WESTMORELAND
BROADBAND

Data Collection & Feasibility Study

January 2023

Westmoreland County Department of Planning and Development

Prepared By

Michael Baker INTERNATIONAL

A Message from the Commissioners

Broadband connects people, industries, customers, and families and plays a critical role in the economic growth and productivity in Westmoreland County. COVID revealed many digital disparities and highlighted that broadband is not a luxury but a necessity for communities to thrive and grow. This is especially applicable to Westmoreland residents with low to moderate income (LMI) levels who struggle to afford quality Internet service. The Westmoreland Broadband Data Collection and Feasibility Study is critical to developing future broadband infrastructure improvements and funding. Expanding broadband will make our communities more resilient and sustainable.

Participation from stakeholders, residents, and business owners across the county helped to inform five key goals to advance digital equity, improve access to health resources, grow the county's economy, expand the county's workforce, and support municipal leadership all through targeted broadband expansion efforts. Additionally, stakeholders and field work helped identify 154 Connectivity Opportunity Areas (COAs), and 3,506 unserved home or business addresses for new service. Lastly, four Early Action projects are set to be released for bid in early 2023. This is just the beginning of the broadband expansion program.

This report advances strategies and actions of Reimagining Our Westmoreland by establishing our community as a leader in broadband infrastructure and access for all. Your participation in the study and survey will help to bring affordable and reliable high-speed broadband access to residents and business owners, especially those who are unserved or underserved.

We appreciate your continued support in pursuing broadband resources necessary to close the digital gaps in Westmoreland County.

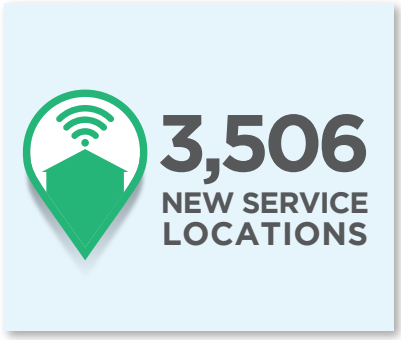
Westmoreland County Commissioners

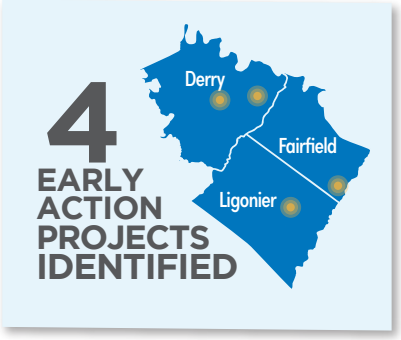
Sean Kertes, Chair

Douglas W. Chew, Vice Chair

Gina Cerilli Thrasher, Secretary

AT A GLANCE





Acknowledgments

Thank you to the Taskforce Members who lent their time and expertise to guide this process on behalf of Westmoreland County:

Westmoreland Broadband Taskforce

Eric Davanzo - State Representative

Dan DeBone - Westmoreland County Chamber of Commerce

Brian Lawrence - Redevelopment Authority of the County of Westmoreland

Bob MacPherson - Westmoreland County

McCrae Martino - Community Foundation of Westmoreland County

Jim Morrison - Municipality of Murrysville*

Cesare Muccari - Westmoreland County Federated Library System

Don Obrien - Westmoreland County

Curt Smith - Smith Communications Group

Jim Smith - Economic Growth Connection

Jesse Sprajcar - United Way

Dottie Staffen - District Representative, Office of State Senator Kim Ward

Jay Struble - Westmoreland County Community College

Rick Svesnik - Westmoreland County IT

Janine Vallano - Ligonier Valley School District

Eric Vaughan - Westmoreland County IU

Jon Wian - Westmoreland County

Jason Winters - Hempfield Township*

Mandy Zalich - Westmoreland Community Action

**Through October 2022*

KEY TERMS

Broadband

High-speed internet access that is faster than traditional dial-up access.

Fixed vs. Wireless Broadband

Fixed broadband transmits data through physical wires and cables. Some fixed broadband technologies include fiber optic, cable modem, and satellite. Wireless broadband connects devices to the internet via a short-range wireless connection, like mobile 5G.

Mbps

Megabits per second are units of measurement that generally refer to upload and download speeds to measure the file size of data transferred per second over a channel and are used to show how fast a network or Internet connection is.

Unserved

Does not have access to Internet service with at least 25/3 (25 Mbps download/3 Mbps upload) speed.

Underserved

Internet access is available but does not meet a minimum 100/20 (100 Mbps download/20 Mbps upload) speed threshold.

Digital Equity

A condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy and economy (definition per the National Digital Inclusion Alliance).

Connectivity Opportunity Areas (COAs)

Locations that are top priorities for access to new service due to little to no access to mobile and fixed broadband service at speeds below 25/3.

Contents

Introduction: A Plan for Broadband 2023

Overview

Westmoreland County understands that access to broadband is now a requirement to participate in modern society. This fact was emphasized by the COVID-19 pandemic, which exposed the challenges of poor access for unserved and underserved residents of Westmoreland County. Since then, the federal government has made historic investments in broadband under the Infrastructure Investment and Jobs Act (IIJA) to enhance access primarily in areas that have been unconnected for some time. The IIJA represents a key opportunity for areas like Westmoreland to first understand the state of broadband in their communities, and then design actionable and fundable strategies to bridge local digital divides.

Westmoreland County presents the following Broadband Data Collection and Feasibility Study findings, including recommended next steps, locations for new service, and Early Action projects. This report is guided by Taskforce and stakeholder input; interviews with service providers; identification of unserved and underserved areas via existing mapping, field survey results, and resident survey responses. It also includes guidance on funding mechanisms and applicable grant programs for which to apply. Moreover, the Feasibility Study contains an estimated implementation cost to provide service at 100/100 Mbps download/upload with cost-per-home based on the data findings, and by comparing cost estimates from other counties' broadband programs. The study also considers the relative affordability of current service plans offered for households with low and moderate income.

This Westmoreland Broadband Data Collection and Feasibility Study builds off several key data collection and planning efforts to develop informed action steps for bridging the county's digital divide. Moreover, alignment with strategic plans validates the idea that integrating broadband will enhance the County's ability to meet other important economic development objectives.

Reimagining Our Westmoreland, the County's comprehensive plan completed in 2018, recognized the importance of broadband capacity expansion as "essential to ensure Westmoreland can attract modern and emerging industries and businesses that provide high-paying jobs that appeal to young professionals and college graduates. Further, the integration of technology throughout the county can help to support technology-related industries as well as communicate the County's openness to innovation."

In 2019, Westmoreland County participated in a broadband study led by Southern Alleghenies Planning and Development Commission (SAP&DC) which identified Internet needs at a high level. The resulting 2020 broadband study and recommendations laid out options for connecting the county primarily with wireless infrastructure. While this study was foundational, the COVID-19 pandemic changed the landscape significantly. In response to this health crisis, the federal government launched the American Rescue Plan Act (ARPA) which sent State and Local Fiscal Recovery Funds (SLFRF) to counties across the country. A portion of these funds were allocated to

future broadband expansion in Westmoreland. Additionally, in 2021, the Southwestern Pennsylvania Commission (SPC) conducted a regional connectivity study for the 10 counties that make up the southwestern Pennsylvania region including Westmoreland. This Connectivity Roadmap charted the most updated path toward bridging the digital divide because it includes the critical context of the COVID-19 pandemic and the newly created IIJA funding sources.

Westmoreland County targeted broadband as an essential investment in 2021 and established a Broadband Taskforce to identify and spearhead dedicated efforts to expand broadband access within the county. The Westmoreland Broadband Program was developed to identify Internet gap areas and to work with internet service providers (ISPs) to begin deploying infrastructure to reach communities in need of broadband. Much of this countywide feasibility study is built on SPC's regional roadmap to advance a strategic focus on developing connectivity solutions specifically applicable within Westmoreland County.

Connectivity Opportunity Areas Identified Across the County (New Service Areas)

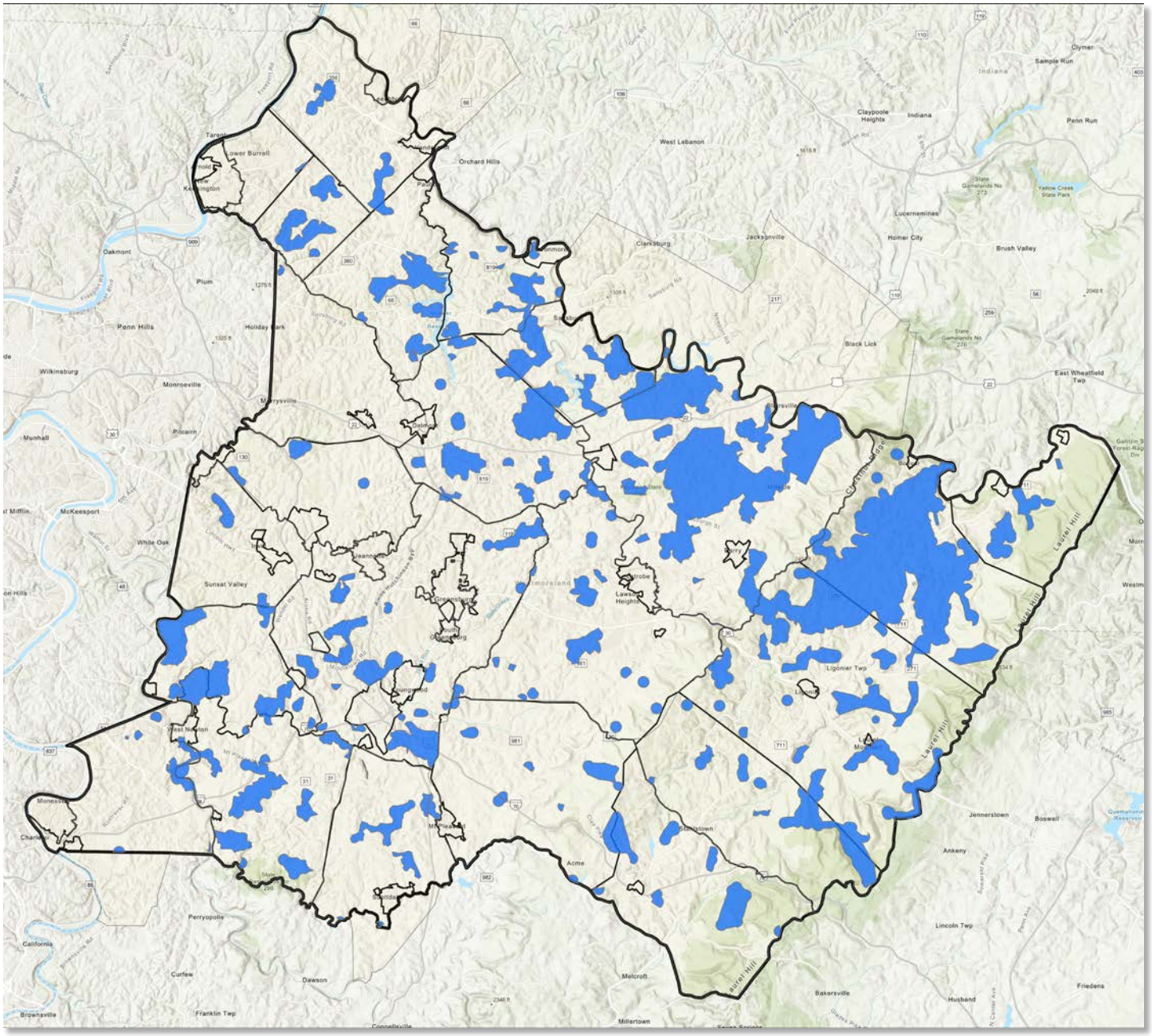


Figure 1: Connectivity Opportunity Areas represent unserved areas with insufficient broadband access. This data, when cross referenced with sociodemographic factors and planned expansion projects, will allow Westmoreland County to direct targeted investment.

Westmoreland County is taking definitive action to ensure that all its residents can connect to high-speed affordable Internet. These efforts reflect a national reckoning to bridge the digital divide by ensuring both urban and rural communities are adequately and properly connected. Further, the County's plan includes considerations around affordability and access for those with varied socioeconomic backgrounds. Westmoreland County will be in lock step with the Pennsylvania Broadband Development Authority (PBDA) as the state works toward a shared broadband goal. With new funding available, the results of the project will shape the future of infrastructure expansion so all individuals can have access and effective use of technology to participate in modern society.

A Collaborative Planning Process

Westmoreland County Planning and Development, along with a Taskforce of core community leaders, led the development and provided the foundation for this study. The planning process included interactive meetings and workshops focused on developing a shared vision and clear broadband goals and strategies for expansion. Extensive field work was conducted at more than 3,700 locations throughout the county to verify broadband connection speeds and solicit feedback for an Internet Survey and Speed Test, which garnered an unprecedented response from more than 2,500 residents and business owners.

This all culminated in the identification of thousands of locations needing new broadband service, four Early Action projects, and five guiding goals. To construct and deploy expanded, affordable broadband access, Westmoreland County engaged in the following planning activities, which will inform implementation phases in 2023 and beyond.

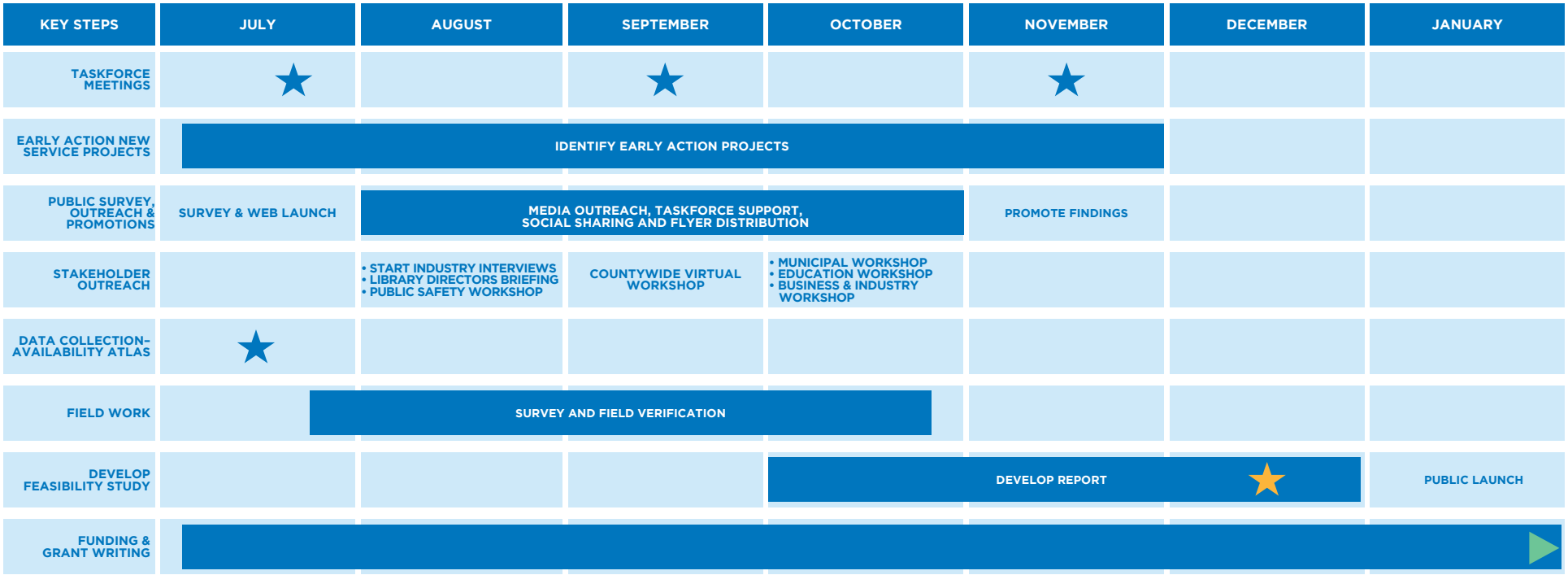


Figure 2: Westmoreland Broadband Program Schedule

The Westmoreland Broadband Program will continue through 2026 with the construction of the identified Early Action projects, continued grant funding pursuits, and program management to secure funding and prepare additional fiber deployment to reach each of the Connectivity Opportunity Areas. The County will rely on a Request for Proposal process that will result in public-private partnerships (P3) with ISPs allowing for the expansion of affordable broadband utilizing ARPA or other funding mechanisms.

Key Findings

The planning effort produced key results, sourced from dedicated engagement and field survey work, that will help govern broadband expansion work across the county over the next several years. The Westmoreland Broadband Program has been supported and validated by the visioning work of stakeholders and community members who affirm that better broadband is an integral aspect of enhancing the county's local economy and workforce, public education, health outcomes, and growing the population base.

Broadband Vision and Priorities: Throughout workshops conducted with the Taskforce and stakeholders representing the educational and library systems, municipal leaders and staff, business and industry leaders, public safety, and community organizations, participants across Westmoreland County shared their priorities for expanded broadband and helped to define a vision for the future. This vision is multifaceted and reflects three key priorities for how affordable and reliable high-speed Internet can help the county grow and thrive:

OF THE
3,778 ADDRESSES
THAT THE FIELD CREW VISITED:

60%
have outdated or non-existent broadband infrastructure (DSL, copper wire, satellite, or nothing at all).

ONLY 4%
have high-speed fiber optic cable.

Invest in Expanded Fiber Infrastructure

This feasibility report focuses on identifying infrastructure needs and preparing a path forward to design, fund, and construct fiber.

Use Improved Broadband Access to Promote Greater Economic Development

High-speed Internet is increasingly a must for businesses across all sectors. Broadband investment can be used to better support local shops and town main streets, support modernization and growth across existing industries, and attract emerging markets such as technology industries.

Prioritize Digital Equity For All

Digital equity for all Westmoreland residents is a prerequisite to the efficacy of infrastructure investments and economic development—if target populations cannot access the Internet at home, school, and work, other broadband activities will be for naught and economic inequities will continue into the next generation.

Survey and Field Work Data: A public survey was conducted to gather qualitative data from Westmoreland County residents and businesses on their broadband availability and usage. Their feedback corroborated findings gathered at a regional level in 2021 through the SPC regional data collection effort and emphasized the overall lack of available Internet options in rural pockets of the county. It also revealed significant changes in work and learn from home trends post-pandemic, which indicates that the need for comprehensive broadband intervention has only grown over the last several years. To further verify this data, field work was performed in suspected low-access areas to determine how many unserved and underserved areas there are in the county and where they were located. Of these low-access areas, nine are low to moderate income including Arona Borough, Avonmore Borough, Fairfield Township, New Florence Borough, St. Clair Township, Seward Borough, Smithton Borough, West Newton Borough, and Youngwood Borough.

Early Action Projects and Prioritization Metrics: With so many unserved and underserved locations to cover, bringing fiber to all will require some time to fund and construct. With currently available funds, a process was developed to determine which areas of highest need would be strong Early Action projects to complete. The resulting scoring matrix analyzed variables such as income statistics, the number of homes, businesses, and CAIs. The matrix considered additional metrics on two vulnerable demographic populations, including seniors and children. It then factored in broadband variables such as current fixed broadband and mobile speeds and estimated costs to build to each community.

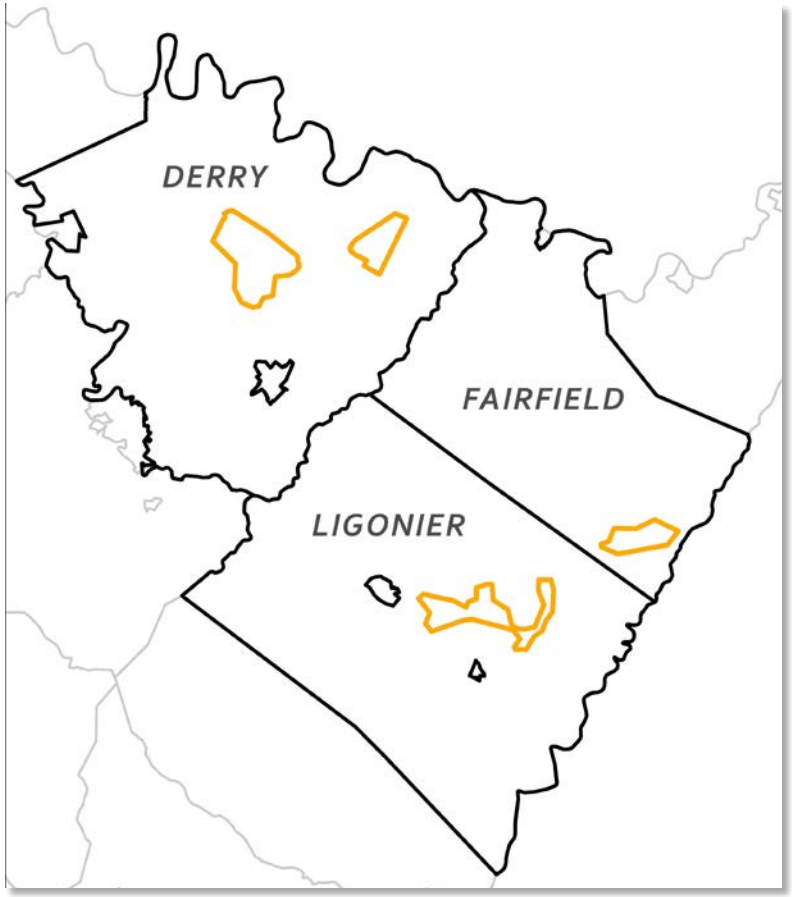


Figure 3: Map of Early Action projects identified through this project.

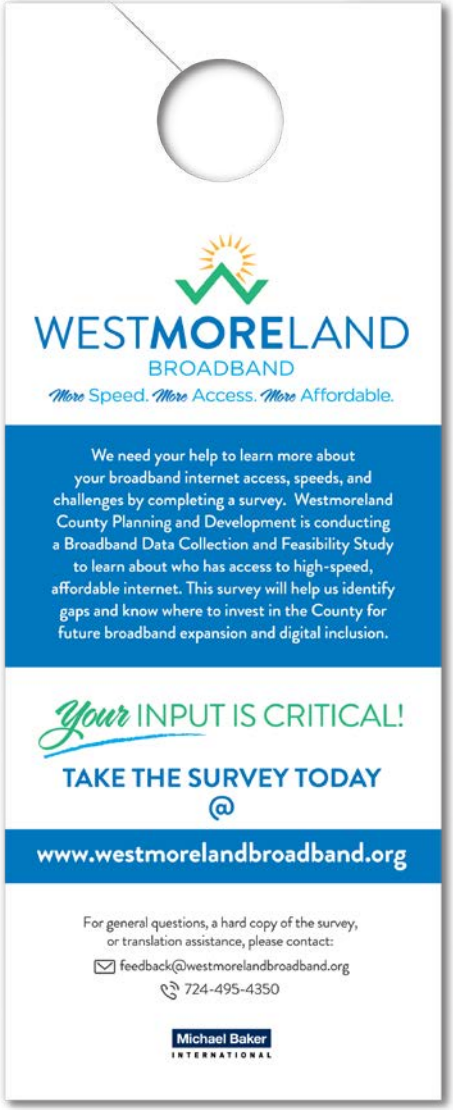


Figure 4: Image of the doorhangers used. These were left at each address surveyed by field crews, except in limited instances where access to a door or mailbox was not possible.

Funding Broadband Activities: Although broadband is the focus of substantial federal and state grants, the timelines, maximum grant allocations, and applicable project guidelines vary.

A comprehensive Funding Strategy was created to successfully pursue and secure state and federal grants in coming years. This includes the identification of funding sources, application development and submission requirements, and grant administration to ensure program compliance. Some of the entities the County will petition funding from include the Pennsylvania Broadband Devlopment Authority (PBDA), Appalachian Regional Commission (ARC), US Department of Agriculture (USDA), and the National Telecommunications Information Administration (NTIA). Recognizing that the funding strategy is a living document that will likely be adjusted as new information becomes available, the following available funds were targeted for pursuit over the next three years:

- **Capital Projects Fund (PBDA)**
- **ReConnect Grant, Round 6 (USDA)**
- **Area Development Program (ARC)**
- **POWER Initiative (ARC)**
- **Broadband Equity and Deployment (NTIA/PBDA)**

State of Broadband in Westmoreland: 2022 Findings

Inventory and Assets

A complete accounting of all currently deployed broadband infrastructure and assets in the county was performed during the program's first phase. Federal Communications Commission (FCC) Form 477 collects information captured at the census block level about Internet connections and services, such as provider, speed, and technology, that ISPs are required to provide to the FCC biannually. Currently, the FCC is undergoing a revamp of Form 477 data because there are challenges with its accuracy. ISPs must self-report twice a year, but they might do so erroneously, based on outdated data or a lack of time to pull necessary data together. Also, Form 477 data is overstated, meaning if one resident has high-speed broadband service within a given census block, the whole census block is considered served. This is often not the case, especially in rural areas. By documenting broadband access by address instead of by census block, we can better understand how broadband is being deployed across the county and where competition allows residents a choice in ISP.

Using Form 477 as a baseline, Westmoreland County Planning and Development needed to research the true nature of the unserved areas of the county. Unserved areas have broadband speeds less than 25/3 megabits per second (Mbps) download/upload, respectively. Unserved areas do not have access to high-speed Internet and may be only relying on satellite or Digital Subscriber Line (DSL) technology. Households and businesses cannot function in their day-to-day activities if speeds are below 25/3. Westmoreland County refined their assessment of broadband availability by relying on data gathered at regional levels through the 2021 SPC Connectivity Roadmap and the 2020 SAP&DC Broadband Study, and validating addresses reported as unserved through on-the-ground field work.

Through this effort, Westmoreland County created an updated broadband map for this Feasibility Study that will guide where investment is most needed to close connectivity gaps. Moreover, many grant programs require a countywide broadband feasibility study to be submitted to qualify for funding.

Countywide Mapping: Identification of Unserved and Underserved Areas

The County utilized recent SPC data to develop a living broadband atlas called the Westmoreland Broadband Availability Atlas.

This resource is an interactive map to visualize existing broadband activity within Westmoreland County. The Broadband Availability Atlas contains three tabbed dashboards that allow for quick analysis of providers' footprints, fastest available speed in an area, and the technology (i.e. fiber, cable, DSL) available in an area. Mapping the current availability displays broadband thresholds of well-served, served, underserved, and unserved areas along with the number of current broadband providers in an area, and what technologies are currently available in an area. This dashboard expands to include additional data layers, such as vertical assets and other broadband data sourced directly from ISP interviews, giving the County a clearer view of the true state of connectivity.

The Broadband Availability Atlas includes the following data:

- Broadband datasets: Most recent FCC Form 477 census block data broken down by speed, provider, technology, and provider density. A custom FCC Form 477 processing tool was used to ensure satellite providers are removed from the dataset and domain values are properly translated to easily understandable definitions. It also includes FCC Rural Digital Opportunity Fund (RDOF) awarded areas, and previously designated Federal Opportunity Zones.
- Additional asset inventory cultivated from three sources:
  1. Data sharing agreements via non-disclosure agreements (NDAs) with ISPs and middle mile providers,
  2. Open-source vertical assets available via download from the FCC, and
  3. County-owned datasets.
- Opportunity areas for adoption and broadband access via the previous SPC study.

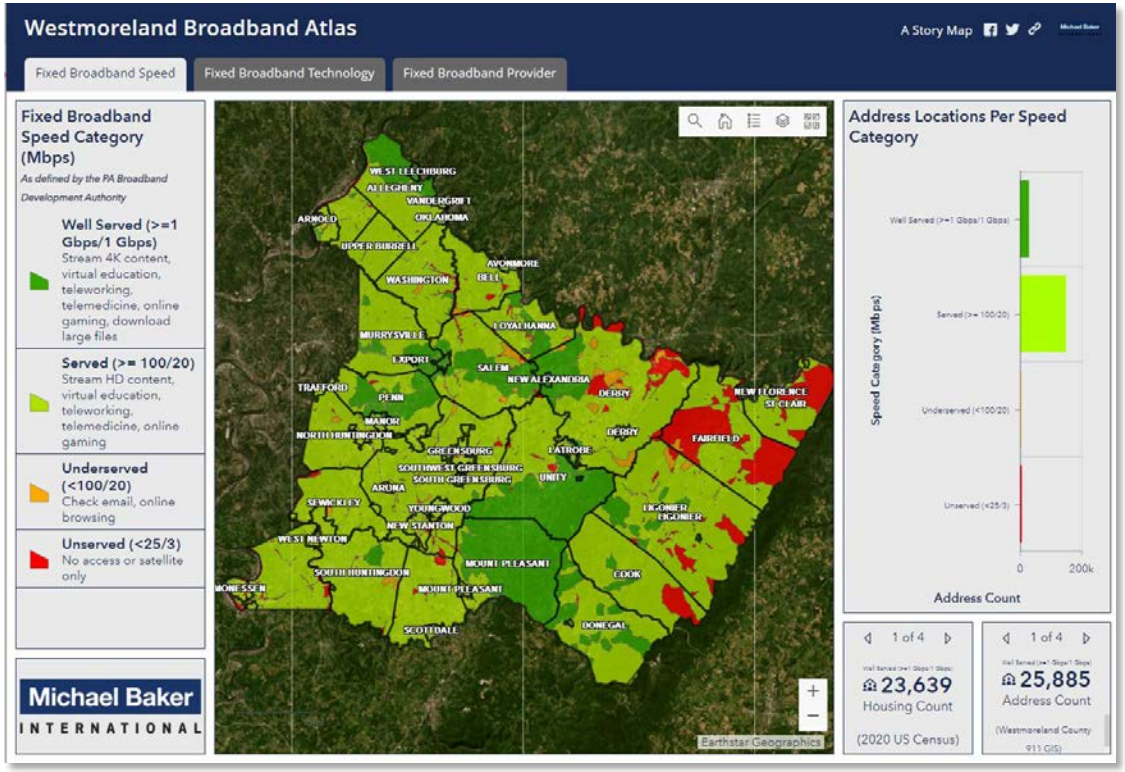


Figure 5: The Broadband Availability Atlas is an interactive online dashboard that identified areas with varying levels of broadband service and speed.

To further validate whether an address is unserved, field crews visited 3,778 address locations that were purported to not have access to broadband per FCC and SPC data. Residents and businesses were visited via a "boots on the ground" verification methodology that placed a doorhanger at each location, asking the resident or business to take the Internet Survey and Speed Test. Field crews documented and photographed any visible telecom infrastructure nearby and what type of infrastructure was connected to the residence or business. These efforts will set the stage for Westmoreland County to challenge the FCC's new National Broadband Map, released November 18, 2022. Challenging the map may benefit the County with future funding in two ways – first, by showcasing that there are more unserved locations in the county than FCC data may indicate, and second, by showing that the mobile wireless coverage is overstated. This provides the Commonwealth, and subsequently Westmoreland County, with additional funding opportunities related to the IIJA Broadband Equity, Access, and Deployment (BEAD) program implementation and forthcoming 5G for Rural America implementation.

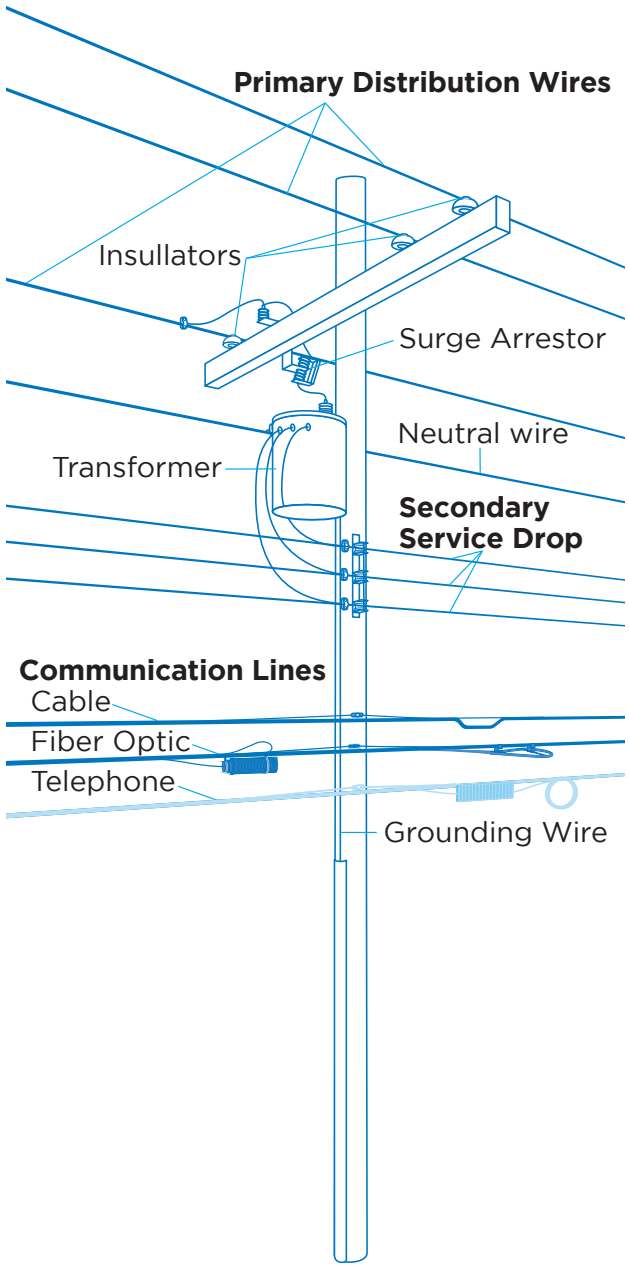
The Broadband Availability Atlas accounts for existing conditions so that it informs future-proofing decision-making. It utilizes external geospatial datasets, such as RDOF areas, to understand which rural areas are already projected to undergo broadband enhancements. RDOF is a separate program in which unserved rural areas of America were auctioned off by the FCC to ISPs. For the purposes of the Westmoreland Broadband Program, it is in the County's interest to connect with Windstream, the ISP who won RDOF areas in Westmoreland County, and see where future expansion plans might align. Aligning and coordinating expansion plans will help to avoid overbuilding and a duplicative use of funds, and may even lead to resource sharing where possible.

Market Overview

It is critical that the project plans generated by the Westmoreland County Broadband Program benefit those who are living in unserved and underserved communities with services that are affordable to households with low- to moderate-income. However, it is equally important that newly designed project plans also speak to the priorities and motivations of the ISPs who will compete to win the construction contracts that come from this program. By incorporating ISP feedback at the planning stage, the County can define project areas and prepare bid processes that are more likely to meet both

resident needs and garner ISP participation. The County does not wish to fully fund or own fiber infrastructure, so ensuring that projects are viable from the ISP business standpoint also is essential to convincing them to invest and contribute to project costs. To ensure this plan is informed by a wider industry context, the County conducted detailed interviews with 13 ISPs currently operating in the county. During these interviews, qualitative and quantitative data were collected to inform this planning effort.

The 13 ISP interviews were conducted between August and October 2022. The ISPs who were interviewed are Armstrong, Breezeline, Brightspeed, Citizens Fiber, Comcast, Consolidated Communications, Crown Castle, DQE Communications, In the Stix Broadband, Laurel Highlands Telephone Company, T-Mobile, Verizon, and Windstream. Each entity described their company background as well as what services, speeds, and price points they offer. They were asked if they have already identified known areas within the county that lack broadband connectivity, and they shared their perceptions of unmet customer needs. Finally, they were given a chance to share their future expansion plans and any concerns or constraints related to new funding requirements. A table presenting each ISP's standard plan pricing, advertised speeds, and technical mode of transmission is included in this report as Appendix C. This table also indicates if the ISP participates in federal affordability programs, such as Lifeline or the Affordable Connectivity Program (ACP), or if they have their own income-based plan to understand each ISP's commitment to price equity in the area.



Countywide Field Survey: Validating and Refining the Data

Survey Results

Four types of geospatial data points were collected for the Westmoreland Broadband Program. Two data points, based on customer experience and primary location, focused on the broadband survey and speed test results. The other two data points were gathered through field work, as crews logged broadband infrastructure types and mobile broadband speed test results at the locations inventoried.

The broadband survey ran from July 18 through October 31, 2022 and resulted in 2,504 responses from households and businesses throughout Westmoreland County. The survey was offered online via the Westmoreland Broadband website. Hardcopy versions of the survey were also available upon request and mailed out to residents or businesses. Residents and businesses that took the survey online also took a speed test, which was imbedded in the survey and automatically captured the user's download and upload speeds without requiring any interaction from the user. Residents of Westmoreland County ran speed tests 2,208 times during the survey to determine what the download and upload speeds were at their location.

Map of Survey Speed Results

Speed tests were collected during the online survey utilizing Speed Test by Ookla (https://www.speedtest.net/). The Speed Test can capture the user's ISP, download speed, and upload speed.

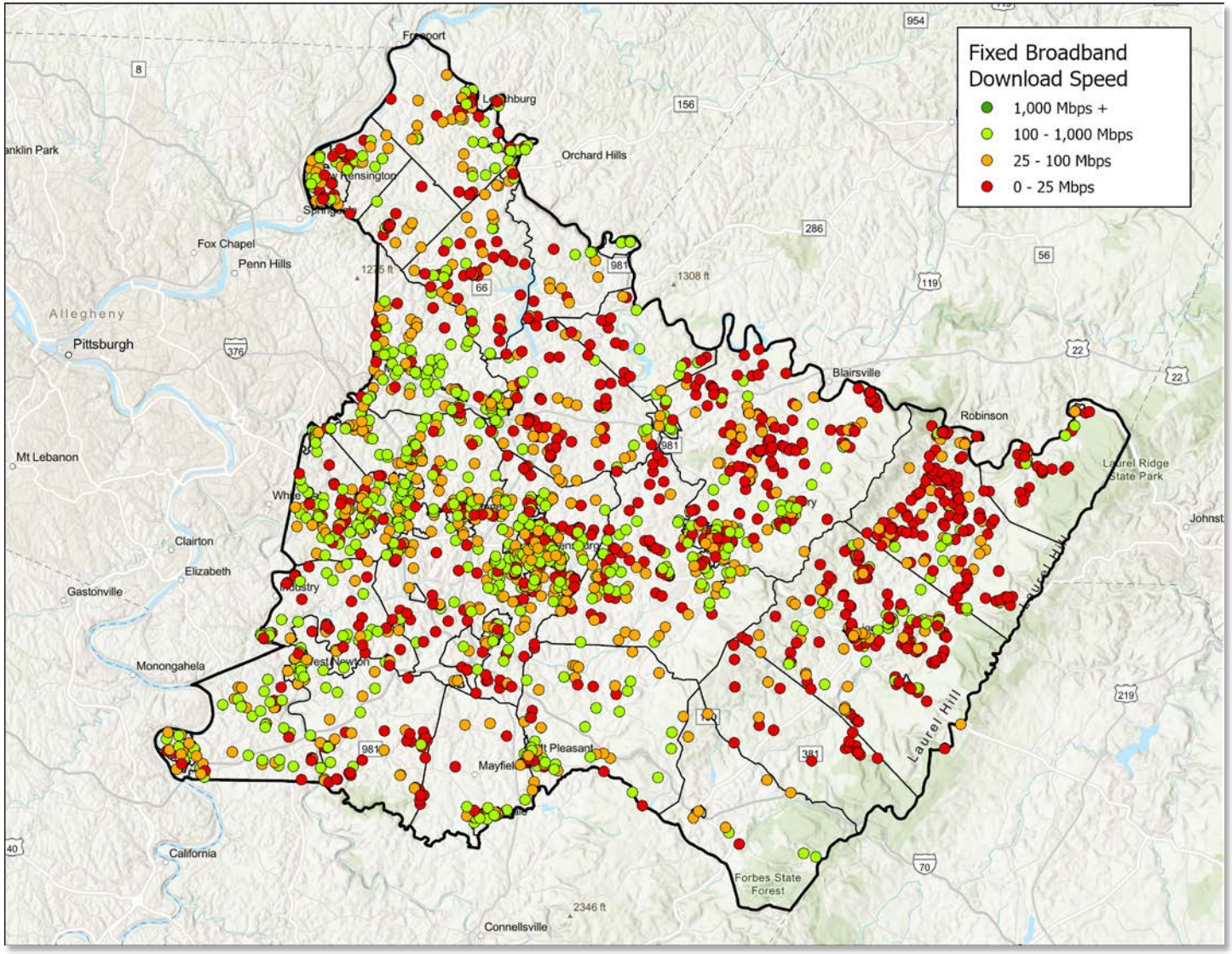


Figure 6: Survey results measured Internet speed for each user who took the survey online.

Rural Area Average Speeds. The survey results show rural areas as having the slowest average speeds: 65.5 download/15.3 upload, which are considered "underserved" speeds. Many of the red and orange dots, which correspond to slow speeds, are clustered on the eastern side of the county which is mainly rural.

Urban Area Average Speeds. The average speeds among more urban and suburban areas were faster as compared to rural areas: 151.9 download/28.0 upload. These speeds are technically considered "served," but an assessment based on speeds alone does not account for cost barriers. For example, low- income residents may not have Internet service due to excessive costs, even if service is available to their address. It is possible that many people living within urban areas with higher Internet speeds might not be able to afford them without financial assistance.

Why Are People Unconnected?

While many residents reported having some kind of home Internet access, a more in-depth look at the survey results calls attention to the significant gaps in quality access: 9% of the total surveyed population stated that they rely on their cellular data plan for their main home Internet, and 12% stated having no home Internet at all. Although mobile connections are better than no access whatsoever, it is important to recognize that complete reliance on mobile devices for connectivity will limit what the user is able to do online, and depending on the plan, may end up creating financial hardships for those with costly cellular data plans. This was a key finding that offers several levels of insight—while mobile connectivity is not the gold standard Internet service, communities or individuals who solely rely on mobile devices have some connectivity, and therefore might have more resiliency when waiting for better service options. The County intends to provide every resident the opportunity to get physically connected, but a prioritization process is needed to determine where expansion investments are made and in what order. Communities that lack both mobile wireless and fixed broadband options will be prioritized in the near term, as they statistically have the highest need. Instances of the lowest mobile download speeds often occur in areas that also report slow fixed wireless speeds. For example, the concentration of red dots in the eastern side of the county corroborates rural respondents' reports that neither mobile wireless nor fixed broadband speeds are adequate, indicating that this area is at the highest level of priority for broadband expansion work.

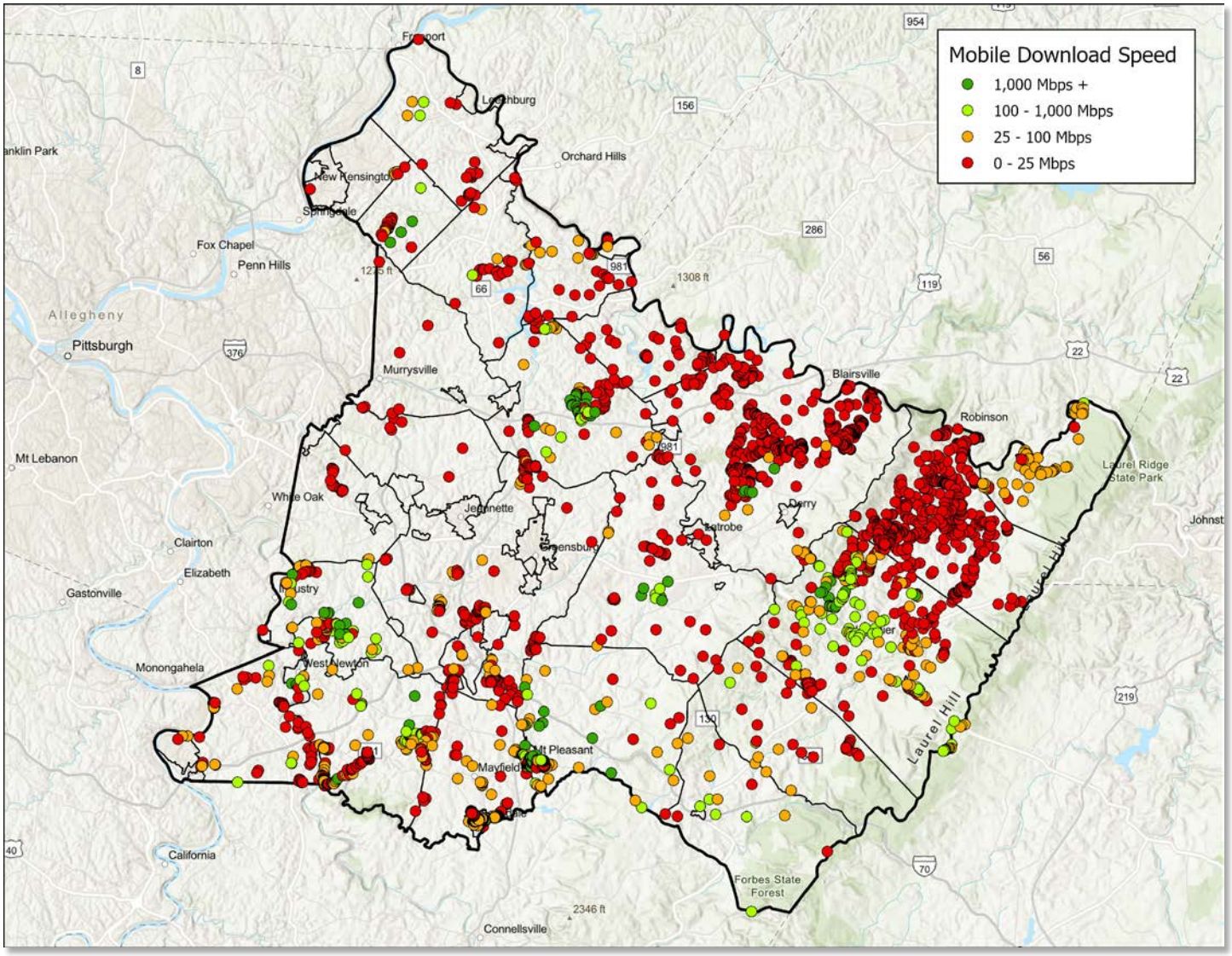


Figure 7: The mobile speed data (AT&T, T-Mobile, and Verizon) was taken by field crews using MiFi Jetpacks.

Rural and Urban Broadband Barriers

All survey respondents were asked to explain why they are not subscribed to the Internet: **69% cited that no service was offered in their area, and 18% said the price was too high.** Lack of available and affordable plans are the two key barriers to Internet access, and while Westmoreland suffers from infrastructure gaps and pricey plans, these results indicate that the highest and primary need is for expanded infrastructure. When broken down into rural and urban demographics, the results reinforce a national trend. Of the urban survey respondents who reported that they do not have Internet access, 65% cited lack of affordable plans, while 27% said that there is no service offered in their area. This is consistent with past broadband expansion patterns, where ISPs overbuild to urban areas and avoid lower income populations who cannot afford plan costs. While service is available in urban areas, it is inaccessible to more than half of the survey respondents. The opposite is true for rural respondents: 77% reported the lack of available service and only 9% cited high plan costs as the main reason they are not connected. For rural residents, lack of infrastructure and therefore lack of service is the main barrier to access. These findings underscore the need for developing tailored strategies for expanding broadband access specific to rural and urban communities to address their respective barriers.

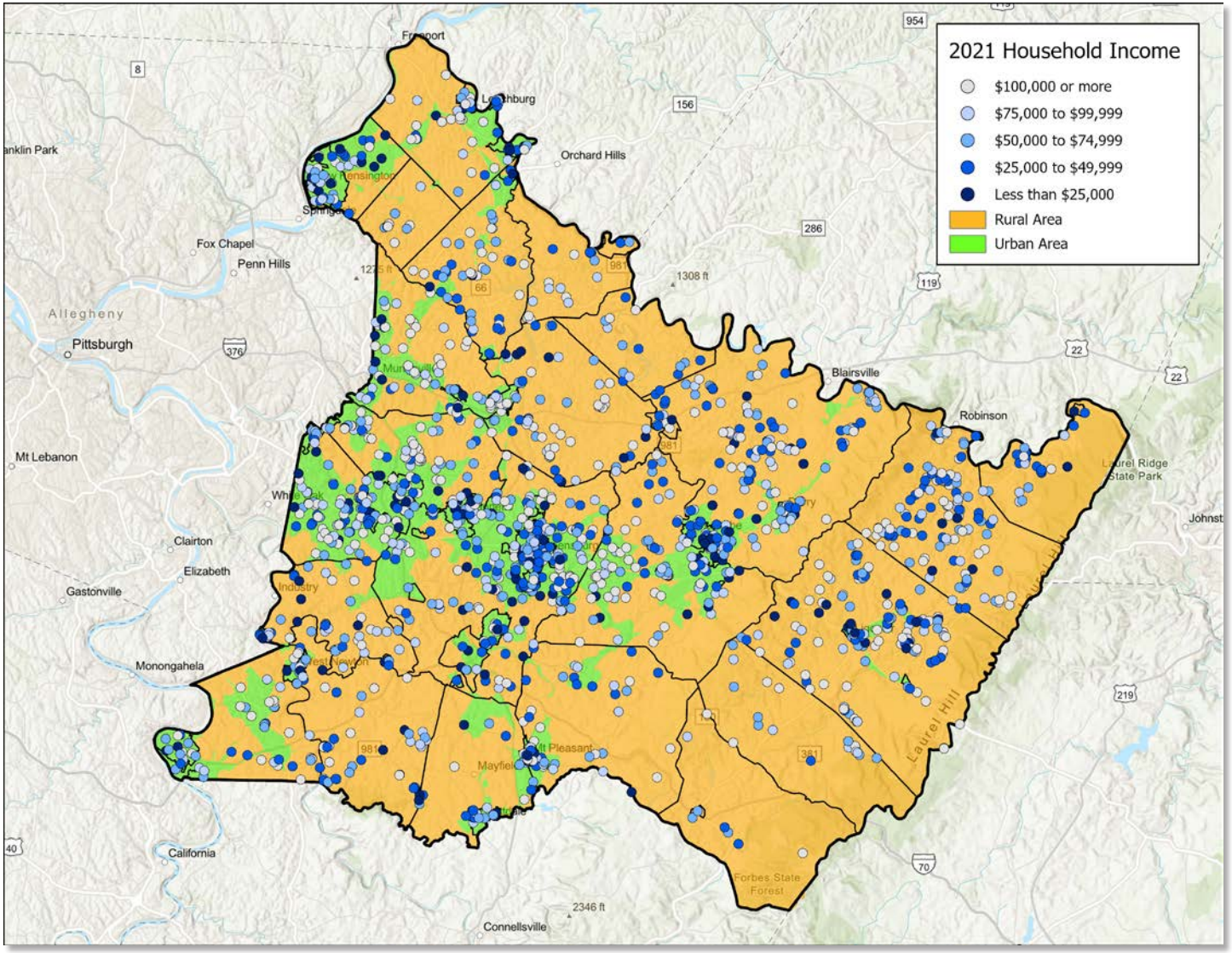
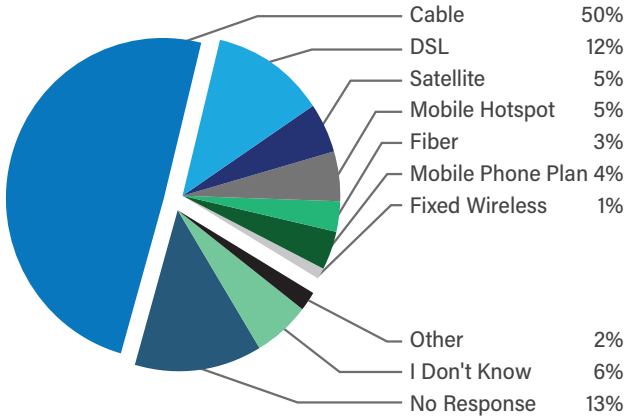


Figure 8: 2021 household income, compared with census-designated rural/urban areas, was noted in addition to access and speed results to further understand where costs limit residents' ability to afford high-speed plans.

Other Barriers to Access

To probe further into the nature of broadband access barriers in Westmoreland County, another survey question was included: What barriers exist for upgrading Internet service? Importantly, 17% of respondents said no barriers exist that prevent them from upgrading their Internet service plans, which might indicate that this population considers their plan options affordable to them, and that they are satisfied with the speed of their service. This tells us that about a fifth of those surveyed do not need direct broadband related investments on behalf of the County. Of the remaining results, 26% said "I can't afford a faster connection," and 32% said "I can't get a faster connection," supporting key findings on overall barriers to access. The median price range for both urban and rural areas is ($81-$100), and when asked further on affordability, 91% of respondents said they would be unwilling to pay more to upgrade their service plan. These results on relative affordability and willingness to pay more correspond with respondents who reported lower household incomes. Notably, 12% reported "other", and another 12% skipped the question entirely, indicating that there are individual circumstances that are preventing plan upgrades that are not considered affordability or availability barriers by the respondents.

Type of Internet Service



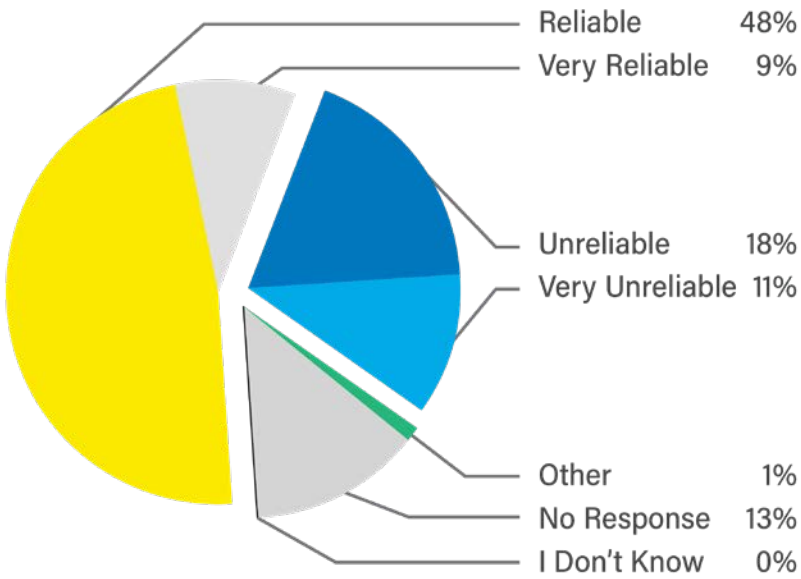
91%

of respondents said they would be unwilling to pay more to upgrade their service plan.

Reliability Matters

In addition to general information about access, the survey also found that residents are interested in faster, more reliable Internet primarily for communication purposes but also to support working from home, digital educational tools, and managing finances. When asked to describe Internet reliability, only 57% of respondents reported that their connection is reliable. This is a key insight, because while a speed test might measure speeds, it only takes a moment-in-time snapshot. Internet speeds constantly fluctuate due to environmental factors, such as weather and outages, and congestion on the network, meaning that when many people are online at once, the speeds will slow and reliability decreases. If the network is reliable, it will only fluctuate slightly in response to these external factors. If the network is unreliable, residents and business owners are periodically blocked by their lack of connection, often in an unpredictable pattern to the end user. Therefore, an unreliable connection is almost as useful as no connection at all.

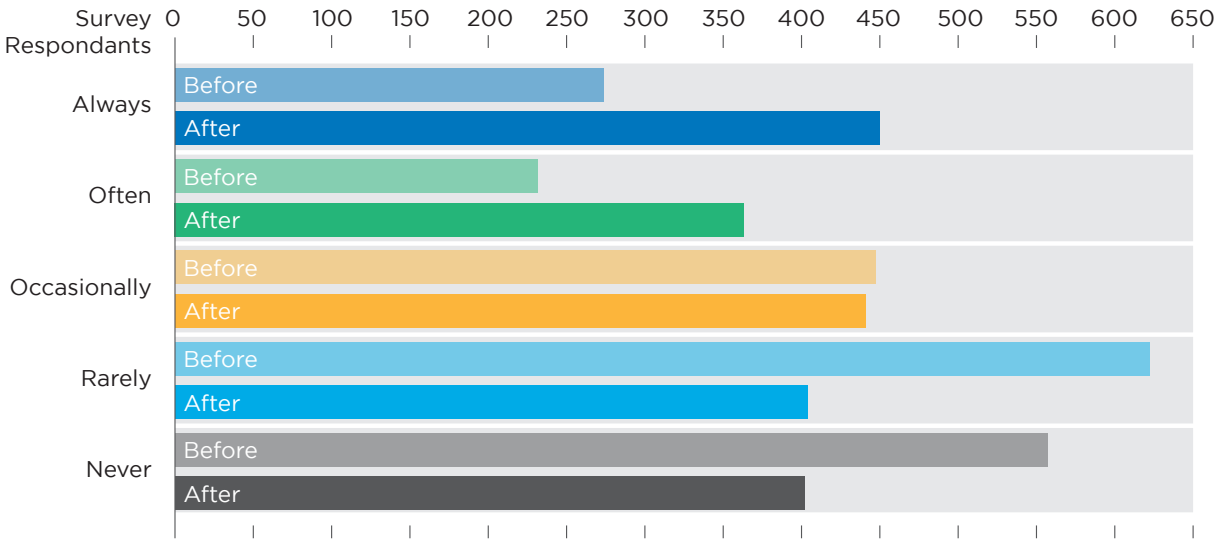
Internet Reliability



ONLY 57% of respondents reported that their connection is reliable or very reliable.

The need for faster, more reliable Internet has become more evident by the overall increase of and reliance on home Internet usage due to the COVID-19 pandemic. For example, when asked to compare how their work-from-home and learn-from-home patterns have changed pre-COVID versus post-COVID, there was a significant change. As anticipated, more people are working and learning from home after COVID. While these results were expected, it helps offer another layer of nuance to broadband expansion plans: new broadband investments must accommodate current Internet usage needs, which have changed significantly due to the pandemic. Even broadband expansions performed as late as 2020 may be considered insufficient given this public health event.

How Often Did You Work From Home and/or Learn From Home Before/After COVID?



Understanding the Users: Key Populations for Prioritization

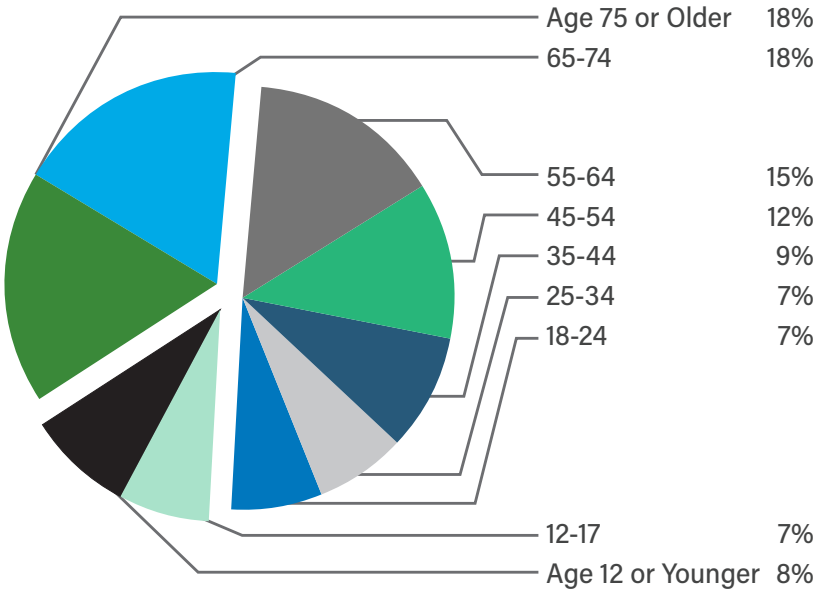
Rural Residents

Survey responses indicate many rural residents suffer from poor access and service with little provider choice and high prices. Rural residents also face a significant barrier with a lack of ISP options as only 17% felt they had a broad selection of service options. As a result, rural residents often rely on cellular data for their home Internet access more than any other demographic group. This is especially true when considering 98% of all survey respondents that fall within the COAs are rural. Similarly, 74% of all addresses inventoried by field crews were in rural areas.

74%

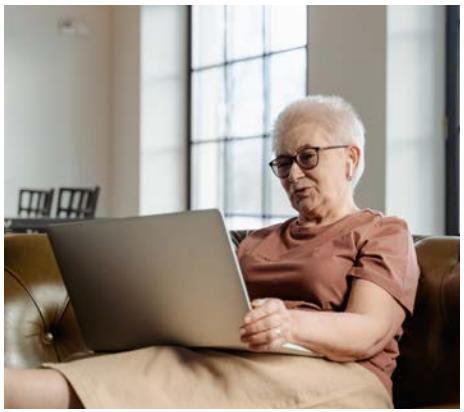
of all addresses inventoried by field crews were in rural areas.

Age Group that Uses the Internet



Households with Children

Households with children under 18 need increased service capabilities due to larger households and additional Internet usage, more online hours, and many online activities and needs. Of the survey respondents, 23% of households have children, and 25% of households have four (4) or more people living together (with or without children). Since the global pandemic, 50% of households with children in Westmoreland County say they "often" or "always" work or learn from home. Many of these households report that they do not have Internet capabilities to meet the demands of working remotely, additionally: 44% of these households consider their Internet to be unreliable.



Seniors

36% of survey respondents in Westmoreland County say that one (1) or more seniors live in the household. 33% say they consider their Internet to be "unreliable" or "very unreliable". Of those who consider their Internet to be "unreliable" or "very unreliable," 59% say they cannot get a faster connection. This indicates a lack of high-speed Internet options in these areas. Older residents would also benefit from increased digital literacy education about the opportunities technology and Internet access provides for their personal use.

People with Disabilities

Households with people suffering from chronic illnesses or disabilities need increased access to telehealth, emergency services, and other health-related apps and services. Of the 2,504 survey respondents in Westmoreland County, 2% suffer from some form of chronic illness or disability. The most prevalent disabilities include problems with eyesight (37%), mental disability (24%), and joint pain or arthritis (22%). Of households with a chronic illness or disability, 40% say they consider their Internet to be "unreliable" or "very unreliable". This is an important statistic, as those with disabilities are also more likely to have limited mobility to access daily needs, health services, and employment. Reliable Internet can help these individuals meet their needs more easily and safely from their home.

HOUSEHOLDS WITH CHILDREN

44%

of these households consider their Internet to be unreliable.

HOUSEHOLDS WITH SENIORS

33%

say they consider their Internet to be "unreliable" or "very unreliable".

OF THOSE

59%

say they cannot get a faster connection.

HOUSEHOLDS WITH DISABILITIES

40%

say they consider their Internet to be "unreliable" or "very unreliable".

Field Verification Results

For field verification, two field crews visited 3,778 locations in-person to determine what broadband infrastructure may or may not be available at these locations. Field crews logged this information and more than 10,000 photographs of the associated infrastructure. While in the field, they also measured mobile broadband speeds available at each location visited. The crews logged 2,377 speed test results each for AT&T, T-Mobile, and Verizon providers for a combined total of 7,131 speed tests. The field verification and mobile speed test inventory took place from July 18 through September 23, 2022. This section of the report outlines the results of the data collection outputs from these data points. The results are depicted with maps and charts on the following pages.

FIELD VERIFICATION RESULTS

Two field crews visited

3,778 LOCATIONS

And conducted a total of

7,131 SPEED TESTS

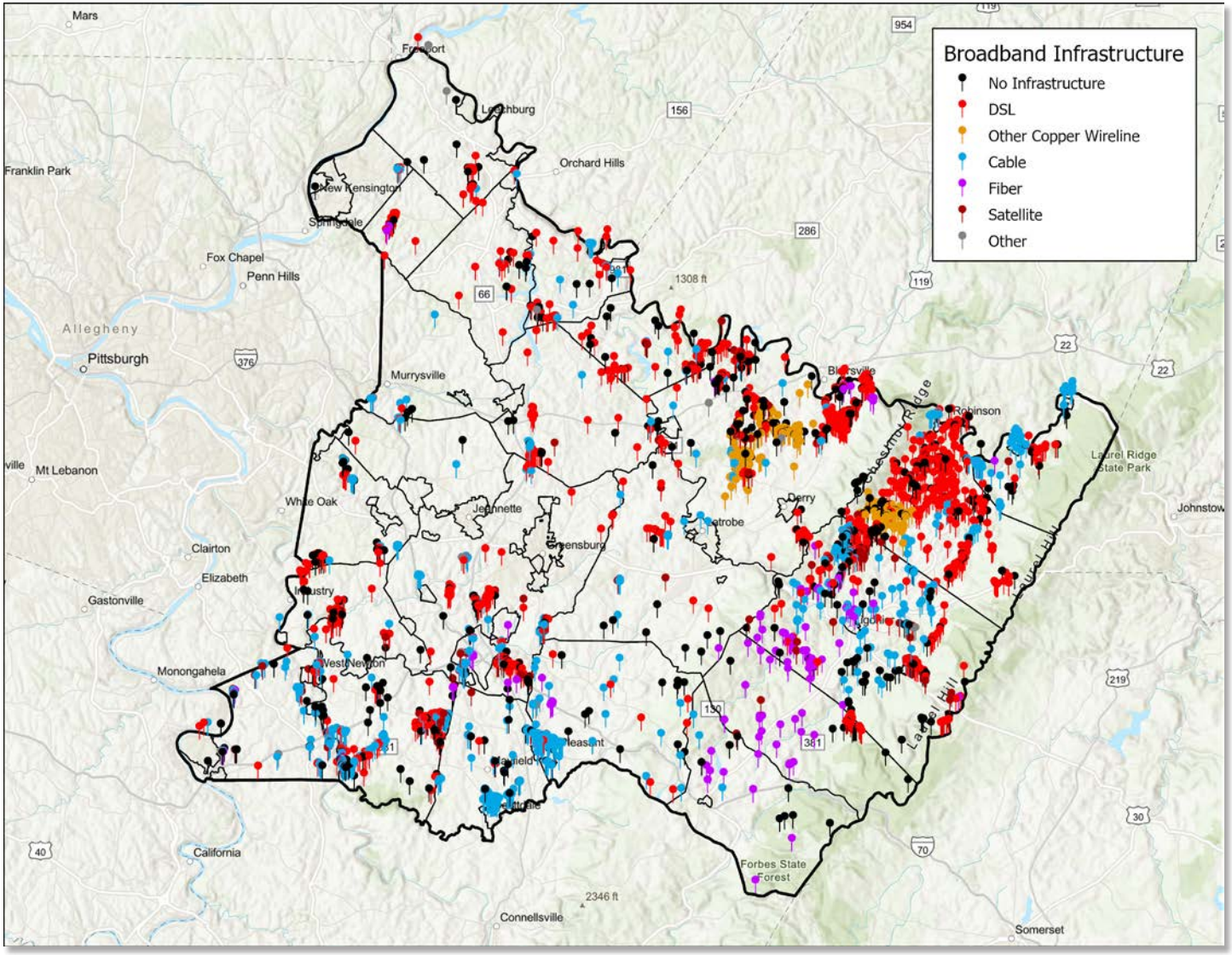


Figure 9: Broadband infrastructure identified by field crews shows diverse infrastructure across the county.

New Service Areas

The creation of COAs was a culmination of all the data outputs mentioned in this section. COA addresses were identified using GIS desktop analysis, the County's Next Generation 911 database, household, and business locations (overlaid on unserved broadband areas from FCC data and refined by the Availability Atlas data), and survey and field verification results. With these results, Westmoreland County can make informed decisions to expand broadband based on known gap locations that are truly unserved.

As of November 2022, the results show **3,506 addresses with poor or no broadband connectivity** that are within the new service areas.

A dynamic version of this map will be available on http://westmorelandbroadband.org/ with user instructions so that members of the public can zoom into the COAs. It will illustrate project build-out progress, with updates indicating which areas are completed and by which ISP, as well as which areas are still underway. Members of the public can also leave comments via the website if they believe a location is missing or not included in the unserved inventory.

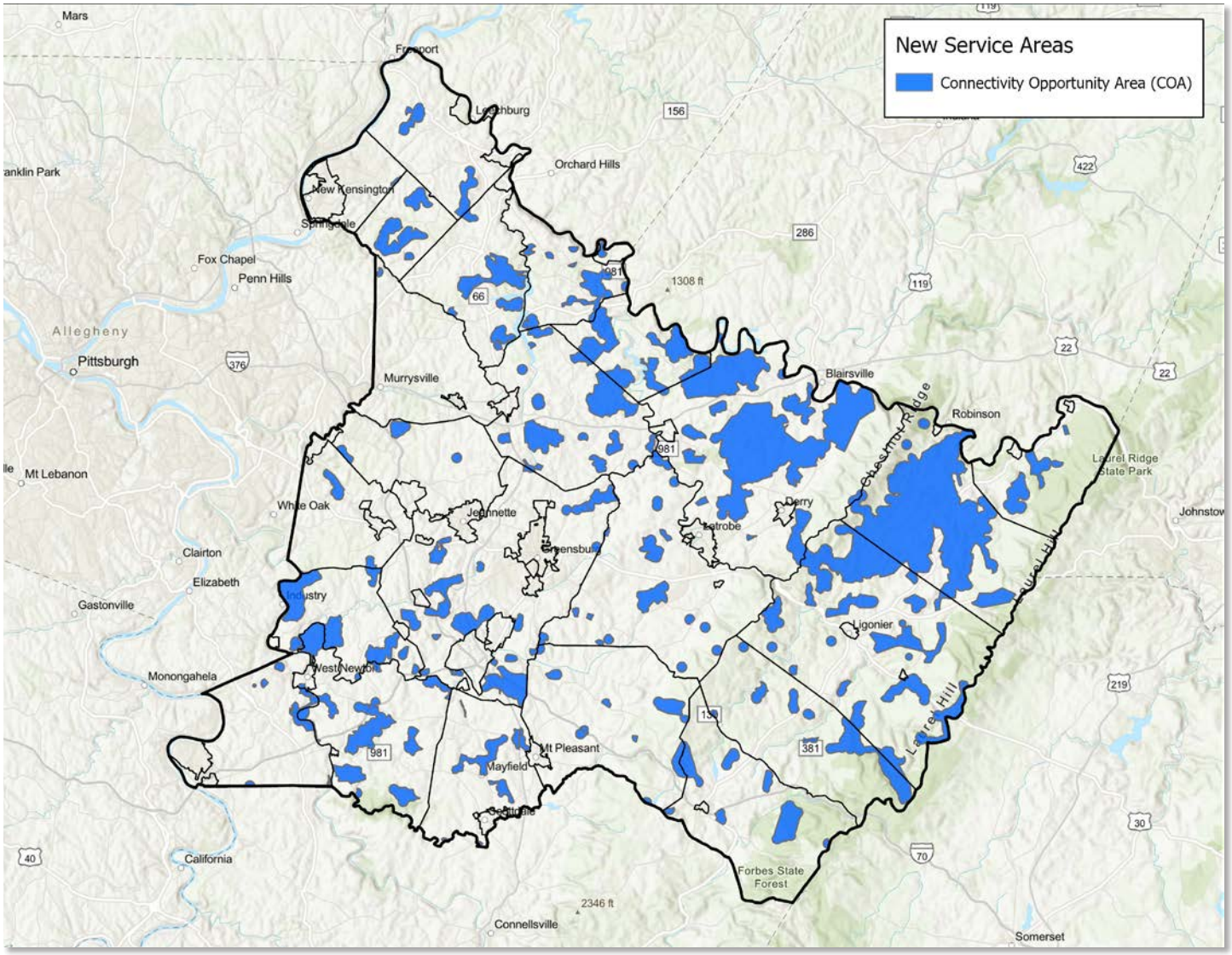


Figure 10: New service areas, or COAs, show gaps in service.

FCC Form 477 Data

This map depicts areas in Westmoreland County where the FCC Form 477 data states that the areas are unserved or underserved. Relying on this data alone indicated 2,103 addresses in Westmoreland do not have reliable Internet. However, during the field verification portion of the project, field crews surveyed these locations and verified some areas as served, and others not covered by the FCC Form 477 data as unserved. The FCC is currently conducting a national Broadband Serviceable Location Fabric bulk challenge process. This effort is intended to refine and correct previously inaccurate Form 477 data. The result should be a nationally recognized and verified account of which areas are affected by the digital divide.

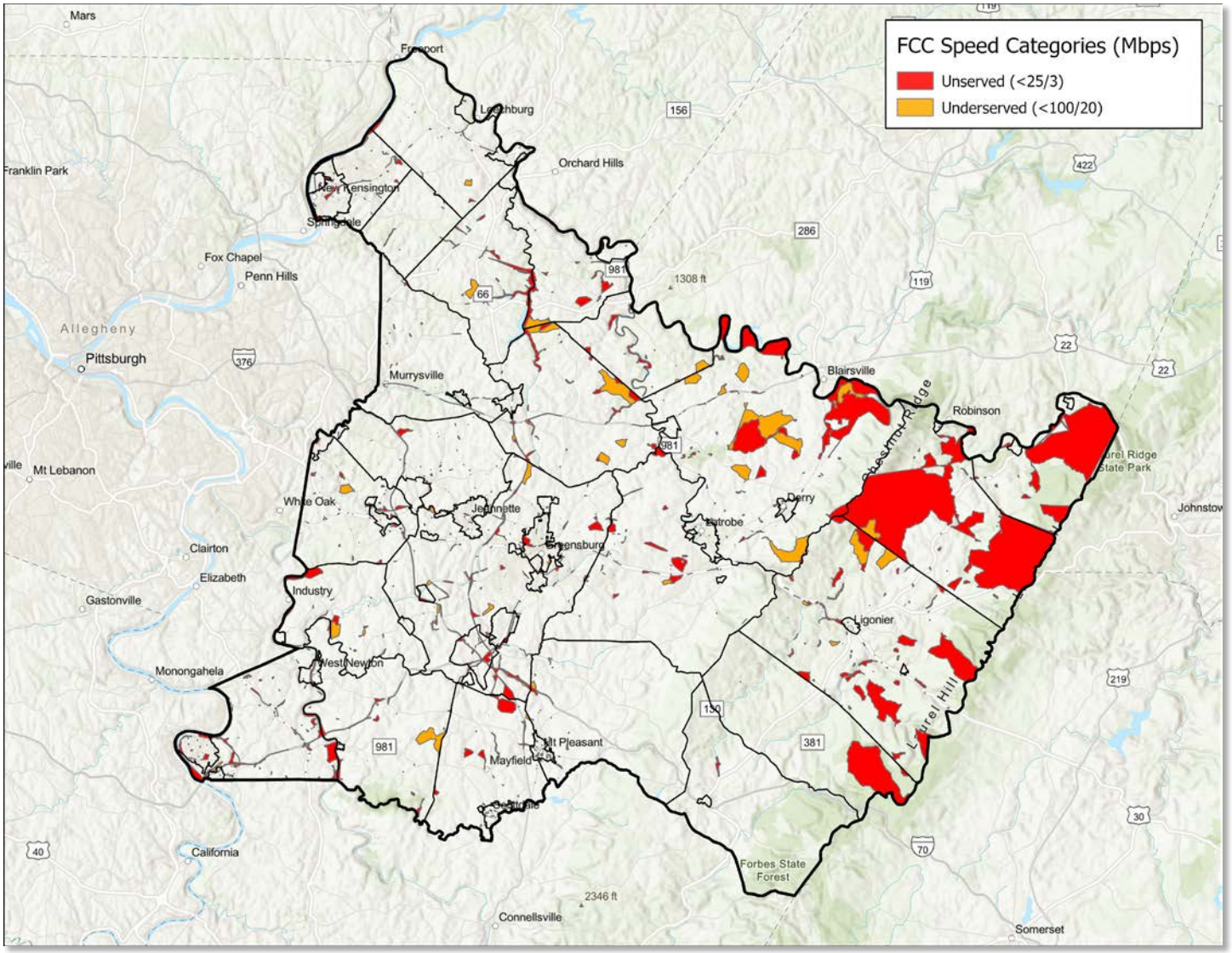


Figure 11: Invalidated data from 2022 FCC Form 477.

Connectivity Opportunity Area Data

This map is a result of the data gathering efforts to refine the FCC Form 477 data. The COAs identified during the field verification and online survey process revealed that at the development of this report, 3,506 addresses (far more than the FCC's assessment of 2,103) in Westmoreland County do not have adequate access to the Internet. The total number of locations that need service may increase if more information is submitted from the public identifying previously unknown unserved areas. It is also possible that the number of COAs is reduced by local ISPs challenging this map to correct locations that may have been erroneously marked as unserved or underserved. Similarly, the FCC will conduct their own national Broadband Serviceable Location Fabric bulk challenge process, which may change the number of Westmoreland County COAs. Some gaps will be closed via private sector market growth, which will be tracked and incorporated into planning. Ultimately, the County will continue to refine and finalize the map of COAs in accordance with these variables.

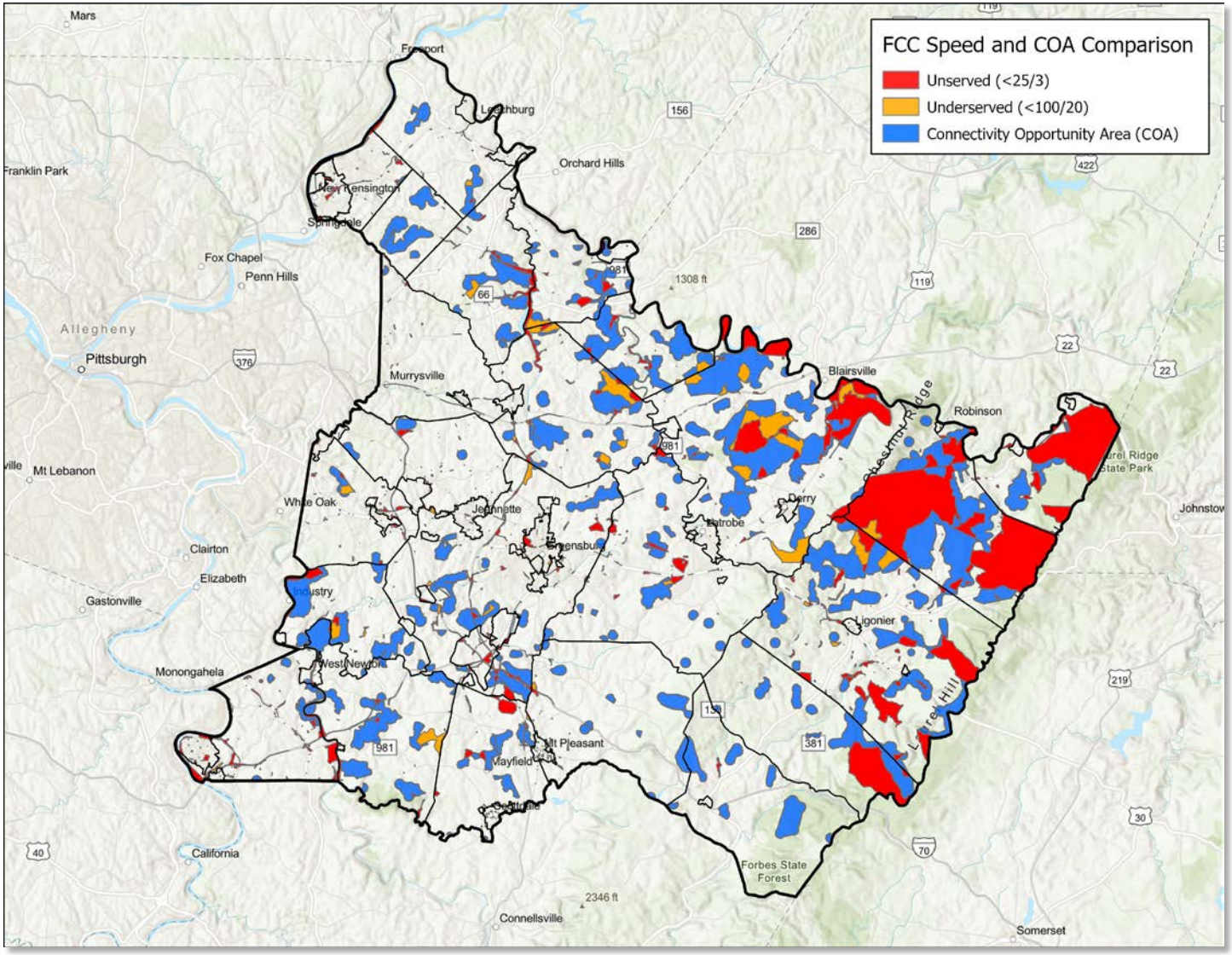


Figure 12: Map of COAs from 2022 field verification effort compared to inaccurate FCC data.

Challenge Processes Explained

Broadband challenge processes, both at the local and national level, were established to ensure that unserved and underserved locations are verified by outside data sourced from the public, researchers, and from ISPs. This is a major shift from past Form 477 ISP reporting requirements, wherein the ISPs simply submitted the data to the FCC without much oversight or verification. Also, the reporting system itself was flawed because it was measured at the census block level, so if an ISP served only a single location in a census block, the entire census block would be falsely marked as served. These national challenge processes, including the Broadband Serviceable Location Fabric Challenge, Fixed Availability Challenge, and Mobile Availability Challenge, intend to refine this data, which will more than likely reveal more unserved or underserved locations than previously understood. ISPs currently providing broadband service of 100 Mbps download and 20 Mbps upload or faster to an unserved location(s) can submit a challenge to have the location(s) removed from the unserved repository. Conversely, members of the public and broadband researchers can also contribute by identifying where areas marked as served in fact do not have access.

FCC Broadband Serviceable Location (BSL) Fabric

A large dataset of all locations in the US and territories that have broadband or could have broadband. A BSL is at the structure level, *not* the address level. CostQuest Associates has been contracted by the FCC to build/maintain the fabric.

FCC Fixed Availability

Challenges the availability of fixed broadband availability at a particular Fabric location. Providers have 60 days to respond to a challenge.

FCC Mobile Availability

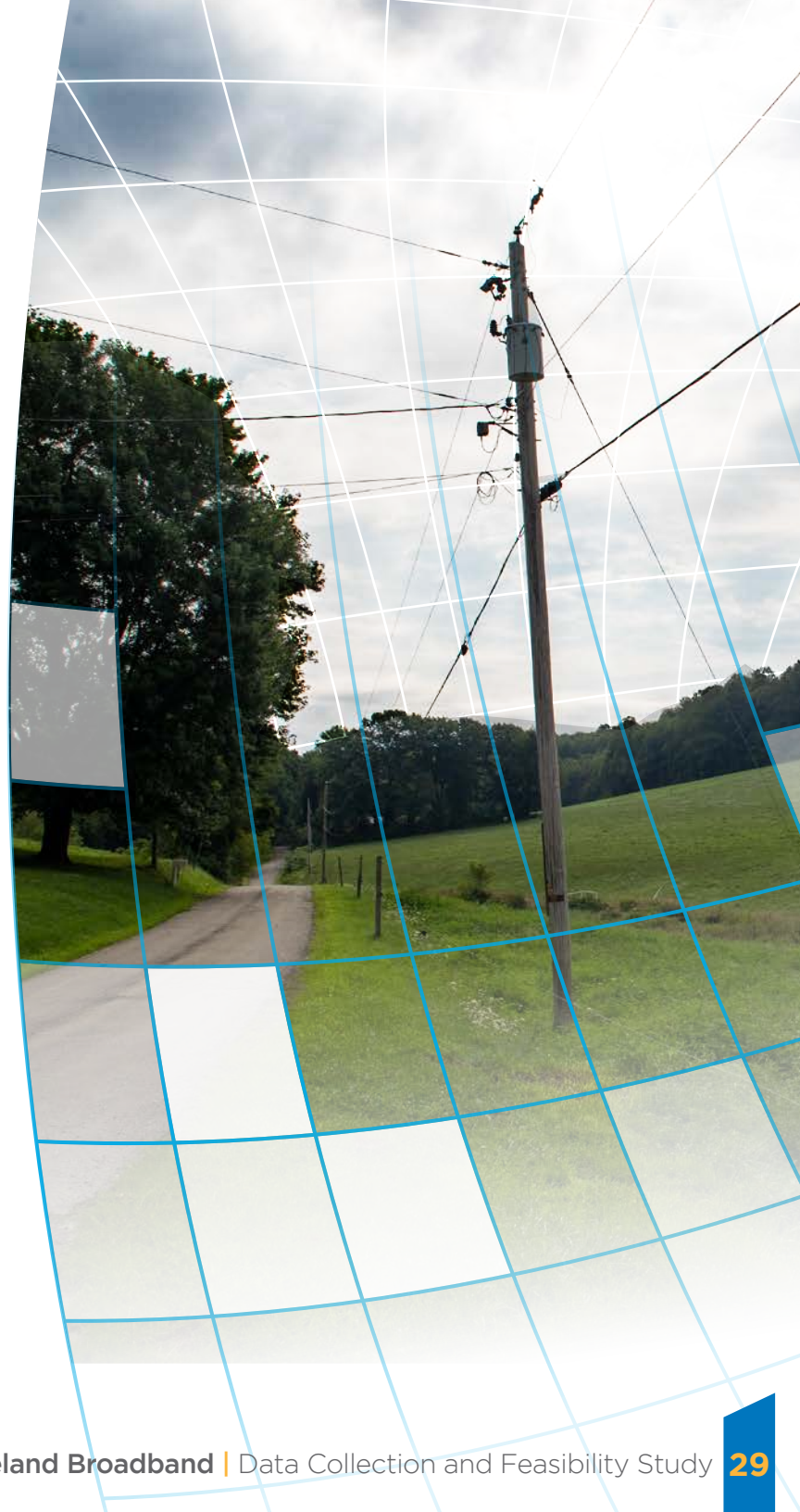
Challenges the mobile availability at a particular geographic location. Providers have 60 days to respond to a challenge.

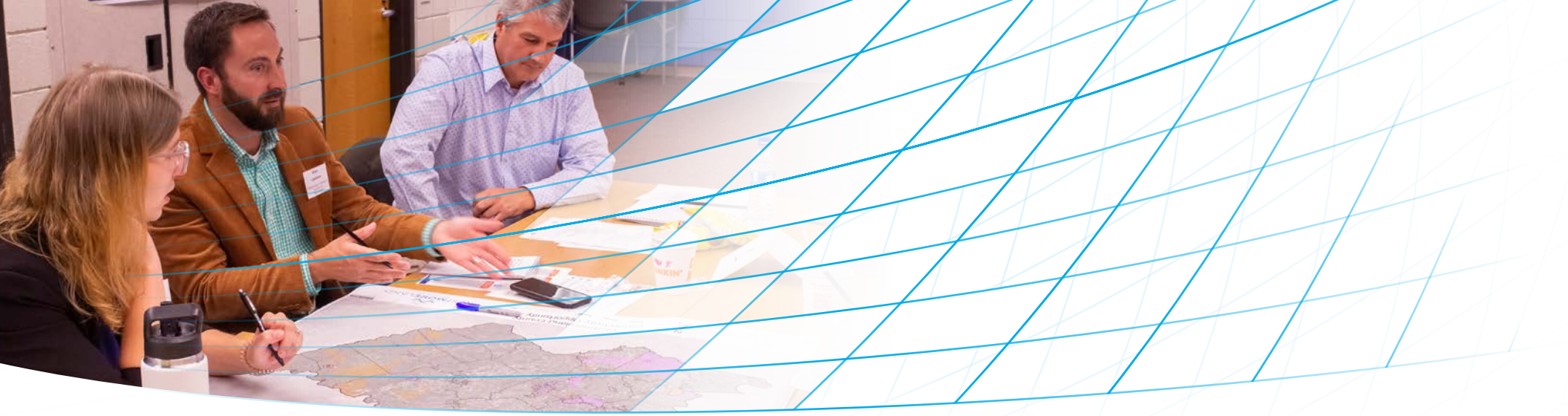
Local ISP Challenge

Replicating the national process on a local scale. A memo issued by Westmoreland County will be sent via email to ISPs which will provide preliminary information on an upcoming challenge process. GIS files and a web mapping application will be provided with the memo showing the unserved areas.

How Connectivity Opportunity Areas Get Served

Once the challenge process is completed, the County will have enough data to organize COAs into groups, or "polygons," of new service areas. Polygons are grouped usually based on geographic proximity between COAs and proximity to nearby fiber infrastructure. These polygons will be made public through a formal Request for Proposal(s) (RFP) from the County to ISPs so they can bid on the opportunity to build to the area. For management and economies of scale, an ISP bid may propose to serve multiple polygons wrapped into one project. Once the County awards the ISP(s), their proposed polygon(s) will become infrastructure expansion projects overseen by the County. The Early Action projects are examples of COAs that were grouped into polygons based on COA proximity. The Early Action RFP process pilots the overall bid process that will occur with the remaining COAs in the county.





A Collaborative Plan for Westmoreland Broadband

Vision for Westmoreland County

A broadband plan for the entire county can only be properly implemented once a vision and strategy for serving unserved and underserved populations with affordable broadband are in place. To establish a vision for a connected Westmoreland, the County engaged with its Taskforce, stakeholders, and the public to conduct stakeholder workshops and focus groups, promote the public Internet Survey and Speed Test, and to gather resident input and conducted virtual industry interviews with local ISPs and middle mile providers that have a presence in Westmoreland County.

Stakeholder Engagement

Taskforce Workshop 1
Visioning

Taskforce Workshop 2
Early Action Projects

Taskforce Workshop 3
Goals and Priorities for New Service

Taskforce Workshops: This Feasibility Study Report was prepared with the involvement and expertise of a highly knowledgeable Taskforce through three in-depth Taskforce workshops. During the workshops, leaders in technology, innovation, industry, economic development, education, human services, and telecommunications at regional and state levels guided the development of goals and strategies that respond to existing problems, meet documented needs, and build upon available funding sources.

Stakeholder Workshops: Stakeholders were engaged across Westmoreland County to assess needs, gaps, and solutions in the development of a community vision for connectivity. In the fall of 2022, a series of visioning workshops were conducted with leaders from municipal governments, the library system, public safety, education, and business and industry. The feedback from these workshops forms the basis of the vision and goals for the future of broadband connectivity in the county, and the applications of high-speed Internet to support and improve the activities and quality of life for residents.

Public Engagement: Public feedback was a key part of the planning process centered around the countywide Internet Survey and Speed Test conducted to measure levels of service and speed across the region as well as user accessibility. The responses complemented the numerous ideas shared by county, municipal, community, industry, and nonprofit stakeholders during the workshop series, and helped to refine and prioritize goals and strategies that address the needs revealed through the survey results.

Summary documents of each engagement event are included in this report as Appendix D.

"I am disabled and use the internet daily to transfer data to a healthcare specialist. Internet service is very necessary to me for healthcare reasons."

Derry Township resident

"We desperately need internet. I'm a veterinarian and need to have access to help clients/ patients after hours."

Ligonier Township resident

"My son will need reliable internet for school this year and we are unable to get service run to our address from any carrier that provides reliable coverage."

Fairfield Township resident

"None of the current programs available really help senior people."

North Huntingdon Township resident

"We live in a cellular dead zone. Unreliable internet is a safety issue for 911 access."

New Alexandria Borough resident

Public Outreach & Promotions

The public engagement strategy focused on raising awareness about the study, field inventory, and promoting the survey to reach the County's goal of at least 2,000 submissions. Several engagement tools and resources were provided to stakeholders and the public to share the survey and information about the project with their communities. The primary goals of the communications strategy for survey participation included:

- Engaging stakeholders in the outreach process and messaging
- Providing the public with ample time to complete the survey
- Ensuring opportunities for both urban and rural communities to participate
- Partnering with local organizations to combine public outreach efforts

The following details the primary public outreach tactics that were used throughout the process.

Engaging Stakeholders with Online Resources

The Westmoreland Broadband website (www.westmorelandbroadband.org) went live in mid-July 2022 to share the Internet Survey and Speed Test and provide details about the project. For accessibility, the website provided a print option for residents to take the survey on paper if preferred. A communications toolkit was shared on the project website with resources for stakeholders to maximize public outreach and awareness with their networks through different communication channels. Included in the communications toolkit were social media posts and taglines, downloadable logos and graphics, newspaper ads and articles, newsletters, a press release, and email blast content.

STAKEHOLDER ENGAGEMENT BY THE NUMBERS

July 18 – Oct. 31, 2022

294 SOCIAL MEDIA POSTS/SHARES

7 COUNTY EMAIL BLASTS

490 COMMUNICATIONS TOOLKIT VIEWS

1,913 STAKEHOLDERS DATABASE

4,471 WEBSITE VIEWS

12 NEWS ARTICLES

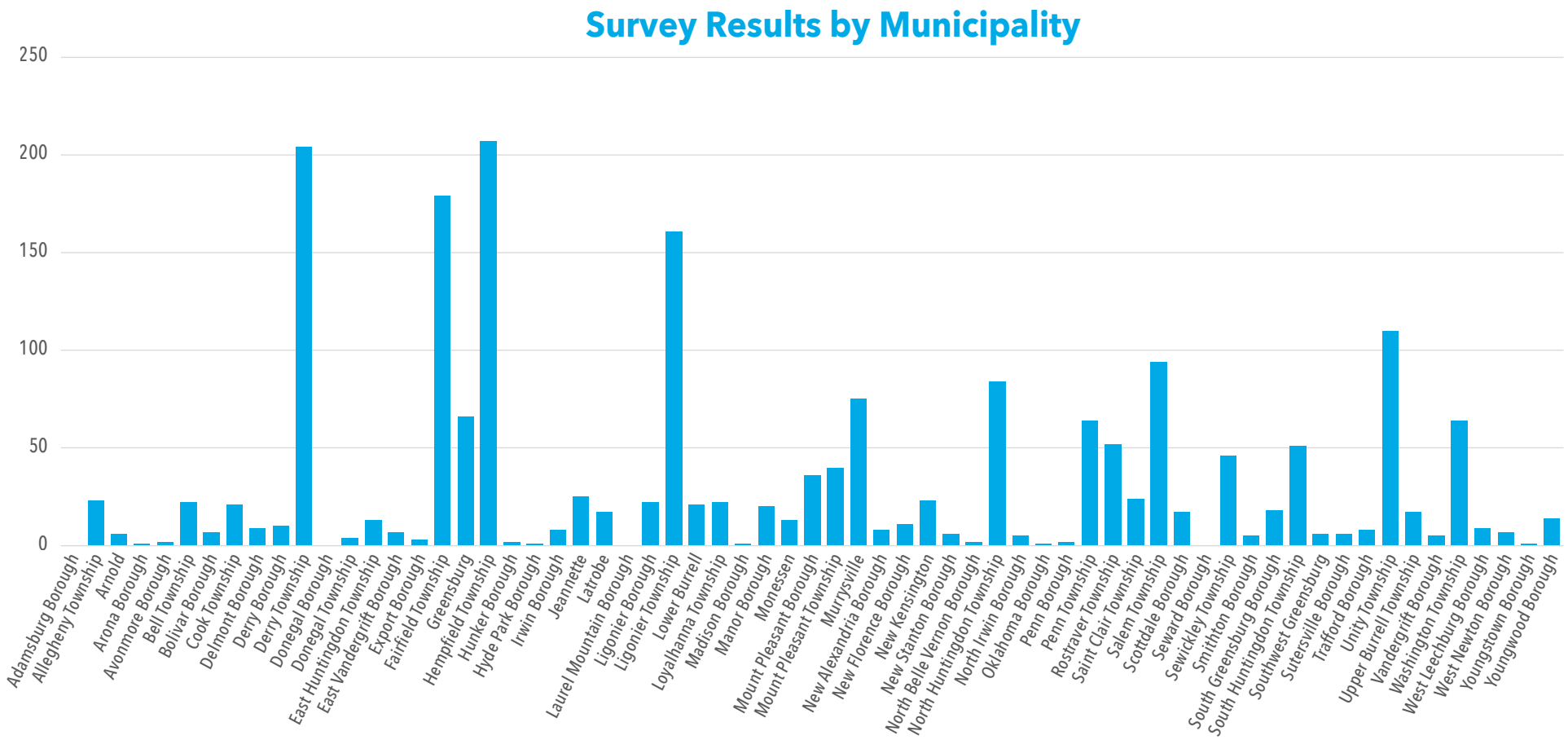
Partnering to Spread the Word

Key partnerships were established with local leaders to help with messaging, promotions, and engaging with underrepresented populations such as senior citizens and other hard to reach communities.

- Legislative Leaders
- County Commissioners
- Municipal Leaders
- School Districts
- Chambers of Commerce
- Industrial Development Corporations
- Federated Library System
- Social Service Organizations

Survey and Participation Results

The Internet survey was open for public input from July 18 through October 31, 2022. The goal was to receive 2,000 responses, and that was exceeded with the final number of 2,504 surveys submitted from across the county.



Top Five Goals for Broadband Improvements

One of the key results of this engagement work was to establish the top five (5) collaborative goals for broadband-related improvements in the county. Each goal is accompanied by a succinct narrative as well as several direct actions that can be taken by different stakeholders to advance progress. Finally, these goals also offer suggestions as to which entity can begin implementation of action steps. More specifically, it indicates which goals the County can lead with support from stakeholders, and which actions can be led by stakeholders with support from the County.

FIVE KEY GOALS

Digital Equity
Improve Digital Literacy and Digital Equity for All

Health & Safety
Improve Safety and Health Outcomes for Vulnerable Residents

Growth
Invest in Broadband to Incentivize Economic Development

Workforce
Invest in Workforce Development

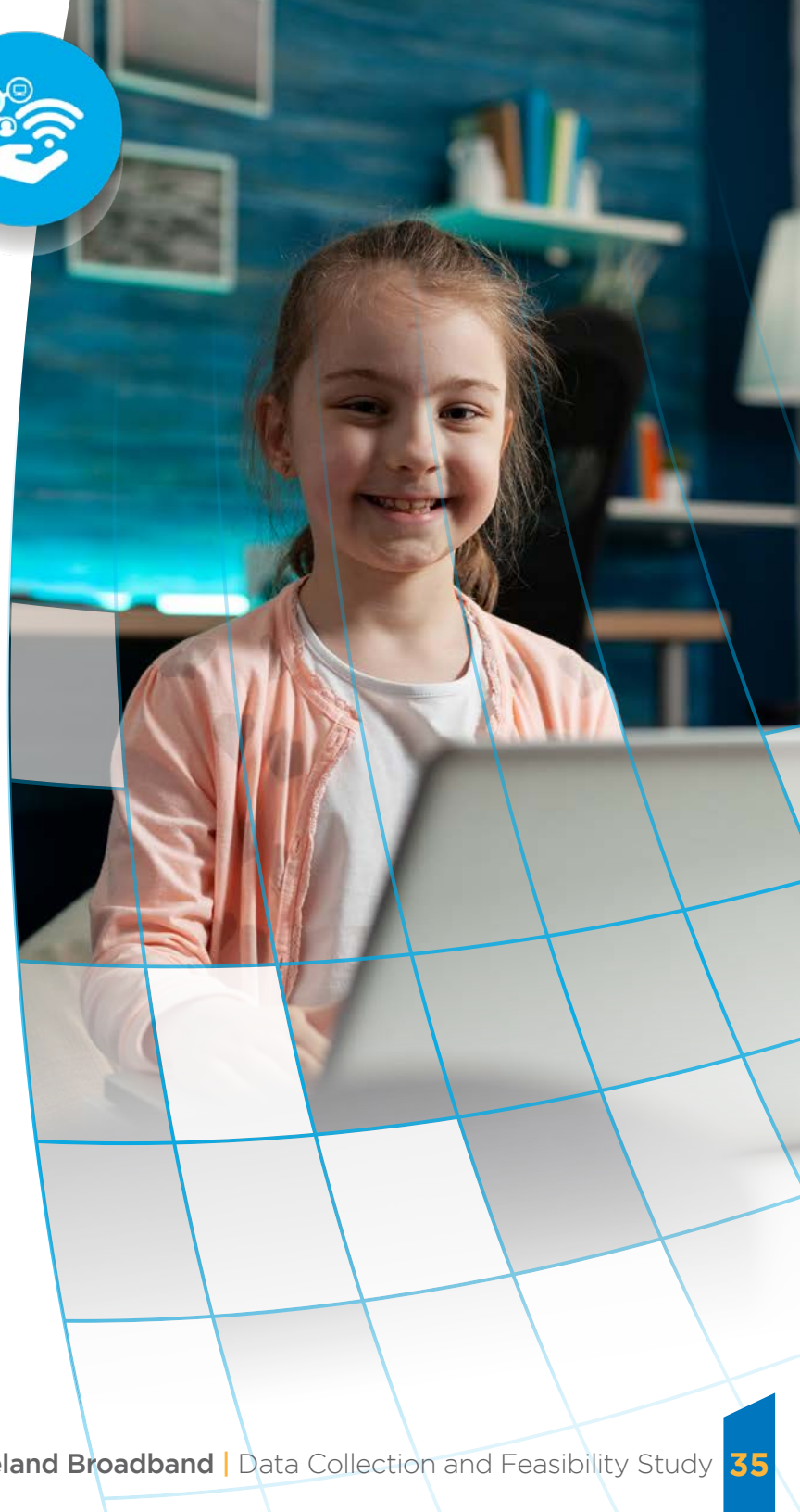
Municipal Support
Support Municipal Leadership and Services

GOAL 1: Improve digital literacy and digital equity for all.

Understood as the Homework Gap, children who lack access to key educational resources outside of school are academically disadvantaged. The Homework Gap took on a different magnitude due to the COVID-19 pandemic. With the move to distanced learning initiatives, which were exclusively online based, more children than ever were left outside of the virtual classroom. It is theorized that, because of this lack of access to the Internet and therefore lack of access to school, a national disruption to learning growth occurred, setting back key education milestones for millions of students. As the world recovers from the pandemic, educational institutions are keeping some of the distanced learning initiatives and integrating them into regular school life. Therefore, direct broadband interventions for students are still urgently needed as much as they were during the pandemic.

There is also a need to enhance digital skills for non-educational purposes. Children should be able to use the digital skills they are learning in school at home. Many kids grew up with apps, but they were not taught how the Internet works, or how to protect themselves online. In school districts that are using digital platforms, kids get used to using whichever platform is used by each district, but do not really learn more diverse skillsets. Investment in student digital skills training should include other aspects of life outside of school so they are well-rounded in their digital knowledge.

Education, experience, and comfort levels all contribute to digital literacy, and they are different for everyone. Some may have strong reservations about their children using the Internet, which implies that some safety education might be needed to increase comfort levels. Skills such as this can be taught at any level, but only if there is adequate access to the Internet outside of school. One key barrier to access is lack of Internet infrastructure due to location and topography. However, the other key barrier is affordability—even if there is service available, it may still be unattainable due to financial hardship. This is a barrier for many households with low- to -moderate income, but the fact that young learners are without affordable access perpetuates digital inequality and stunts academic growth. Promoting both private and federal affordability programs is critical for equalizing access rates within different socio-economic classes.



STRATEGY	NARRATIVE
Ensure Affordable Home Internet Access	Enable all residents to access the Internet at home by ensuring that Internet service is not only offered but is also affordable. This can be accomplished through various means such as fostering competition amongst service providers so that residents have choices, creating incentives for low-cost plans, and seeking partners to provide affordability assistance programs. Users should not have to pay over $100/month for poor service with no other options available, yet that condition currently exists in some areas of the county.
	County Role: All broadband expansion projects led by the County should include affordability metrics requiring that ISPs benefitting from public funding both participate in the FCC's ACP and offer a low-cost plan available to all users that adheres to the federal speed threshold of 100/20 Mbps.
	In Action: The FCC has created four complementary grant programs to promote the ACP nationwide. The outreach program seeks to enlist trusted community messengers to develop innovative outreach strategies and reach historically unserved and underserved communities. Partners will be provided with the funding needed to increase participation among eligible, low-income households in need of an Internet connection. For these awards to secure funding and resources, the County may decide to partner with or support other eligible governmental and non-government applications. This is to increase awareness of and participation in the Affordable Connectivity Program among eligible households most in need of affordable connectivity.

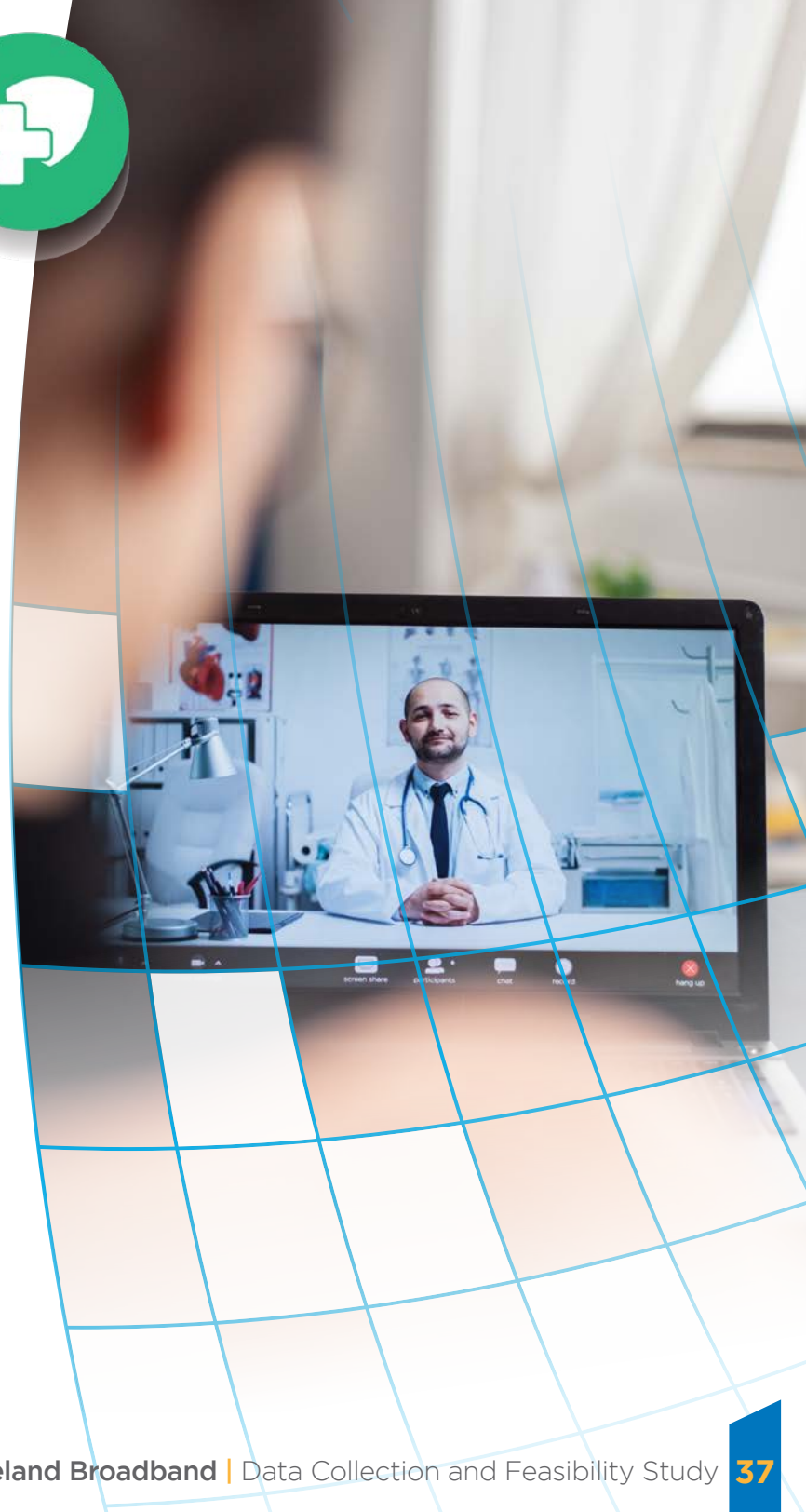
STRATEGY	NARRATIVE	ROLE
Invest in Equitable In-School Resources	Provide equal/similar levels of access to devices and technology across school districts. Provide similar levels of technology training and courses across school districts.	Intermediate Unit (IU) to **lead.**
Invest in a Dual Approach that Teaches Both Smartphone and Desktop Technology	Teach email skills and typing. Diversify software programs and tools used in schools, so that students learn a range of digital literacy skills that are transferrable across platforms.	IU to **lead.**
Create a Multi-Pronged and Multigenerational Strategy for Teaching Digital Literacy	Teach different types of skill sets to access the Internet, understanding that users have various levels and different areas of expertise. Provide training resources for parents to help them assist their kids with schoolwork, provide in-school education geared towards future careers and work opportunities, and offer ongoing adult training and services at both introductory and at more advanced levels to learn common skills and software.	County can **advocate**. Partnership opportunity between County investment and school/library/nonprofit program implementation.
		United Way may also be a **partner** for this.
Provide Mobile Hot Spots	Funding for mobile hotspots during COVID-19 school closures has ended and many schools are no longer able to provide hot spots. Many students still lack home Internet though and will continue to lack Internet for potentially several years until full build-out of countywide broadband infrastructure is identified, funded, and completed. Mobile hot spots continue to be a valuable resource to close the gap for households that lack fixed broadband access.	County can **support** schools and community anchor institutions with continued grant assistance to help them locate and apply for available funding through state and federal sources.
		United Way may also be a **partner** for this.

GOAL 2: Improve safety and health outcomes for vulnerable residents.

Internet access has a direct impact on health outcomes. Numerous national studies support this finding and investigate how better connectivity can enhance every aspect of healthcare for Americans. An obvious but critical example of connected care is the use of telehealth applications, which saw a steep rise in use due to the COVID-19 pandemic. Telehealth supports social distancing, but it also solves other types of access issues that existed long before the pandemic. For those who lack mobility, either due to health issues, childcare, transportation, or other reasons, telehealth offers a direct connection to doctors when healthcare is otherwise unreachable by vulnerable populations. Because telehealth relies on video conferencing applications, it is essential that both the patient and the provider have adequate Internet speeds and capacity to support large data transfers, from both upload and download perspectives.

Connectivity virtually connects patients to providers, but connectivity can also determine how diseases are treated. Many medical interventions these days rely on some type of connectivity to accurately assess and treat patients from afar. The Internet of Things (IoT) and Cellular IoT in healthcare refers to networked systems and devices that can help providers better care for patients while also giving patients more autonomy in their care. With connected medical devices, patient health data is sent directly to providers for efficient monitoring, which allows for speedy treatment—sometimes that treatment can also be sent wirelessly back to the device without a doctor's visit. This increased efficiency creates better patient outcomes while also reducing the overall cost of care. Common medical devices like wireless insulin pumps, pacemakers, ventilators, and many others offer continuous care that allow patients to enjoy everyday life activities because medicine has been integrated with connectivity.

Internet access affects health outcomes in other unexpected ways. Aside from treating health concerns as they arise, connectivity facilitates other activities that contribute to day-to-day health. For example, communities are using websites and apps to solve food scarcity. If you live in a food desert, you can order groceries through these platforms. Another example of connectivity enhancing health habits are activity trackers which give consumers more insight into their daily physical health, which can prevent disease in the long term.



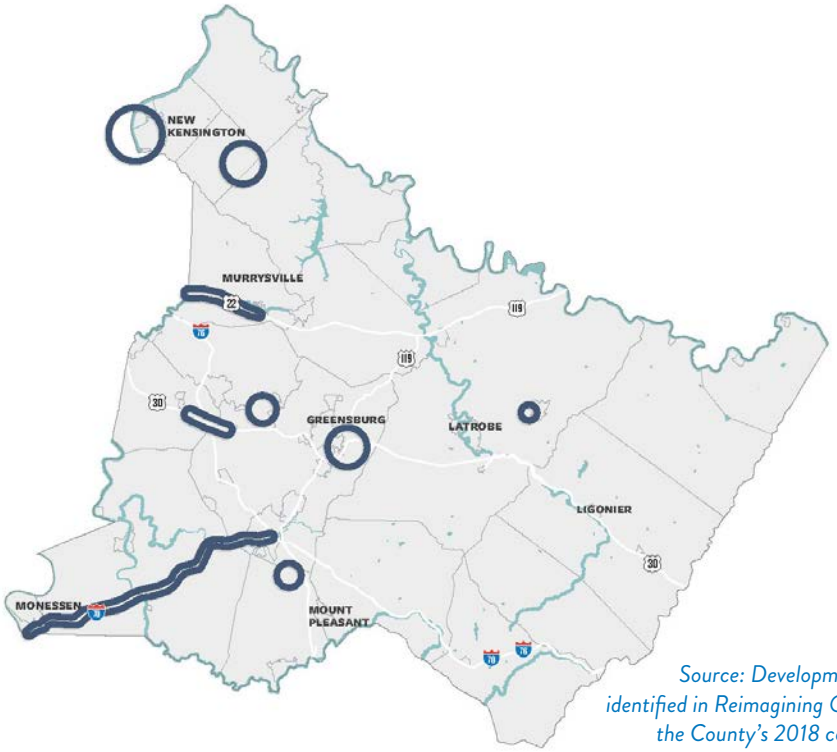
STRATEGY	NARRATIVE
Improve Senior Services	Many seniors have limited awareness of how Internet service can be used to assist them in their daily activities, and/or lack digital literacy skills to know how to use Internet when they have it. Seniors also often struggle with accessing transportation to visit stores or accomplish daily tasks in person, but do not realize that many of these tasks can be done online.
	County Role: Lead an awareness campaign targeted at seniors that helps them understand what services are available, and how to best access them. Pair this with a resource guide, provided online and in print that can be dispersed at senior centers and similar locations, that identifies services that can be reserved or provided online. This resource guide should be user-friendly and use large text and accessible language. For example, the awareness campaign may identify how orders at grocery stores can be placed online, how paratransit rides can be requested online, and where digital literacy courses or assistance is available.
	In Action: To support broadband access, adoption, and digital equity needs in both urban and rural areas, Westmoreland County may develop a Digital Navigator program in-line with the National Digital Inclusion Alliance's Digital Navigator Model. Digital Navigators are individuals who address the whole digital inclusion process —home connectivity, devices, and digital skills —with community members through repeated interactions. An example scenario of Digital Navigation in action would be for a Navigator to support a resident at the library in signing up for the FCC's ACP. The ACP provides a direct-to-consumer discount of up to $30/month towards broadband service for eligible households. Eligible households can also receive a one-time discount of up to $100 to purchase a laptop, desktop computer, or tablet from participating providers if they contribute more than $10 and less than $50 toward the purchase price. Through community conversations, it is clear that many are not aware of this program and those who are aware still struggle to sign up for the program. A Digital Navigator would assist the resident in signing up. A potential follow-up action would be to provide an incentive for signing up, such as covering the remaining cost of the Internet subscription up to a certain amount (i.e. $25/month). Comcast's Project UP is a possible partner program to work with in implementing this goal, as it provides funding for programs of this type.

STRATEGY	NARRATIVE	ROLE
Increase Access to Telehealth	Digital literacy support is needed to assist patients in knowing how to access provider portals and how to use the online services they offer. Health providers should also be actively involved in providing assistance and training to help patients navigate their online portals and learn how to engage in telehealth appointments.	County can **advocate** for increased broadband access, affordability, and awareness.
	Mental health services are especially important, as these can be more readily offered online without necessitating in-person medical examination. Promoting and advocating for these health services can reduce stigmas and increase awareness of telehealth options to encourage residents to seek and obtain better care.	Private sector and healthcare entities will **lead** further actions towards expanding telehealth opportunities and support for patients in using and navigating this system.
Increase Nutrition Access through Broadband	Residents without transportation means are relegated to dollar stores or convenience stores to source all their nutrition. This is a major social and health concern for any community, which deserves access to quality foods. For example, downtown New Kensington is considered a "food desert" because it lacks proximity to grocery stores that offer fresh, healthy foods. A local nonprofit called Food21 is working in the Alle-Kiski Valley to address food deserts through an online app that delivers quality foods from stores that residents could not otherwise access. For residents to leverage this critical community service, they must have a connection to the Internet. Increasing residential Internet access throughout Westmoreland County would unlock access to these types of resources to support public health.	The County could **partner** with food-focused nonprofits or other public health service agencies to elevate their causes and target specific broadband interventions that help these agencies complete their missions.

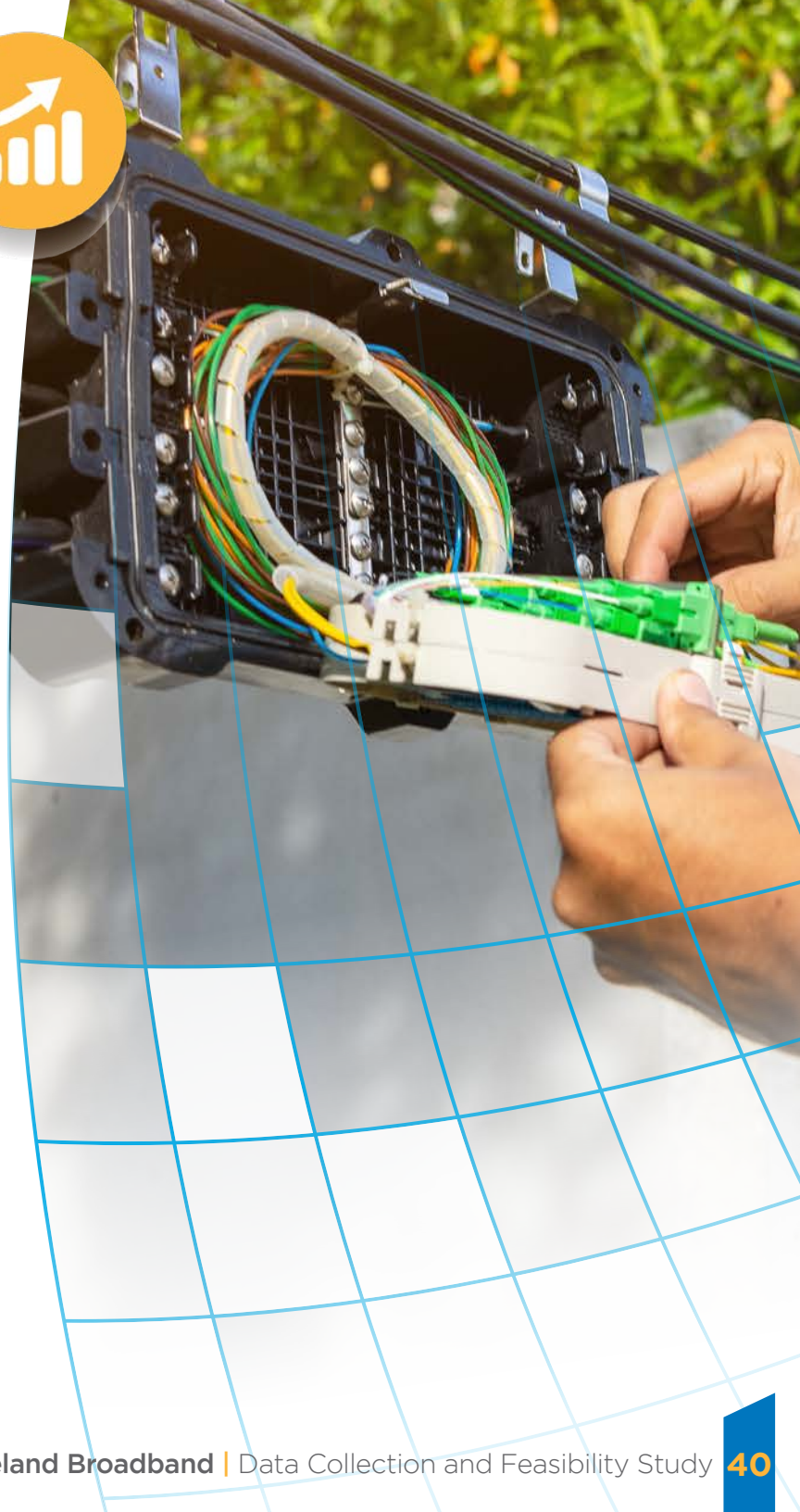
GOAL 3: Invest in broadband to incentivize economic development.

Broadband is a requirement for economic development in the 21st century. It is integral to how business is conducted, yet many businesses in Westmoreland County lack adequate connectivity for success. E-commerce is a huge part of the global economy, yet many Westmoreland-based businesses cannot sell or purchase products online. Additionally, web-based tools are now the main avenue for advertisement, reaching a broader demographic than traditional advertisements. Overall, connectivity is a non-negotiable for economic development.

Industry Internet solutions are rarely one-size-fits-all. Different industries will require different broadband capabilities depending on their trade. Some need to use multiple devices with the ability to video conference simultaneously without pixilation or freezing. Right now, some businesses are using cellular telephones as their primary connectivity tool, which is insufficient for performing daily business activities. Business connectivity is about more than simply turning on more Internet access points—these access points must be equipped with the technology required to accommodate business activities that need high broadband capacity. These investments would keep businesses from leaving the county due to lack of adequate broadband, and they would attract new commerce into the area.



Source: Development ready areas, as identified in Reimagining Our Westmoreland, the County's 2018 comprehensive plan.



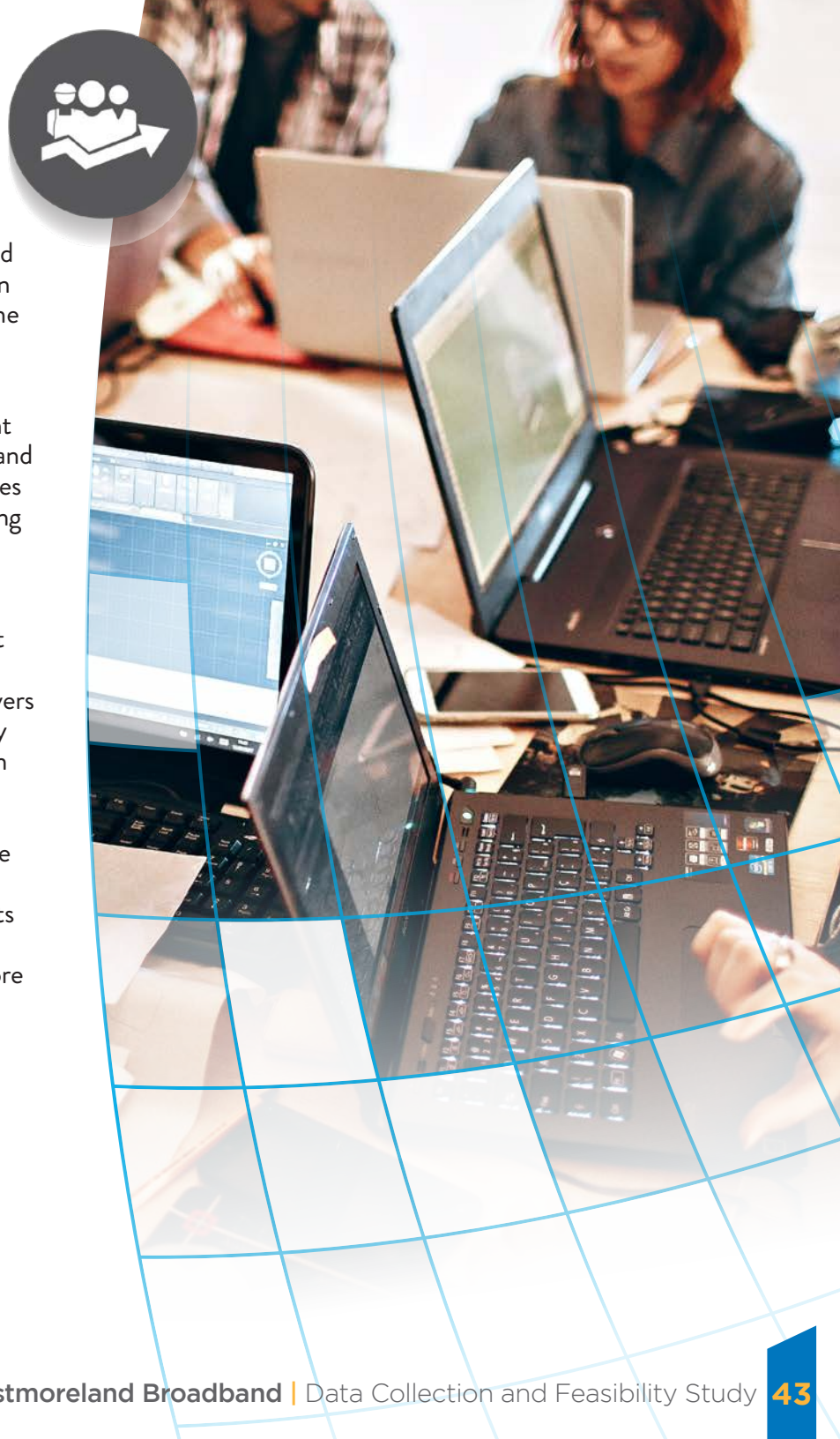
STRATEGY	NARRATIVE
Invest in High-Speed Internet and Technology to Promote Growth Countywide	Increasingly, businesses across all sectors rely on digital tools and the IoT, which involves systems of networked and interrelated computing devices. This requires more bandwidth to keep companies in place and to expand their operations. From innovative tech companies to traditional businesses such as farming operations, high-speed Internet allows modern networked equipment, rapid data processing, and constant digital connectivity to support commercial activities. Faster connectivity and ready to use infrastructure is attractive to businesses seeking to start-up, expand, or relocate. Westmoreland County can use broadband expansion to retain its existing businesses, incentivize new business growth, and attract commercial investment.
	County Role: Through the planning phase of the Westmoreland Broadband Program, the County has identified new service areas that urgently need adequate and affordable broadband. Some of these identified COAs will be partially subsidized with public funds that the County has and will continue to apply for. This subsidy reduces some administrative and financial strain on the ISPs who would deploy the technology and will help streamline and oversee construction to ensure required service provision. Subsidizing areas targeted for broadband expansion will make broadband more affordable and faster in high-need areas, which will entice residents and business owners to move to and remain in the county.
	In Action: Targeting established business districts, commercial corridors, business/industrial parks, and planned developments with concentrated business investments for fiber enhancements is a key strategy for attracting new business to the county and keeping current businesses in the county. It is imperative that broadband enhancements to concentrated business locations account for capacity needs that exceed residential Internet needs. For example, a full-service data collection and modeling company based in New Kensington requires significantly more broadband capacity than they have access to due to the nature of their work, which requires large and fast data transfers over the Internet. By normal metrics, this business already has speeds that would qualify them as "served," but the scope of their online needs is far greater than a typical resident or non-technical businesses' needs, and so these speeds are inadequate for their activities. The County is already making investments to support the growth of technology companies in the county, and broadband must be a key feature of those investments. Alternate sources of funding (aside from IIJA or ARPA) may be required to specifically address business Internet, which the County has been tracking.

STRATEGY	NARRATIVE	ROLE
Create Economic Enhancement Areas	Resources are limited so it is prudent to identify specific locations that require enhancements beyond basic level connectivity.	County can **support** this strategy by establishing priority characteristics for greater investment and supporting continued grant fund applications that may apply.
		Municipal leaders and private sector entities will need to **identify** geographic areas that fit these priorities and work with the County to pursue applicable funding sources.
Advance the Manufacturing Base into the Digital Age	The manufacturing base is strong in the county, and broadband would advance this industry into the digital age.	County can **advocate** for increased broadband access, affordability, and awareness.
		Leverage partnerships with the Digital Foundry and others to **promote** the IoT building a stronger, more resilient, and globally competitive manufacturing sector.
Support Next Generation Farming Techniques in Agriculture	Next generation farming techniques are using GPS which requires significant capacity for geolocation. Farmers also use broadband to improve operations, increase yields, and assist in selling goods online, shipping, etc. Faster service in rural farming communities is required to maintain up-to-date, onsite records of livestock health and vaccinations. There are also industry drones capable of collecting information on crops for improved fertilizer and pesticide whose systems require certain applications, all of which need Internet speed and support.	County can **advocate** for infrastructure investments that specifically support agricultural areas of the county. The County will continue to elicit involvement from farmers to help shape their broadband solutions.
		Agricultural organizations and businesses can **pursue** this strategy as the County invests in building more fiber infrastructure to provide them with high-speed Internet access.

GOAL 4: Invest in workforce development to benefit from expanded broadband access.

While reliable high-speed Internet can support each of the previously described goals, broadband access alone will not achieve them. A skilled and trained workforce is needed to support many of the desired outcomes in Westmoreland County. Jobs that rely on technology tools, use online applications, allow or require remote access, or teach online tools to multiple generations, all require knowledge and skill with basic navigation, software, online security practices, and more.

In Westmoreland County, residents indicated a need for stronger workforce development and training programs to help workers with limited digital literacy gain the comfort level and skills to compete in workspaces that are increasingly online, and benefit from job resources and opportunities that are accessed online. Residents also indicated a need for better training in schools to equip the next generation with computer literacy to succeed, but training for the educators is needed to prepare them to impart these skills. School resources are often strained and not all teachers have the same level of digital literacy, or the same capability with multiple types of software. Regarding multigenerational programs, it must be acknowledged that teaching children is not the same as teaching adults, and different curriculums must be developed for different course levels and user types. Finally, employers need to be partners in advancing digital workforce skills, as these skills benefit their ability to grow as well. Arduous job applications that are difficult to navigate place the burden on applicants to teach themselves skills that the job may not even need on a daily basis, and employers who prefer in-person interviews or working environments even when virtual is a viable option will leave out potential workers who could otherwise excel at the job. Those with low income, parents of young children, seniors, individuals with disabilities, and non-native English speakers are among the populations that are likely to have more constraints on their ability to commute to work regularly but could have greater opportunities to contribute to the economy and maintain steady work if online or hybrid options were more available. In short, to benefit from a digital workforce, improved training and improved awareness is needed to nurture digital skills and value online work.



STRATEGY	NARRATIVE
Increase Job Training	Investing in job training programs will further economic growth and develop more opportunities for workers to advance in their careers, obtain career and economic mobility, and bring their increased skills to the workplace to help raise overall performance and productivity using digital tools and processes. Training programs deepen the pool of candidates who can compete for open positions and expand access to jobs to a wider audience who may have limited ability or hours to commute.
	County Role: Encourage employers to create job training programs for both employers and employees to help them better benefit from digital platforms. The County can be a partner in this effort by providing funding to nonprofits or community anchor institutions that provide job training, advocating for the economic benefits and value of allowing hybrid and virtual workplaces, creating assistance modules or tutorials for employers seeking to better understand how to set up and run online job applications and interviews, and serving as an example for how hybrid and virtual jobs may be conducted.
	In Action: SkillUp is a national nonprofit organization with a presence in Pennsylvania. Its mission is to provide individuals and employers with the necessary tools, resources, and support to improve their competencies and career mobility, elevating a community's workforce and local economy. Lancaster County augmented its existing online job-training platform by using SkillUp, with the initiative being led by the Lancaster Chamber of Commerce and PA CareerLink of Lancaster. SkillUp functions as a one-stop portal designed for both jobseekers and employers. Jobseekers can explore different career pathways, view job postings, receive workforce services, and sign up for various free online learning sessions, while employers can search for qualified candidates, post jobs, and receive a full suite of consulting services aimed at addressing hiring and training needs. The County could make a long-term investment in its workforce by leveraging the services of SkillUp, or partnering with a similar organization.

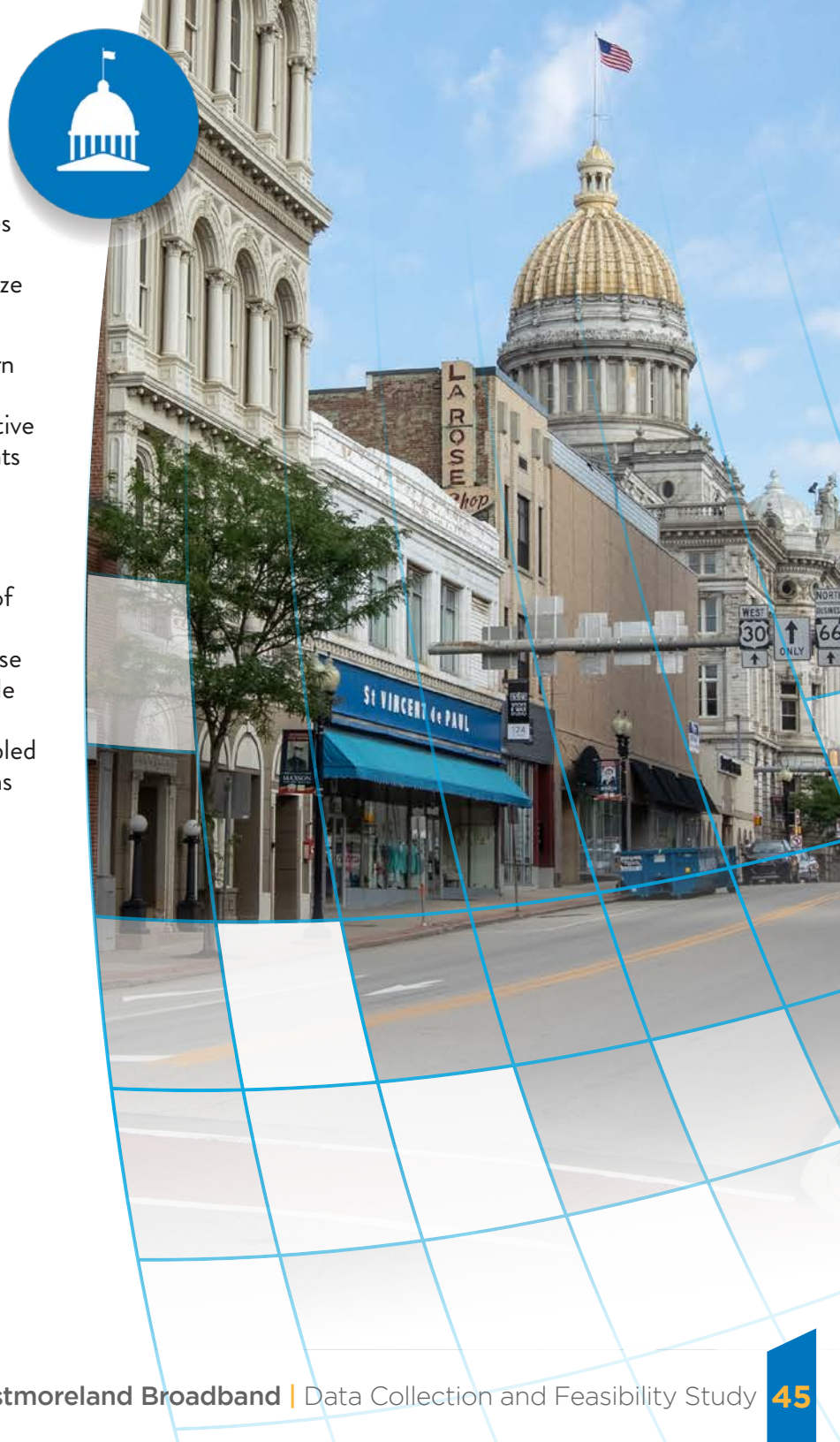
STRATEGY	NARRATIVE	ROLE
Retain People in the Workforce through Education	Like many other counties and regions across the nation, a shrinking labor force continues to challenge Westmoreland County businesses, thus impacting potential economic growth and communities. To combat this trend, the County should be investing in training from high school, vocational school, community college, and other higher education entities to ensure that workers are not only learning valuable tech skills, but are also being taught about and actively paired with local employment opportunities that will utilize those skills. Workers need to be equipped to participate in the local economy and feel confident that there are many opportunities to excel and succeed within the Westmoreland economy.	County can both **partner** and **advocate** to develop and support apprenticeship and internship opportunities between educational institutions and employers.
Support Hybrid and Virtual Jobs to Grow the Employment Base	Hybrid and work-from-home positions enable many residents who are excluded from traditional jobs to join the workforce. This is an inclusive hiring strategy that should be actively promoted. The County should ensure their own websites are well-presented and provide an example of how online navigation can be accessible and user-friendly, and support hybrid work for applicable positions to set a positive example for other employers.	County can **advocate**. The County should also serve as a leader by providing hybrid or remote work opportunities, where possible.

GOAL 5: Support municipal leadership and services.

Many municipal administrative duties and services rely on Internet access, or could be further improved with better Internet access, but municipal staff have limited resources and time available. County resources and support can be highly beneficial in equipping municipal leaders with educational resources, training, and guides to help them maximize their grant requests, investments, and administrative processes.

SMART (Simple, Moral, Accountable, Responsive, and Transparent) Governance uses modern technology to ensure collaborative and simplified governance that is transparent and accountable. High-speed Internet for municipal governance can mean that administrative and regulatory processes can be conducted online, making them more accessible to residents and more easily tracked and monitored in a consistent way. Digitizing services such as permitting, payments and fees, and informational materials also reduces printing costs and storage requirements within municipal buildings.

Reliable Internet also allows municipalities to utilize technology to improve efficiency of their services. Code enforcement can be more effectively documented and monitored using digital equipment. Traffic control systems using smart technology such as license plate readers, intersection cameras, traffic light synchronization, and emergency vehicle preemption can improve traffic safety, but require reliable high-speed connectivity to function properly and transmit video in a timely manner. The costs of technology-enabled services can be high for individual municipalities but can be more feasible if such programs and services are shared among municipalities.



STRATEGY	NARRATIVE
Advance SMART Governance	SMART Governance has many advantages, from streamlining grant and management processes, to digitizing public services and sharing information about available technology and related programs.
	County Role: Educate municipal leaders on issues and opportunities surrounding broadband. This can include resources for understanding key terms, timelines, and programs; assistance with pursuing grant funding; and templates for municipalities to use in updating their permitting processes.
	In Action: Structural and social enhancements are key results of SMART Governance, therefore the County could take almost any current goal and utilize SMART Governance approaches to advance them. There are four models of SMART Governance: Government to Citizen (G2C) model; Government to Business (G2B) model; Government to Government (G2G) model; and Government to Employee (G2E) model. Based on the feedback from visioning sessions, G2G and G2E models are of most interest to the County. Municipalities will play a large role in using smart governance processes and technologies, but County guidance on available resources and how to use them will be helpful to municipal staff. To implement, the County would need to invest in an eGovernance platform and data storage systems, as well as key physical infrastructure investments to support increased connectivity between parties. Generally, the steps toward SMART Governance would involve educating and training stakeholders; hiring a SMART Governance professional to assist; establishing which specific goals can be advanced with SMART Governance as well as strategies to meet them; and importantly, updating policies and procedures to support SMART Governance efficiency.

STRATEGY	NARRATIVE	ROLE
Grow the Tax Base	Make the county an attractive place to live by offering a desirable quality of life, and services including high-speed reliable Internet.	County can **support** through enabling municipalities to access and promote high-speed, reliable, and affordable Internet for residents and businesses.
Improve Multi-Municipal Collaboration	Help municipalities collaborate with shared resources and programs that reduce overall time or expenses required per each municipality. For example, traffic control systems that use smart sensors involve costs that can be shared amongst municipalities.	County can **support** through resource sharing platforms.
		Municipalities will **lead** this collaboration.
Improve EMS and Public Safety Efficiency and Reliability	Invest in redundant systems and continue to work with Emergency Medical Services (EMS) and Public Safety systems to ensure the 300,000+ calls received by the 9-1-1 Center annually are processed with sufficient field connectivity to support the coordination of local emergencies.	County can **lead** through continued investment in wireless broadband as well as fixed/fiber.
Include Broadband in Comprehensive Plans and Zoning Ordinances	Zoning ordinances often limit how broadband infrastructure (i.e., towers) can be built within a municipality. Municipalities need to understand how broadband can positively impact their overall community goals and ensure their zoning code allows the expansion they desire.	County can **support** with guidelines for municipalities to use.
		Municipalities will **lead** their comprehensive planning and zoning updates.

Implementation Steps for Westmoreland County

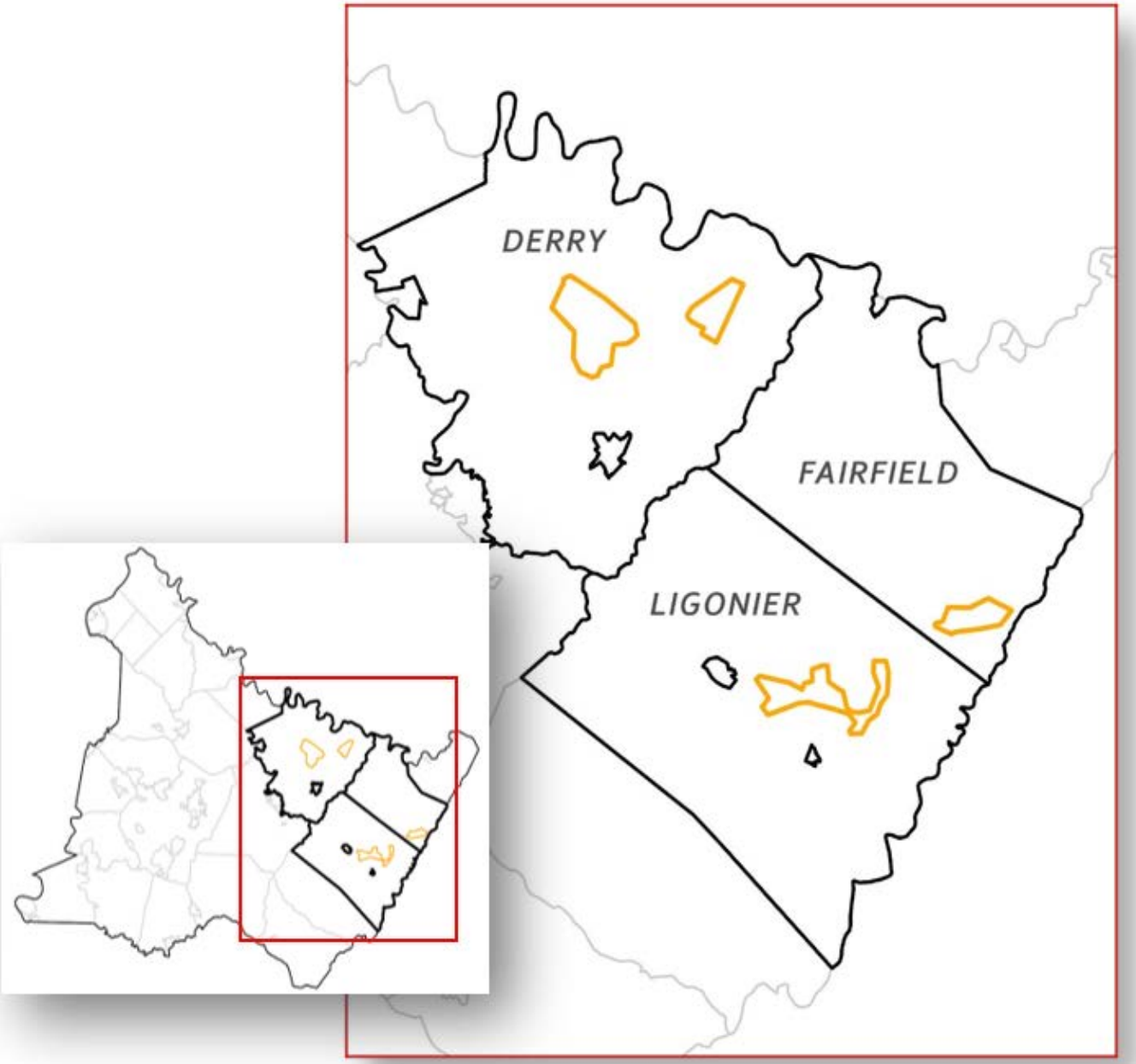
Known Expansion Plans

The County is tracking other known expansion plans that may impact the Westmoreland County Broadband Program. The County is aware of a Middle Mile Grant Program application that was submitted by SPC in September of 2022. If awarded, this plan would endeavor to establish fiber routes throughout the southwest Pennsylvania 10-county region as backbone networks, and one of the proposed routes runs through an area of high need in Ligonier and Fairfield Townships. While the Middle Mile Grant would not connect individual homes to this infrastructure, establishing backbone fiber infrastructure opens the door for last mile service providers to connect residences to the newly established network. The County is in close contact with SPC, and if they are awarded, the County will account for this development in future planning. Similarly, RDOF activities are expected to occur in the county within the next six (6) years, as RDOF winners were awarded funds to implement their rural expansion plans and extend service by 2028. Windstream is the only RDOF provider in Westmoreland County, and an open channel of communication has been established with Windstream so that the County can monitor RDOF progress and align with RDOF developments.

Early Action Projects

There are several key reasons for implementing four (4) Early Action broadband projects in Westmoreland County as the first direct implementation step. The first is to offer immediate intervention in the highest need communities and create some relief in areas where connectivity is scarce or non-existent. The second is to start integrating the planned investment of ARPA dollars into Westmoreland Broadband without waiting for new funds, which will come later in the project. Finally, to pilot project processes through these Early Action projects to adequately prepare for the full implementation of all COAs in Westmoreland County over the course of this program. The Early Action process allows Westmoreland County, select ISPs, and associated contractor staff to quickly initiate the process of rolling out broadband and to demonstrate to the public that the County is intent on moving forward with the broadband program.

A detailed scoring methodology was developed to assess which of the pre-identified unserved areas of the county (meaning areas with less than 25/3 Mbps), would be prioritized as an Early Action project. Much of this criterion is a direct reflection of requirements per the larger IIJA and other funding structures. For example, to ensure compliance with ARPA speed requirements of 100/100 Mbps, the projects will utilize optical fiber deployments. In addition to speed requirements, it is critical to assess population density as well as structure types within the area to ensure residential and CAIs get priority before other commercial locations. Other considerations include homes per linear mile, which is an important metric for ISPs to assess feasibility. Lastly, background history on the community and key demographic information were integrated into the scoring methodology to create a contextualized justification for broadband interventions.



Selection Methodology

Four potential Early Action project areas were identified in the preliminary stages of field studies and by validating survey responses. Beginning in July 2022, 3,778 addresses in Westmoreland were surveyed for broadband infrastructure. Nearly 60% of the homes visited had outdated infrastructure (DSL, copper wire, or satellite). These are key areas to target with Early Action. Similarly, as of October 31, 2022, residents of Westmoreland County took 2,504 surveys and speed tests. Over 70% of the speed tests recorded download speeds below 100 Mbps, which is considered insufficient by the PA Broadband Development Authority and the FCC. Finally, a GIS analysis on density, income, population, age, and many other factors went into the Early Action analysis. Combined with the data from the field work and speed tests, four (4) Early Action areas were analyzed and recommend by the Taskforce and approved by the Board of Commissioners for implementation in Fairfield Township, Derry Township, and Ligonier Township.

MORE THAN 70%
of the speed tests showed speeds below 100 Mbps.

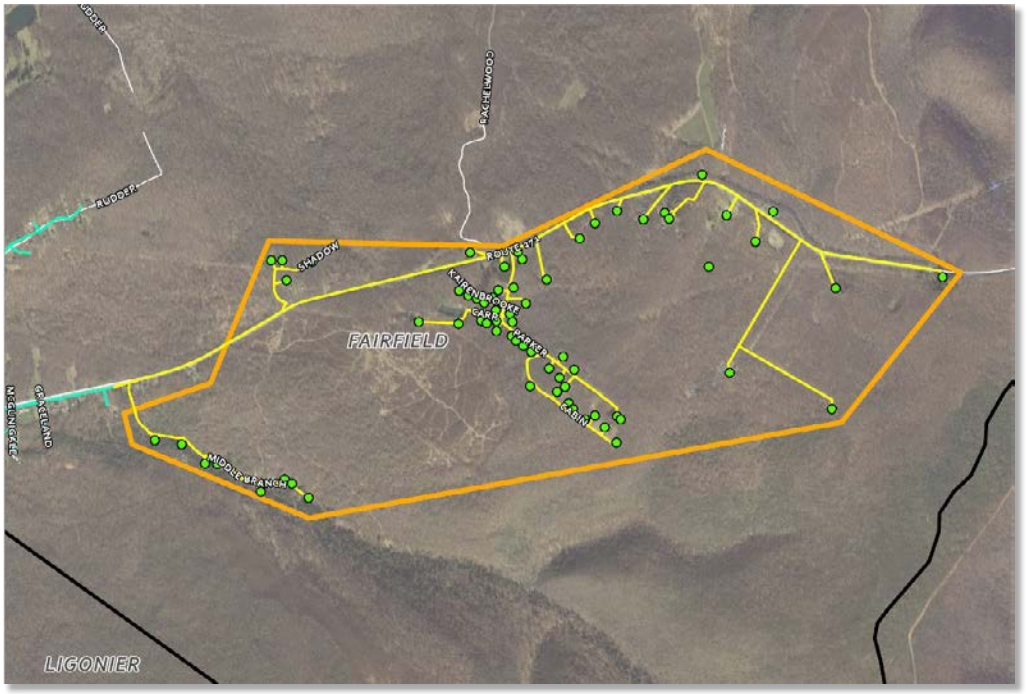
Early Action Areas – Analysis Criteria

CRITERIA	FAIRFIELD TOWNSHIP	DERRY/GRAY STATION ROAD	DERRY TOWNSHIP	LIGONIER/ WATERFORD
Percent of Area Below Federal Poverty Line	6%	4%	12%	3%
Nearby Fiber Location & Distance	Fiber line is located 600 ft to the west along Route 271	Two fiber lines are located 1,600 ft to the west along Gray Station Road to Route 237	Fiber is located on Pizza Barn Road to the south of the area. Another fiber line is located 4,400 ft to the south along Route 982	Fiber surrounds the area in all directions. Another fiber line is located 670 ft to the northwest along Gravel Hill Road
Total Number of Households	68	90	124	125
Total Number of Community Anchor Institutions	0	1	0	0
Average Fixed Broadband Download/Upload Speed	2.00 Mbps/0.63 Mbps	5.70 Mbps/1.02 Mbps	7.90 Mbps/2.54 Mbps	6.20 Mbps/1.07 Mbps
Average Mobile Download/ Upload Speed	0.95 Mbps/0.07 Mbps	10.4 Mbps/0.74 Mbps	5.93 Mbps/0.97 Mbps	23.16 Mbps/8.56 Mbps
Estimated Total Fiber Build Length, including laterals	7.25 miles	8.73 miles	15.60 miles	16.78 miles
Estimated Fiber Build Length, curb only	4.47 miles	5.88 miles	9.95 miles	10.13 miles
Household Linear Density (based on curb only fiber length)	15 houses/linear mile	15 houses/linear mile	12 houses/linear mile	12 houses/linear mile
Distance to Nearest RDOF Area	4.94 miles	2.95 miles	0 miles	6.02 miles
Median Household Income	$51,415	$55,625	$66,635	$66,977
Child Population Percentage	21%	12%	16%	15%
Senior Population Percentage	22%	23%	23%	29%

When the Westmoreland Broadband Program began, it was anticipated that two Early Action projects would be selected by the County Commissioners for initial investment. The County identified four areas as contenders for Early Action because they had the overall worst rates of connectivity, and because the County could help get these smaller areas connected relatively quickly. The scoring rubric above was developed to help County Commissioners decide in a data driven manner which two areas to move forward with, thus a weighted score is offered in the Early Action area tables below. However, upon deliberation, the County Commissioners decided to support all four (4) Early Action projects for deployment, therefore each of these areas will have priority via the Early Action phase. This makes the weighted score nonapplicable, but it is presented here for process transparency .

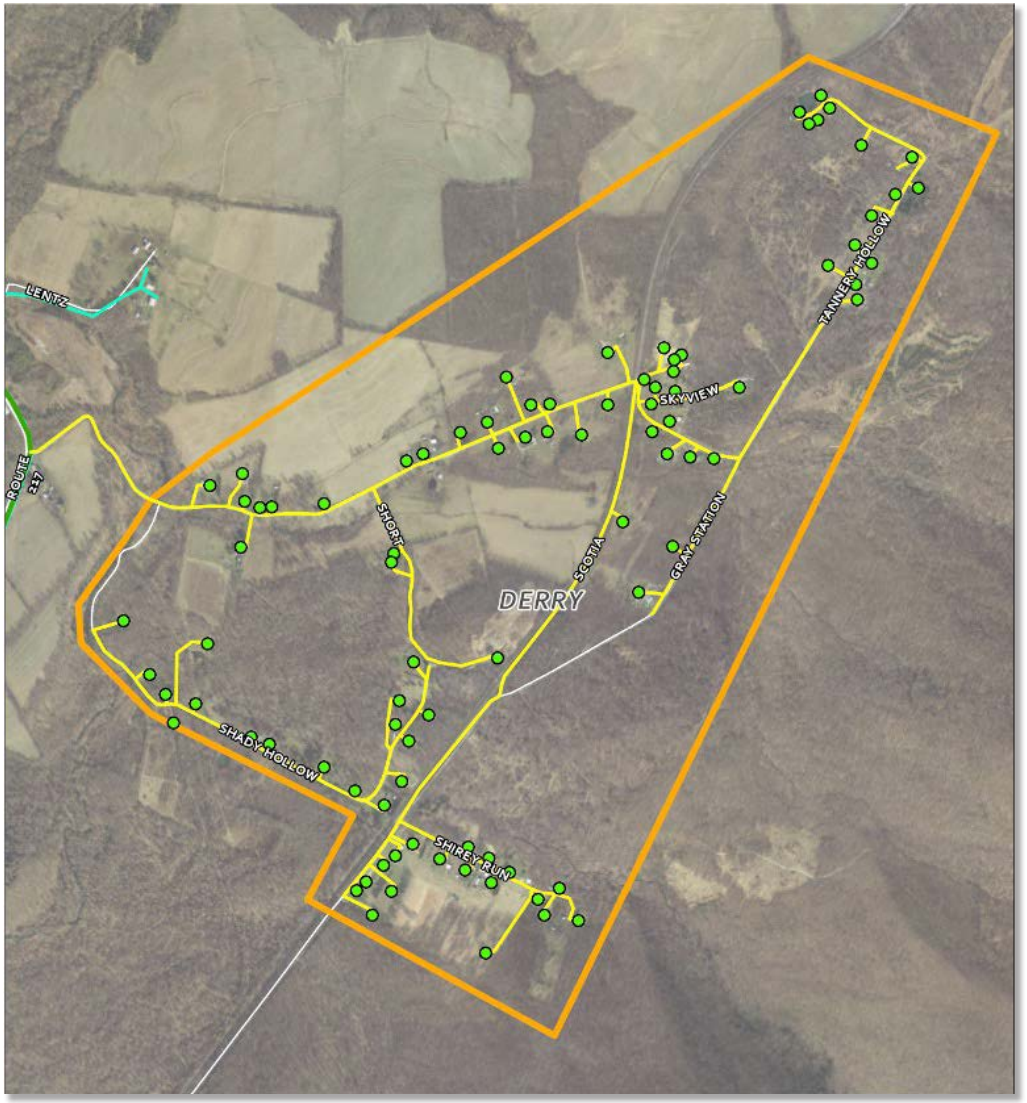
Fairfield Township

Criteria	Criteria Results	Score
Summary of Area	Fairfield Township is considered an unserved broadband area, with most homes operating on DSL. The 2020 Census data reports that **5.8% of the homes in this area are below the federal poverty line.**	3
Nearby Fiber & Distance	Fiber line is located 600 ft to the west along Route 271.	NA
Total Number of Households	68	1
Total Number of Community Anchor Institutions	0	1
Average Fixed Broadband Download/ Upload Speed	2.00 Mbps/0.63 Mbps	4
Average Mobile Download/Upload Speed	0.95 Mbps/0.07 Mbps	4
Estimated Total Fiber Build Length, including laterals	7.25 miles	4
Estimated Fiber Build Length, curb only	4.47 miles	4
Household Linear Density (based on curb only fiber length)	15 houses/linear mile	3
Distance to Nearest RDOF Area	4.94 miles	2
Median Household Income	$51,415	4
Child Population Percentage	21%	4
Senior Population Percentage	22%	2
	Average Score:	**3.00**



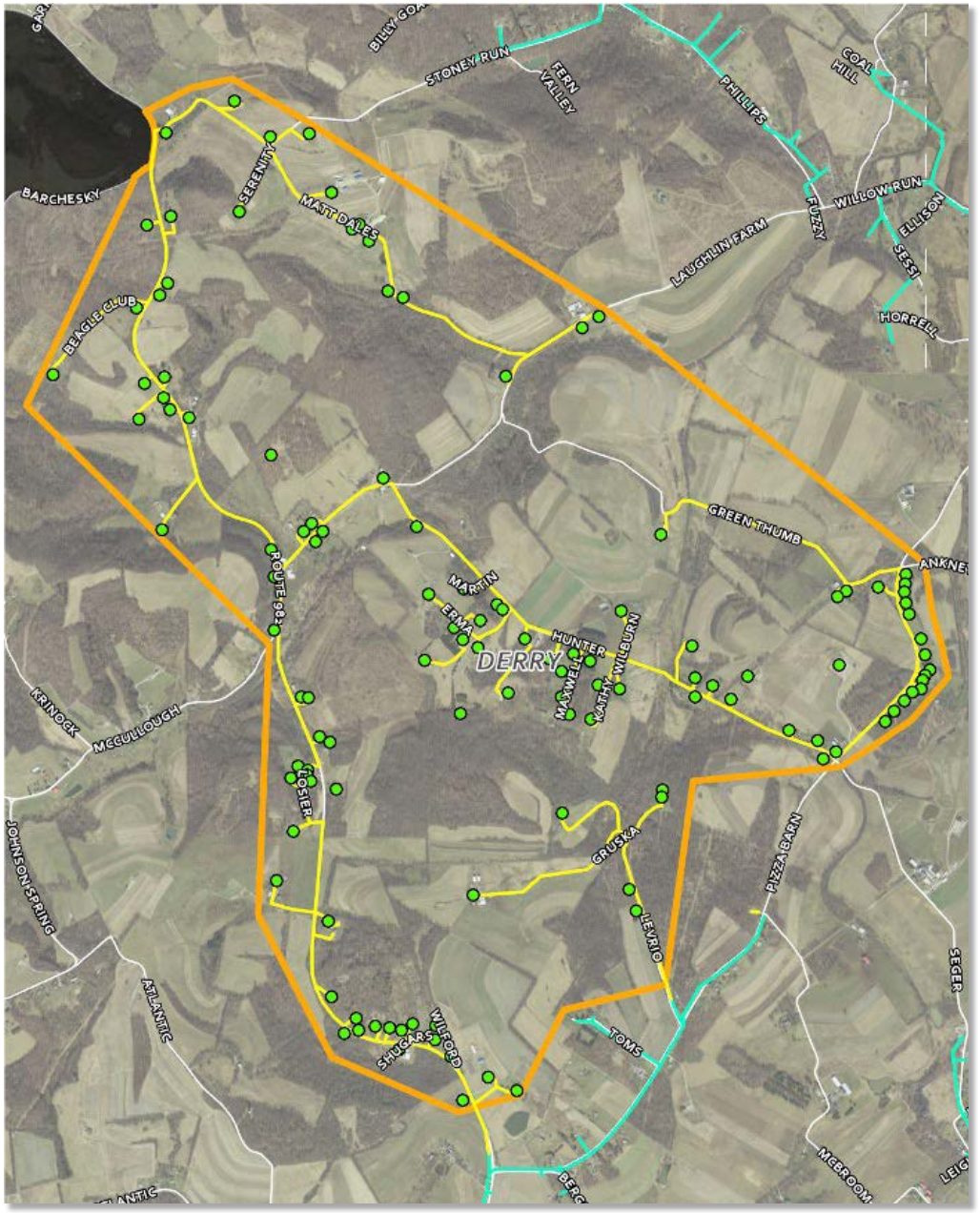
Derry/Gray Station Road

Criteria	Criteria Results	Score
Summary of Area	Derry Township/Gray Station Road is considered an unserved broadband area, with most homes operating on DSL. The 2020 Census data reports that **4.0% of the homes in this area are below the federal poverty line.**	2
Nearby Fiber & Distance	Fiber line is located 1,600 ft to the west along Gray Station Road to Route 237.	N/A
Total Number of Households	90	2
Total Number of Community Anchor Institutions	1	2
Average Fixed Broadband Download/ Upload Speed	5.7 Mbps/1.02 Mbps	3
Average Mobile Download/Upload Speed	10.4 Mbps/0.74 Mbps	2
Estimated Total Fiber Build Length, including laterals	8.73 miles	3
Estimated Fiber Build Length, curb only	5.88 miles	3
Household Linear Density (based on curb only fiber length)	15 houses/linear mile	4
Distance to Nearest RDOF Area	2.95 miles	3
Median Household Income	$55,625	3
Child Population Percentage	12%	1
Senior Population Percentage	23%	3
	Average Score:	**2.58**



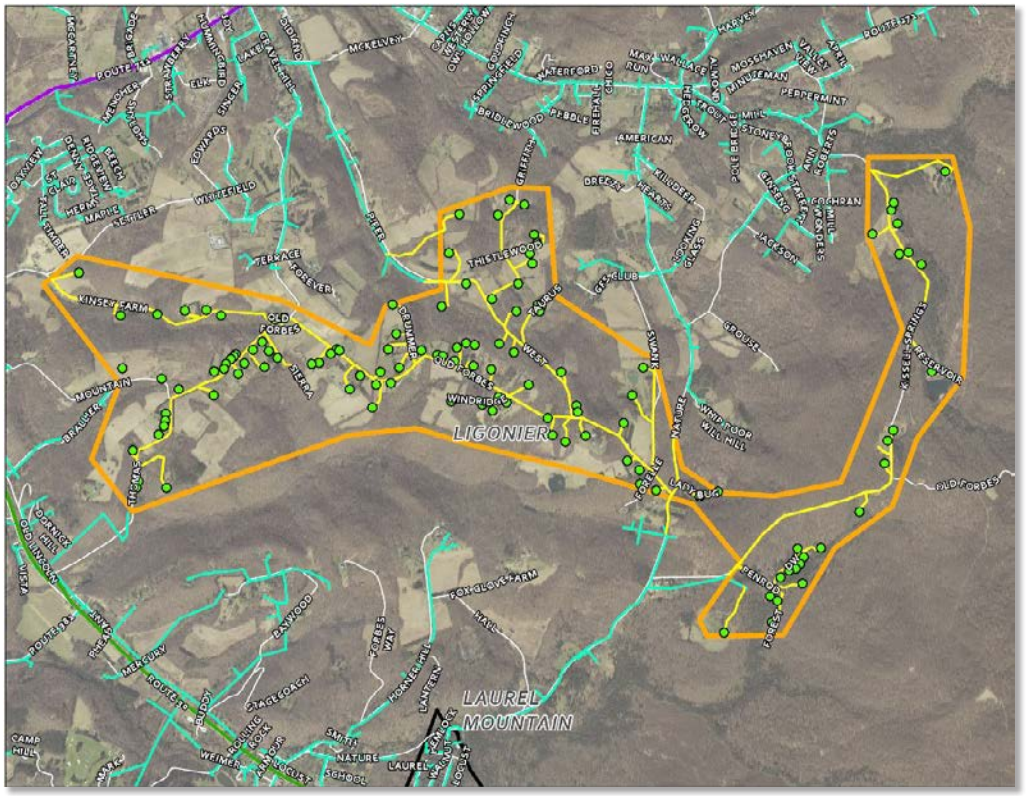
Derry Township

Criteria	Criteria Results	Score
Summary of Area	Derry Township is considered an unserved broadband area, with most homes operating on DSL, or no internet at all. The 2020 Census data reports that **12.4% of households are below the federal poverty line.**	4
Nearby Fiber & Distance	Fiber line is located on Pizza Barn Road to the south of the area, and 4,400 ft to the south along Route 982.	N/A
Total Number of Households	124	4
Total Number of Community Anchor Institutions	0	1
Average Fixed Broadband Download/ Upload Speed	7.9 Mbps/2.54 Mbps	1
Average Mobile Download/Upload Speed	5.93 Mbps/0.97 Mbps	3
Estimated Total Fiber Build Length, including laterals	15.6 miles	2
Estimated Fiber Build Length, curb only	9.95 miles	2
Household Linear Density (based on curb only fiber length)	12 houses/linear mile	2
Distance to Nearest RDOF Area	0 miles	4
Median Household Income	$66,635	2
Child Population Percentage	16%	3
Senior Population Percentage	23%	3
	Average Score:	**2.58**



Ligonier/Waterford

Criteria	Criteria Results	Score
Summary of Area	The Ligonier/Waterford area is considered an unserved broadband area, with most homes operating on DSL or Cable. The 2020 Census data reports that **2.7% of the homes in this area are below the federal poverty line.**	1
Nearby Fiber & Distance	Fiber line surrounds the area in all directions, with multiple providers present in the surrounding area.	N/A
Total Number of Households	125	3
Total Number of Community Anchor Institutions	0	1
Average Fixed Broadband Download/ Upload Speed	6.2 Mbps/1.07 Mbps	2
Average Mobile Download/Upload Speed	23.16 Mbps/8.56 Mbps	1
Estimated Total Fiber Build Length, including laterals	16.78 miles	1
Estimated Fiber Build Length, curb only	10.13 miles	1
Household Linear Density (based on curb only fiber length)	12 houses/linear mile	2
Distance to Nearest RDOF Area	6.02 miles	1
Median Household Income	$66,977	1
Child Population Percentage	15%	2
Senior Population Percentage	29%	4
	Average Score:	**1.67**



Funding Strategy

Since the implementation of IIJA, the funding landscape for broadband expansion activities has grown significantly with more monies available and new funds established. For entities such as Westmoreland County looking to enhance broadband deployment and close the digital divide, funding mechanisms exist through the NTIA and the FCC for both Internet access and adoption. Pennsylvania state agencies, such as the Pennsylvania Department of Community & Economic Development (DCED), provide grants to provide middle-mile and last-mile high-speed broadband infrastructure to unserved areas in Pennsylvania.

It is anticipated that the new PBDA will utilize a competitive grant process to provide access to subgrantees, such as Westmoreland County, related to infrastructure build out and the development of digital equity programs. Additionally, the ARC Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) grant, Coronavirus Aide, Relief, and Economic Security Act (CARES Act), and ARPA are sources of funding anticipated to be utilized for broadband. The Department of Planning and Development has identified a need for $20 million in ARPA funds as well as a portion of their Community Development Block Grant CARES Act (CDBG-CV) funding to devote to broadband activities in the interim until new funds are procured. Additionally, approximately $23 million in new funding will be required to connect the entire county.

A comprehensive funding strategy was created to successfully secure state and federal grants which includes the identification of funding sources, application development and submission, and grant administration, to ensure program compliance. Importantly, the County sought to develop a funding plan that was deeply informed by the visioning conducted with stakeholders so that new funds work directly towards the goals that were established. A fund selection methodology was developed to cross-check that the proposed broadband projects align with the award deadline/disbursement dates, that the project needs are eligible expenses under the award, and if there are any synergies between funds that could be paired together for greater impact.

The County is planning to develop one (1) grant submission for Year One (ending June 2023), two (2) grant submissions for Year Two, and two (2) grant submissions for Year Three for a total of five (5) grant submissions. Grant submissions for Year Four and Year Five will be assessed based on remaining unserved/underserved areas and other action items identified in this feasibility report. This strategy is continually being updated to account for new funding announcements and information from conversations with funders, some of which will be significant enough to alter the award pursuit plan set forth in this report. Recognizing that the funding strategy as a living document that will likely be adjusted as new information becomes available, the available funds listed on the following page were targeted for pursuit:

TIME-LINE	PHASE	SOURCE
2022	Planning	**Community Development Block Grant (CDBG-CV)** Distributed from The Department of Housing and Urband Development (HUD) to the State, then to the County in 2022.
		Current CDBG-CV funding can be used for broadband installation infrastructure and service delivery. Westmoreland County used a portion of this award to fund the planning phase of the Westmoreland Broadband Program.
2023	Early Action Projects	**American Rescue Plan Act – State and Local Fiscal Recovery Fund (ARPA – SLFRF)** Distributed from the US Treasury to States, Counties, and Municipalities in 2021.
		Established to support response to and recovery from the COVID-19 public health emergency, it invests in broadband infrastructure to expand affordable access to broadband internet. Westmoreland County will use a portion of this funding for Early Action projects with the expectation that ISPs who are awarded also contribute to costs.
2023	Connectivity Opportunity Areas	**American Rescue Plan Act – Capital Projects Fund (ARPA – CPF)** Distributed from the US Treasury to States, to be released from PBDA in Q1 2023.
		ARPA – CPF supports critical capital projects that directly enable work, education, and health monitoring including remote options, in response to the public health emergency. It's divided between up to three programs: Broadband Infrastructure, Digital Connectivity Technology, and Multi-Purpose Community Facility Projects. The County will apply for funds to support the build-out phases of Early Action (as timing allows) or the following COA projects.
2023	Connectivity Opportunity Areas	**Area Development Program** From Appalachian Regional Commission (ARC) to apply in early 2023.
		One of ARC's goals is to invest in critical broadband infrastructure to increase access, improve education, support e-commerce, and foster entrepreneurship. Westmoreland County will seek this award to jump start the process of connecting the remaining COAs after the Early Action awards have been made.
2024	Connectivity Opportunity Areas	**ReConnect Grant Program, Round 6** From USDA to apply in spring 2024.
		The ReConnect Program offers loans, grants, and loan-grant combinations to facilitate broadband deployment in areas of rural America that currently do not have sufficient access to broadband. Given the requirement that the lead applicant be the owner and operator of the new network, Westmoreland County will jointly pursue this award with specific ISP partner(s) who will own/operate to address rural parts of the county.
2024	Connectivity Opportunity Areas	**Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) Initiative** From Appalachian Regional Commission (ARC) to apply in summer 2024.
		The POWER Initiative targets federal resources to help communities and regions that have been affected by job losses in coal industries. It funds broadband feasibility studies, fiber deployments and wireless deployments. The County will apply with ISP partner(s) to supplement new infrastructure expenditures as COAs get connected.
2025	Remaining Connectivity Opportunity Areas	**Broadband Equity and Deployment Program (BEAD)** From PBDA to apply in summer 2025.
		BEAD will be distributed from the NTIA to the PBDA in the next year. Sometime following that, PBDA will establish a funding mechanism for counties and other stakeholders to apply for BEAD funding. While the specifics of this funding mechanism are unknown at this time, the County anticipates that the activities that remain to complete the Westmoreland Broadband Program will be eligible expenses.

Considerations for Additional Investment Areas

Each of the current potential funding sources listed above that could support the Westmoreland Broadband Program are strictly to be used for improved service first in unserved locations, secondarily, in underserved locations, and tertiarily unserved or underserved Community Anchor Institutions. The prioritization of locations with the highest need is clearly articulated by the federal government within all the funding requirements. As a result, locations that are already considered served, meaning they have 100 Mbps upload/100 Mbps download speeds, will not be covered by current federal funding opportunities. However, the County is aware that there are locations in the county that may have served speeds but require more to perform certain functions. For example, some businesses that provide technical services require symmetrical gig speeds (1000 Mbps/1000 Mbps) to serve their customers. In cases like these, the County will evaluate the potential of non-federal funds to cover these locations. It is more than likely that a set of partnerships will be required to procure different funds for this use, and the County may look to municipalities where these locations exist to allocate local funding where needed.

Next Steps

The County anticipates the following steps to further the next phase of the Westmoreland Broadband Program:

Oversee a Local ISP Challenge

ChallengeOnce the COA maps are published, ISPs will have the chance to challenge the data and correct locations that may have been mistakenly marked as "unserved" or "underserved." An email will be sent to the ISPs within the county about 2-3 weeks ahead of time to inform them of the County's intent to compare and challenge the points the ISPs have indicated they serve within the county. After 2-3 weeks, a password protected URL to an online and dynamic website will be sent out for each ISP to view their provided data and the locations the County have deemed to be unserved. An Excel spreadsheet indicating their unserved locations will also be shared. The County will allow ISPs 2-3 weeks to compare their latest served locations against the county's unserved locations and to provide evidence on locations where the County has identified locations as unserved, yet the ISP believes they are indeed served. Evidence will be reviewed, and as needed, some additional fieldwork may be performed to verify the evidence. The ISP evidence will either be accepted or rejected, which will adjust the number of unserved locations and the number/size/shape of the COAs accordingly.

Issue RFPs for Connecting Westmoreland County

After conducting the Local ISP Challenge, the County will rely on its updated map results to guide the next steps toward broadband infrastructure deployments in Westmoreland COAs. Implementation steps for the Westmoreland County Broadband Program include two separate RFPs to engage service providers in county broadband work. The first RFP will be issued in Q1 of 2023 to offer service providers the chance to propose plans for connecting unserved locations within the four Early Action Areas (described on pages 47-53 of this report), of which providers can propose to connect one, a few, or all four of the Early Action areas. While the Early Action projects are underway and awardee(s) are implementing their planning and construction activities for those four areas, a second RFP will be issued by the County that will include the remaining unserved locations in the previously identified COAs that were not a part of the Early Action projects. This subsequent RFP will rely on the most updated mapping data available, which will continually be refined over the next several years to include any missed locations, newly constructed locations, and newly deployed infrastructure not administered through the Westmoreland County Broadband Program. This RFP is anticipated to be issued in Q2 of 2023 with the expectation that all new broadband deployments are implemented before the end of 2026.

Continually Update the Grant Funding Strategy

The County will continue to track existing funding opportunities and identify potential new grants which align with the County's funding needs, partnerships, timing, and eligibility requirements. As explained in the Funding Strategy section of this report, the County is anticipating forthcoming changes to broadband funding mechanisms, which could include changes to requirements, deadlines, and award amounts. These changes, perhaps at both the federal and state level, may alter the funding strategy as it was presented in this report. For grants where the County has identified a partnership opportunity, the County requires the project to go out for RFP. Potential partners will be notified of the RFP process via email.

Develop a Digital Navigator Program

The Digital Navigator Program is a nationally recognized model for bridging the equity side of the digital divide. Once new infrastructure is deployed, it is critical that residents of Westmoreland County have the skills and confidence needed to utilize newly available Internet services. In preparation for Year 2 of the Westmoreland Broadband Program, the County will evaluate the potential of a Digital Navigator Program, which will likely rely on a diverse set of partnerships to implement successfully with as big of a reach as possible. If it is considered feasible, the County will assist in the development of a program plan in collaboration with local partners who work on digital inclusion.

Evaluate the Potential of a Broadband Utility Connection Fund

The County will consider the potential of a Broadband Utility Connection Fund for scenarios where ISPs require a high installation fee from a resident to connect hard to reach locations. For example, there are locations within the county that have fiber or cable running past their location at the main road, but do not have a service line, or drop line, to their home due to the distance from the main road. Locations like these require more investment to connect, and ISPs have quoted exorbitant fees to residents in some cases. This concept is considered both an infrastructure and affordability issue. Many of these scenarios were captured during field work and the broadband survey, however given not every rural location was visited, there is potential that other locations may exist that did not take the survey, were missed during the field work, or will be newly constructed in the future. This fund would be set up to help offset these costs for the residents.

Partnering Together for Broadband Expansion

As the County does not intend to become an ISP itself, the path forward is to partner with multiple ISPs who will implement fiber solutions to meet all ARPA and IIJA goals. To provide service to the 3,506 structures identified as unserved in the COAs, the County will conduct a competitive bid process that will be issued to local ISPs. This bid will be developed while the Early Action projects are progressing.

The request for proposal will be as easy to respond to as possible, but it will still require a proposal from ISPs for technology that is future-proof. This means the lowest bid for an area may not be of best value to the County. For example, a bid for point-to-point Wireless Internet Service may be lower than a fiber bid, but wireline fiber is the preferred technology and provides for more advanced upload and download speeds at the time of the writing of this report. Cable DOCSIS 4.0 advancements may allow for similar speeds but should be reviewed during the bidding process. Other emerging technologies such as Wireless Internet Service Provider (WISP), VDSL, and 5G may meet this criterion but should not be prioritized first. Also, partnering with existing fiber backbone providers should be looked upon favorably as this could provide cost savings to avoid rolling out fiber in areas where it already exists.

The County may make awards to more than one ISP to connect the rest of the county to lower costs. This is also intended to inspire more competition and therefore more options for consumers, as one of the main results from the Internet Survey and Speed Test was "There is no competition and I only have access to one provider." Potentially partnering with multiple providers allows for required future expansion and competition. Westmoreland County does not anticipate bidding the Windstream RDOF areas, but in the event the Windstream retracts their RDOF bid prior to their 2028 deadline, those census blocks should then be put out to bid by the County.

Based on local knowledge, broadband project experience, it is recommended Westmoreland County budget at least $43M of funding for total project costs to solve the digital divide for unserved locations, of which up to 50% of the total project cost may be picked up by ISPs. This estimate assumes minimal additional feedback from the broadband survey or from the Westmoreland County Broadband website in denoting previously unidentified unserved locations. Based off this estimate, the County anticipates using funding from its existing ARPA budget, potential grant awards, and assumes that it will partially be supplemented by ISP partners who will invest their own funds into projects to provide low-cost bids during the competitive RFP process.

Westmoreland County aims to provide high-speed, reliable Internet to all locations across the county over the next five (5) years, if not sooner. By working with ISPs to share the funding burden, and further collaborating with the PBDA to share the COAs and seek continued funding through state grants, Westmoreland County is setting a path to expand fiber infrastructure and improve the quality of Internet services provided countywide.

Appendix A: Key Terms & Acronyms Defined

Common Terms

Bandwidth	The volume of information that can be sent over a connection in a measured amount of time.
Broadband	The term broadband commonly refers to high-speed Internet access that is always on and faster than traditional DSL or dial-up access. Broadband is delivered through multiple technologies, like fiber optic cables, fixed antenna wireless, satellite, mobile, and cable modem.
Connectivity	The ability to link to and communicate with other computer systems, electronic devices, software, or the Internet.
Connectivity Opportunity Areas	Locations that are unserved with poor mobile and fixed broadband service speeds.
Dark Fiber	Unused optical fiber that has been laid or strung but is not currently being used in fiber-optic communications. Dark fiber represents additional capacity for bandwidth to be made available. Typically the customer, not the service provider, maintains and operates equipment to use the dark fiber when they lease it.
Digital Equity	A goal to ensure that everyone has equal access to technology tools, computers, and the Internet and has the knowledge and skills to use them effectively.
Digital Literacy	Digital literacy is the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills.
Digital Navigator	Digital Navigators are trained staff who work with residents on digital literacy including home connectivity and how to search for or apply for jobs and critical services.
Upload Speed	The rate that data or information is transferred from a user's computer or device to the Internet.
Download Speed	The rate that data or information can be received by a user's computer or device from the Internet.
Hotspot	A hotspot is a physical location where people may obtain Internet access, typically using Wi-Fi technology. Public hotspots may be created by a business for use by customers, such as coffee shops or hotels. Personal or mobile hotspots let users connect their smartphones to other devices for Internet access.
Mbps	Megabits per second are units of measurement that generally refer to upload and download speeds to measure the file size of data transferred per second over a channel and are used to show how fast a network or Internet connection is.
Mesh Network	Technology to provide seamless wireless via multiple mesh nodes, or Wi-Fi extenders, that work together to route data to and from users.
Network	A system that connects two or more computing devices for transmitting or sharing information.
Served	Locations that have access to high-speed Internet as it is currently defined by the FCC is 25 Mbps download/3 Mbps upload.
Small Cell Technology	Wireless transmitters and receivers (pizza-box sized) designed to provide network coverage to smaller areas. It strengthens coverage and data transfer speeds where devices might otherwise compete for bandwidth. 5G is built on small cell technology.
Underserved	Locations where Internet service is at or above the FCC threshold but with no access to broadband service at speeds 100 Mbps download and 20 Mbps upload.
Wi-Fi	Wi-Fi (short for Wireless Fidelity) is the radio signal sent from a wireless router to a nearby device, which translates the signal into data you can see and use. The device transmits a radio signal back to the router, which connects to the Internet by wire or cable.

Acronyms

ACP	Affordable Connectivity Program (formerly the Emergency Broadband Benefit Program)
ARPA	American Rescue Plan Act
BEAD	Broadband, Equity, Access, and Deployment Program
BSL	Broadband Serviceable Location
CDBG	Community Development Block Grant
CARES Act	Coronavirus Aid, Relief, & Economic Security Act
CFA	Commonwealth Financing Authority
COA	Connectivity Opportunity Areas
CRF	Coronavirus Relief Fund
DCED	Department of Community and Economic Development
EMS	Emergency Medical Services
FCC	Federal Communications Commission
HUD	The Department of Housing and Urband Development
IIJA	Infrastructure Investment and Jobs Act (of 2021)
IoT	Internet of Things
ISP	Internet Service Provider
IT	Information Technology
LMI	Low to Moderate Income
MPO	Metropolitan Planning Organization
NTIA	National Telecommunications and Information Administration
P3	Public-Private Partnerships
PBDA	Pennsylvania Broadband Development Authority
RDOF	Rural Digital Opportunity Fund
RFP	Request for Proposal
RPO	Rural Planning Organization
SAP&DC	Southern Alleghenies Planning and Development Commission
SLFRF	Coronavirus State and Local Fiscal Recovery Funds
SPC	Southwestern Pennsylvania Commission
SWPA	Southwestern Pennsylvania
USDA	United States Department of Agriculture
WISP	Wireless Internet Service Provider

Appendix B

Regional Connectivity Roadmap: A Focus on Westmoreland

The 2021 Connectivity Roadmap prepared by SPC for the 10-county region included 12 goals for regional broadband improvement. Throughout this planning effort for Westmoreland County, these regional goals were used as a starting point. Below, each of the 12 goals are reiterated, and the strategies identified in the Connectivity Roadmap that are most relevant to Westmoreland County are listed. This appendix item serves as a guide for Westmoreland County in using and applying the Connectivity Roadmap at the County level.

1. Establish Network Redundancy: As technology continues to advance and smart devices allow more efficient and connected workflows and lifestyles, Internet reliance will become even more embedded in our daily lives. A connected lifestyle requires an energy source to power the increasing number and type of devices we use. A smart phone that is not charged cannot look up a bus schedule or place an order for food. Of even greater concern, a short Internet outage can be catastrophic as our daily activities are conducted online. For example: during an outage, contacts and online documents will be inaccessible, smart vehicles and emergency services will lose access to their navigation systems, and calls will not be able to be placed to 911 or elsewhere. Network redundancy acknowledges that our region wishes to increase resiliency and anticipates ways to strengthen our energy grid and build redundancy into each level of the communications system.

    a. Pair investments in fiber that will provide long-term efficiency and capacity in urbanized areas with cell towers in low density areas that will fill gaps and provide complete coverage to advance the fiber network. Allocate broadband funding equitably between fiber and cellular using the Roadmap's project evaluation rubrics to gauge needs met

2. Reframe Internet as a Public Necessity: The past century has seen a massive expansion of infrastructure, accompanied by an evolution of ownership and management approaches. Our transportation network has evolved into a fully public system of roads and highways, owned and managed at local, state, and federal levels with departments created to oversee them. Water, electricity, and heat are viewed as public health issues and access to them is protected through various laws and assistance programs. High-speed Internet has not yet been elevated to the same status, and although subsidies do exist, it is not treated as a public necessity. Landlords do not have to guarantee access to Internet, public buildings do not have to provide it, and there is no governmental entity to oversee and enforce its accessibility. The Regional Vision clearly articulates a desire for broadband to be expanded into the public domain through public policy and public funding.

    a. Conduct a public service campaign with targeted messaging to increase awareness and build advocacy for broadband as a public necessity.

    b. Identify available sites that are ready or near ready to accommodate fiber expansion in unserved areas, focusing on opportunity sites and areas with the highest rates of no service per square mile.

3. Expand Broadband in the Public Domain: Following up on reframing broadband as a public necessity, the Regional Vision imagines high-speed Internet being made available within the public realm. Public buildings and spaces should consider providing Internet as they provide light and water. Building publicly accessible Internet networks will make access more equitable and affordable while supporting expansion of the network and smart technology through cities and towns, without requiring individual home service plans. Live data tracking for food banks and emergency services, or mobile application of benefits towards bus fares, are a few examples of how equitable public realm broadband will enable our region to excel and lead in technology and innovation.

    a. Create a database of potential "community connectivity anchors," including libraries and public institutions, and highlight those with poor or lacking Internet access to prioritize network expansion projects in these locations.

    b. Partner with community anchor institutions, including libraries, to provide funding and program assistance for high-speed Internet access onsite and access to devices.

4. Invest in Expanded Infrastructure and Establish a Fiber Backbone: Building the infrastructure to reach every household and every business across the region is a clear goal. Providing high-speed Internet service begins with the infrastructure to deliver it, and many gaps exist in our region. Fiber is a priority for fixed networks. This Vision proposes including fiber in other infrastructure projects to maximize efficiencies in construction and maintenance and to utilize available rights-of-way. Providers and local government can partner together along "smart corridors" to provide shared space for fiber and 5G infrastructure that multiple providers can use, creating a strong backbone of middle-mile service through each County. A continuous backbone is also essential to advancing the use of Connected and Autonomous Vehicles and transforming our region's mobility options. Partnering with transportation and utility departments and companies to share resources and co-locate broadband, road, and electric networks where possible will make infrastructure projects more efficient to build, operate, and maintain across each sector.

    a. Promote public-private partnerships (P3) that rely on private industry to build and maintain a backbone of fiber infrastructure and assign public entities to sponsor or own the missing or last mile(s). Continue to advance the Connectivity Roadmap's ranking system to quantify the impact of network expansion into un- or under-served areas based on households served, cost per user, and socioeconomic growth factors in order to identify projects as a priority (ranked by high to low impact), or P3 sponsorship priority (ranked by high to low impact).

    b. Prioritize investments with long-lasting functionality that will offer 100/20 (100 Mbps download and 20 Mbps upload speed) for all projects.

5. Support Industry Sectors i.e., Transportation and Agriculture: Regional and local leaders must understand how broadband intersects with and supports efficiencies and innovation in transportation, agriculture, and other industry sectors. Pittsburgh is a hub for developing and testing Connected and Autonomous Vehicles (CAVs), but smart technology applications in transportation are more wide-ranging than that alone: real-time traffic data can improve road utilization and safety, improve public transportation reliability by allowing accurate bus schedule tracking, allow curbside management programs that allocate road space to different uses by time of day, and more. Agricultural businesses benefit from self-operating equipment, sensors to monitor food freshness, real-time data sharing between suppliers and buyers to efficiently deliver food in needed quantities, and more.

Broadband investments in the region also support cutting-edge technologies, robotics, and modern equipment that will enable our industries to be leaders in the nation and drive economic growth and prosperity.

a. Promote smart growth land use patterns in southwestern Pennsylvania counties and municipalities to ensure that infrastructure investments, from fiber and cellular to roads, transit, and land use are efficient and complementary.

b. Factor smart land use into planning efforts and require a comprehensive land use approach that includes broadband connectivity infrastructure, with fiber for all new housing and industrial development.

c. Invest in network expansion to and around areas with high farming and agricultural activity to allow continued technological advancement and modernization of the industry to stay competitive.

6. Prioritize Digital Equity for all Existing and Potential Users: At the core of inclusion and literacy goals, there is a desired outcome of digital equity. Broadband access directly impacts economic mobility: resources available online connect users to greater job markets, permit flexibility to work from home, support the freedom to make individual choices about personal health and safety, and open up a variety of training and educational opportunities. Increasing dependence on technology and online systems drives the growth of a new workforce sector to manage, monitor, and maintain everything from websites and devices to the innovative software and data tracking tools they may employ. Southwestern Pennsylvania must connect marginalized communities to these opportunities and ensure that workforce education and development is created and implemented equitably. Every resident who wants a better future for themselves should be able to benefit from the digital economy.

   a. When assessing household Internet usage and need, continue to incorporate questions in public surveys on number of users and their anticipated Internet needs (i.e., school, work, gaming, medical visits, streaming, etc.), to evaluate the Internet speed and capacity that will best support the household's Internet usage needs and respond to the diverse and changing needs of different household types.

7. Provide Assistance to Achieve Affordable Rates: Costs for high-speed Internet vary widely across southwestern Pennsylvania, even though there is little connection between the rates charged and the speed or reliability of service. In fact, there is a correlation between higher rates and less reliable service in rural areas. In some of the least densely populated parts of the region, users pay for cell service that they can only use in some parts of their town and home service with slow speeds and frequent outages. Across the region, users struggle to afford all the costs associated with accessing the Internet, from service plans and devices to installation fees and unexpected data fees. If southwestern Pennsylvania truly wants to ensure that all residents have access to the tools, benefits, and opportunities available online, we need to also invest in making this access affordable to all.

   a. Explore ways and resources to structure Internet service as a public utility with low and affordable costs.

   b. Partner with community organizations and social services to promote existing programs such as the FCC Affordable Connectivity Program.

8. Foster Digital Inclusion and Access: The prioritization of digital inclusion acknowledges the unequal dispersion of resources across the region and commits to seeking balance through future investments. Southwestern Pennsylvania must take steps to connect broadband service, programs, and literacy initiatives equitably and inclusively so that no one is left behind. The needs differ in each County and in different demographic groups. Middle mile and last-mile infrastructure projects have left out many rural areas where low household density does not generate enough profit for private companies to expand. Programs and subsidies that are advertised online or accessed online automatically exclude those without reliable access, while geographic or demographic qualifiers exclude others. Digital inclusion is easy to value, but difficult to implement and maintain because it requires ongoing effort to assess the reach of every provider, service, and program. Future investments should be prioritized based on how well they address gaps and inequalities in access to Internet service and related programs, include plans for how they will measure success, and provide sustainable funding to continue inclusive access in the long term.

    a. Identify opportunities to close middle-mile and last-mile connectivity gaps across the region. Create a strategic plan aligned with funding resources and an implementation timeline to address last-mile connectivity gaps. As part of the strategic plan, evaluate the ability of local and/or regional governments to play an active role in making the last-mile connection.

9. Expand Programs for Digital Literacy and Education: Digital literacy is an expansive topic that covers the many ways that users fail to benefit from available Internet resources due to lack of skills and knowledge. For some people, navigating provider websites and understanding the terms within service plans is itself a challenge; as a result, they pay extra costs or fees they do not understand. Others do not have enough web familiarity to know how to check out books, pay bills, or research services online. Understanding how to secure personal accounts and information is a huge barrier that keeps some users afraid of using the Internet and costs others when their data is stolen. Jobs more and more often require basic web skills to do the work and sometimes even to apply, so digital skills are an entry point to the workforce. The Vision for a connected southwestern Pennsylvania recognizes that having Internet access is not enough – we must also invest in educating residents on how to use it through robust digital literacy programs and offerings.

    a. Partner with state agencies and aid organizations to identify common services (such as job applications, vehicle registration, unemployment application), that favor Internet access and provide application assistance through digital navigator programs offered in-person or by phone.

    b. Support the creation of a digital navigator library system, in partnership with libraries, senior centers, and/or other entities, to offer technical support, resources available to be checked out, and computer training for free.

10. Facilitate and Lead Regional Partnerships: The expansion of broadband infrastructure and services involves many entities who must coordinate and work together to build out the network completely and efficiently. Pairing broadband projects with existing infrastructure requires strong partnerships between different owners, systems, and service providers. If broadband is to be treated as a public utility and government assists in ensuring service, there are further partnerships to build between public and private entities. It is not currently profitable for private companies to expand broadband in areas with few households or challenging and expensive site conditions. The Vision of comprehensive coverage across the region will require strong and clear partnerships that bring multiple sectors together to collaborate and share resources.

    a. Set private industry standards for providing services fairly and sustainably, for example, requiring ongoing maintenance plans, transparent pricing, accurate data sharing, and sustainable funding sources, and apply these standards as a qualifier for allocating public funds and selecting partnerships with providers.

    b. Explore ways to generate competition, such as incentives for providers to expand in areas with single-provider service.

    c. Anticipate market constraints and supply chain barriers by planning in advance and ensuring that project timelines include the flexibility to accommodate a year of acquisition time without adversely impacting funding, construction, or other project constraints.

    d. Facilitate collaboration between fiber, cable, WISPs, and middle-mile backbone providers by hosting a provider working group via regular, quarterly collaboration sessions and a shared contact list that enables communication and mutual familiarity amongst providers.

11. Advance Cross-Jurisdictional Policies and Legislative Change: The Internet does not stop at County or state boundaries, yet these boundaries do define governmental funding and regulatory arms. By working alone, counties and municipalities within counties often struggle to have the necessary staffing, resources, and skill sets to implement the projects they wish to see or even navigate all the steps to identify what those projects should be. This Connectivity Roadmap is a first step towards equipping the counties with the tools to proceed, but more steps should follow to facilitate projects and programs across jurisdictional borders. Whether it is modernizing smarter land use policies that enable broadband infrastructure and new technology, streamlining multi-municipal projects, or developing clear policies for ISPs to follow in ensuring a fair market, our region needs to continuously understand the limitations embedded in our own policies and strategically work to pursue legislative changes that enable the land use, infrastructure, and fair access outcomes desired in the Regional Vision.

    a. Collaborate with providers and counties to create a resource sharing portal that provides data and mapping, implementation guides and templates, and facilitates shared labor and investment across County lines, including guides for streamlined applications, zoning ordinance examples, best practices, and more.

    b. Work with legislators to create fair access regulations to apply to ISPs, paired with incentives and funding support, to mandate that ISPs provide reasonable and fair access in rural areas and provide clear means for ISPs to achieve this goal.

    c. Promote legislator awareness of regulatory burdens, timetable and cost standards, and deployment processes in order to educate officials on the steps involved and provide the tools and knowledge for them to simplify and streamline their processes.

12. Integrate Broadband Expansion into Economic Development Policies and Strategies: The previous goals make it clear that broadband access and expansions will have ripple effects throughout the workforce and throughout all sectors of the economy. In the near term, broadband related construction creates jobs. New types of infrastructure will give rise to a new set of jobs to maintain them, and digital systems that grow and thrive in a region with reliable high-speed connectivity will give rise to new jobs in software, data management, operations, and more. As an example, the use of self-driving tractors in agriculture supports new jobs to design the tractors, manage and track the routes within a farm, and service the tractors when maintenance is needed. Investment in infrastructure is always expensive, but the economic impact can be transformational and lead to sustainable new sources of revenue and job creation. Southwestern Pennsylvania should anticipate and quantify the economic value of broadband investments to maximize each project's potential to spur growth in the region and to accurately portray to residents and to leaders the true value of broadband investments. Incentivizing strategic efforts to digitally connect the whole region will position the counties to excel in the new and emerging economy.

    a. Include broadband access and availability in the evaluation of local and regional economic development strategies and evaluation tools. Assess if certain areas have been more impacted than others in the region. Consider key factors such as cost of living, Internet availability and cost, and diversity of workforce.

    b. Conduct a regional study on remote work with a lens on potential economic development impacts.

Appendix C: Westmoreland ISPs

ISP	Technology	Data Shared?	Price	Speed	ACP	ETC (Lifeline)
Brightspeed	Copper (DSL)	✓	ND	ND	✓	✓
Citizens Fiber	Fiber to the home	✓	$35-$75*	30 Mbps-1 Gbps**	✓	✓
Verizon	Copper (DSL)/Fiber to the home	✓	$60-$80 (WISP)*	85-300 Mbps (WISP)*	✓	✓
Armstrong	Cable Modem	X	$35-$75*	1 Gbps/30 Mbps (New Areas Symmetrical)	✓	✓
Breezeline	Cable Modem	X	$20-$60*	1 Gbps/50 Mbps, Metro-E service up to 10 Gbps	✓	X
Comcast	Cable Modem	X	$30-$80*	1.2 Gbps/35 Mbps	✓	X
Consolidated Communications	Copper (DSL)	✓	NA	NA	✓	✓
Crown Castle	Fiber to school districts and CAI's.	X	NA***	NA***	X	X
DQE Communications	Fiber to school districts and CAIs. Future fiber to the home	X	$50-$90*	250 Mbps-1 Gbps**	X	X
In the Stix Broadband	WISP	✓	$45-$100*	3-25 Mbps download speeds wirelessly	X	X
Laurel Highland Telephone Company	Fiber to the home	X	$25-$120	5 Mbps-1 Gbps**	✓	X
T-Mobile	WISP	✓	$50	33-182 Mbps**	X	✓
Windstream	Fiber to the home and DSL	X	$40-$70*	500 Mbps-1 Gbps**	✓	✓

**Price was determined by utilizing an arbitrary address in ISP's service area. If no asterisk is present, information was provided by ISP via interview.*
***Speed was determined by utilizing an arbitrary address in ISP's service area. If no asterisk is present, information was provided by ISP via interview.*
****ISP does not list residential service on its website and price could not be found.*
ND = could not find or access data.

Appendix D: Taskforce Meetings and Stakeholder Workshops

Taskforce Meeting 1 (07/13/22)

Attendance

Sean Kertes	Westmoreland County Commissioner
Douglas W. Chew	Westmoreland County Commissioner
Gina Cerilli Thrasher	Westmoreland County Commissioner
Jason Rigone	Westmoreland County Planning and Development
Corey Block, AICP	Westmoreland County Planning and Development
Victoria Baur	Westmoreland County Planning and Development
Jennifer Woodling	Westmoreland County Planning and Development
Leanne Doran	Michael Baker International
David Price, GISP	Michael Baker International
Andrew Scampone, GISP	Michael Baker International
Stephen Golebiewski	Michael Baker International
Hannah Clark, AICP	Michael Baker International
Kirsten Compitello, AICP	Michael Baker International
Jim Morrison	Municipality of Murrysville
Jason Winters	Hempfield Township
Cesare Muccari	Westmoreland County Federated Library System
Janine Vallano	Ligonier Valley School District
Eric Vaughan	Westmoreland County IU
Jay Struble	Westmoreland County Community College
Jesse Sprajcar	United Way
Mandy Zalich	Westmoreland Community Action
McCrae Martino	Community Foundation of Westmoreland County
Jim Smith	Economic Growth Connection
Dan DeBone	Westmoreland County Chamber of Commerce
Brian Lawrence	Redevelopment Authority of the County of Westmoreland
Jon Wian	Westmoreland County
Bob MacPherson	Westmoreland County
Don Obrien	Westmoreland County
Rick Svesnik	Westmoreland County IT
Dottie Staffen	District Representative, Office of State Senator Kim Ward
Eric Davanzo	State Representative
Curt Smith	Smith Communications Group

Summary

This introductory Taskforce meeting focused on discussion of County goals and overall vision for broadband. This meeting also provided overall project details and upcoming tasks. There was also a Q&A session.

Public Safety Taskforce Member Focus Group (08/18/22)

Attendance

Daniel Carpenter	Westmoreland County Planning and Development
David Price, GISP	Michael Baker International
Andrew Scampone, GISP	Michael Baker International
Leanne Doran	Michael Baker International
Christopher Tantlinger	Westmoreland County Public Safety
Adam Varrato	Westmoreland County Public Safety
Scott Stepanovich	Westmoreland County Public Safety

Summary

The focus of this meeting was to gain feedback from public safety Taskforce members that were unable to attend the first Taskforce meeting. Key suggestions focused on including broadband along key corridors including roadways, railways, trails, and waterways. They need a provider for fixed antenna wireless to help keep mobile signal along rural roadways where cell service is very poor. It's important to connect economic centers like large RIDC parks, large track (AV/testing facility) and PennDOT/Turnpike.

Taskforce Meeting 2 (09/28/22)

Attendance

Jason Rigone	Westmoreland County Planning and Development
Corey Block, AICP	Westmoreland County Planning and Development
Daniel Carpenter	Westmoreland County Planning and Development
Jennifer Woodling	Westmoreland County Planning and Development
Victoria Baur	Westmoreland County Planning and Development
Karen Horchak	Westmoreland County IDC
David Price, GISP	Michael Baker International
Andrew Scampone, GISP	Michael Baker International
Leanne Doran	Michael Baker International
Kirsten Compitello, AICP	Michael Baker International
Jonathan Heck	Michael Baker International
Samantha Garfinkel	Michael Baker International
Jay Struble	Westmoreland County Community College
Christopher Tantlinger	Westmoreland County Public Safety
Cesare Muccari	Westmoreland County Federated Library System
Jason Winters	Hempfield Township
Brian Lawrence	Redevelopment Authority of the County of Westmoreland
Rick Svesnik	Westmoreland County IT
Mandy Zalich	Westmoreland Community Action
Jesse Sprajcar	United Way

Summary

The first half of the meeting focused on project updates from Michael Baker staff (project overview, field work, mapping, visioning, the survey, and grant opportunities). The second half revolved around discussion of the Early Action projects and a follow-up Q&A session.

Taskforce Meeting 3 (11/16/22)

Attendance

Jason Rigone	Westmoreland County Planning and Development
Corey Block, AICP	Westmoreland County Planning and Development
Daniel Carpenter	Westmoreland County Planning and Development
Victoria Baur	Westmoreland County Planning and Development
Jennifer Woodling	Westmoreland County Planning and Development
David Price, GISP	Michael Baker International
Andrew Scampone, GISP	Michael Baker International
Danyel Patrick	Michael Baker International
Kirsten Compitello, AICP	Michael Baker International
Sam Garfinkel	Michael Baker International
Jonathan Heck	Michael Baker International
Jesse Sprajcar	United Way
Rick Svesnik	Westmoreland County IT
Karen Horchak	Westmoreland County IDC
Curt Smith	Smith Communications Group
Jim Smith	Economic Growth Connection

Summary

This meeting consisted of project updates and milestones provided by staff (project overview and field work). There were staff reviews of the goals from the Feasibility Study Final Report, funding strategies, and Early Action projects, followed by a Q&A session.

Municipal Leaders Workshop (10/12/22)

Attendance

Douglas W. Chew	Westmoreland County Commissioner
Jason Rigone	Westmoreland County Planning and Development
Corey Block, AICP	Westmoreland County Planning and Development
Daniel Carpenter	Westmoreland County Planning and Development
Victoria Baur	Westmoreland County Planning and Development
Jennifer Woodling	Westmoreland County Planning and Development
Kirsten Compitello, AICP	Michael Baker International
Andrew Scarpone, GISP	Michael Baker International
Leanne Doran	Michael Baker International
Mary Trunzo	Loyalhanna Township
Cynthia Rupert	Borough of Avonmore
Amy Rockwell	City of Lower Burrell
Melissa Cortileso	Upper Burrell Township
Michael Strelic	Ligonier Township
Terry Carcella	City of Latrobe
Kelsye Hantz	City of Greensburg
Michael Nestico	Municipality of Murrysville
Carrie Tantlinger	Fairfield Township
Jason Winters	Hempfield Township
Greg Primm	Allegheny Township
Patricia Betts	Borough of Bolivar
Mary Perez	Penn Township
Jon Wian	Westmoreland County
Joe Lapia	Borough of Manor
Matthew Peoria	Borough of Youngwood
Ron Mozer	City of Monessen
Barbara Phillips	Borough of Derry
Diane Schaefer	Borough of Youngwood
Nina Mulnix	Borough of Trafford
Al Checca	Derry Borough Council
Sara Cowan	Derry Borough Council
Benjamin Walker	City of Jeannette
Shari Martino	Borough of Irwin
Amanda Way	Borough of Sutersville
Jennifer Bombalski	Washington Township
Caprice Mills	Mount Pleasant Township
Michael Turley	North Huntington Township
Dennis Scarpiniti	City of New Kensington
Angelo Pallone	Borough of Scottdale
Kristen Sarno	Borough of East Vandergrift
Alexandria Torock	East Huntington Township
Tifanie Gagen	Borough of Hyde Park

Summary

The first half of the meeting focused on project updates from Michael Baker staff (project overview, field work, mapping, visioning, the survey, and grant opportunities). The second half of the meeting consisted of survey questions to the group to learn more about the specific broadband topics and goals that were of the most interest to them, followed by a Q&A session.

Education Focus Group Workshop (10/27/22)

Attendance

Jason Rigone	Westmoreland County Planning and Development
Corey Block, AICP	Westmoreland County Planning and Development
Victoria Baur	Westmoreland County Planning and Development
David Price, GISP	Michael Baker International
Kirsten Compitello, AICP	Michael Baker International
Samantha Garfinkel	Michael Baker International
Andrew Scampone, GISP	Michael Baker International
Timothy Mack	Michael Baker International
Eric Vaughn	Westmoreland County IU
Andrew Sanders	Yough School District
Becki Pellis	Greater Latrobe School District
Bill Bell	Jeannette City School District
Coleen Steim	Westmoreland CTC
Ian Dunlap	Eastern Westmoreland CTC
Dani Regula	Westmoreland County IU
Gavin Dunlap	Westmoreland County IU
Marianna Mormack	Westmoreland County IU
Jason Caruso	Guest
Greg Steeber	Belle Vernon Area School District
Karen Cornell	Greensburg Salem School District
Todd Watkins	Adelphoi
Kevin Pasko	Burrell School District
Jim Deluca	Guest
Phil Brautigam	New Kensington-Arnold School District
Kellie Speer	Guest

Summary

This meeting was to learn about the educational aspects of broadband, and the implications of not having it. A roundtable-style discussion focused on the different school districts in the area, and what school administrators and IT (Information Technology) representatives were experiencing in relation to their respective school districts (e.g., community and student struggles with lack of broadband).

Business & Industry Focus Group Workshop (10/27/22)

Attendance

Corey Block, AICP	Westmoreland County Planning and Development
Victoria Baur	Westmoreland County Planning and Development
David Price, GISP	Michael Baker International
Kirsten Compitello, AICP	Michael Baker International
Samantha Garfinkel	Michael Baker International
Andrew Scampone, GISP	Michael Baker International
Timothy Mack	Michael Baker International
Aaron Byrd	Excela Health
Vasanth Balu	Excela Health
Amy Franz	Guest
Amy McChesney	Guest
Charles Howell	Mon Valley Initiative
Andy Waple	Southwestern PA Commission
Angela Sanders	PennDOT Engineering D-12
Briana Tomack	Greater Latrobe Laurel Valley Regional Chamber of Commerce
Collin Beattie	Private Industry Council of Westmoreland/ Fayette, Inc

Summary

The first half of the meeting focused on project updates from Michael Baker staff (project overview, field work, mapping, visioning, the survey, and grant opportunities). The second half revolved around discussion about the economic benefits of broadband, how broadband can improve local industry, and what broadband topics were of the most interest to those in attendance (economic development, regional partnerships, digital equity, or other topics).

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