diversity of partners.

BoCo is a county that was hating life online, but that's about to change. Officially, only 70% of residents have Internet access, although some say there are a lot more disconnected citizens than that.

The numbers of unserved individuals and businesses here can seem daunting, and many are happy at even the prospect of being connected. But the BoCo leadership is offering a vision of a county bubbling over with ample bandwidth. Gigabit speed. 10 gig speed. With the foundation that's being laid, the sky's the limit!

Gary Larrowe, County Administrator for Botetourt County wants, "Local citizens to be able to have bandwidth that allows them to work remotely, run a home-based business while expanding their educational opportunities over the Net. I can see seniors staying in their homes longer because of telemedicine, and keeping up with the grandkid's birthdays and graduations."

Broadband infrastructure will impact economic development, which is often the driving reason many communities build these networks. "New business starts, net business entity growth, sales tax revenues and business license revenue are all objective criteria we use for tracking economic development success," says Ken McFadyen, who is the Director of Economic Development for Botetourt County. "Subjectively, you know economic development success when you see it!"

Consider this brief report card on the first semester of BoCo's broadband project. A lot went on in 2018, and individuals as well as businesses should be proud of the achievements.

This report highlights two stellar achievements in broadband deployment: 1) breaking with the process of "ready, shoot, aim" in broadband planning; and 2) participating in a new trend of co-op/government partnerships. But there is additional good news for the County as they begin their new semester.

Grassroots broadband activism

Walter Grigg, Executive Vice President at Lawrence Companies, moved to Botetourt County from neighboring Roanoke County, VA few years ago and was immediately incredulous and frustrated at the lack of broadband. It was virtually non-existent in many parts of the county.

Although he had no political experience or leanings towards activism, Grigg talked to anyone in the power structure who would listen. Soon the Broadband Advisory Commission was formed, which Supervisor Mac Scothorn heads up, and Grigg was named vice chairman.

"My wife was totally into it," says Grigg. "She did a couple of Facebook posts and the response was phenomenal. She had a couple of thousand residents and business in some way." Local news coverage added to the excitement and the people volunteering to help out to make broadband a reality.

Seated from left: Ken McFadyen, Walter Grigg, "Mac" Scothorn, Gary Larrowe. Standing from left: Arleen Boyd, Brandon Evans, Michelle Crook, Darrell Hix, Frank Smith, David Moorman.

The Commission coordinated an online survey to quantify the need for broadband and further publicize the grassroots efforts. "The survey validated the overwhelming need," said Grigg. "It also revealed that throughout the county a sizable number of people didn't know a lot about broadband and how it could help us."

Larrowe found the survey results troubling given that the county is "near the largest Metro area in the western part of Virginia, yet we have so many homes that are without service. With the numbers being so high, it started accelerating the movement to find a solution.

It is at this point where BoCo broke with the *modus operandi* of typical broadband project teams. Many communities, knowing generally that they need broadband, will go straight to hiring a consultant before fully understanding the particulars of broadband or how it can address their specific needs.

BoCo decided to hold a two full-day broadband summit in September 2018. Because of that summit, the county should have a better network that gives the community a greater return on their investment.

We've been to the Summit!

The BoCo Summit was a gathering of private and public organizations, policymakers, and other segments of the community broadband arena. Their mission was to educate and motivate the BoCo community. YouTube, and social media brought the summit to those who couldn't attend the live session.

By holding the summit first, the Commission developed a better handle on the community's needs and could better engage consultants before selecting one. An amazing number of new opportunities presented themselves. They recruited Arleen Boyd to head the Summit. Besides her cat-herding skills, Boyd spent significant time working in the telecom industry before retiring.

"We had a lot of community people helping with recruiting speakers and managing logistics," says Boyd. "The goal was to get as many people speaking on the program who had knowledge that could help us.

Larrowe added, "All kinds of solutions came come out of the discussions. We had a logical plan, consensus that led to our consultant decision (Sandie Terry), and connections galore."

Community broadband industry luminary James Baller was the keynote speaker, and led a host of speakers and panelists, including representatives of state and federal agencies, industry associations, government officials of counties with broadband initiatives, and co-ops. ISPs and industry lobbyists were speakers as well, and several tech companies had tabletop displays.

Boyd adds, "It's important that you include in the needs assessment phase information exchanges with knowledgeable people involved with various aspects of broadband deployment, especially raising money. It was amazing how many state and federal agencies can provide grants and programs to help us with this."

Avoiding the "Cut & Paste" Trap

Organizing events such as the BoCo Summit opens up a community's vision to a myriad of possibilities. Some consultants have tunnel vision. This is partly because they don't live in the community they're consulting for, they don't know anyone there, and they have a primary way of doing things that fits their consulting philosophy.

"Communities are being advised to build 'x' number of towers, and lay 'so many miles' of fiber, or give a community's anchor institutions to a broadband provider that will somehow magically generate residential customers," says Sandie Terry, Principal at Rural Broadband Consulting, LLC in Virginia. "As a result, you see these cookie-cutter reports that end up on a shelves."

Terry has worked many years for county jurisdictions, and then for a quasi-state agency, getting broadband to more Virginia residents and businesses. "Even with my experience, the Summit presented some new ideas, and ways of looking at broadband strategy I probably wouldn't have thought of alone," Terry says.

In the heyday of the municipal citywide Wi-Fi movement, the broadband stimulus program, and the heightened drive for fiber-to-the-home projects, there is a common thread. Local governments follow the "Cut & Paste" strategy of network deployments. Two or three jurisdictions come up with a formula for selecting consultants or designing network infrastructure, then there is a rash of similar Requests for Proposals (RFPs).

While there could be some similarities between jurisdictions, political environments, population densities, budgets, terrain, and other factors that impact broadband, deployments are unique for each jurisdiction. The BoCo Summit and various activities since then have made it certain that this jurisdiction will not fall victim to the "Cut & Paste" Trap.

Have a broadband story to tell? There's map for that.

There is so much data associated with broadband projects, it's difficult to make sense of a lot of it. Maps and map data, census data, demographic stats, fiber locators, surveys, and so forth.

Terry, BoCo's broadband consultant, uses a software tool that brings some rare features to projects. She uses estimated demand to determine the priority order in which areas get broadband. Esri's Story Maps enables Terry to tell BoCo's broadband story in a way that people can understand.

To start, Terry calculated the "take rate" in a more predictable and accurate way. For every 100 possible customers, you get "X" percentage to be subscribers. X = take rate.

Pew Research does extensive research continuously and each year releases a study where they have formulated how specific variables in education, age, and household income indicate which people buy or reject Internet access.
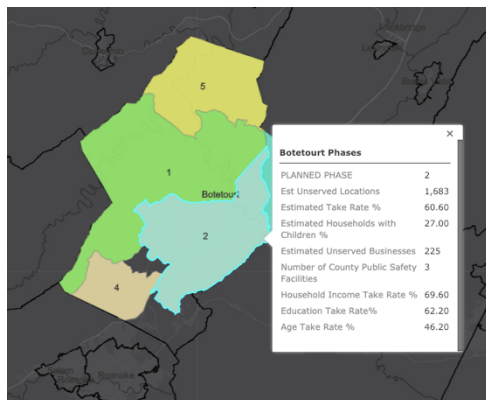
With better foundation data, Terry can educate local governments, co-ops, providers, and others about the deployment phases. These stakeholders on their own can more accurately map and predict deployment costs, raise money and identify resources to increase broadband utilization while still being connected with each other.

The norm is to go to the GIS squad, and have them make maps available. But non-technical staff would never consider navigating the data themselves.

Non-technical people benefit from Story Maps' easy interface. "Once the people saw the interactive features, they couldn't wait to add their address to see where their location falls in the phases and deployment plans," says Terry.

Community broadband is a 21st-century engine of creativity, yet we are using a lot of one- and two-dimensional tools to build it. It's imperative that we approach this engine using leading-edge tools and forward thinking best practices.

Partnerships rock

The summit led to BoCo joining an exciting broadband trend. Until the last three or four years, electric co-ops were just dabbling in the broadband scene. There were about ten (10) electric co-ops building and marketing broadband services while the other co-ops waited to see which

way the winds were going to blow. Only a couple of the 10 created a logical, though novel, partnership at the time.

Delta-Montrose Electric Association (DMEA) in Colorado is a co-op that serves 32,000 souls. Though members wanted the co-op to provide broadband service, DMEA's management wanted the City of Montrose to commit to purchasing services for its workers and departments. This ensured a base revenue stream.

Niles, Michigan has fiber infrastructure but didn't want to build and run a citywide broadband network. So they asked the nearby Midwest co-op to extend the co-op's infrastructure to the town. Ann Arbor is Midwest's next co-op/muni partnership.

BoCo joins these jurisdictions in creative co-op partnerships. During the Summit, BoCo discovered two co-ops providing or planning to offer broadband services in the county: Craig Botetourt Electric Cooperative (CBEC) from the west, and BARC Electric Co-op from the north. BoCo is also partnering with Lumos Networks on fiber deployment.

Terry and BoCo's leadership are executing several partnerships that should ensure most BoCo residents and businesses receive fiber coverage. BARC scored $2 million in federal grant to build broadband. CBEC is putting in $2 million of their money and pursuing state grant funding in partnership with BoCo. In addition, Lumos Networks obtained Connect America Funding (ACAM) for upgrades to eligible areas to fiber.

As a way to make itself even more valuable as a partner, BoCo is considering building out a fiber ring for their wide-area-network through the unserved middle area of the county. "Communities cannot go into a project expecting to spend no money, having providers carry the full financial freight, and wanting little do with broadband once the project starts," says Terry. "People won't be happy with the results. Local government has to make it quick, easy, and cheap for providers to get involved."

Later this year, BoCo plans to issue a RFP for this last stretch of unserved area. "From what we've seen of their work and capabilities, BARC, Craig-Botetourt, and Lumos Networks easily could be serious contenders for this project," says Terry.

Broadband and economic development

Given all you can do with broadband, economic development still seems to lead the pack in terms how communities most expect broadband to benefit individuals and businesses. One of the big debates among economic developers is, do you use broadband to make your existing businesses stronger, or use the technology to attract businesses? Or maybe you give equal time to both outcomes.

Ken McFadyen has an interesting perspective on the topic. "With larger manufacturers, they generally assume that we have sufficient connectivity and the locations where our manufacturers operate, and we typically do offer connectivity. But I see real value in [using broadband for] small business development opportunities."

But how do you balance retention versus attraction?

"Business attraction draws the investments into the community that allows for business expansion and retention to become a viable endeavor," McFadyen says. "Conversely, our existing business base is what encourages new business ventures to consider locating, so business attraction and business retention are not mutually exclusive; however, a local emphasis on attraction suggests that the benefits would deliver greater economic activity more efficiently for the community."

Each community has to determine what type of economic development outcomes they should use broadband to pursue. When I surveyed members of the International Economic Development Corporation about how they saw broadband impacting economic development, I asked survey respondents to critique six outcomes.

How would you rank these outcomes: 1) attracting new businesses, 2) making local companies more competitive, 3) revising depressed business districts, 4) revising depressed communities, 5) improving individuals' ability to earn income, and 6) increasing home-based businesses. (Survey results and report)

Going forward

The possibilities for moving various necessary, creative, and innovative services are endless, especially given the enthusiasm many in the community have shown over the past year. Here are some of the thoughts to take with you as you plan and execute broadband projects.

When it comes to partnerships, don't make a deal until you are convinced that you have found exactly the right partners. Ideally, your head and gut agree when you find the right partners. When you have found that right partner, get out of the way and let them run. Don't micro-manage.

When you decide to go forward with broadband, test the focus of your projects, especially those involving the marketing of the network. Are the public and community leaders committed to the network for the right reasons? Does your project team agree on the target market of the network? Do they understand what is likely to happen as a result of an important decision? Do they have the courage to stand up for it?

It's the geek-speak that often confuses community people. Consultants, Internet service providers, and broadband vendors have their own particular versions of geek-speak. Terry was hired as a part-time employee after the Summit and one of her jobs was to serve as the translator between the various participants in the broadband project. "I worked a lot years on the government side, and was fortunate to learn the broadband ropes," Terry says. "Make sure you have you translator nearby."

When it comes to broadband, the problem-solving approach sometimes fosters a mindset of "just build it (fix the problem) and they will come."

On the other hand, with a creation orientation you bring something new into being. There's a lot of energy you can get with "wouldn't it be cool if...?" brainstorming. You create an incredible vision with lots of people contributing to it because they can be a part of the dream.

The various community leaders and stakeholders would agree that having the network is great, and it solves a problem. But what their communities create with the network is how they'll achieve maximum return on the infrastructure investments.

Communicate, communicate, communicate…and never stop doing so. Early on it's important that you know your potential partner well and are convinced you have not just made a choice…but the right choice. After the selection is made, you must stay in touch to keep both parties on the same page.

Test the focus: are the public and community leaders committed to the network for the right reasons? Do they understand what is likely to happen? Do they have the courage to stand up for it?

Conclusion

Botetourt County has done a lot of great things. Among those achievements is the extent to which the County leadership has educated and motivated their constituents about the broadband project. The success of these networks is heavily dependent upon that support.

No less important is the broadband team's willingness to gather as much knowledge about broadband from as many diverse sources as possible. The scope and inclusiveness of the BoCo Summit should be a best practice that every community tries to emulate.

Craig Settles helps municipalities and co-ops create [successful broadband business plans](), with a [heavy emphasis on telehealth](). His latest analysis report is [Telehealth and Broadband: In Sickness and In Health, Pt 2]().