

Garrett County, Maryland



Using Broadband Infrastructure to Drive Economic Growth

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Rural
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Section 1: About this plan

This plan was created as part of the Appalachia Digital Accelerator, a Connect Humanity program funded by the Appalachia Regional Commission with additional support from Truist Foundation, Ford Foundation, and Duke Energy.



Garrett County Government
Department of Technology and Communications

Section 2: Garrett County can use broadband infrastructure to grow businesses and jobs

Universal broadband connectivity is a powerful enabler of economic development – particularly for rural communities like Garrett County. Researchers widely agree that high-speed internet improves economic outcomes in rural areas, whether through increases in business activity or measures like productivity, jobs, and income.¹

Garrett County has been committed to expanding broadband access for over a decade. In 2010, the county participated in the One Maryland Broadband Network project,² which connected over 1,000 government facilities and community anchor institutions (CAIs) across the state to a fiber optic network.

The county achieved a significant milestone in 2012, when leadership released the first broadband strategic plan.³ A series of grants and projects followed, including fiber extensions to CAIs in 2012 and a multi-phase fixed wireless deployment starting in 2013.

The county has continuously updated its approach, completing a new feasibility study in 2022⁴ and initiating multiple federal- and state-funded projects currently valued at over \$6.5 million in partnership with private entities.

Garrett County's persistent efforts demonstrate a long-term commitment to bridging the digital divide for its residents. While universal broadband access remains a primary goal, the exact timeline for full coverage is still uncertain.

Now, county leadership's focus should be on securing the maximum benefit of that infrastructure for the people and the economy of Garrett County. Importantly, these benefits do not come automatically after deploying universal, high-speed broadband. County economic development leadership – as well as education leaders, private businesses, and many others – have a crucial role to play in ensuring the county fully maximizes the economic impact of having great broadband.

¹ Elizabeth A. Mack, Scott Loveridge, Thomas Keene, John Mann (2023) A review of the literature about broadband internet connections and rural development (1995-2002). *International Regional Science Review*, 10.1177/01600176231202457.

² Department of Information Technology, "One Maryland Broadband Network." Available at <https://doit.maryland.gov/ombn/Pages/ombnHome.aspx>. Accessed July 26, 2024.

³ Garrett County, Maryland (2012) *Broadband in Garrett County: A Strategy for Expansion and Adoption*. Available at <https://www.garrettcounty.md.gov/sites/default/files/Broadband-Feasibility-Study.pdf>. Accessed July 26, 2024.

⁴ Garrett County, Maryland (2022) *Broadband Strategic Plan*. Available at https://www.garrettcounty.md.gov/sites/default/files/2024-01/2022_Broadband_Plan_Garrett_Co_full.pdf. Accessed July 26, 2024.

The basic premise of economic development strategies focused on maximizing the value of universal, high-speed internet is that the strategies allow for the local creation of digital products and services, which can be exported around the country and the world, bringing resources and wealth back into the community.

This is similar to how rural industries have worked for a long time, but instead of exporting manufactured goods such as paper or fabric and natural resources like timber or coal, the goods being made locally and sold elsewhere are digital – based on software or enabled by software. Fostering businesses, remote workers, and local entrepreneurs working in digital spaces will create high-paying jobs, retain talented individuals who might otherwise leave for opportunities in urban areas, and bring new revenue streams into the local economy, which can be spent in local brick-and-mortar businesses.

A healthy, self-sustaining rural digital economy has several conditions:

- A growing density of technology workers – some working for local companies (e.g., cybersecurity analyst for a local bank) and some working remotely and learning from employers around the country and world.
- A workforce and education pipeline producing technologists – whether through high schools, post-secondary education, tech boot camps, or other avenues – to ensure the total number of technology workers in the community can grow and employers have people to hire locally.
- A growing culture of seeing opportunity in entrepreneurship, where people have access to resources, skills, funding, and mentorship to start and grow digital businesses.

Though these conditions may seem foreign or too ambitious to some in Garrett County, there are significant early indicators that the conditions and culture exist in the community that would enable the intentional growth of a digital economy.

- 9.9 percent of residents state they work from home.⁵
 - Many of these residents are surely working for tech companies based elsewhere, learning from innovative companies, and building skills that could eventually be applied to local companies and startups.
- Twenty-seven percent⁶ of the county's 29,000 residents⁷ identify as self-employed, which suggests there are entrepreneurial instincts among residents.

⁵ United States Census Bureau (2022) "Garrett County, Maryland: Employment." Available at https://data.census.gov/profile/Garrett_County,_Maryland?g=050XX00US24023. Accessed June 28, 2024.

⁶ United States Bureau of Economic Analysis (2022) "Employment." Available at <https://www.bea.gov/data/employment>. Accessed June 28, 2024.

⁷ United States Census Bureau (2022) "Quick Facts: Garrett County, Maryland: People." Available at <https://www.census.gov/quickfacts/garrettcountrymaryland>. Accessed June 27, 2024.

- A number of these self-employed residents are likely self-employed due to necessity, rather than self-employed to seek the opportunity that can come from being an entrepreneur; however, the point remains that an entrepreneurial culture is not absent from the county.
- Almost ten percent of Garrett’s businesses are less than five years old – which is slightly higher than the state average of nine percent.⁸
 - New firms indicate an entrepreneurial culture and provide the most new job growth.

Universal, world-class internet presents a unique opportunity to export digital products and services, attract high-paying remote jobs, and empower homegrown innovators across diverse sectors. From veterans with technical skills who are leaving service to early-career remote workers who would like to move back to their hometowns, from entrepreneurs with new ideas to seniors seeking enhanced independence through telehealth – every segment of Garrett’s population stands to benefit from a digitally enabled economic shift.⁹

This report describes strategies the county can take to leverage the emerging world-class broadband infrastructure and existing seeds of a digital economy and amplify its economic impact through job creation, wage growth, increased entrepreneurship, and local wealth creation.

⁸ United States Census Bureau (2023) “Data: Quarterly Workforce Indicators (QWI).” Available at <https://www.bea.gov/data/employment>. Accessed June 28, 2024.

⁹ Karina V. Korosteline, Jocelyn Barrett (2023) Bridging the digital divide for Native American tribes: Roadblocks to broadband and community resilience. *Policy & Internet*, 10.1002/poi3.339.

Section 3: Garrett County can boost economic activity through intentional economic development centered around robust broadband

Building an active, sustainable, wealth-generating digital economy in rural areas often requires a new economic development mindset and a willingness to engage in emerging but effective strategies to increase tech jobs and support homegrown entrepreneurs. The following strategies have been successfully employed by rural communities as small and remote as Garrett County, leading to a marked growth in remote workers, entrepreneurs, startups, and business dynamism:

Actively increase the number of tech workers in the county by growing skills among residents. Training more people in digital skills and industries that pay higher-than-average wages — such as coding, software development, cybersecurity, and data analysis — allows people to bring significantly more wealth into the community via their salaries. Studies have found that each high-tech job leads to the creation of three to five additional jobs in the local economy.¹⁰

- Produce an inventory of workforce development community assets — such as K-12 programming, libraries, regional higher education opportunities, and workforce development centers — to understand what is currently happening and where there are gaps.
- Work with Garrett College to understand their tech training programs and barriers to training more people and helping them find local jobs — and then think through how the county can help address some of their challenges.
- Establish or support a tech and coding club at the high school level to increase the visibility of that career path, and invite existing tech workers to speak or volunteer.
- Host monthly tech worker networking meetups — for both permanent and part-time residents — to enhance tech workforce visibility.

Enable access to tech jobs for residents and ensure local businesses are using local tech workers to adopt technology, grow, and compete. Provide opportunities and resources for community members to obtain employment in the technology sector and enable them to stay in the community. According to the Bureau of Economic Analysis, rural workers in computer and math occupations had the fifth-highest average annual wage in rural areas, and the third-highest in the U.S. overall.¹¹

¹⁰ Timothy J. Bartik, Nathan Sotheland (2019) “Local job multipliers in the United States: Variation with local characteristics and with high-tech shocks,” Upjohn Institute Working Paper 19-301 (Kalamazoo, MI), 10.17848/wp19-301.

¹¹ Center on Rural Innovation (2023) “The equity of economic opportunity in rural America.” Available at <https://ruralinnovation.us/blog/equity-economic-opportunity-rural-america/>. Accessed June 27, 2024.

- Develop a census of regional businesses that currently hire technology workers; coordinate collaboration between these employers and workforce pipeline builders and graduates. Garrett College, for example, is a strong partner in workforce development and offers a wide array of complementary degrees and certificates. Currently, the county offers scholarships to high school graduates who attend Garrett College.
- Create a survey of current businesses to understand what their technology and staffing needs are now and in the future.
- Develop or deploy an existing remote work training program to help people understand how to successfully apply for and secure remote jobs.
- Determine who in the county is already working remotely and convene a focus group to learn about their needs and perspectives.
- Consider whether any unused publicly owned spaces in the county could be turned into coworking spaces for remote workers and venues for community workshops, social meet-ups, book clubs, mentoring programs, or public meetings.

Provide entrepreneurship support for homegrown startups. Offer resources and assistance to help local businesses succeed — especially companies that will create and export digital products and services and import wealth back into the community. Communities that nurture and support businesses during start-up and those all-important first five years of operation through networking and educational, technical, and mentoring services will foster stronger local economies and communities.¹²

- Organize events where people bring side-projects or business ideas they are working on to solicit feedback and find potential collaborators.
- Work with Garrett College to establish entrepreneurship programming related to their current degree offerings.
- Identify Garrett College professors or community leaders with experience starting or running businesses, especially those with technology sector experience and interest in serving as mentors.
- Facilitate networking between local startups and successful tech entrepreneurs/investors from other regions to expose founders to expertise and potential funding sources.
- Partner with economic development organizations to offer workshops on business planning, product development, marketing, and legal/regulatory compliance for startups.

¹² Steven Deller, Tessa Conroy (2016) Survival rates of rural businesses: What the evidence tells us. *Choices*, 31(4). Available at <https://www.choicesmagazine.org/choices-magazine/submitted-articles/survival-rates-of-rural-businesses-what-the-evidence-tells-us>. Accessed June 26, 2024.

Improve access to startup capital. Make it easier for new businesses to obtain the funding they need to launch and grow. Access to local capital is important for business formation in rural areas.¹³

- Work with local banking institutions like M&T Bank or First Peoples Community Federal Credit Union – as well as community development financial institutions and entities that offer revolving loan funds – to explore ways to connect entrepreneurs to startup funding.
- Develop relationships with organizations offering startup investment funds that focus on rural areas, Appalachia, or Maryland, like the Appalachian Investors Alliance or Garrett County’s own grant programs, such as the Small Business Marketing Grant. In addition, veterans can apply for no-interest loans through Maryland’s Military Personnel and Veteran-Owned Small Business Loan Program.
- Identify and cultivate relationships with potential investors who have ties to the region to bring visibility and credibility to its entrepreneurial brand.
- Provide grant-writing assistance – even if it is informal – to small businesses and entrepreneurs for regional or state grant opportunities, such as through the Maryland Technology Development Corporation.

Ensure everyone in the community can participate. Make programming accessible to all demographics, so that as many people as possible can empower themselves through increased economic opportunity.

- Convene a countywide advisory committee to develop plans, messaging, and actions that consider all residents when enticing entrepreneurs and major employers to invest.
- Highlight stories from all types of entrepreneurs, young professionals, and tech workers in the county.
- Verify that programming – from events to school clubs – showcases the inclusivity of technology jobs.
- Host a speaker series in locations around the county for local entrepreneurs, businesses, and industries to share their knowledge, insights, and experiences.

Environments conducive to entrepreneurial growth will witness failures alongside successes. This churn is healthy because it signifies an active ecosystem where ideas germinate, businesses iterate, and a new group of innovators continually emerges from the community. Each entrepreneurial win, each startup that grows into an

The path forward requires consistent actions, not substantial expenditures.

¹³ Craig Wesley Carpenter, F. Carson Mencken, Charles M. Tolbert, Michael Lotspeich (2020) Locally owned bank concentration and business start-ups and closures in U.S. metropolitan, micropolitan, and rural counties from 1980-2010. *Review of Regional Studies*, 10.52324/001c.11479.

established enterprise, will bear fruit far beyond its success.¹⁴ The creation of high-wage jobs creates more local disposable income that supports local retail and hospitality businesses.¹⁵ Relationships forged between employers and educators ensure a steady pipeline of skilled talent to propel future growth.

¹⁴ Tessa Conroy, Sarah A. Low (2021) Entrepreneurship, broadband, and gender: Evidence from establishment births in rural America. *International Regional Science Review*, 10.1177/01600176211018749.

¹⁵ Mark Muro (2012) "Multiplier effects: Connecting the innovation and opportunity agendas," *Brookings*. Available at <https://www.brookings.edu/articles/multiplier-effects-connecting-the-innovation-and-opportunity-agendas/>. Accessed June 26, 2024.

Section 4: With increased digital literacy and broadband adoption, Garrett County will see additional widespread economic benefits

Though the prior section focuses on business and economic development applications of universal broadband, county leaders should also anticipate more ambient benefits of great broadband to percolate through the community.

Because broadband touches almost every aspect of life, and because everyone has a different type of interest and engagement with the internet, everyone in Garrett County will benefit from broadband connectivity in different ways. The following are some of the secondary effects and more ambient impacts that broadband deployment – followed by improved adoption and widespread digital skills – can provide for a community:

- **Increases in residential and commercial real estate appreciation – and therefore property tax revenue.** Rising property values reflect a thriving local economy and allow municipalities to invest more tax dollars into community amenities, infrastructure projects, and public services that enhance residents' quality of life.¹⁶
- **Improvements in productivity and efficiency for local businesses.** Better internet connectivity allows local businesses to leverage cloud computing, videoconferencing, and other digital tools to streamline operations and collaborate more effectively, which can lead to higher output and profitability.¹⁷
- **Extended tourist visits correlated with increased expenditure on local services and brick-and-mortar establishments.** When visitors stay in an area longer because they have access to amenities like high-speed internet, they tend to spend more money at restaurants, shops, and hotels, and on local activities and attractions.¹⁸ This increased tourism revenue provides an economic boost for small businesses.
- **Cost savings and improved outcomes from digital tools, like telehealth.** The ability to receive some medical care remotely via videoconferencing reduces travel costs and missed work for patients. Telehealth can also help improve health outcomes by making it easier for patients to access preventative care.¹⁹

¹⁶ Center on Rural Innovation (2023) "The equity of economic opportunity in rural America." Available at <https://ruralinnovation.us/blog/equity-economic-opportunity-rural-america/>. Accessed June 26, 2024.

¹⁷ Harald Edquist (2022) The economic impact of mobile broadband speed. *Telecommunications Policy*, 10.1016/j.telpol.2022.102351.

¹⁸ Comcast Business (2016) "How offering free WiFi can boost profits," *Business Insider*. Available at <https://www.businessinsider.com/sc/business-benefits-free-wifi-2016-5>. Accessed June 17, 2024.

¹⁹ Abid Haleem, Mohd Javaid, Ravi Pratap Singh, Rajiv Suman (2021) Telemedicine for healthcare: Capabilities, features, barriers, and applications. *Sensors International*, 10.1016/j.sintl.2021.100117.

- **Greater governmental operational efficiency as more constituents engage with online government services.** When more residents use online portals and digital services for tasks like renewing licenses, paying fees, and accessing public records, it can allow government agencies to operate with higher efficiency. This increased reliance on online government services enables municipalities to streamline workflows and allocate resources more effectively.²⁰

Tailored digital skills instruction can empower underserved demographics like the 23 percent of Garrett County residents who are seniors, 18.2 percent with disabilities, and 8.5 percent veteran population (higher than the state averages for each demographic).^{21,22} Such programs teach valuable technological proficiencies that unlock remote work, education, independent living with assistive technologies, and veterans' ability to seek benefits, transition to civilian life, and stay connected to support systems online while remaining in their rural community. For example, remote work can help veterans with post-traumatic stress disorder have a more welcoming workspace and flexibility to attend medical appointments.²³

Providing digital literacy and skill-building programs accessible to all residents will allow Garrett County to maximize the economic benefits derived from world-class broadband infrastructure.

These widespread benefits underscore the transformative potential of universal broadband access and adoption in Garrett County. To fully realize these opportunities, the county can take proactive steps to cultivate a digital ecosystem and engage residents in the process of economic revitalization.

²⁰ Harald Edquist (2022) The economic impact of mobile broadband speed. *Telecommunications Policy*, 10.1016/j.telpol.2022.102351.

²¹ United States Census Bureau (2022) "Garrett County, Maryland." Available at https://data.census.gov/profile/Garrett_County_Maryland?g=050XX00US24023#health. Accessed June 27, 2024.

²² United States Census Bureau (2022) "Maryland." Available at <https://data.census.gov/profile/Maryland?g=040XX00US24#health>. Accessed June 27, 2024.

²³ Davis Winkie (2020) "Remote work could be silver lining of pandemic for some veterans, including those with PTSD," *Army Times*. Available at <https://www.armytimes.com/news/your-army/2020/11/27/remote-work-could-be-silver-lining-of-pandemic-for-some-veterans-including-those-with-ptsd/>. Accessed June 26, 2024.

Section 5: Garrett County can get started cultivating a digital ecosystem and economic revitalization by engaging with residents

All of these efforts begin with a committed coalition of local champions who understand the transformative potential of economic development built on digital opportunities. Finding the right people and getting together the business leaders, education leaders, and economic development leaders – and convincing segments of the population as a whole to consider new ways of thinking about economic development – is often the hardest part.

Garrett County may not be ready to implement all of these strategies at once – but to generate excitement and the belief that new strategies can work, the county should start with some of the smaller, low-cost, easy-to-implement ideas. By using small wins, the county can show the community that there are existing businesses, workers, and entrepreneurs eager for more structured support and that focusing on growing the digital economy will pay dividends.

We encourage county leaders to spend some time looking at what other similarly rural, small communities have achieved – and one place to start is by reading through the case studies and watching the profile videos of rural communities as part of the [Center on Rural Innovation's "Rural Edge" series](#).

Next, gather the people in the community already working in the digital economy, starting businesses, and training the next generation of the workforce. Talk about what each segment needs and how everyone in the community can work together to grow that segment of the economy.

What starts as intentional investments in programming to support digital economy workers and entrepreneurs will transition into a self-supporting ecosystem. Successful founders and investors will begin to reinvest their capital into budding local ventures, recognizing the tremendous upside of supporting homegrown innovation.

Ultimately, what other rural communities have achieved, and what Garrett County can achieve as well, is the creation of a self-perpetuating engine of economic diversification and vitality based on world-class broadband connectivity.