DRIVE
Economic Development Entity

CONNECTIVITY PLAN

COLUMBIA COUNTY 2024

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BROADBAND CONNECTIVITY PLAN

Executive Summary

Access to broadband service is increasingly recognized as critical infrastructure in modern society. Today, it is as important for communities to have robust internet access as it is for them to have clean water and electricity. And yet, rural counties continue to lag their urban counterparts in access, affordability, and adoption.

Broadband networks are community assets that enhance the quality of life for residents and catalyze economic growth in the 21st century global marketplace. It facilitates e-commerce, remote work, distance learning opportunities, telehealth, entrepreneurial innovation, and more, all of which contribute to societal progress.

Further, there is evidence that suggests higher broadband utilization in rural areas equates to increases in the number of new businesses as well as higher GDP and per capita income growth rates when compared to rural areas with lower broadband utilization.

As part of this plan for Columbia County, DRIVE examined demographic data, adoption rates, broadband access and affordability. While there are more detailed recommendations within this plan, the largest identified need is for affordable broadband service.

Of the five counties in DRIVE's region, Columbia County has the largest number of unserved and underserved locations. Additionally, it has the lowest per capita income in the region. Utilizing state and federal dollars to construct an open access fiber network would bring much-needed competition to the county and drive down subscription costs for consumers. Often, rural electric cooperatives can drive the development of community based broadband networks. Co-ops often utilize their electric infrastructure to support broadband service for their members either by partnering with an ISP or forming their own. However, Columbia County (and all counties in the DRIVE region) are primarily served by investor-owned electric utilities (IOUs). IOUs do not typically utilize their assets in this fashion and have generally stayed out of broadband beyond selling pole attachments to cable and fiber providers. Securing a privately owned open access provider like eCommunity or Utopia to develop a network in Columbia County is the most expeditious path to reach the goal of affordable, ubiquitous broadband service.

An additional step to ensuring robust broadband utilization in Columbia County is the development of digital equity initiatives that support covered populations in the region. Without access to appropriate devices and the digital skills to utilize them, residents will continue to miss out on opportunities to advance their education, improve their health, start a business, or find a new job. This plan highlights the need for capacity building at local libraries, social service organizations, and other community anchor institutions to provide devices and skills training to the residents of Columbia County.

A competitive broadband market in Columbia County can ultimately lead to a more connected and technologically advanced society. We would like to thank Connect Humanity and NRTC for their guidance, assistance, and support in the development of this plan.

Section 1: Preliminary Research

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A. Geographic and Demographic Profile

General Community Demographic Information

DRIVE utilized demographic data from the Census, American Community Survey, PA Center for Workforce Information and Analysis, and The Center for Rural Pennsylvania to obtain the following information for Columbia County.

Demographic	Demographic Data
Total Population Number	64,924
Square Miles Covered	490
Number of People per Square Mile	132
Number of Residents Who Identify as White	60,451
Total Minority	5,443
Number of Residents Who Identify as Black	1,204
Number of Residents Who Identify as Hispanic or Latino	2,219
Number of Residents Who Identify as Indigenous	23
Number of Residents Who Identify as Other	248
Total Number of BSLs	27,462
Number of Households That Are Owner Occupied	18,313
Average Household Size	2
Mean Household Income	$76,713.00
Median Household Income	$59,457.00
Mean Family Income	$93,418.00
Median Family Income	$79,519.00
Per Capita Income	$31,238.00
Number of People Living Below the Poverty Line	9,313
Number of Low to Moderate Income Residents	24,605

Columbia County Population Trend*	
2000	63,936
2010	67,355
2020	64,926
2030	62,478
2040	58,821
2050	54,437

*Data from Center for Rural Pennsylvania

Observations

The population of Columbia County is predicted to decline by nearly 16% by 2050. With nearly 38% of residents qualifying as low-to-moderate income and 14% living in poverty, having access to affordable high-speed internet is a primary concern in the county. While all of Columbia County is considered rural, 41% of residents live in a rural area, that is outside the larger population centers of Berwick and Bloomsburg. Finally, 20.2% of Columbia County residents are 65 years of age or older.

Documented Presence of Covered Populations

Specific to both the Digital Equity and Broadband Equity, Access, and Deployment (BEAD) programs, DRIVE has identified the following impact to covered populations, as defined in the Infrastructure Investment and Jobs Act (IIJA), as a result of the proposed project(s):

Covered Population	Presence in Columbia County (Scale 1 to 5, 1 = Low)	Potential Impact (Low, Moderate, High)
Individuals who live in covered households	4	High
Aging individuals	4	High
Incarcerated individuals, other than individuals who are incarcerated in a Federal correctional facility	1	Low
Veterans	2	Moderate
Individuals with disabilities	2	Moderate
Individuals with a language barrier	3	Moderate
Those with low levels of literacy	4	High
Individuals who are members of a racial or ethnic minority group	1	Low
Individuals who primarily reside in a rural area	5	High

General Community Economic and Workforce Status

DRIVE utilized additional data resources from the U.S. Census and Appalachian Regional Commission to further identify current and past economic drivers for Columbia County. Based on the data from the U.S. Census regarding Persistent Poverty Areas in the United States, the following observations were made that there are no persistent poverty areas in Columbia County.

Data made available from the Appalachian Regional Commission (ARC) regarding Economic Distress in Appalachian counties classifies Columbia County as transitional. ARC defines transitional counties as those that are transitioning between strong and weak economies. They make up the largest economic status designation. Transitional counties rank between the worst 25 percent and the best 25 percent of the nation's counties.

In a 2024 report Beyond Connectivity: The Role of Broadband in Rural Economic Growth and Resilience from the Center on Rural Innovation, researchers found that "rural communities with high broadband utilization see increases in the number of businesses, whereas similar counties without high broadband utilization see the number of businesses decline." Key indicators of economic health analyzed in the report included business entry rates and growth in Gross Domestic Product (GDP). Data from NTIA's Broadband Dashboard[1] indicates that Columbia County's establishment entry rate in 2020 relative to 2019 was 5.8%. Of the other counties in DRIVE's region, only Northumberland has a lower business entry rate (5.1%). Further, Columbia County showed a net loss in small business establishments in 2019 compared to 2018[2]. For businesses with less than 20 employees, Columbia County's annual change was –2.1%. For companies with less than 500 employees, which are still considered small business by the Small Business Administration (SBA), that figure was –1.9%. This loss exceeded all other counties in the DRIVE region and far outpaces the Commonwealth of Pennsylvania of –0.2%.

FCC data indicates that 79.9% of Columbia County residents live in places with broadband service of 25/3 Mbps[3]. In the Commonwealth of Pennsylvania this figure is 95.9%.

In August 2024, the unemployment rate in Columbia County was 3.8%, slightly higher than the Commonwealth of Pennsylvania at 3.4%. The county labor force is 34,600.

Just over 7% of Columbia County residents report working from home and 5.3% of Columbia County residents are self-employed. Research shows that small businesses and self-employment are linked to higher employment and income growth, even in rural areas.[1][2] Increasing broadband utilization can have a significant impact on the development of an entrepreneurial ecosystem. Broadband access can lower barriers to starting a business by allowing rural residents to connect to global markets, allow entrepreneurs to conduct market research, deploy digital marketing strategies, and expand their customer base.[3]

[1] Source: 2020 Business Dynamic Statistics, U.S. Census Bureau
[2] Source: 2018 & 2019 Statistics of U.S. Businesses (SUSB), U.S. Census Bureau
[3] Source: Fourteenth Broadband Deployment Report, Released January 19, 2021, Federal Communications Commission (FCC)
[4] Stephens, H.M. and Partridge, M.D. (2011). Do Entrepreneurs Enhance Economic Growth in Lagging Regions? Growth and Change, 42(4), 431-465.
[5] Weinstein, A & Erouart, M (2024). Swimming Upstream on the Path to Thriving. The Rural Aperture Project. Center on Rural Innovation.
[6] Weinstein, A & Erouart, M (2024). Beyond Connectivity: The Role of Broadband in Rural Economic Growth and Resilience. Center on Rural Innovation.

B. State Data
Digital Marketing Highlights

According to the State of Pennsylvania's BEAD Five-Year Action Plan and Volume 2 Initial Proposal, the following priorities are being implemented:

Priority	Description
Access	Access to reliable high-speed internet is imperative to all Pennsylvanians' ability to learn, work, benefit from virtual healthcare, participate in democracy, and utilize essential services. Universal access—where all residents, businesses, and CAIs have reliable, secure methods, tools, and skills to use the internet—is impacted by modern infrastructure existing in an area, availability of internet-capable devices, and the knowledge on how to use them.
Affordability and Adoption	Pennsylvanians deserve broadband that meets their needs at affordable pricing. Leveraging existing resources can reduce broadband subscription costs. A well-connected commonwealth exists when costs meet consumers needs and residents are both willing and able to adopt broadband in their homes, businesses, and communities
Minimal Deployment Obstacles	Efforts to reduce obstacles to broadband deployment are crucial features of the PBDA's plan to effectively use BEAD funds. Major barriers to deploying broadband statewide include supply chain concerns, a smaller workforce than is needed, and long permitting timelines.
Sustainable and Resilient Networks	Sustainable and resilient broadband networks are those that have strong cybersecurity protocols in place to protect the commonwealth's asset investments. These networks will also withstand regular, heavy use, and environmental elements. Funding must be focused on ensuring these broadband expansion investments are secure and are able to serve Pennsylvanian's long-term needs.
Data Acquisition and Implementation	Developing and tracking metrics using the most recent data sources will ensure that the PBDA is making broadband investments effectively.

Additionally, the Commonwealth acknowledges the importance of high-speed internet in workforce and economic development, the ability for residents to age in place as well as educational attainment. Those priorities are shown in the table below.

Workforce Development	Reliable internet access that can withstand environmental disruptions and consistently serve residents increases opportunities for workforce development. Broadband connectivity gives Pennsylvanians access to everything from jobs and job training to healthcare, transportation and a wealth of other vital services for quality of life.
Economic Development	Increasing broadband access enables economic development by creating business opportunities and drawing residents. It allows residents fair access to opportunities available online, including those related to education, employment and healthcare, and enhancing the overall quality of life. Broad access to reliable and affordable connectivity contributes to economic growth, yields higher personal incomes and lowers unemployment rates. Equitable and sustainable investment in broadband equips residents with the resources to participate in an increasingly digital economy and allows residents to participate in social, civic and economic opportunities.
Aging in Place	Reliable internet access increases and expands access to essential telemedicine services, and brings broader access to emerging technologies that better the outcomes of healthcare innovation. The Pennsylvania Broadband Development Authority plans to partner with the Department of Aging to address potential adoption gaps and ensure that older adults across the Commonwealth have the support for digital skills training, as well as the Department of Human Services to provide critical insight into telehealth needs, improving services, and identifying disadvantaged communities in need of assistance and services.
Educational Attainment	Access to reliable broadband services increases opportunities for educational growth, accelerating outcomes driven by STEM-based curriculum and providing fair access to educational opportunities. The lack of broadband service and access to online education opportunities and digital skills training can limit the overall quality of life for Pennsylvanians.

Method for Determining Eligibility

The State of Pennsylvania's BEAD Initial Proposal Volume 1 describes the process being undertaken to identify eligible locations for funding. Further details regarding the State's Deployment Subgrantee Selection process, can be found in Volume 2 of the BEAD Initial Proposal.

As of this writing, there are 4,399 BEAD eligible locations (both residential and business) in Columbia County. Of the 33 municipalities in Columbia County, the majority of the eligible locations (3,161) are located in 14 municipalities as shown in the table below. It should be noted there are only 3 locations in Centralia.

Percentage of BEAD Eligible Locations	
Centralia	100.00%
Roaring Creek	75.34%
Cleveland	68.80%
Beaver	51.52%
Pine	49.74%
Franklin	46.32%
Sugarloaf	44.43%
Greenwood	40.43%
North Centre	34.02%
Main	29.60%
Mifflin	27.31%
Stillwater	25.66%
Locust	23.57%
Orange	20.20%
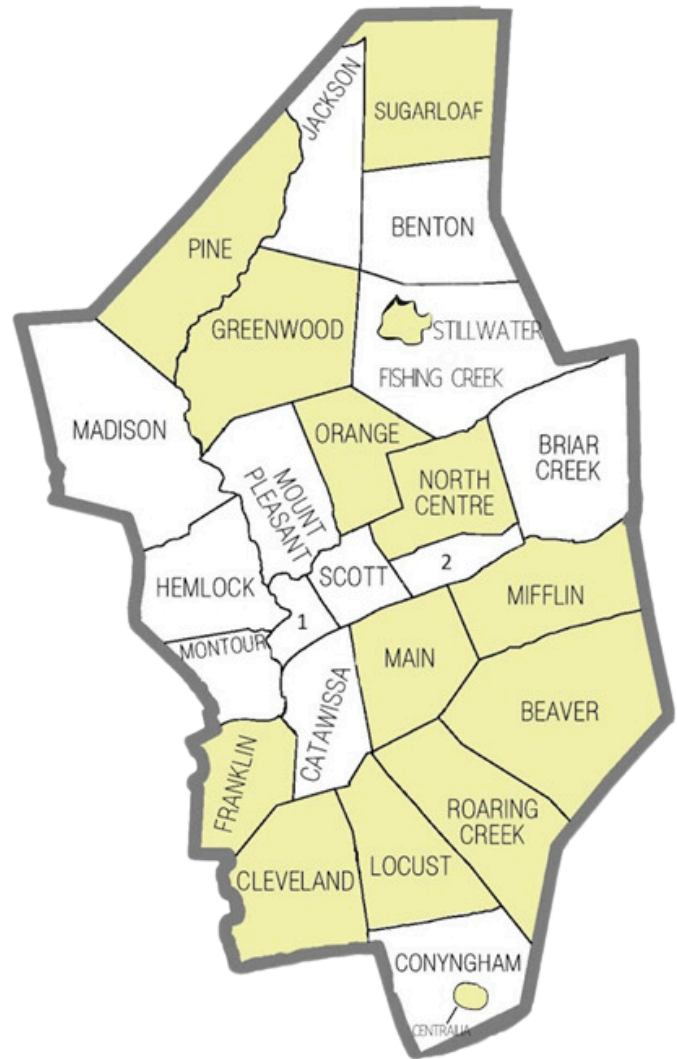
C. Current Internet Adoption and Use

This section aims to provide Columbia County with a diagnosis of the current health of broadband infrastructure and services in the community. The results of this Connectivity Plan will enable Columbia County to strategically target and prioritize areas to bridge the digital divide and offer equitable broadband opportunities to all residents and businesses, while minimizing risk and amplifying the likelihood of success.

Currently Available Internet Services

To perform the analysis of currently available internet services, DRIVE's project team worked with NRTC to collect and evaluate data from publicly available broadband data sources and local datasets, and then compiled these sources to reflect the competitive landscape, including:

- An inventory of existing fiber networks within the county, including ownership and availability for use by other network providers;
- An overview of current broadband providers' services, pricing strategies and coverage areas;
- To the best extent possible, the locations of existing fiber and broadband-related electronics; and
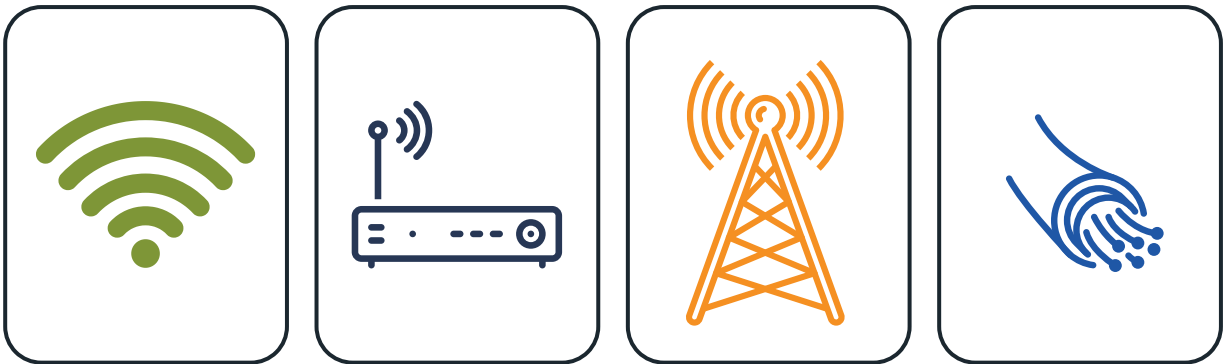- The available broadband speeds by provider.

In the sections that follow we identify current ISP service offerings and pricing, existing broadband networks, and priority areas within Columbia County for additional broadband infrastructure investment.

The wired providers of high-speed Internet service in the DRIVE market area are Service Electric (CATV), Breezeline (CATV), Frontier (DSL, Fiber), TDS Telecom (DSL), and Verizon (DSL) Earthlink is available as a reseller of Frontier's service at a slightly higher rate, and therefore, only competitive where Frontier's fiber service is available. Blue Ridge Communications is adjacent to the DRIVE market area (just to the east) and as they offer 2Gig service, they are included in the table below.

Several Fixed Wireless providers were identified in the DRIVE market area; however, only one – Sky Packet Networks – serves more than 10% of the DRIVE market area.

In addition to DSL, Verizon offers 5G Wireless Home Internet, as does T-Mobile. Both Earthlink and Always ON are resellers on T-Mobile's wireless network. Both providers' prices are based on data usage and offer "best available" speed (no advertised download speed is available). These 5G services are most likely to compare more favorably and take market share from the DSL providers in the market than they are to impact the market share of the higher speed wired providers.

The table on the next two pages summarizes the potential competitors in Columbia County, their broadband availability and their anticipated impact for a new provider entering the Columbia County market area.

Name of Provider (Coverage)	Type of Service	Sample of Monthly Prices	Competitive Impact
Service Electric Zip Codes: 17858 Numidia (100%) 17920 Aristes (98%) 17888 Wilburton (97%) 17815 Bloomsburg (79%) 17820 Catawissa (59%) 17859 Orangeville (13%) 17846 Millville (7%)	CATV	150Mb/20Mb $49.95 300Mb/30Mb $69.95 600Mb/60Mb $89.95 1G/100Mb $104.95 2G/200Mb $114.95 All included Unlimited Data 600Mb+ includes modem rental. 150Mb and 300Mb Services Modem Rental $8.43 w/ Wi-Fi +$5.50	Service Electric will be the competitor of most concern as they serve 40% of the DRIVE market area with 2G service. Bundled options are available which adds to their appeal to consumers and further drives their market share.
Breezeline Zip Codes: 18631 Mifflinville (97%) 18603 Berwick (91%) 18635 Nescopeck (59%) 17846 Millville (39%) 17859 Orangeville (37%) 17814 Benton (35%) 17878 Stillwater (13%)	CATV	100Mb/10Mb $67.99 200Mb/20Mb $89.99 500Mb/50Mb $109.99 1G/50Mb $132.99 Wi-Fi Modem Lease $17.99 Unlimited Data Technician Install $99.00	While they are higher priced than other 1G providers in the market, they do benefit from the ability to bundle internet with video, home, and mobile phone services. As they are usually the only 1G provider in their service area, they are expected to have a significant market share and likely to have a significant impact on the market share of a new 1G provider.
Frontier Zip Codes: 17878 Stillwater (68%) 17814 Benton (33%) 17859 Orangeville (81%) 18635 Nescopeck (11%)	DSL, Fiber	DSL Sample Speeds 10Mb/1Mb $74.99 25Mb/1.5Mb $74.99 70Mb/3Mb $74.99 90Mb/5Mb $74.99 115Mb/7Mb $74.99 Fiber Service 200Mb/200Mb $39.99 500Mb/500Mb $54.99 1G/1G $74.99 2G/2G $109.99 5G/5G $139.99 Wi-Fi Router $10.00 $10.00 Discount with Autopay First Year Promotional Rates Available	Frontier service is available in <5% of the DRIVE market area. This is primarily DSL; however, fiber was found at several addresses. Frontier DSL Internet service is not provided based on speed. All speeds are the same price and the actual speed at a home is based on fastest availability. Overall Frontier's DSL speeds are limited (with 10Mb download being the most common and 115Mb being the fastest, although it was confirmed in only one location). Frontier DSL does not pose a significant competitive threat. Where fiber is being deployed, Frontier will pose a competitive threat with speeds up to 5G.
Verizon Zip Codes: 17815 Bloomsburg (54%) 17820 Catawissa (46%) 17888 Wilburton (37%) 18635 Nescopeck (30%) 17859 Orangeville (17%) 18603 Berwick (15%) 17846 Millville (14%) 18631 Mifflinville (14%) NOTE: Coverage % is a combination of DSL and 5G services.	DSL, 5G Wireless	DSL Service 3Mb/768K $40.00 10Mb/1Mb $40.00 5G Home Internet 100Mb/10Mb $60.00 300Mb/20Mb $80.00 Discounts available for Autopay and Mobile customers.	Verizon's DSL service is available to <10% of the DRIVE market area. The fastest DSL download speed that could be confirmed was 10Mb. Information on Verizon DSL service is limited as it is not being actively sold. Verizon does not actively market their DSL service; rather they promote their 5G Home Internet service, which features faster speeds. Verizon recently changed their 5G Home Internet pricing and now offers tiers of services. While DSL is not a competitive threat, Verizon's 5G service does serve a need for moderate users. With a built in base of mobile phone customers, Verizon's 5G service will have an impact on market share where available.

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Connectivity Plan

Blue Ridge Communications
  Zip Code:
  17878 Stillwater (19%)
	CATV	300Mb/7Mb $59.95
		400Mb/10Mb $64.95
		500Mb/12Mb $74.95
		600Mb/15Mb $92.95
		700Mb/20Mb $114.95
		1200Mb/40Mb $119.95
		2G/40Mb $129.95
		
		Unlimited Data
		Wi-Fi (2) Included
		Professional Install $54.95
			As they offer a robust service and video bundles, they are listed as a potential future competitor.

Sky Packet Networks
  Zip Codes:
  17858 Numidia (57%)
  17815 Bloomsburg (25%)
  17820 Catawissa (22%)
  17859 Orangeville (15%)
  17814 Benton (11%)
  17878 Stillwater (8%)
  17846 Millville (7%)
	Fixed Wireless	25Mb/10Mb $65.00
		50Mb/10Mb $79.00
		100Mb/10Mb $99.00
		
		Standard Installation
		  2-year contract $100.00
		  1-year contract $150.00
		  No contract $200.00
			Although 100Mb speeds are available at a price comparable to Verizon and T-Mobile's 5G services, they will compete with those services and lower speed DSL options, therefore having a minimal impact on the market share and take rates for a new fiber provider.

T-Mobile
  Zip Codes:
  17888 Wilburton (35%)
	5G Wireless	72-245Mb/15-31Mb $65.00
		
		$10 Discount w/ Autopay
		
		  There are no DATA Caps, but users can be throttled during high traffic times.
			T-Mobile provides Home Internet on their 5G wireless network. It is estimated that T-Mobile's Home Internet service is available to 15% of the homes in the DRIVE market area. In this area there is only one plan available for $65.00 per month. Download and upload speeds vary depending on the network and data prioritization based on congestion of network. Download speeds can range from 72Mb – 245Mb and upload speeds can range from 15Mb –31Mb. For those looking for a reasonably priced connection to the internet, T-Mobile could fill this niche and garner limited market share.

Always ON
  Zip Codes:
  18635 Nescopeck (38%)
  17888 Wilburton (36%)
  18631 Mifflinville (34%)
  17859 Orangeville (21%)
  17814 Benton (17%)
  17878 Stillwater (10%)
	5G Wireless	Monthly Data Usage
		  25GB $60.00
		  50GB $85.00
		  100GB $100.00
		  200GB $110.00
		  300GB $120.00
		  450GB $140.00
		  800GB $170.00
		  1000GB $220.00
		  Router $299.99
		  Hotspot $149.99
			Always ON's speeds will mirror those of T-Mobile. Unlike their cellular partners that charge a flat rate for their service, Always ON charges based on data usage. In all cases, this makes Always ON more expensive and less competitive T-Mobile or Verizon.

*Zip Code coverage data source is BroadbandNow.com

Data analyzed for Columbia County include, but were not limited to:

- Availability
  - BroadbandNow.com provided data on service areas of providers in Columbia County
  - NRTC provided additional information drawn from FCC Form 477
- Affordability
  - Plan costs and speed came from BroadbandNow.com
  - Additional competitive analysis was provided by NRTC
- Adoption
  - Internet adoption data was drawn from the 2022 American Community Survey

	Households w/computer	Households w/internet subscription	Population of 65+ without a computer in household
Columbia	89.9%	84.6%	19.4%
Pennsylvania	91.9%	87.1%	15.8%

*Data from 2022 American Community Survey

Of the 27,462 broadband serviceable locations (BSLs) in Columbia County, only 1,192 are served with fiber to the premises. Most CATV providers offer some hybrid infrastructure of fiber to the node and rely on legacy coax to connect to end users.

Truth on the Ground

While 18% of Columbia County locations remain unserved or underserved according to the most recent FCC data, many areas that are considered served are not receiving the broadband speeds advertised by ISPs.

Utilizing data from Penn State University (internetxplorer.org) and Radar Online, DRIVE compared speed data claims in Columbia County (Image 1) with on-the-ground speed tests from users. Locations that fell below claimed speeds are shown in Image 2.
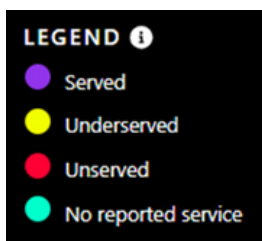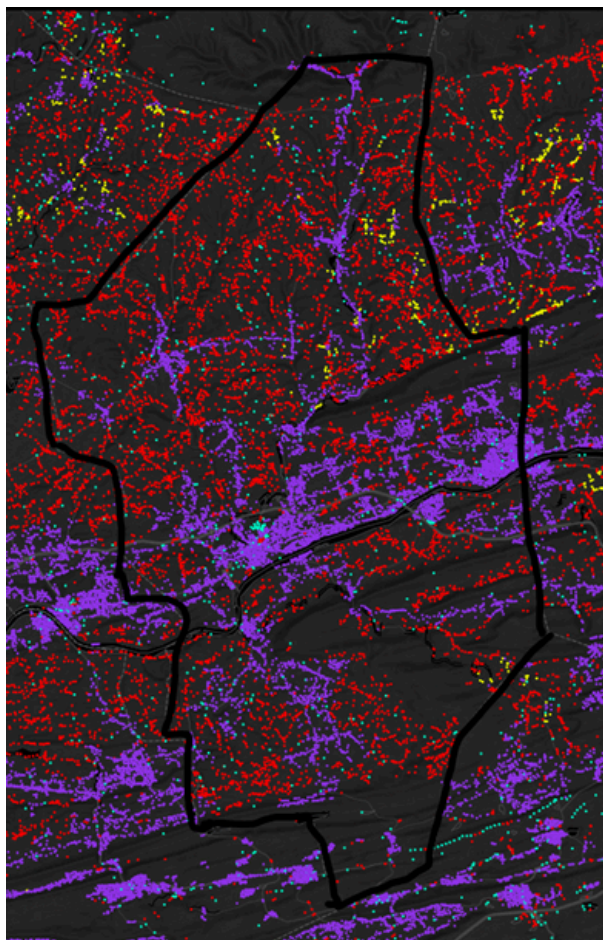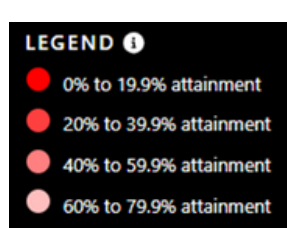
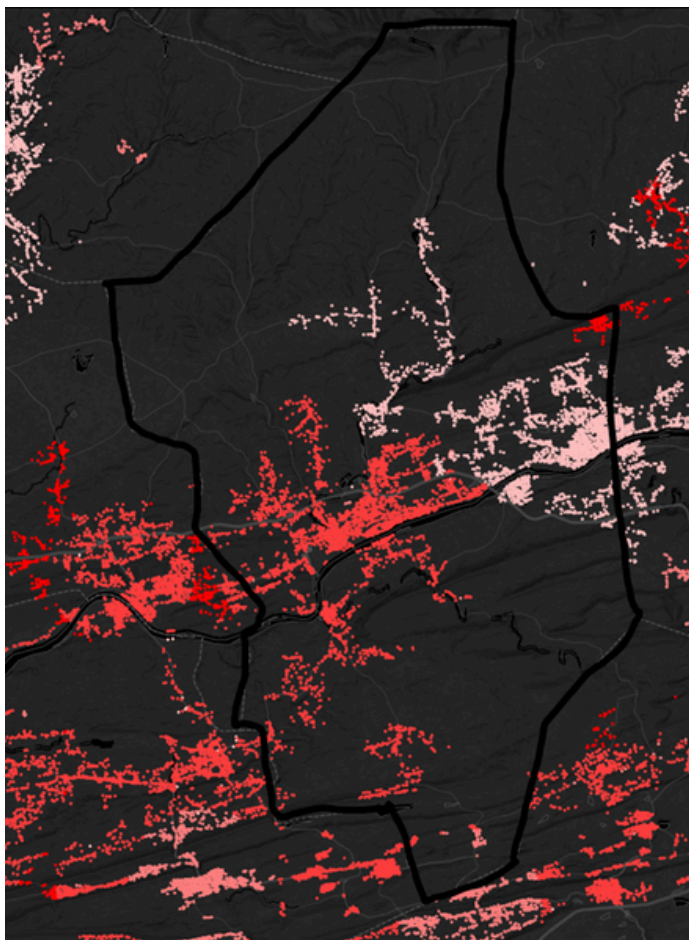### Image 1 – Reported service availability

Image 2 - Underperforming locations

LEGEND ⓘ
- 🟣 Served
- 🟡 Underserved
- 🔴 Unserved
- 🟢 No reported service

LEGEND ⓘ
- 🔴 0% to 19.9% attainment
- 🔴 20% to 39.9% attainment
- 🔴 40% to 59.9% attainment
- ⚪ 60% to 79.9% attainment

Observations

Even more populated areas of Columbia County (Bloomsburg-Berwick corridor) are not receiving the broadband speeds claimed by ISPs. If these areas are underperforming, how much worse is the service in areas with limited access to any providers?
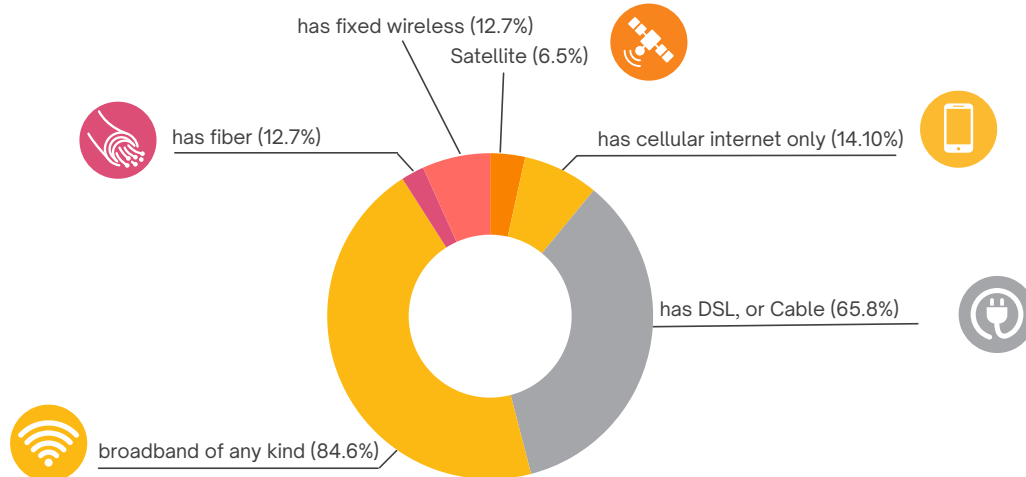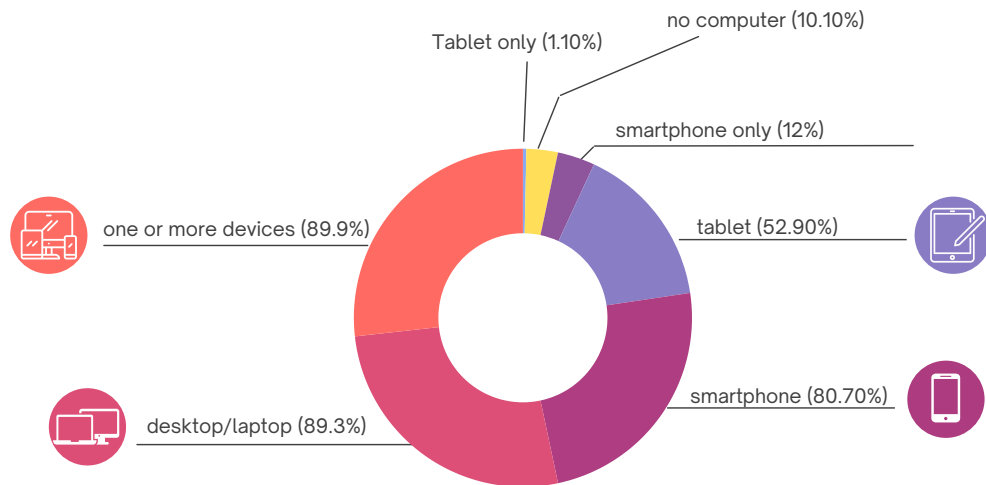
Connectivity Plan

Internet Affordability & Device Access

DRIVE also collected broadband usage data from the United States Census Bureau specific to the community, which illustrates the overall profile of internet affordability and adoption percentages in Columbia County:

Internet/Usage Statistic	Number/Percentage per Household
Number of Total Households	25,7172
Percentage of Households with Broadband of Any Kind	84.6%
Percentage of Households with DSL or Cable	65.8%
Percentage of Households with Fiber	4.3%
Percentage of Households with Fixed Wireless	12.7%
Percentage of Households with Satellite	6.5%
Percentage of Households with Mobile (Cellular) Internet Only	14.10%
Percentage of Households without a Computer	10.10%
Percentage of Households with One or More Devices	89.90%
Percentage of Households with a Desktop or Laptop Computer	89.30%
Percentage of Households with a Smartphone	80.70%
Percentage of Households with Only a Smartphone	12%
Percentage of Households with a Tablet	52.90%
Percentage of Households with Only a Tablet	1.10%

COLUMBIA COUNTY

Tablet only (1.10%)

no computer (10.10%)

smartphone only (12%)

one or more devices (89.9%)

tablet (52.90%)

desktop/laptop (89.3%)

smartphone (80.70%)

has fixed wireless (12.7%)

Satellite (6.5%)

has fiber (12.7%)

has cellular internet only (14.10%)

has DSL, or Cable (65.8%)

broadband of any kind (84.6%)

Observations

Based on the internet usage, median household income, accessibility, and affordability information of Columbia County the following observations can be made:

- More households in Columbia have a computer (89.9%) than have internet to the home(84.6%)
- There are few areas in Columbia County where subscribers have a choice of ISP
- Many areas in Columbia County do not have access to 100Mbps/20Mbps service
- Less than 5% of all broadband serviceable locations have fiber to the premises
- The most rural areas of Columbia County do not have access to broadband

Section 2: Digital Equity

Section 2: Digital Equity

A. Introduction and Vision for Digital Equity

DRIVE has developed a vision for achieving Digital Equity through increased broadband access as shown below:

Problem Statement	The Central Susquehanna region of Pennsylvania (Columbia, Montour, Northumberland, Snyder, and Union Counties) lags the Commonwealth in rates of digital adoption and in-home device accessibility. Cost and reliability of service are most often cited as reasons for not adopting in-home broadband.
Vision Statement	All residents in the region that want access to affordable internet have it as well as the digital skills to fully participate in the digital economy.
Mission Statement	In partnership with the Central Susquehanna Intermediate Unit (CSIU), libraries, and other social service providers, DRIVE will build regional capacity for digital navigators, expand accessibility to digital skills training and devices, and advocate for more affordable choices for in-home broadband service.
Values	We believe rural Pennsylvanians should have the same opportunities as those living in more urban areas of the Commonwealth.

The digital equity plan encompasses all five counties in DRIVE's service area. There are resources across the region, some of which are located within Columbia County, that impact residents of all counties. Much of the digital equity work is being carried out by regional providers. Therefore, the information contained within this section will address the digital equity efforts across the region rather than only in Columbia County.

Alignment with Existing Goals

The Commonwealth of Pennsylvania has outlined five priorities in its Digital Equity Plan. These can be found in section 2.3 of *Connected and Empowered: A Digital Equity Plan for the Commonwealth of Pennsylvania*. DRIVE's digital equity vision ties in with the state's goals in a number of significant ways. They are:

- **Get People Online** - **Increase internet use & adoption**
  - Expand access to affordable internet through state and/or federal programs and incentivizing low-cost subscriptions from ISPs.
  - Encouraging the development of an open access fiber network which will bring multiple ISPs into the region to serve residents and businesses. Having a competitive environment on a single fiber network ensures consumers receive reliable service at an affordable price.
  - Improve access to free public Wi-Fi by including public institutions in broadband infrastructure expansion and partnerships.

DRIVE will continue to work with ISPs to expand the availability of high-speed internet in the region. Additionally, by further developing an open access network, DRIVE will encourage participating ISPs to provide an affordable option that allows everyone in the region to have in-home internet service.

- **The Right Tools** - **Improve device accessibility**
  - Ensure access to devices and technical support, especially for underserved populations, while promoting digital accessibility standards and compliance with relevant laws.
  - Enhance access to digital navigation programs, overcoming barriers like funding and equipment.

Working with partner organizations such as the Central Susquehanna Intermediate Unit (CSIU), libraries, and social service providers in the region, appropriate devices can be provided to residents in conjunction with digital education to ensure covered populations have access to both the tools and the skills they need to fully participate in the digital economy.

- **Grow Skills** - **Improve digital skills**
  - Establish low-cost technical assistance to promote digital accessibility services.
  - Implement a comprehensive digital equity ecosystem, fostering collaboration, standardization, and workforce opportunities.
  - Provide higher levels of digital skills training resources and statewide certification programs in order to maintain consistency through curriculum standards.

DRIVE's plan includes expanding access to digital navigators through established delivery systems such as libraries and other community hubs. Building staff capacity at libraries is a key component in this effort and provides a no-cost solution to meet the digital education needs of the region's covered populations.

- **Stay Safe and Secure** - **Better safety & security**
  - Address mental health in the digital realm by advocating for healthy online habits and offering resources for those affected.
  - Expand safety and security awareness to maintain online privacy as well as protect against scams that may tarnish a users' digital footprint.

The CSIU will be using SkillUpPA from Career Link as foundational curricula for digital navigators which includes modules on cyber security. These will be used to ensure residents are able to safely access the internet and protect their personal information and healthcare data.

- **Strengthen the Foundation - Strengthen partnerships**
  - Empower service delivery partnerships through resources to aid in navigating state processes.
  - Expand programs, training, and outreach efforts while fostering diverse industry partnerships to address digital equity needs comprehensively.

Digital inclusion is not the work of a single entity, but rather that of the entire community. DRIVE, CSIU, public libraries, workforce development, and social service agencies each have a role to play in bridging the digital divide in the Central Susquehanna region. Strengthening these connections creates a unified vision of digital inclusion, allows for robust grant applications that can build capacity, improve access to existing services, and meet the digital equity goals that support the vision.

Identifying Priority Populations

Internet use in counties served by DRIVE lags behind that of the Commonwealth of Pennsylvania. Table 1 also shows that more older individuals in the region do not have a home computer compared to the statewide percentage.

Table 1: Internet Use by County

	Households w/computer	Households w/internet subscription	Population of 65+ without a computer in household
Columbia	89.9%	84.6%	19.4%
Montour	88.5%	84.8%	23.9%
Northumberland	86.1%	80.6%	26.1%
Snyder	85.0%	80.3%	26.4%
Union	85.8%	76.6%	21.7%
Pennsylvania	91.9%	87.1%	15.8%

*Data from 2022 American Community Survey

Further, data from the Pew Research Center indicates that home internet adoption (use) rates tend to correspond to income.

Table 2: Home Broadband Adoption by Household Income

Income	2000	2010	2020
Less than $30,000	0	51%	57%
$30,000–$49,999	0	64%	73%
$50,000–$74,99	1%	78%	87%
$75,000+	2%	88%	92%

DRIVE's digital equity plan is designed to encourage home adoption of affordable internet while also providing no-cost access to digital literacy programming through partnerships with libraries and other social service agencies that work with priority populations.

Table 3: Presence of Covered Populations in the 5-County Region

Covered Populations	Regional Total
Individuals who primarily reside in a rural area	44.17%
Aging individuals	21.10%
Have low levels of literacy	19.65%
Individuals who live in covered households	12.26%
Individuals with disabilities	10.21%
Individuals who are members of a racial or ethnic minority group	8.74%
Veterans	6.02%
Individuals with a language barrier	5.36%
Incarcerated individuals, other than individuals who are incarcerated in a Federal correctional facility	0.15%

Based on the demographic and internet usage of Columbia, Montour, Northumberland, Union, and Snyder Counties the following covered groups have been identified as priority populations most at risk for being impacted by the digital divide:

- Aging individuals

- Low-income households

- People with low levels of literacy or for whom English is a second language

B. Community Engagement and Digital Equity Asset Mapping

IIn 2023, as part of a grant application for the Pennsylvania Broadband Development Authority (PBDA), DRIVE engaged librarians from across the region to understand the available digital skills programming being provided as well as any additional needs expressed by their clientele. The recurring theme was a lack of capacity. Most libraries offered digital skills training as requested by clients rather than a regularly scheduled program. Additionally, the front desk staff were the primary providers of these services, and they often did not have time or knowledge to meet the need.

From this feedback, DRIVE developed the Digital Literacy Educator position to be shared across all libraries in the region. The position required a person fluent in both English and Spanish and this was identified as an unmet need. While the PBDA grant was not funded, The Charles B. Degenstein 1994 Foundation provided $125,000 to launch the Digital Literacy Educator position in 2024. The position, hosted at the Bloomsburg Public Library, was filled June 3, 2024 with funding available through June 2025.

In the first three months after hiring, the ATLAS Digital Navigator Program served 95 patrons across 4 different library locations for digital skills classes, held 31 in-depth consultations and provided brief support on technical questions to 200 people. Of the 31 in-depth consultations, 30 of those were adults between 21-80 years old. Metrics from the Union County Library system, which has its own digital literacy staff member, showed that adult public computer sessions were up 24% from the previous year and one-on-one free technical assistance appointments were up 41%. This data shows the need for increased capacity for digital skills education.

Additional Outreach

More recently, DRIVE engaged the Central Susquehanna Intermediate Unit (CSIU) regarding their work in digital equity. The CSIU is a regional education service agency that meets the educational needs of schools, students, families, and communities. Digital literacy training modules from SkillUpPA are part of the curricula developed by PA Career Link and can be deployed by any partners in the region depending on the needs of their particular service population. Modules cover topics from accessing the internet, basic applications (Microsoft Suite or Google), job searches, cyber security, and more. These courses have been designed to reach adult learners, job seekers, out of school youth, English Language Learners, and have also been utilized by those living in covered households.

Aggregate Community Engagement Findings

The following key findings and observations resulted from these engagements are:

Digital Access Challenges:
- Rural areas face significant digital access disparities, needing better internet services.
- Various organizations focus on specific groups like veterans, persons with disabilities, and older adults.
- Most libraries do not have the capacity or financial resources to provide dedicated staff for digital literacy.
- There is a clear disparity in digital access in areas where internet services are often unreliable.

Service Offerings:
- Several organizations provide computer access, digital literacy training, and device lending (hotspots, tablets) and do their best to make them accessible.
- There's a shift towards more personalized support rather than traditional classes in regard to digital skills. This is anecdotal evidence based on registrations for group classes within the Union County Library System. Digital navigators will continue to track interactions and provide a variety of learning environments to meet the needs of their clients.

Opportunities:
- There is a need for digital educators to be multilingual, with Spanish being the most requested language.
- Interest in partnerships to enhance digital access initiatives, such as device lending programs.
- Standardized digital skills curriculum could ensure a more comprehensive approach to digital literacy training and could reach beyond the fundamentals to provide knowledge about cybersecurity and the use of AI. Evaluation of participation is more straightforward if the curriculum is standardized.
- Leveraging the experience of the CSIU, the reach of the public libraries and other community service partners, a comprehensive digital literacy and device distribution program could be developed and implemented for the region.

Community Impact:
- Libraries are the primary provider of digital skills training in the region.
- The CSIU has already developed several digital literacy curricula, but has lacked ongoing funding to make it more widely available.
- Digital access impacts community development, education, and workforce training efforts.
- Many libraries serve a diverse range of demographic groups including English Language Learners, low-income households, older adults, persons with disabilities, and veterans.

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C. Understanding Barriers to Digital Equity

DRIVE's Digital Equity planning process has contributed to its understanding of unique barriers to achieving digital equity across a wide range of covered populations. The table below summarizes the respective unique barriers for each of the covered populations present in the community:

Covered Population	Description
Individuals who live in covered households	The lack of choice for in-home internet service in most areas results in higher costs. Additionally, those with unpaid balances lose service and have no other options for service. Late fees and additional charges make it difficult, if not impossible, for people to maintain service. Many are not able to afford in-home service and only access the internet via a cell phone. Also, the cost of devices (laptops, desktops) can be prohibitive.
Aging individuals	Lack of connectivity, lack of access to a device, lack of knowledge in how to use a device
Individuals with disabilities	Lack of access to assistive devices
Individuals with a language barrier	Lack of access to digital skills training in their native language. There is also less online content for non-native speakers which presents a barrier or reduces the value of online content
Individuals who are English learners	Lack of access to digital skills training in their native language as well as a lack of content in their native language.
Individuals who primarily reside in a rural area	The entire DRIVE region is considered rural. In many places there is only one choice, if any, for internet service. Costs are higher than in more urban locations. The average cost in Columbia County for 100Mbps/10Mbps is $70 (excluding additional taxes and fees for hardware, etc.).

- • Other covered populations include veterans, minorities, incarcerated individuals, and those with low levels of literacy. We are choosing to focus on economic barriers because we believe access to services for these populations intersect with those of organizations serving the covered populations listed in the chart above. DRIVE believes the barriers to digital equity experienced by members of these covered populations are primarily driven by the factors listed above.

D. Developing Implementation Strategies

Existing Programs

Based on the unique barriers to achieving Digital Equity identified in the previous section, DRIVE identified the following existing programs that address the respective needs/barriers of the applicable covered populations.

Program	Who is involved in the existing program?	Covered Population	Barrier/Issues addressed	Funding/Sustainability
Digital Skills Training	Libraries CSIU Columbia Montour Aging Office	Aging individuals Individuals with disabilities Individuals with a language barrier Individuals who are English learners	Digital Literacy	DEA Grant Degenstein Crowd source funding
Device Distribution	AGAPE CSIU Libraries REC Columbia Montour Aging Office	Individuals who live in covered households Individuals who primarily reside in a rural area	Device access	DEA Grant

Existing efforts can fall short due to lack of sustainable funding. For example, a digital literacy program offered by the CSIU was well-attended but ended once grant funding was eliminated. Additionally, device distribution programs are primarily lending programs.

Further, without sustained funding, momentum and community trust are lost. Rural communities, which already lag urban areas, fall further behind and new programs must be built from the ground up over and over again.

Those that give devices to those living in covered households are limited to AGAPE in Bloomsburg. An opportunity to provide a device tied to completion of a digital skills curriculum could be developed using DEA Grant funding. Ongoing sustainability of such programs will require further exploration by partners in the region.

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New Programs/Resources

In addition to the existing programs detailed above, DRIVE identified areas where new digital inclusion resources and programs must be funded, developed, and implemented to meet the needs of the respective covered populations, reflected in the table below:

Program	Covered Population	Barrier Addressed	Rationale
Bilingual Digital Literacy Trainer (Capacity Building)	Individuals who live in covered households Aging individuals Individuals with a language barrier Individuals who are English learners Individuals who primarily reside in a rural area	Teaching digital literacy to covered populations Acts as a resource to promote transferable skills	The one staff member that has been hired can't possibly meet the needs of all covered populations across the 5 counties.
Digital Health Educator (Geisinger/ Wellspan Evangelical)	Aging individuals Individuals with a language barrier Individuals with disabilities English learners	Lack of digital literacy resources on technology advancement	Growth of telemedicine and telehealth requires people to have access to the internet and the skills to utilize this service
Device Distribution	Individuals who live in covered households Aging Individuals	Lack of funding and resources needed to support the technological growth that many areas are expanding towards	Most programs are lending only. To encourage in home adoption, giving people a device to use will be key

Implementation Strategies and DEA Measurable Objectives

The DRIVE's Digital Equity Plan includes implementation strategies to address the following needs for each of the covered population in th community:

- **Broadband Access Expansion:**
  Objective-Increase the availability of affordable high-speed internet access.
  - Encourage the development of an open access fiber network to reach unserved and underserved locations in the five-county region by partnering with private enterprise. There are several examples of private operators that construct open-access fiber networks in rural communities.
  - Improve awareness of available service and programs to make home internet more affordable.
  - Ensure all libraries in the region have access to 1 Gig symmetrical broadband service.

- **Digital Literacy Programs:**
  Objective-Improve digital literacy and technology skills among underserved populations.
  - Add additional capacity to libraries in the region by funding a second bi-lingual Digital Literacy Educator position to be shared by all libraries.
  - Work with Geisinger to fund a Digital Health Educator position to provide assistance and training on the use of telemedicine and other healthcare related technologies. This position would go to senior centers, libraries, Community Action Agencies, Veterans Affairs offices and other community locations to meet the public where they are.
  - Develop standardized curriculum covering all aspects of digital literacy from fundamental skills to cybersecurity and utilizing AI.

- **Online Accessibility and Inclusivity of Public Resources and Services:**
  Objective-Ensure everyone has the same opportunity to engage with public resources and services online to increase civic participation.
  - Encourage counties and municipalities to meet ADA recommendations for website accessibility.
  - Ensure libraries have assistive devices for clients that require them to more easily access the internet.

- **Awareness and Use of Cybersecurity and Online Privacy Tools:**
  Objective-Empower individuals, organizations, and communities to protect their digital assets, personal information, and online activities from cyber threats and privacy breaches.
  - Promote current programming on cyber security at area senior centers.
  - Raise awareness of types of cyber threats (e.g. phishing) during Data Privacy Week in January and National Cybersecurity Awareness Month. This could be done through programs, articles in area newspapers, television news stories, and social media posts.

- **Public-Private Partnerships:**
  Objective-Foster collaboration between government, businesses, and nonprofits.
  - As a council of governments, DRIVE offers a link between government (county commissioners), anchor institutions (healthcare & higher education) and private enterprise through its board.
  - Developing a partnership with CSIU, DRIVE, libraries.

- **Digital Inclusion Policies:**
  Objective-Implement policies that promote digital equity.
  - The Pennsylvania Broadband Development Authority established a Broadband Ready Communities Program to encourage streamlining of permitting and other municipal processes to expedite broadband development. DRIVE has agreed to serve as the local champion for this effort to provide support and best practices to participating communities.
  - DRIVE will advocate for policies that encourage standardized curriculum and statewide certification programs for digital skills.

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Connectivity Plan

Funding Sources for Implementation Strategies

A comprehensive regional digital equity plan was developed by the following partner organizations:
CSIU
DRIVE
Advance Central PA
Geisinger
Evangelical Wellspan
Degenstein Foundation

The plan was submitted as an application for the NTIA Digital Equity Competitive Grant in September 2024. The total project amount is $13.8M and includes the following projects that align with this digital equity plans.

Access and Education:

A fiber-served community hubs will be established in each county. In addition to having computers available for public use, each hub will be staffed by a digital navigator. Digital skills training, device use, and assistance will be provided by the digital navigators at the community hubs and other locations such as local libraries and senior centers. Additionally, digital navigators will conduct needs assessments for those who lack the financial resources to obtain devices independently. The goal is to select the correct technology to facilitate ease of use. Device distribution will be managed by the CSIU.

Healthcare:

Mobile digital health units will bring much-needed healthcare access to some of the region's most rural locations. In addition, Geisinger proposes to employ a digital health navigator to work out of the community hubs as well as other locations across the region to provide personalized education and assistance in utilizing online medical platforms and telehealth services.
Evangelical Wellspan aims to create three regional digital health centers to expand access to digital healthcare in the region. Centers will be equipped with advanced digital health technology.

Workforce:

For digital workforce development, Advance Central PA will hire one full-time Career Resource Area (CRA) Specialist who will provide direct digital literacy and job preparation services at the PA CareerLink® centers in Columbia and Montour counties, located in Bloomsburg, PA. The CRA Specialist will be stationed in the Career Resource Area, a computer lab within PA CareerLink®, and will assist walk-in Individuals who need immediate help with tasks such as creating resumes, job searches, and online job applications. Additionally, they will hire two instructors that will work out of the PA CareerLink®, a partner of the American Job Center Network, in Sunbury and Bloomsburg, PA.

The CRA Specialist will ensure that individuals are able to access and navigate the PACareerLink.gov job search dashboard, SkillUp® online training modules, and various interest and skills assessments. They will also guide individuals through the process of using the internet for job searches, applying for jobs online, and utilizing Microsoft Word to create resumes and cover letters.

Responsible Party for Implementation Strategies

The table below reflects the owner/responsible party for each of DRIVE's digital inclusion strategies:

| Need	Implementation Strategy	Owner/Responsible Party
Availability and Affordability	Encourage the development of an open access fiber network to reach unserved and underserved locations in the five-county region utilizing BEAD funding. This effort will be coordinated by DRIVE to find a private company that has a track record of building open access fiber.	DRIVE
	Improve awareness of available service and programs to make home internet more affordable.	ISPs
	Ensure all libraries in the region have access to 1 Gig symmetrical broadband service.	DRIVE/ ISPs Local libraries
Accessibility and Inclusivity of Public Resources and Services	Encourage counties and municipalities to meet ADA recommendations for website accessibility.	ISPs CSIU
	Ensure libraries have assistive devices for clients that require them to more easily access the internet.	CSIU Local libraries
	Implementation of a digital literacy educator	DRIVE Bloomsburg Public Library
Awareness and Use of Cybersecurity and Online Privacy Tools	Promote current programming on cyber security at area senior centers.	CSIU Local senior centers Union-Snyder Agency on Aging Columbia-Montour Aging Office
	Raise awareness of types of cyber threats (e.g. phishing) during Data Privacy Week in January and National Cybersecurity Awareness Month. This could be done through programs, articles in area newspapers, television news stories, and social media posts.	CSIU Libraries
	Work with Geisinger to fund a Digital Health Educator position to provide assistance and training on the use of telemedicine and other healthcare related technologies. This position would go to senior centers, libraries, Community Action Agencies, Veterans Affairs offices and other community locations to meet the public where they are.	Geisinger Wellspan Evangelical
Technical Support for Devices Available to Covered Populations	Add additional capacity to libraries in the region by funding a second bilingual Digital Literacy Educator position to be shared by all libraries.	DegenSTEAM Academy CSIU Local libraries
	Promote current training surrounding technical support at area senior centers.	CSIU Local senior centers Union-Snyder Agency on Aging Columbia-Montour Aging Office

Section 3: Broadband Infrastructure

Section 3: Broadband Infrastructure

The Pennsylvania Broadband Development Authority (PBDA) released proposed project areas for BEAD in late September 2024. In Columbia County, there are 32 project areas with a total of 3,750 broadband serviceable locations (BSLs).

BSA Map
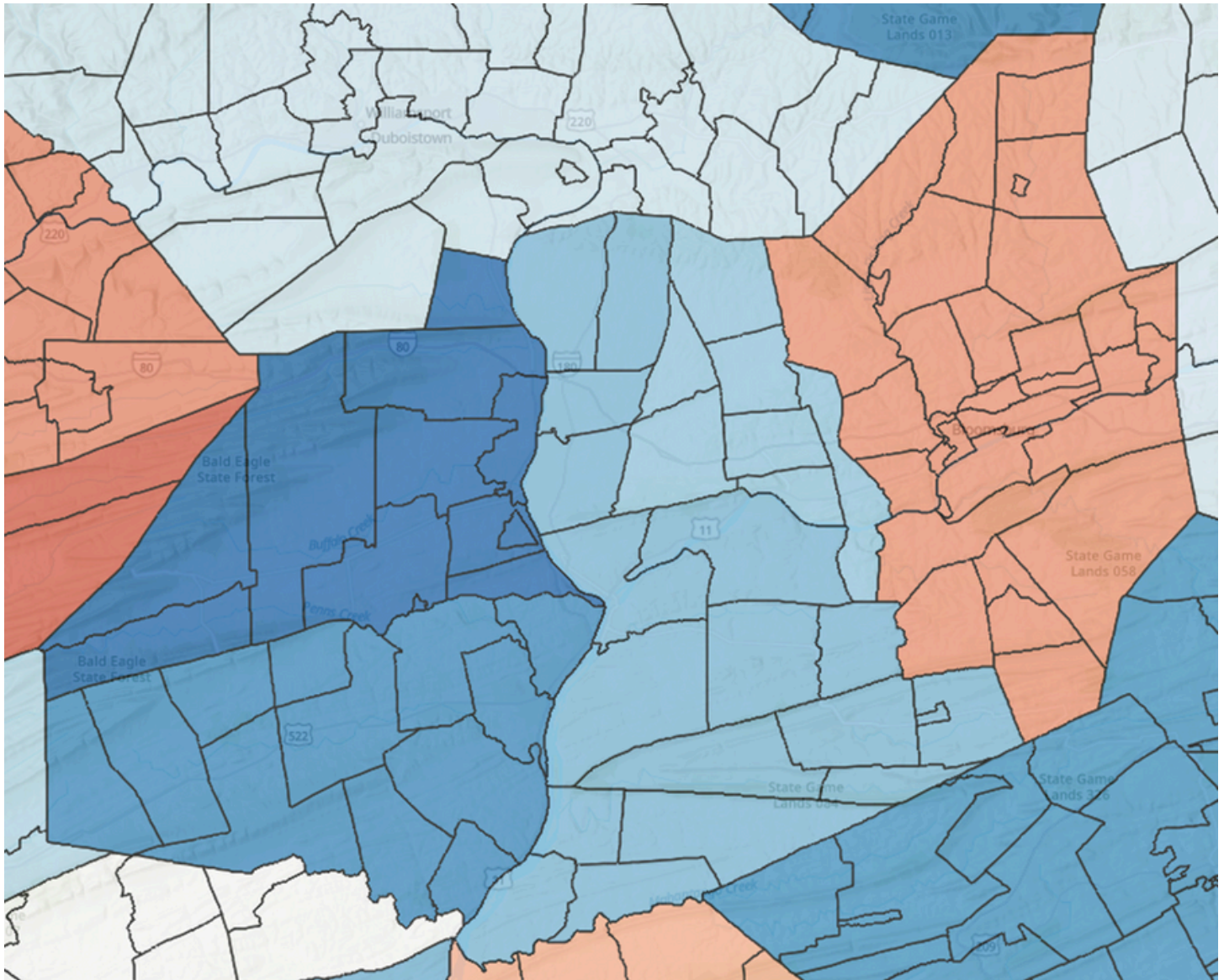
Utilizing data provided by the PBDA, the BEAD investment to bring fiber to the eligible homes in Columbia County is $17,534,033. Assuming a 75% cost share from BEAD that figure assumes a total project cost of $23,378,711. These figures are provided by PBDA as a guideline only. Based on an analysis of the cost data provided by PBDA, a "fair" subsidy from BEAD is approximately $7,055 per BSL. This translates to $26,456,250 to serve the 3,750 eligible BSLs in Columbia County.

DRIVE contracted NRTC to provide cost data to serve BEAD eligible locations in each of its five counties. NRTC's model estimated a required capital investment of $24.91M to construct aerial fiber to these locations. An additional $5.02M to bring fiber to the home at each location brings the total capital costs of $29.93M over three years. The cost increases to $48M for underground construction.

DRIVE believes that an open-access fiber network provides the best solution for affordable, scalable, access to high-speed internet service. Open-access network operators bring multiple ISPs into a service territory. Consumers then have options on price and service from day one.

DRIVE is engaging with potential open-access operators with the intention of assisting a provider in submitting a BEAD application that includes the five counties in the DRIVE region. DRIVE has a large amount of data on the region as well as potential financing opportunities to fund the required match for a BEAD project. Additionally, DRIVE can facilitate the required meetings with municipal officials.

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More Information About Us
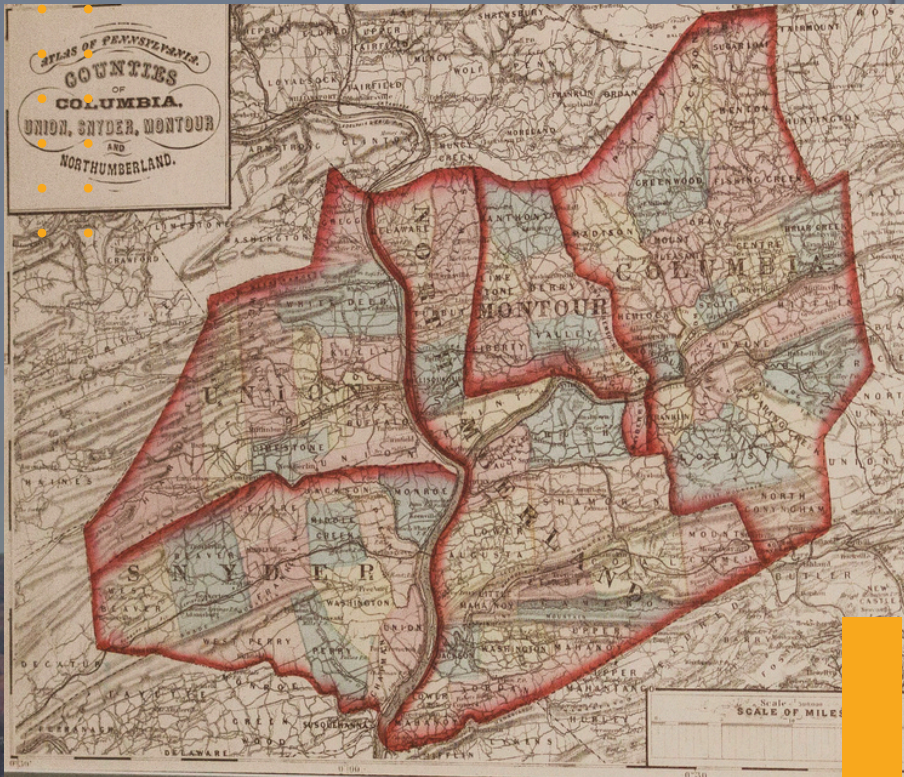
DRIVE (Driving Real Innovation for a Vibrant Economy) was formed in 2015, after county commissioners and community leaders came together to consider how best to promote economic development in Columbia and Montour Counties. Recognizing that financial challenges are independent of political boundaries, and that any solutions to these challenges would benefit the common good, the DRIVE organization was formed as an economic development council of governments where the counties could work together cooperatively.

The key to the success of DRIVE is a strong commitment by its member counties (Northumberland, Snyder, and Union joined in 2020) to collaborate on solutions to common problems for the region.

Since its inception, DRIVE has engaged in many regional projects, bringing job opportunities and capital investment, while growing and diversifying the economic base.

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