



Rural Economic Development Summit: Broadband Infrastructure and Workforce Opportunities

Philip Jones, Community Engagement Associate, Community Development and Regional Outreach Department, Federal Reserve Bank of Philadelphia

The information, analyses, and conclusions set forth are those of the presenters and do not necessarily reflect the views of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.



Agenda

9:00 a.m.–9:05 a.m.	Welcoming Remarks
9:05 a.m.–10:00 a.m.	Opening Plenary: The Economic Imperative for Participating in a Digital Economy
10:00 a.m.–10:30 a.m.	Plenary Session: Leverage Data and Research to Uncover Needs That Exist in Pennsylvania
10:30 a.m.–10:40 a.m.	Break
10:40 a.m.–11:30 a.m.	Respondents' Panel
11:30 a.m.–12:15 p.m.	Networking Lunch

Agenda

(Continued)

12:15 p.m.–12:45 p.m.	Keynote Address: Expanding Economic Opportunity Around Broadband Deployment
12:45 p.m.–1:00 p.m.	Break
1:00 p.m.–2:00 p.m.	Concurrent Sessions to Highlight Workforce and Investment Strategies
2:00 p.m.–2:15 p.m.	Break
2:15 p.m.–3:15 p.m.	Closing Plenary: What Are Other States Up To? Best Practices for Rural Workforce Challenges
3:15 p.m.–3:25 p.m.	Final Reflections on Broadband and Workforce Opportunities in Pennsylvania by Brandon Carson, Executive Director, Pennsylvania Broadband Development Authority
3:25 p.m.	Closing Reflections by Philip Jones

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Opening Plenary:

The Economic Imperative for Participating in a Digital Economy



Brandon Peters

Deputy Director

Pennsylvania Broadband Development Authority

Closing the Digital Divide & Impact on the Economy



Rural Residents Represent



26%
of the population
in Pennsylvania

29%
of the population
nationally

of these Pennsylvania Residents:

39%
live in census tracts
with high Digital
Divide Index scores

27%
are older adults

20%
are low-income

5%
are racial and
ethnic minorities

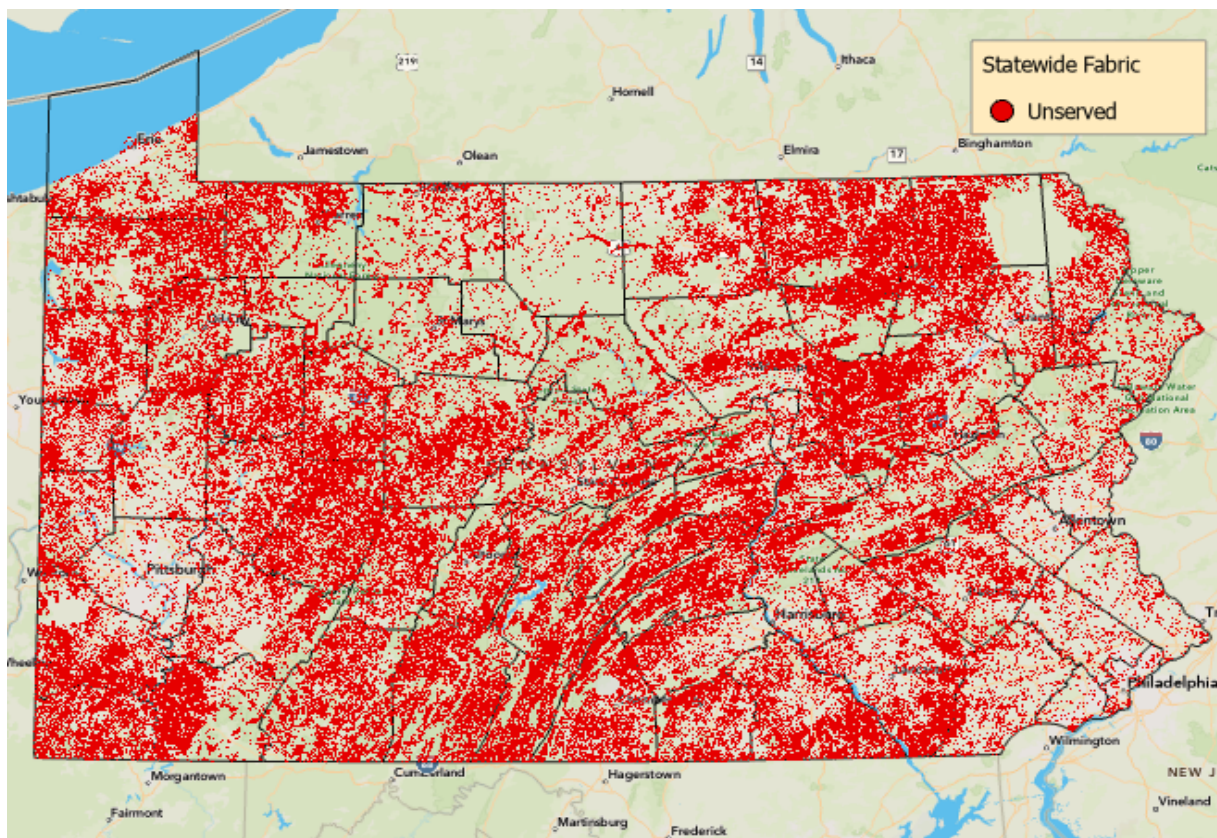
17%
have a disability

Source: 2019 ACS 1 Year Estimate

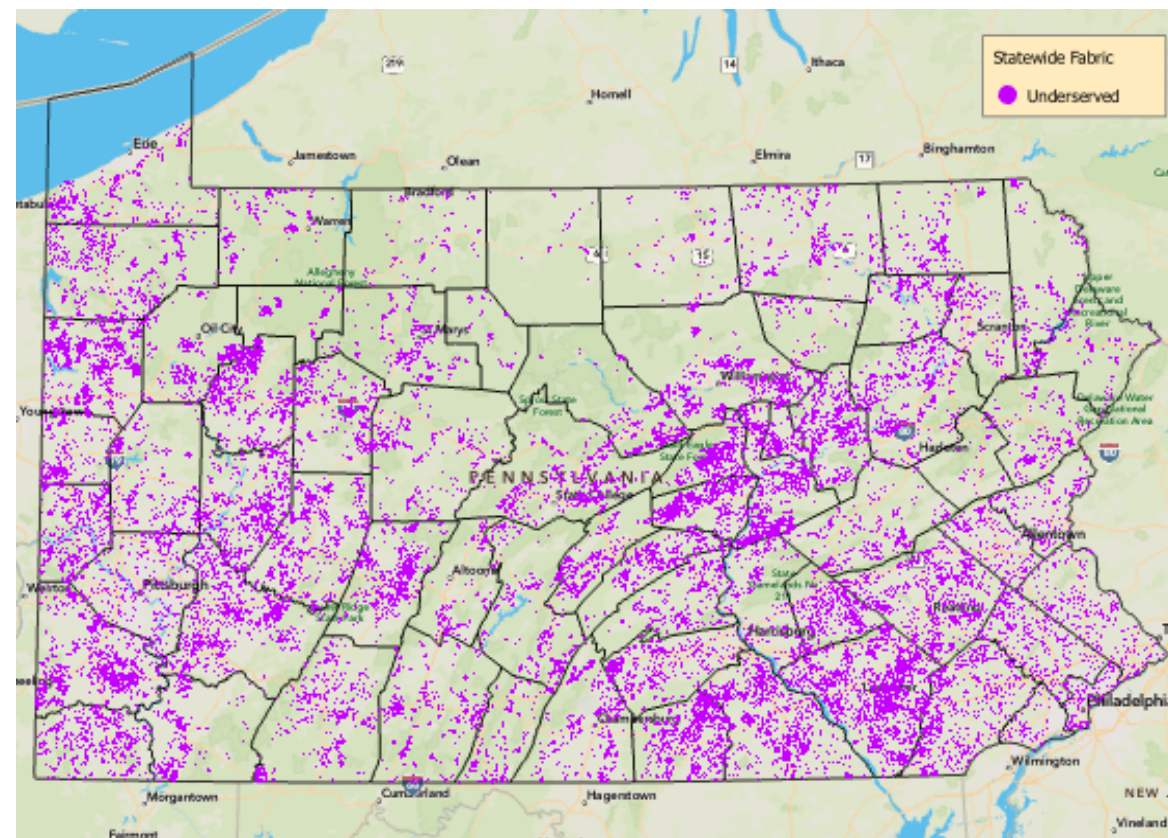


Internet for All – Unserved/Underserved

Unserved locations
234.3k



Underserved locations
51.8k





Broadband Infrastructure Program (BIP)

\$204 Million in Grant Awards

- **Awards:** 53 projects/12 awardees
- **Diverse Technologies:** FTTH, Hybrid Fiber/Coaxial, Licensed Fixed Wireless
- **Geographic Distribution:** 42 Counties and more than 40k unserved and underserved locations
- **Total Project Value:** ~ \$400 million in total investment
- **Total Award Amount:** \$204.1 million in grant awards

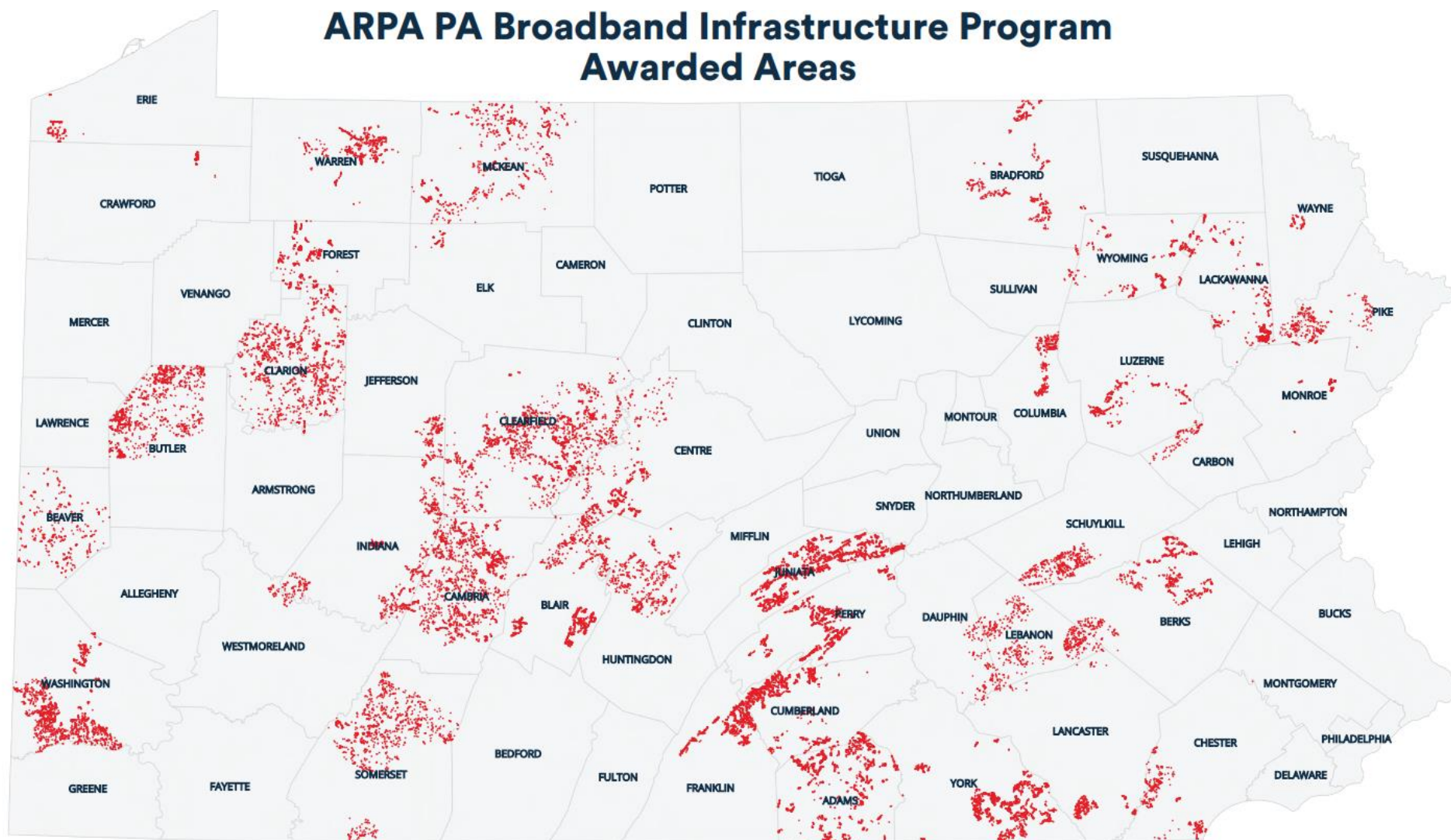
Grant Recipients
Adams CATV Inc.
Alleghenies Broadband, Inc.
Armstrong Telecommunications, Inc.
Blue Ridge Communications
Claverack Communications
Comcast Cable Communications, LLC
Connect Holding II LLC d/b/a Brightspeed
Frontier Communications Parent, Inc.
Upward Broadband, LLC
Verizon North LLC/Verizon Pennsylvania LLC
Windstream Pennsylvania, LLC
Zito West Holding, LLC





BIP Geographic Distribution

ARPA PA Broadband Infrastructure Program Awarded Areas



Broadband Access Equity & Deployment (BEAD)

\$1.16 Billion



Affordability:

- Middle Class Affordability
- Low-Cost Service Option

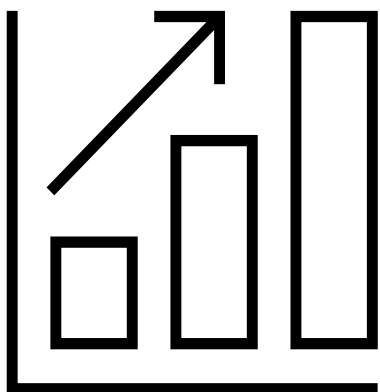
Workforce Readiness:

- Comprehensive workforce development plan
- Commonwealth Workforce Transformation Program (CWTP)

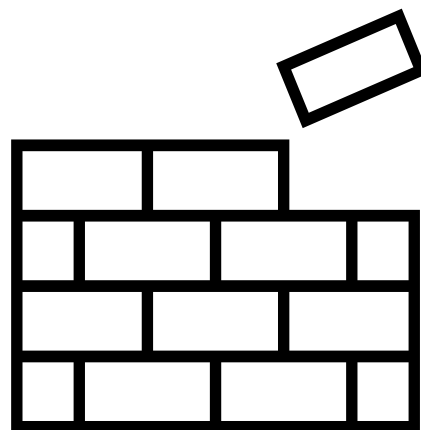
BEAD Timeline:

- Federally required challenge process launched in April and runs through July 2024
- Initial Proposal Volume II approved in early May; begins 365 days to submit Final Proposal
- Anticipate soliciting for subgrantee proposals beginning in late summer-early fall 2024

Broadband Ready Communities



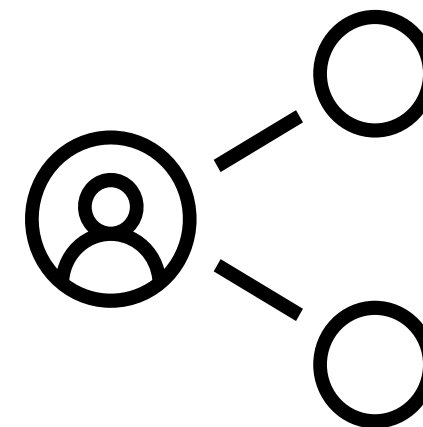
**Increase Investment
and Opportunity
Through Public-
Private Partnerships**



**Reduce Procedural,
Policy, and Permitting
Barriers**



**Encourage
Intergovernmental
Partnerships to
Increase Adoption**



**Promote
Broadband Ready
Communities**

****Not a Regulatory Program / Not an Eligibility Requirement for BEAD or Other Funds****

Broadband Ready Communities Worksheet Components



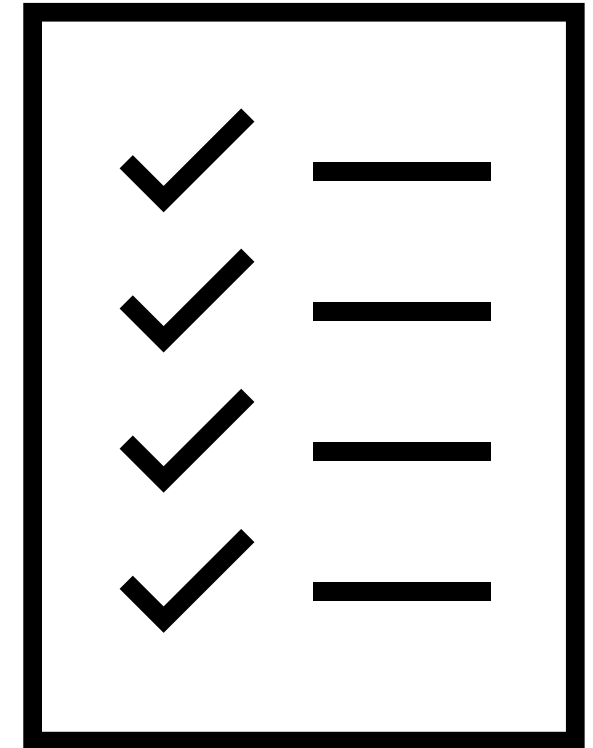
Documentation of Community Engagement

Identification and Understanding of Applicable Funding

Indication of Matching Component **(Optional)**

Creation of Asset Inventory **(Optional)**

Reduction of Barriers to Broadband Expansion



Broadband Ready Communities Timeline



Activity	Month(s)
Preregistration (Complete)	January–March 2024
Application Posting (Complete)	April 2024
Educational Webinar (Complete)	April 2024
Application Window for Worksheet Submission	April–December 2024
Program Closing	December 31, 2024



Debbie Kish

Vice President of Research and Workforce Development
Fiber Broadband Association

Introduction to the Fiber Broadband Association

- Established in 2001
- FBA provides advocacy, education and resources to companies, organizations and communities who want to deploy the best networks through fiber to the home, fiber to the business and fiber everywhere.
- Member based
- Hundreds of members in the U.S. and Canada
 - Telecommunications Service Providers of all types
 - Vendors of telecommunications equipment
 - Installation contractors
 - Consultants
- FBA is affiliated with similar groups advocating for fiber optic networks around the world.

Impact of Fiber Broadband to a Community

VA	TN	Other Impacts
<ul style="list-style-type: none">• \$4m per year increase in housing value• Increase in Digital Microbusinesses• 35% private sector job growth	<ul style="list-style-type: none">• Foundation for Smart Grid• 9,516 jobs created• \$962.8 million in business investments	<ul style="list-style-type: none">• Community Effects (healthcare, telecommuting, education, etc.)• Keeping community connected in natural disaster• Recognized annual revenue for Counties

Economic Impact of Fiber Broadband

CITIZEN'S NEEDS Met Only by Fiber



FTTH HAS THE HIGHEST NET PROMOTER SCORES above all other internet technologies according to the 2021 RVA Broadband Consumer Study.

Meeting Future Bandwidth Demand: **FIBER IS FUTURE-PROOF**



The Projected Peak Bandwidth Requirements of a household of 4 is **500X THAT OF BANDWIDTH** requirements of the 1990s.

We must invest in **POPULATION MIGRATION**



Very High Reliable Internet Access is the **THIRD MOST IMPORTANT ASPECT TO A COMMUNITY** next to safe streets/low crime and affordability according to the 2021 RVA Broadband Consumer Study.

Fiber Improves **ECONOMIC GROWTH**



Cities with heavy fiber have had **64% HIGHER ECONOMIC GROWTH** than cities without fiber.

According to the American Society of Civil Engineers (ACSE)

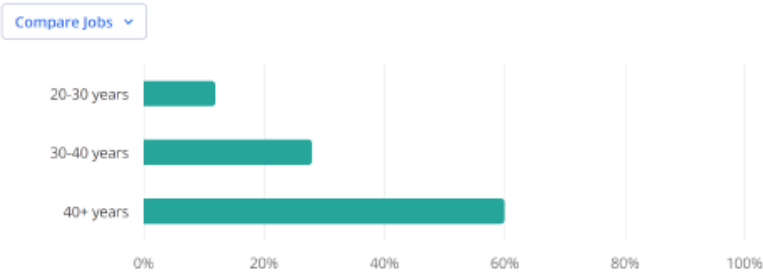
1. Federal Investment should have *long term benefits* to the public and economy.
2. The project's *cost over its entire life span* must be considered
3. Projects should be built *sustainably and resiliently*

Aging Workforce – Increase in Broadband Jobs

“A large percentage of the utility workforce will retire in the coming years, and not enough skilled workers will exist to fill the gap.”

Fiber Optic Splicer Age Breakdown

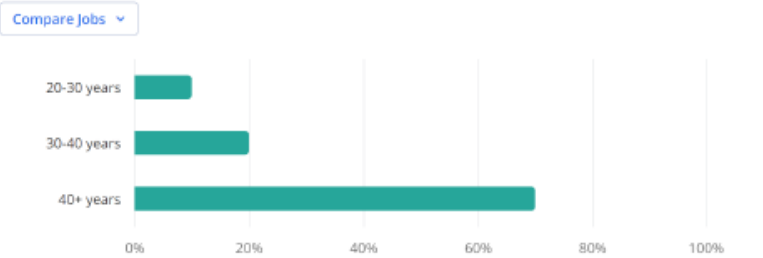
This chart breaks down the ages of Fiber Optic Splicer employees. Interestingly enough, the average age of Fiber Optic Splicers is 40+ years old, which represents 60% of the population.



Fiber Optic Splicer Years	Percentages
20-30 years	12%
30-40 years	28%
40+ years	60%

Broadband Technician Age Breakdown

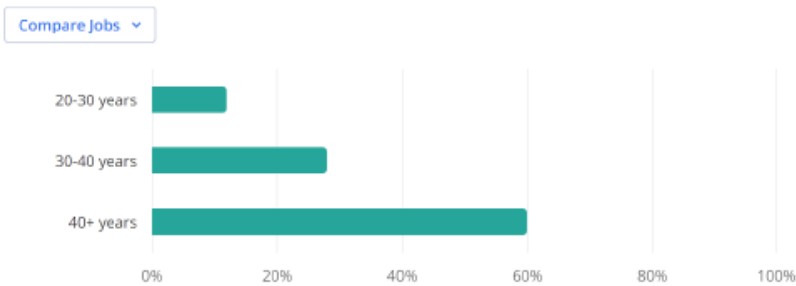
This chart breaks down the ages of Broadband Technician employees. Interestingly enough, the average age of Broadband Technicians is 40+ years old, which represents 70% of the population.



Broadband Technician Years	Percentages
20-30 years	10%
30-40 years	20%
40+ years	70%

Fiber Optic Technician Age Breakdown

This chart breaks down the ages of Fiber Optic Technician employees. Interestingly enough, the average age of Fiber Optic Technicians is 40+ years old, which represents 60% of the population.



Fiber Optic Technician Years	Percentages
20-30 years	12%
30-40 years	28%
40+ years	60%

“The Telecom Industry is expected to create nearly 205,000 jobs by 2025 as part of its broadband push”

2024 Broadband Industry Wages and Gaps

Position	Low End	Median	High End
119021 – Construction Manager (Project Manager)	\$50,000	\$84,000	\$158,660
131051 – Estimator	\$54,120	\$70,102	\$104,000
151141.1 – Contract Administrator	\$52,500	\$72,068	\$91,097
172051.2 – Engineer Cost & Schedule	\$38,000	\$57,240	\$89,540
299011 – Safety Specialist / Representative	\$84,000	\$79,872	\$106,660
471011 – Supervisor (Superintendent, Foreman)	\$72,120	\$82,500	\$124,529
472061 – Laborer	\$33,600	\$48,000	\$73,600
472073 – Operator Light & Heavy Equipment	\$47,757	\$65,052	\$75,845
472111 – Electrician / Fiber Splicer	\$48,000	\$63,000	\$83,200
474010 – Inspector / Quality Assurance / Quality Control	\$50,400	\$65,168	\$96,000
475031 – Operator HDD	\$36,000	\$58,000	\$115,260
493042 – Operator Mechanic	nc	\$54,000	\$120,200
499051 & 499052 – Lineman Electrical & Telecom	\$71,282	\$96,222	\$113,206
514121 – Welder	nc	\$51,500	nc
533032 – Operator CDL Truck Driver only	nc	\$52,000	\$76,800

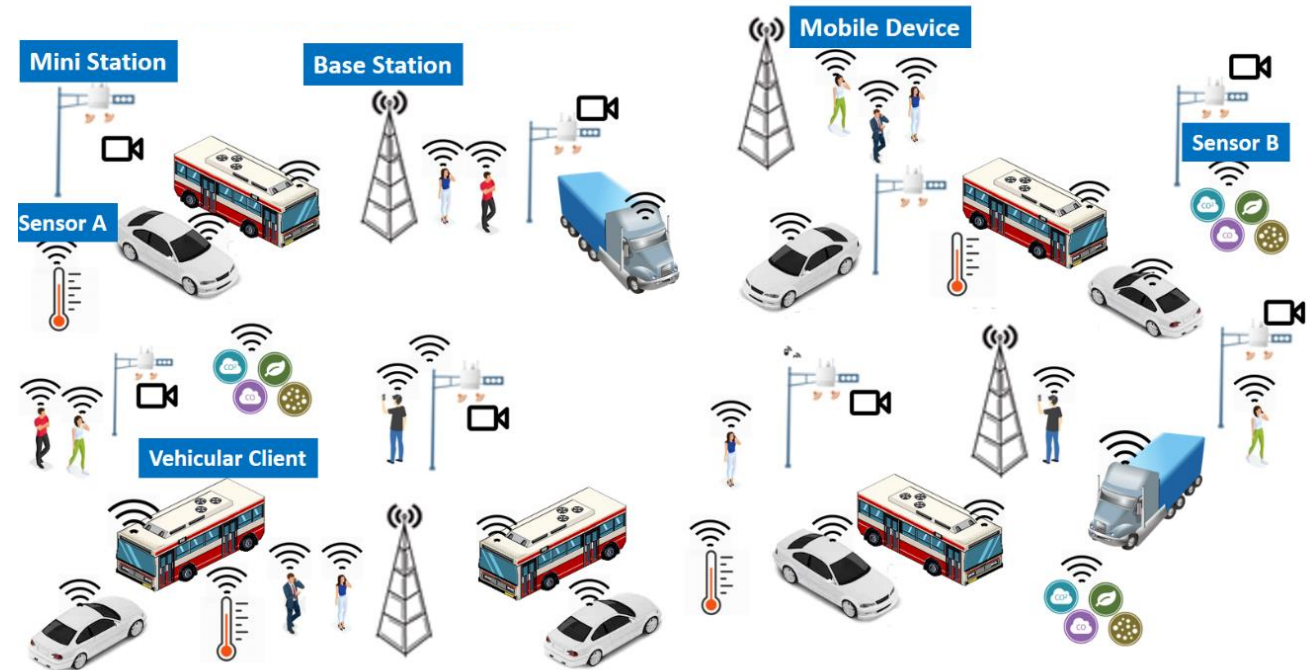
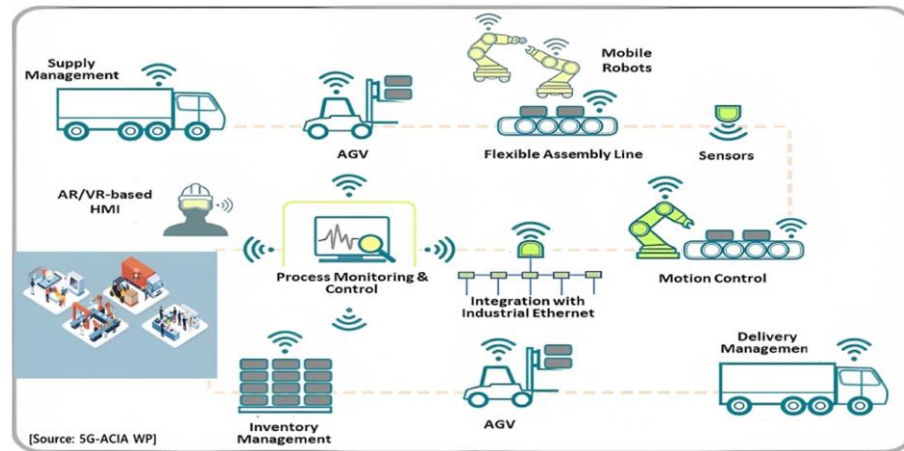
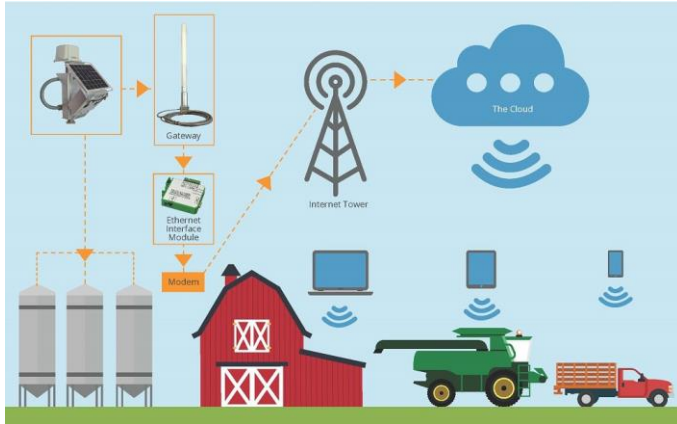
Pennsylvania Construction Workforce Need (Estimated)

- 900 field trades (helper, laborer, lineman, splicer, operator, foreman, etc.)
- Plus project management, design, locator, owner representative, inspection, etc.
- We believe the existing field trade workforce in PA is 1/2 to 2/3 of this size – Surrounding states have similar gap in workforce availability

Karen Lightman

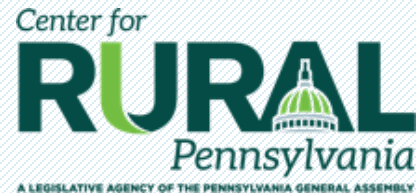
Executive Director
Metro21: Smart Cities Institute

Imagine a World...Rural PA Connected Everywhere for Everyone



Plenary Session:

Leverage Data and Research to Uncover Needs That Exist in Pennsylvania



Sascha Meinrath

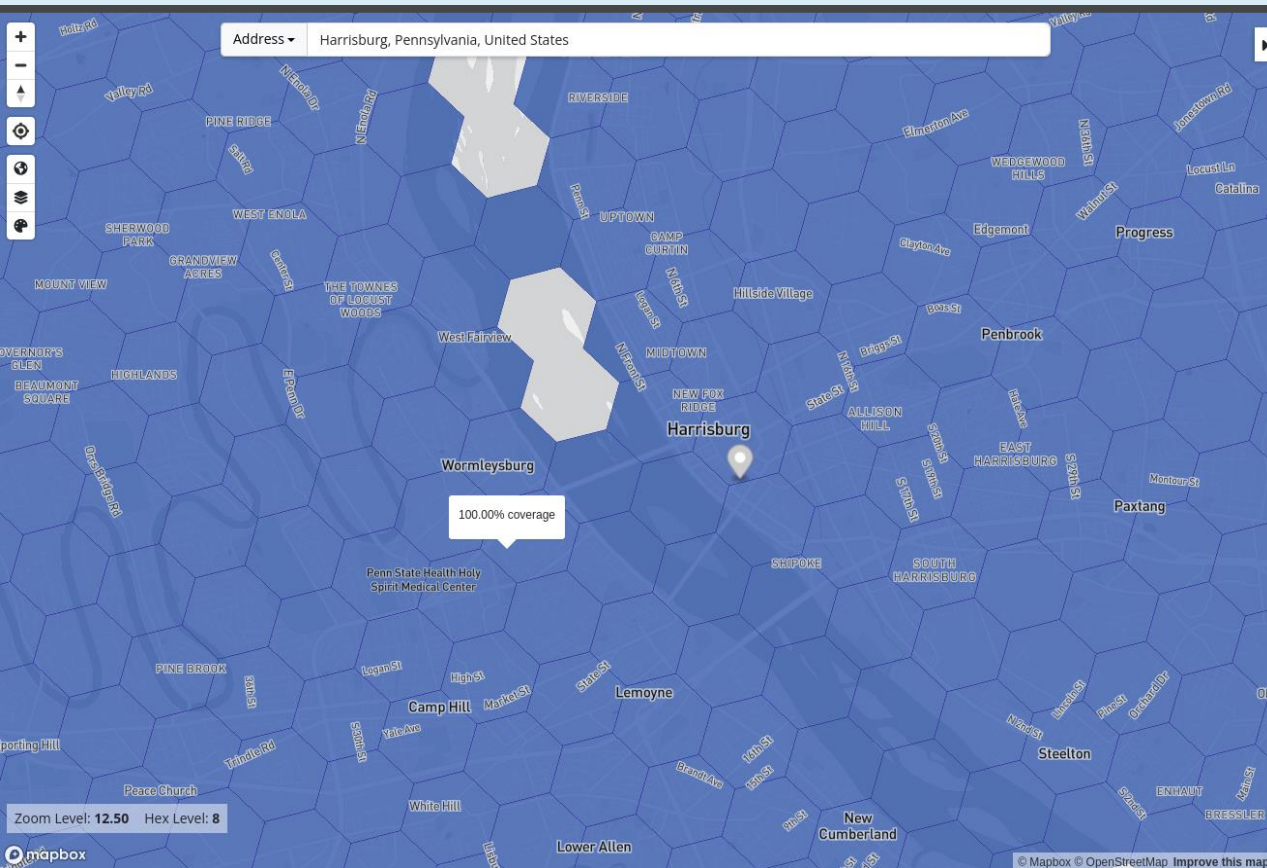
Palmer Chair in Telecommunications
Penn State University

BROADBAND MAPPING: MYTHS & BIASES

FCC:

InternetXplorer.org

FCC Map:



InternetXplorer.org



FCC Map:

Address ▾

212 LOCUST ST HARRISBURG, PA 17101

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⌕

Island

Susquehanna River

Irvey Bridge

Susquehanna River

Susquehanna River

Harrisburg Beach Club

FNB Field

Riverside Dr

Market Street Bridge

Susquehanna River

Quality Inn

© Mapbox © OpenStreetMap Improve this map

Zoom Level: 15.00

Hex Level: 9

mapbox

Fixed Broadband

Mobile Broadband

Selected Location

Location Challenge 1 ▾

212 LOCUST ST

HARRISBURG, PA 17101

Status: Served | Business and Residential | Unit Count: 17

Broadband Availability

Availability Challenge

Provider	Technology	Down (Mbps)	Up (Mbps)	Chall.
HughesNet	GSO Satellite	25	3	
Starlink	NGSO Satellite	220	25	
T-Mobile	Licensed Fixed Wireless	0.2	0.2	
Verizon	Copper	10	1	
Viasat Inc	GSO Satellite	30	3	
Xfinity	Cable	1200	35	
Business-only Service				
Telesystem	Fiber to the Premises	100	100	
Verizon	Licensed Fixed Wireless	400	40	
Viasat Inc	GSO Satellite	35	4	

Map Legend

Coverage available

Internet Xplorer

PA

First, choose a map:

Advertised service

The fastest service advertised by ISPs

Underperforming locations

Advertised service vs. real-world speeds

Then click a dot on the map.

LEGEND

Served

Underserved

Unserved

No reported service

What is this app?

What are the dots?

Can our state have this?

A project of [The X-Lab](#) and [Works Public](#). Built with [open source](#) code and [open data](#). Free for non-commercial use.

212 LOCUST ST

CITY OF HARRISBURG, PA

Advertised service

SERVED

The fastest **wireline** service reported by providers in this area is:

Download

1200 Mbps

Upload

35 Mbps

Provider

Xfinity

Technology

Cable

Speed test results

77%

Top speeds measured near here are 77% of Xfinity's best advertised service

There were 43,450 download tests and 38,525 upload tests taken within about 12 miles of this location in 2022.

Median

99th-%ile

Max

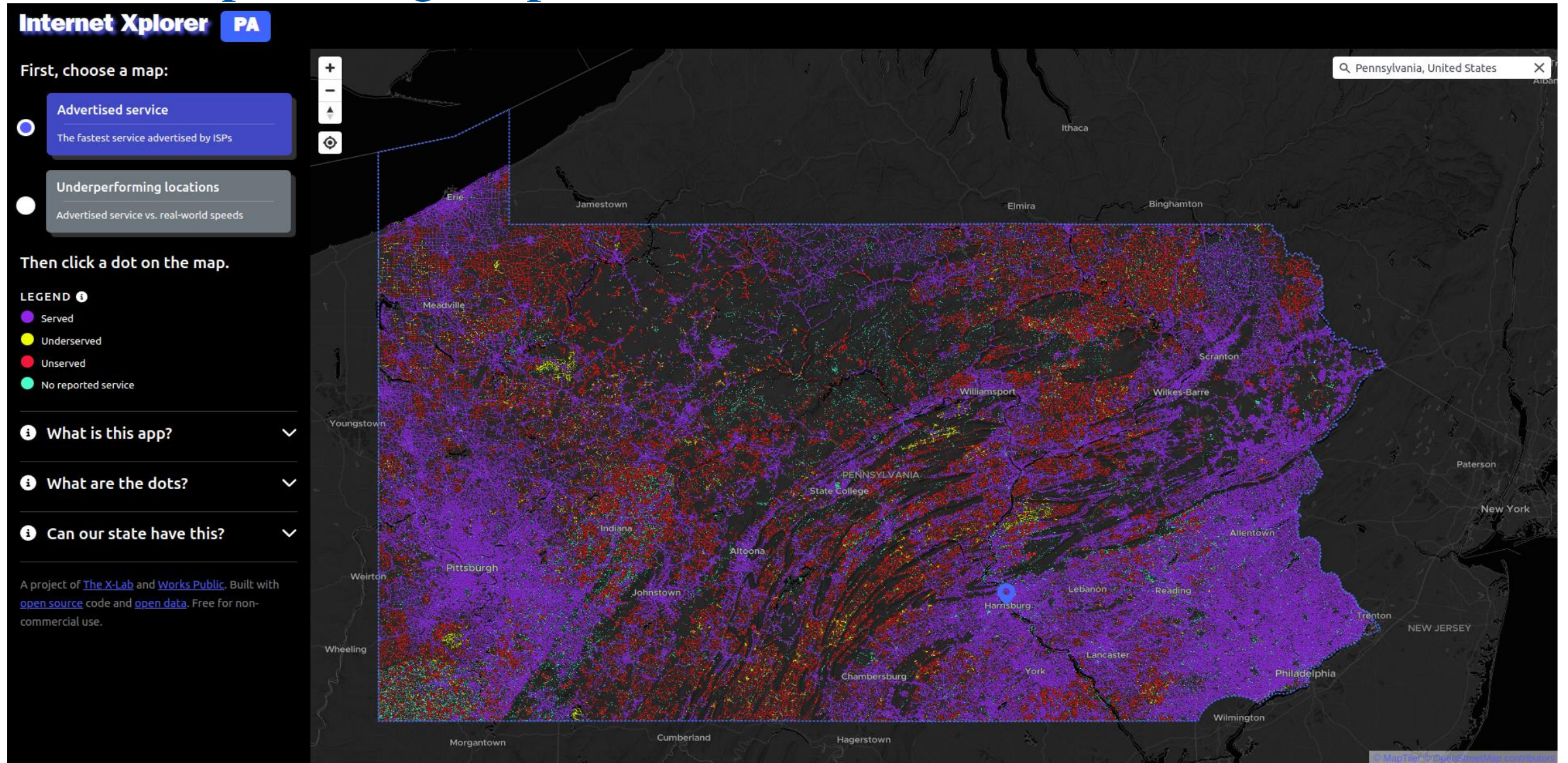
100 x 24 Mbps

918 x 882 Mbps

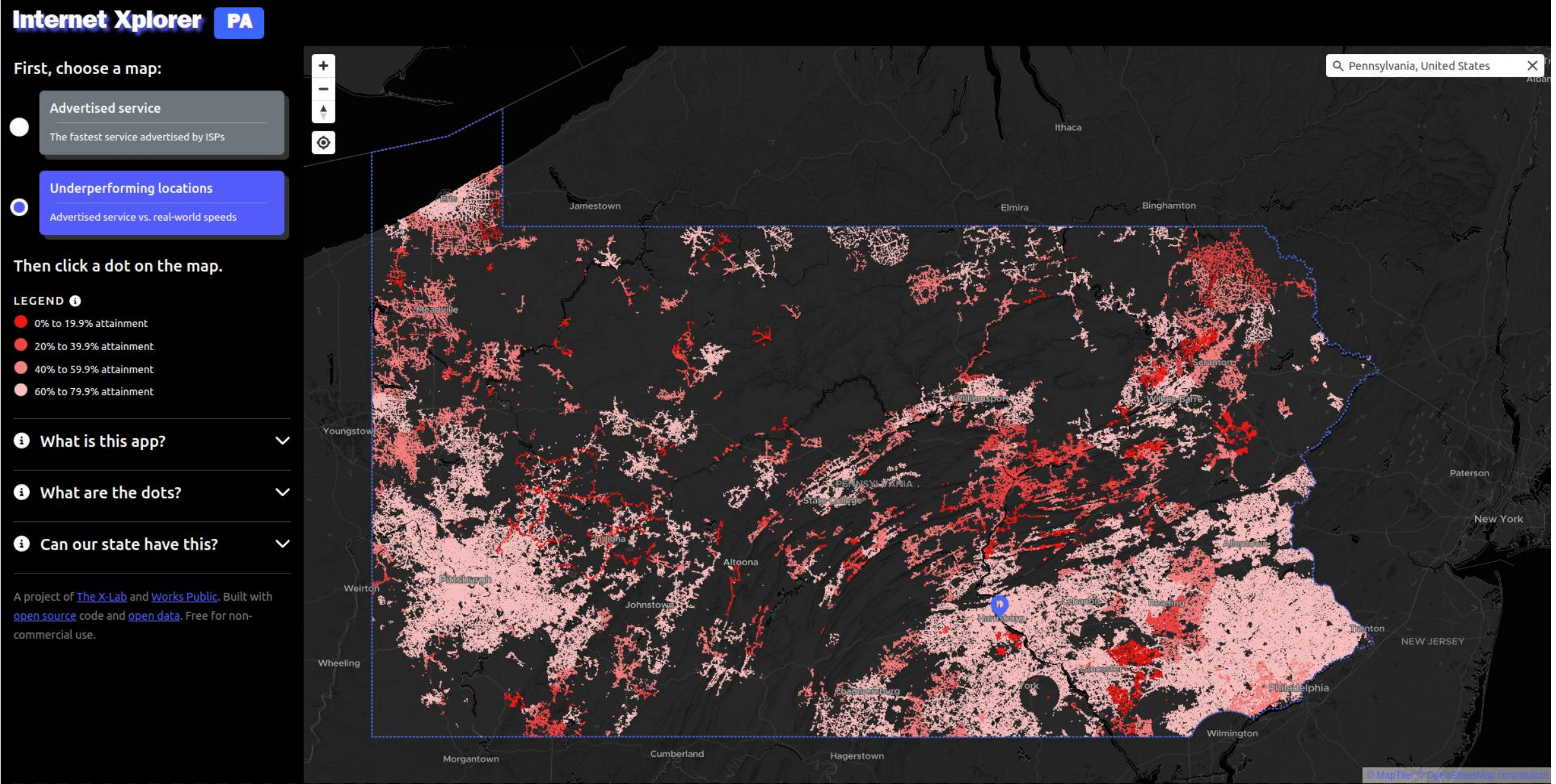
932 x 921 Mbps

Federal Reserve Bank of Philadelphia 30

InternetXplorer.org Map:



InternetXplorer.org Map:



FCC Map:

FC

Federal Communications Commission

FCC National Broadband Map

Sign In

Home

Location Summary

Provider Detail

Area Summary

Data Download

About

Broadband Funding Map

Service: ResidentialTechnology: Any TechnologySpeed: ≥ 100/20

Service Filters

Data As OfJun 30, 2023 (latest)(Last Updated: 5/5/24)

+

-

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📶

🔍

Address834 FISHING CREEK RD NEW CUMBERLND, PA 17070

Zoom Level: 17.00

Hex Level: 9

Fixed Broadband

Mobile Broadband

Selected Location

Location Challenge

834 FISHING CREEK RD
NEW CUMBERLND, PA 17070

Status: **Served** | Residential | Unit Count: 1

Broadband Availability

Availability Challenge

Provider	Technology	Down (Mbps)	Up (Mbps)	Chall.
Frontier	Copper	115	7	
Frontier	Fiber to the Premises	5000	5000	
HughesNet	GSO Satellite	25	3	
Starlink	NGSO Satellite	220	25	
Verizon	Licensed Fixed Wireless	300	20	
Viasat Inc	GSO Satellite	30	3	
Xfinity	Cable	1200	35	
Business-only Service				
Viasat Inc	GSO Satellite	35	4	

Map Legend

● Coverage available

InternetXplorer.org Map:

Internet Explorer PA

First, choose a map:

Advertised service
The fastest service advertised by ISPs

Underperforming locations
Advised service vs. real-world speeds

Then click a dot on the map.

LEGEND ⓘ

- 0% to 19.9% attainment
- 20% to 39.9% attainment
- 40% to 59.9% attainment
- 60% to 79.9% attainment

What is this app? ✓

What are the dots? ✓

Can our state have this? ✓

A project of [The X-Lab](#) and [Works Public](#). Built with [open source](#) code and [open data](#). Free for non-commercial use.

+ - 🔍 Pennsylvania, United States CLOSE X

🔊 Advertised service

SERVED

The fastest **wireline** service reported by providers in this area is:

Download	5000 Mbps
Upload	5000 Mbps
Provider	FRONTIER
Technology	Fiber

ⓘ Speed test results

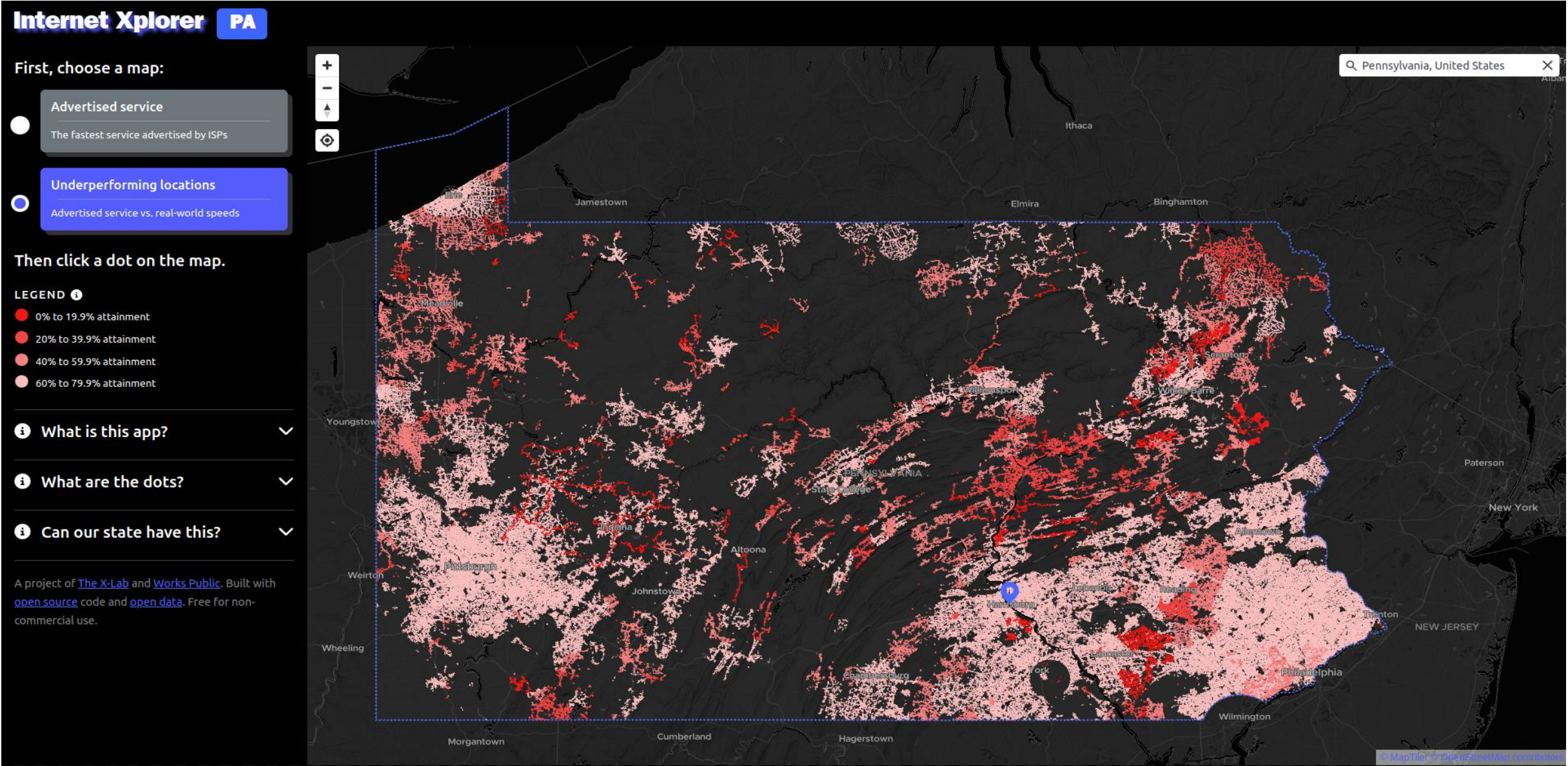
18%

Top speeds measured near here are 18% of FRONTIER's best advertised service

There were 28,542 download tests and 26,332 upload tests taken within about 12 miles of this location in 2022.

Median	96 x 17 Mbps
99th-%ile	924 x 913 Mbps
Max	929 x 917 Mbps

InternetXplorer.org Map:



Take-Home Messages:

- Major progress in broadband mapping has been made! And...
- Today's official maps are still problematic (due to self-reported “available speeds”)
- Fixing these maps crowd-sources due diligence (we have to spend our own time challenging incorrect information)
- Urban underserved have been widely expunged from these official maps.
- Due to these limitations, grant eligibility requirements privilege specific constituencies (mainly: rural areas [and, possibly, less-impooverished households])
- These seemingly-unbiased eligibility requirements may be creating racially-mediated grant allocations
- Initial analyses show that Pennsylvania may be an unfortunate exemplar of a nation-wide racial bias in allocating digital equity funding
- And these issues are all before one looks into broadband PRICING (which is still not being officially mapped)

Theresa Dunne

Community Development Research Analyst
Federal Reserve Bank of Philadelphia

May 2024

Beyond Broadband: Device Access and Digital Equity in Pennsylvania

By: Theresa Dunne, Federal Reserve Bank of Philadelphia

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Addressing the Digital Divide

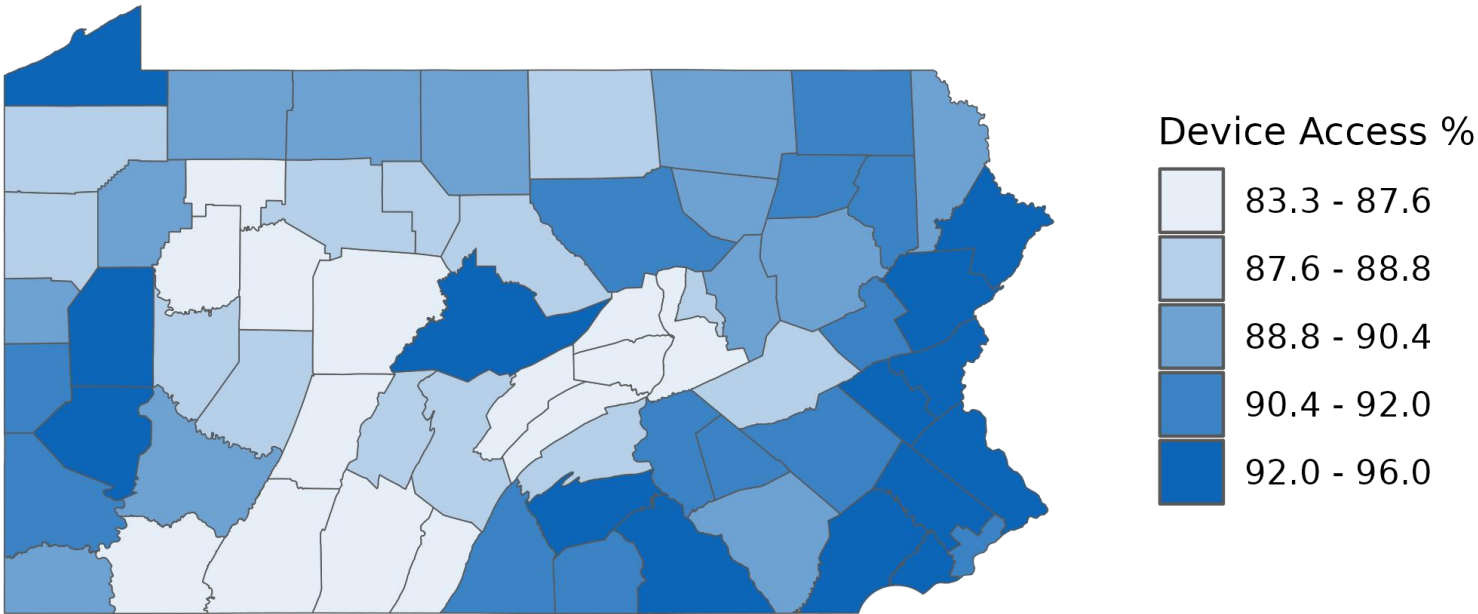
- Limited access to **broadband**, **computing devices**, and **digital skills training** prevents individuals from fully realizing the economic and social benefits of digital connectivity.
- A study conducted by researchers at the Philadelphia Fed in 2020 found a 27-percentage-point difference in labor force participation rates in Philadelphia between workers with and without a computer with a broadband connection, based on 2014–2018 data.
- While broadband expansion remains critical to closing the digital divide, individuals must have access to reliable devices and to training resources that allow them to optimize their device usage.

Access to Computing Devices

Device Access in Pennsylvania

- From 2018 to 2022, about 92 percent of Pennsylvania residents had at-home access to a computing device, which is slightly lower than the national average of 94 percent.
- Pennsylvania ranks 44th in terms of device access in the United States.
- Disparities in device access vary across urban and rural geographies, demonstrating the need for tailored digital equity strategies that address the specific challenges communities face to effectively access and use digital devices.

Household Access to One or More Computing Devices (2018–2022)



County-Level Median Values for Device Access: Lowest and Highest Quintile Groupings

Table 1. Socioeconomic and Demographic Median Values Based on Device Access Quintile Groupings at County Level (2018–2022)

Variables	Lowest Quintile Counties		Highest Quintile Counties	
	Median Value	Median %	Median Value	Median %
Total pop.	45,236	--	344,205	--
Median household income	\$57,685	--	\$81,429	--
65 and above	9,717	21.6%	62,389	18.5%
19 and below	10,478	21.9%	83,689	23.4%
White pop.	43,332	94.4%	253,998	81.4%
Black pop.	857	1.8%	24,932	6.0%
Hispanic or Latino pop.	958	1.8%	29,627	5.8%
Asian pop.	234	0.5%	11,206	3.7%
Speaks English less than “very well”	818	1.4%	14,063	3.6%
Veteran pop.	3,028	8.2%	17,257	6.4%
Pop. with a designated disability	6,572	16.4%	44,382	12.8%

Note: Race variables throughout the presentation include those of any ethnicity, while the Hispanic or Latino variable includes those of any race. These variables are not mutually exclusive, and therefore may not equal the total population count. The veteran variable accounts for the population over 18 that has previously served active duty in the military. The variable titled “Speaks English less than ‘very well’” accounts for the population over 5 that responded, “Well,” “Not well,” or “Not at all” to the question, “How well does this person speak English?” on the 2022 American Community Survey.

Source: Author’s analysis using American Community Survey 5-Year Estimates (2018-2022), accessed May 2024, data.census.gov/cedsci/all?q=ACS.

Berks County

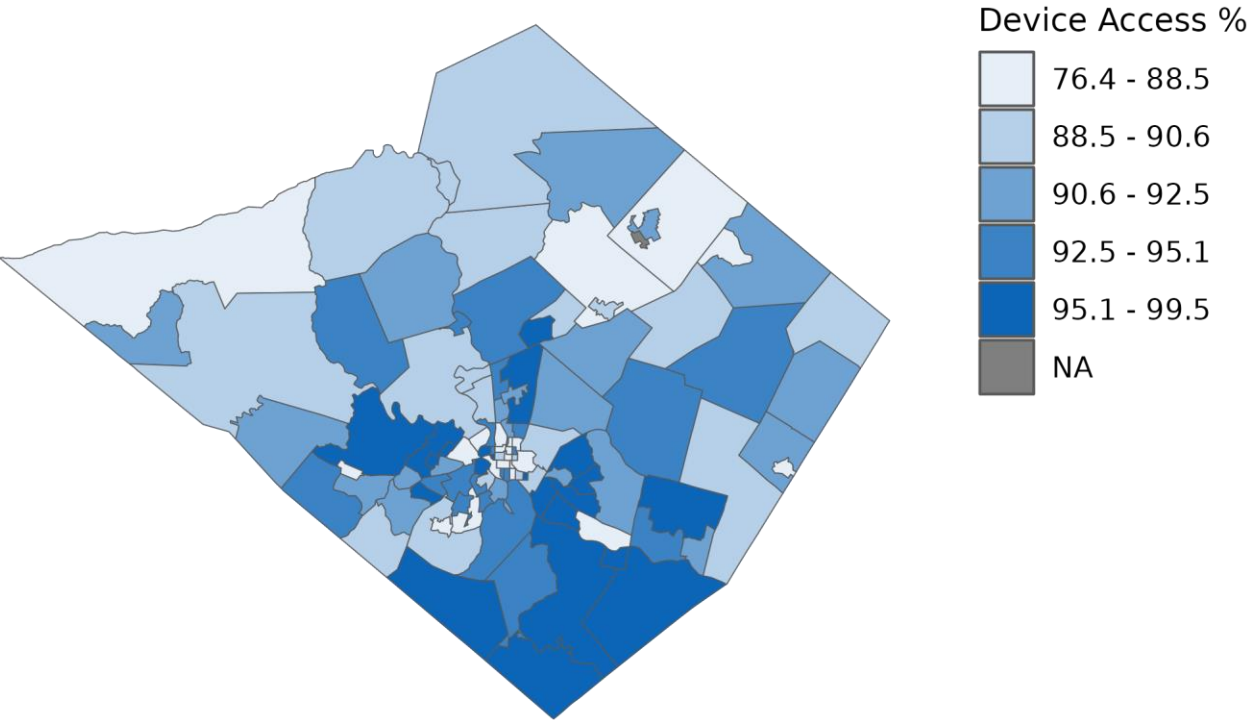


Table 2. Median Values for Lowest and Highest Device Access Quintile Groupings at Tract Level (2018–2022)

Variables	Lowest Quintile	Highest Quintile
Median household income	\$53,882	\$105,236
65 and above	16.4%	15.9%
19 and below	25.8%	26.3%
White pop.	51.7%	83.1%
Black pop.	4.0%	3.4%
Hispanic or Latino pop.	40.6%	12.9%
Asian pop.	0.4%	0.4%
Speaks English less than “very well”	16.8%	3.2%
Veteran pop.	4.8%	5.1%
Pop. with a designated disability	17.3%	11.3%

Schuylkill County

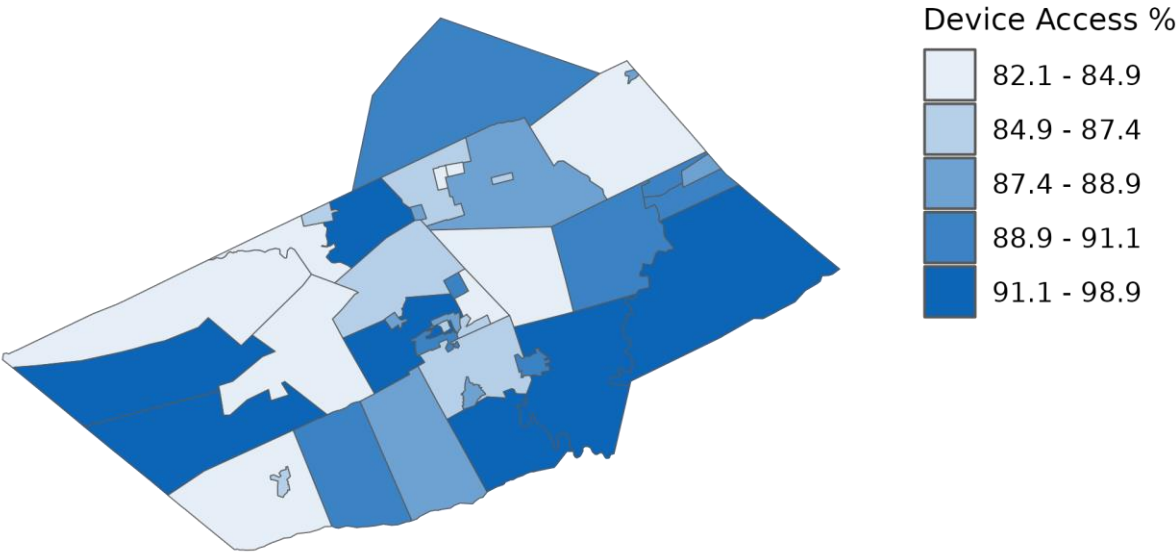
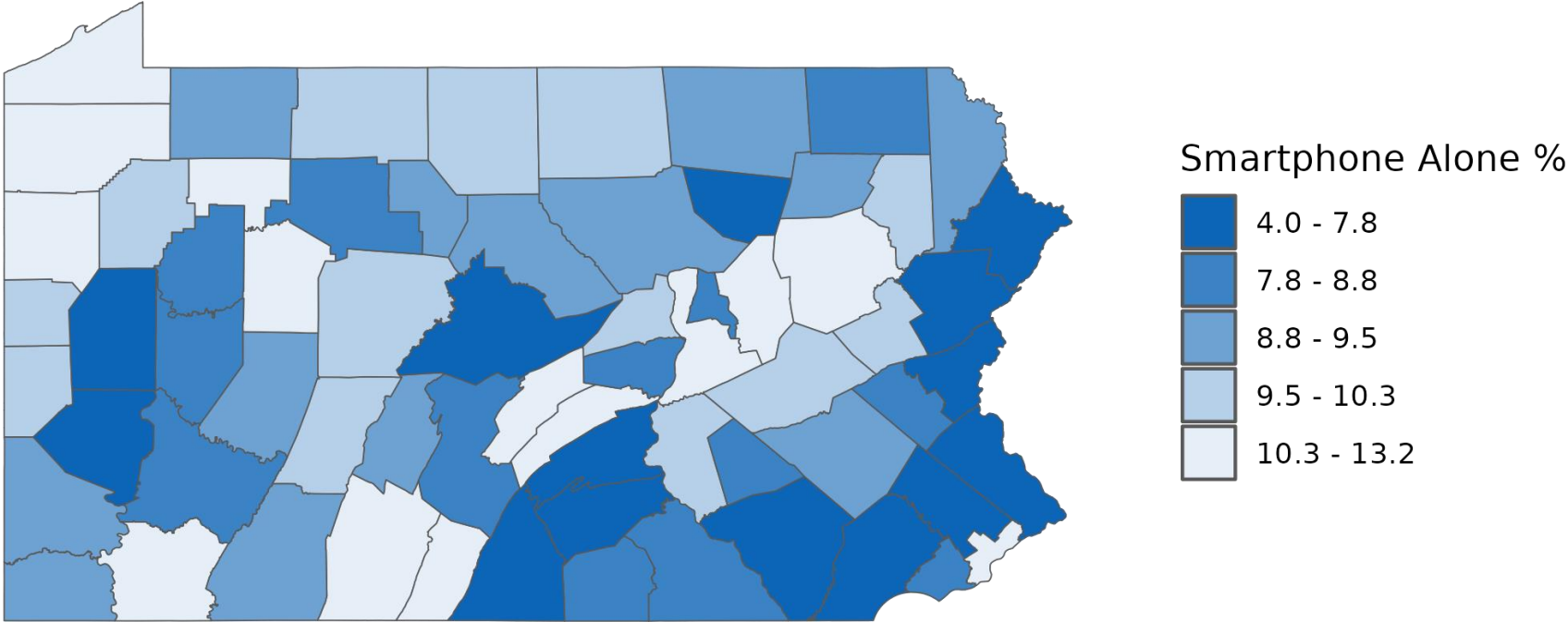


Table 3. Median Values for Lowest and Highest Device Access Quintile Groupings at Tract Level (2018–2022)

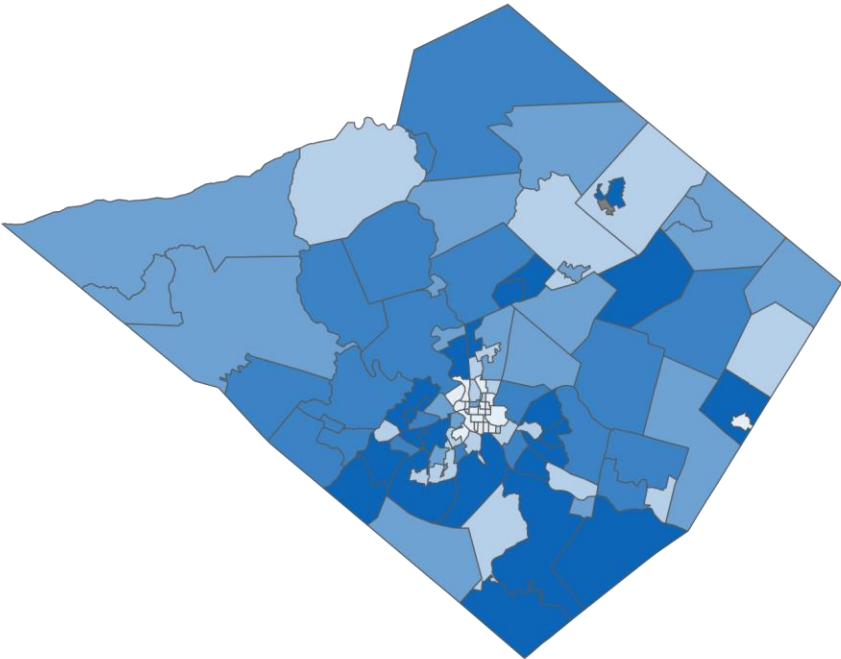
Variables	Lowest Quintile	Highest Quintile
Median household income	\$62,262	\$67,526
65 and above	22.4%	21.0%
19 and below	22.0%	19.9%
White pop.	95.4%	97.2%
Black pop.	0.2%	0.1%
Hispanic or Latino pop.	5.2%	2.2%
Asian pop.	0.0%	0.0%
Speaks English less than “very well”	1.6%	0.5%
Veteran pop.	8.2%	7.7%
Pop. with a designated disability	16.5%	17.2%

Access to Smartphones Alone

Household Device Access Through Smartphone Alone (2018–2022)



Berks County



Smartphone Alone %

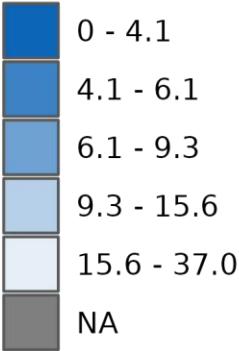
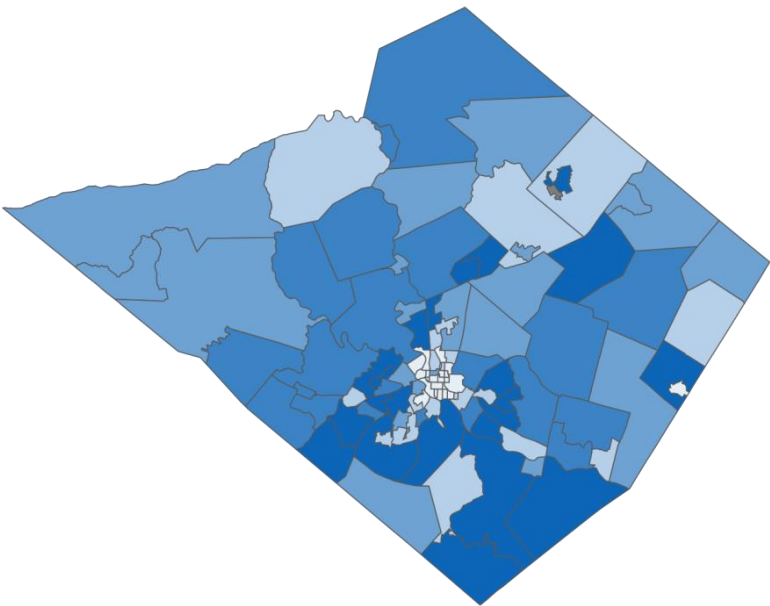


Table 4. Median Values for Lowest and Highest Device Access Through Smartphone Alone Quintile Groupings at Tract Level (2018–2022)

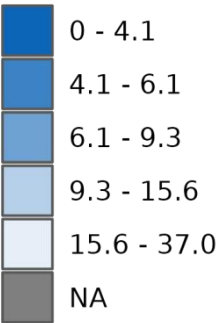
Variables	Lowest Quintile	Highest Quintile
Median household income	\$101,349	\$39,834
65 and above	20.6%	8.3%
19 and below	22.8%	32.9%
White pop.	88.3%	34.5%
Black pop.	1.6%	10.2%
Hispanic or Latino pop.	8.6%	70.7%
Asian pop.	1.5%	0.4%
Speaks English less than “very well”	2.5%	25.4%
Veteran pop.	7.1%	2.9%
Pop. with a designated disability	11.4%	19.5%

Households with Access Through Smartphone Alone vs. Overall Device Access in Berks County (2018–2022)

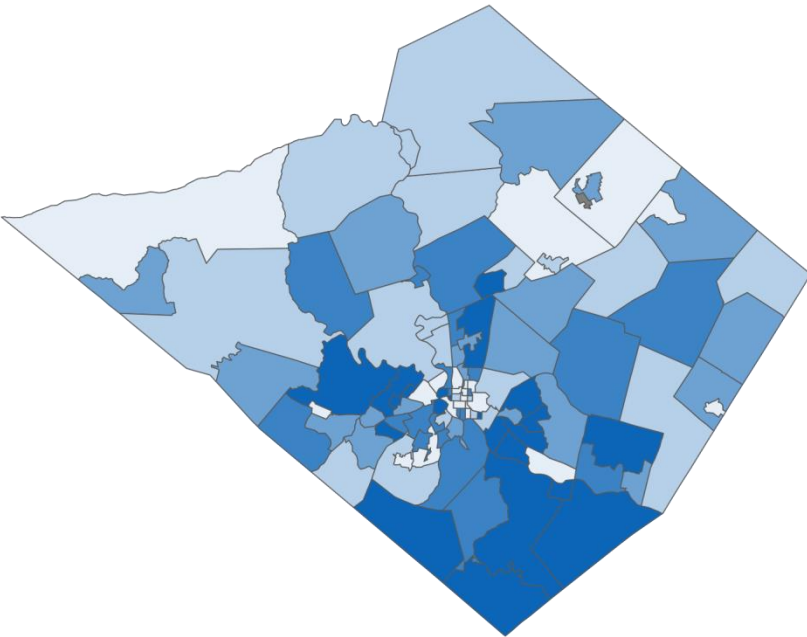
Smartphone Alone %



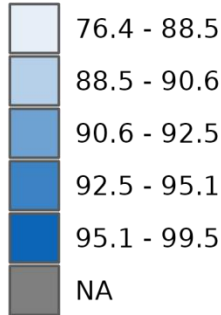
Smartphone Alone %



Device Access %



Device Access %



Schuylkill County

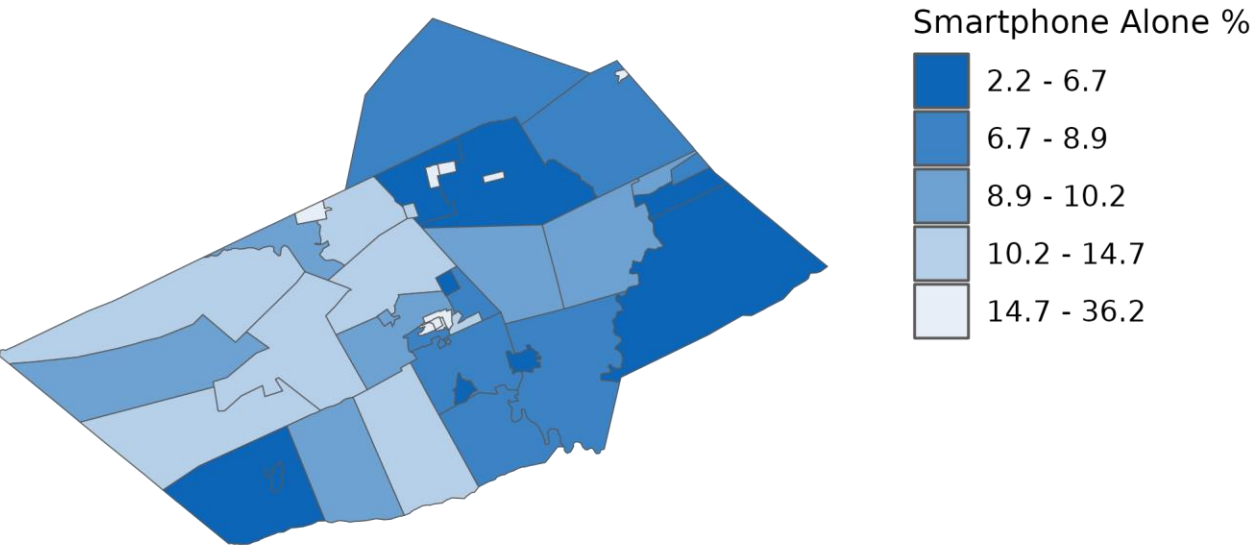
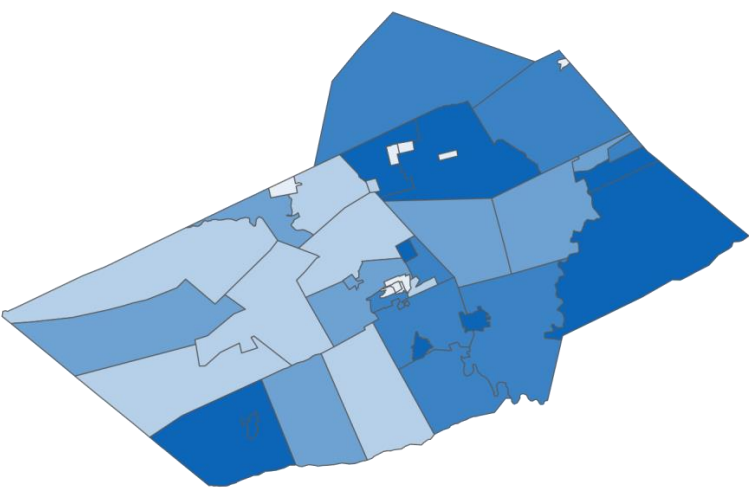


Table 5. Median Values for Lowest and Highest Device Access Through Smartphone Alone Quintile Groupings at Tract Level (2018–2022)

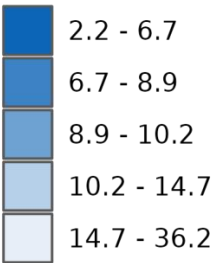
Variables	Lowest Quintile	Highest Quintile
Median household income	\$63,551	\$43,538
65 and above	22.1%	15.0%
19 and below	19.1%	26.9%
White pop.	92.9%	89.1%
Black pop.	0.2%	1.6%
Hispanic or Latino pop.	2.6%	10.3%
Asian pop.	0.3%	0.0%
Speaks English less than “very well”	0.2%	1.4%
Veteran pop.	7.4%	6.0%
Pop. with a designated disability	17.2%	17.7%

Households with Access Through Smartphone Alone vs. Overall Device Access in Schuylkill County (2018–2022)

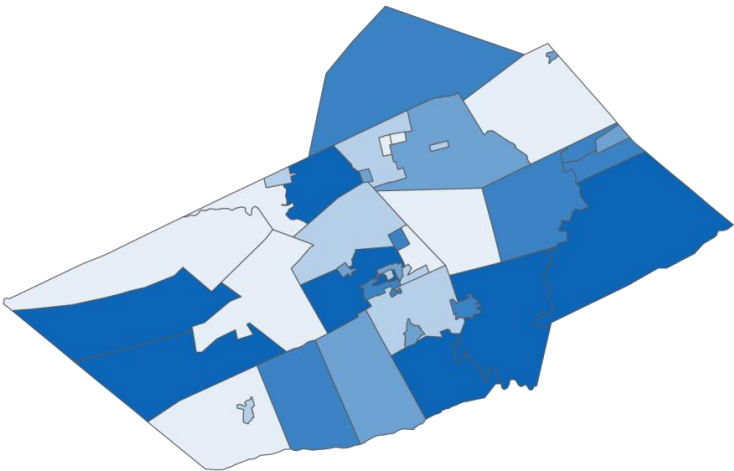
Smartphone Alone %



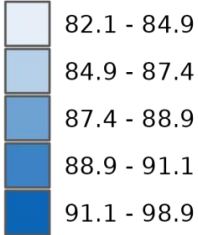
Smartphone Alone %



Device Access %



Device Access %



Summary of Findings

- At the state level, counties with lower rates of device access tended to be less populous and have lower median household incomes than counties with higher rates. They also had higher percentages of White residents.
- In Berks County, tracts with lower rates of device access tended to have greater percentages of people of color, higher rates of disability, and lower median household incomes. In Schuylkill County, there are not substantial differences in the socioeconomic or demographic characteristics between tracts with high and low rates of device access.
- There are both urban and rural counties in Pennsylvania that have high rates of device access through a smartphone alone.

Thank you.

Theresa Dunne
Community Development Research Analyst
theresa.dunne@phil.frb.org

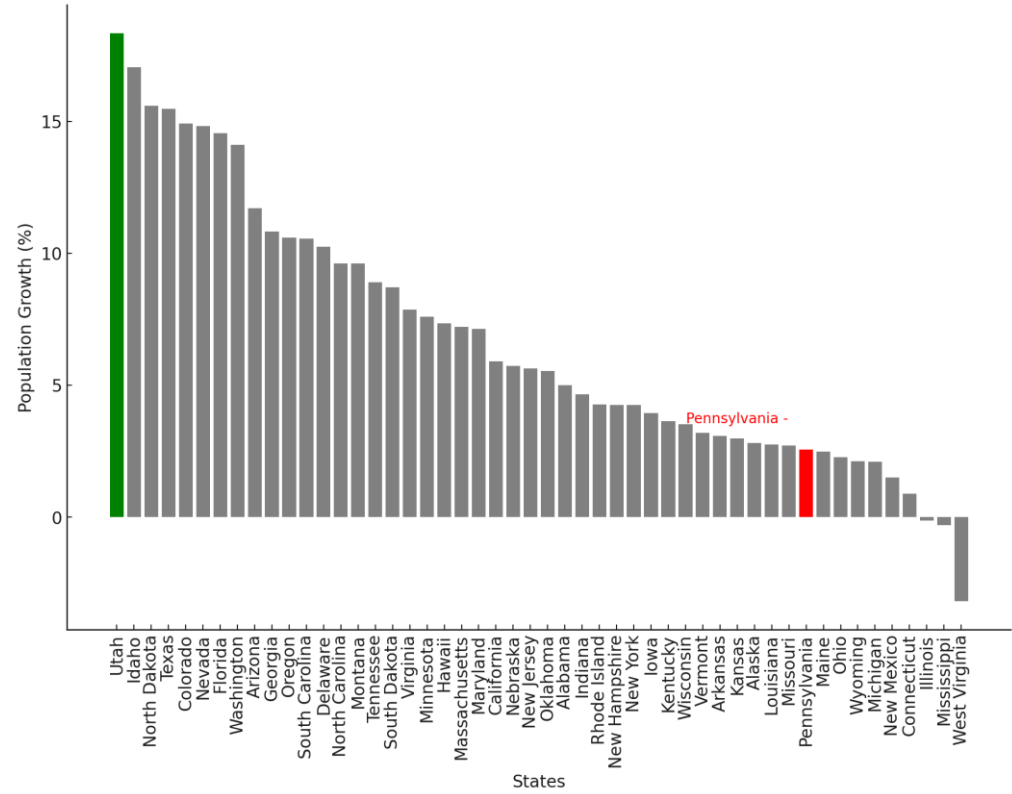
Aadil Ginwala
Senior Policy Advisor
University of Pittsburgh

Affordable High-Speed Internet Is Critical for PA Growth and Prosperity

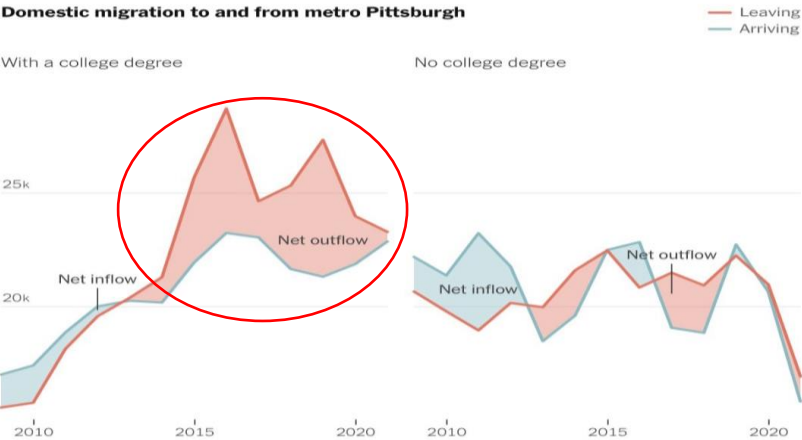
Considerations in advance of historic BEAD funding

Demographics Is Destiny: States that grow their working age and highly-skilled populations will thrive

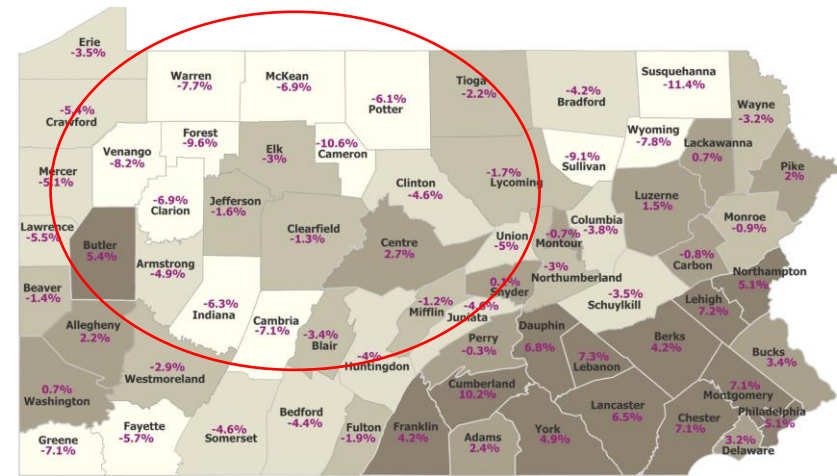
Population Growth by State (2010-2020) as a Percentage
Source: US Census



Domestic migration to and from metro Pittsburgh

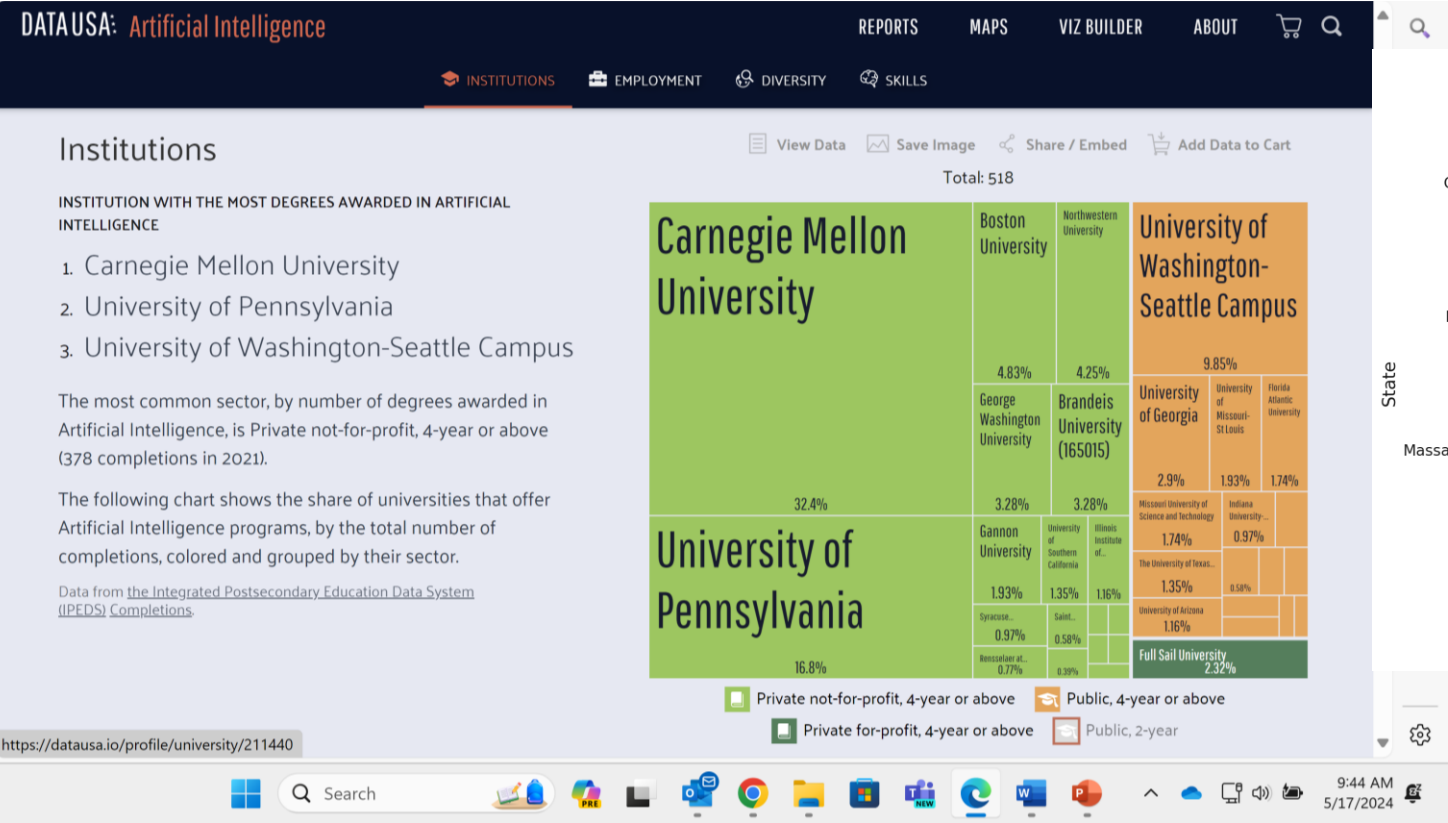


Figures show domestic migration for Americans ages 21 to 64, using two-year rolling averages for large metros of one million population or more and five-year rolling averages for all smaller places.
Source: Upshot analysis of one-year American Community Survey microdata from [johms.org](https://www.johms.org).

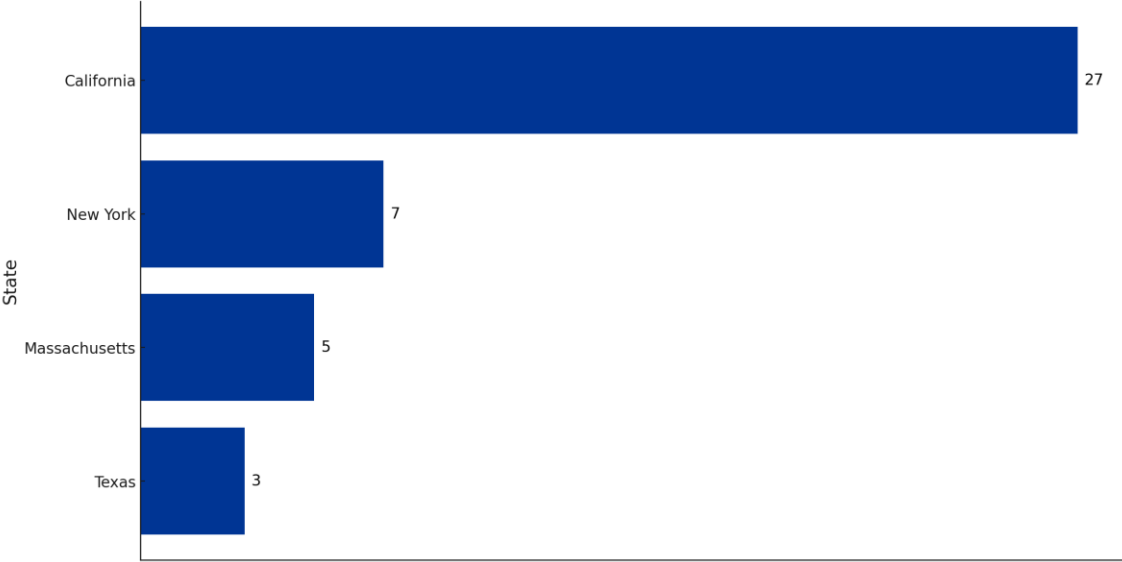


Demographics Is Destiny:

The economies of the future will depend on where those who can build them want to be

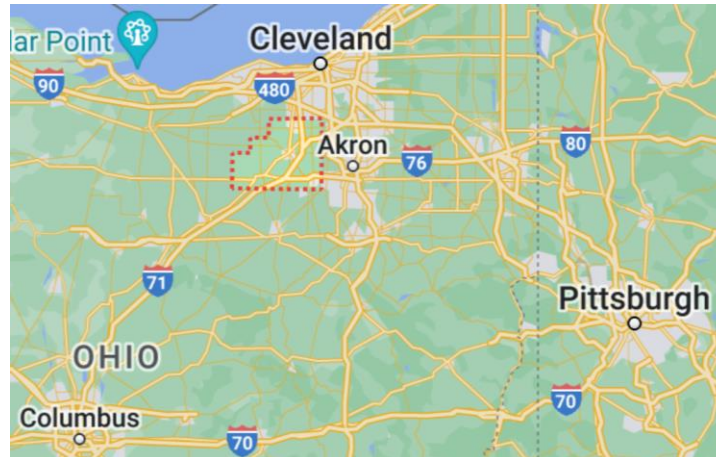


Top 50 AI Startups by US State
Source: Fortune, Nasdaq, Datamation



Affordable High-Speed Internet Is Fundamental for Economic Growth

- The Univ of Tennessee did a study that looked at **Chattanooga's municipal fiber network** that found it reaped the city **\$2.7 billion ROI in its first 10 years** of operation. **Roughly 40% of all jobs created** in Hamilton County in that time period **attributable to the fiber infrastructure**.
- **Medina County Ohio measured \$1.06B in economic development due to broadband**
- Census studies show that **rural counties with affordable high-speed internet lost significantly fewer residents** than those without it over the last decade ... **pre-pandemic**

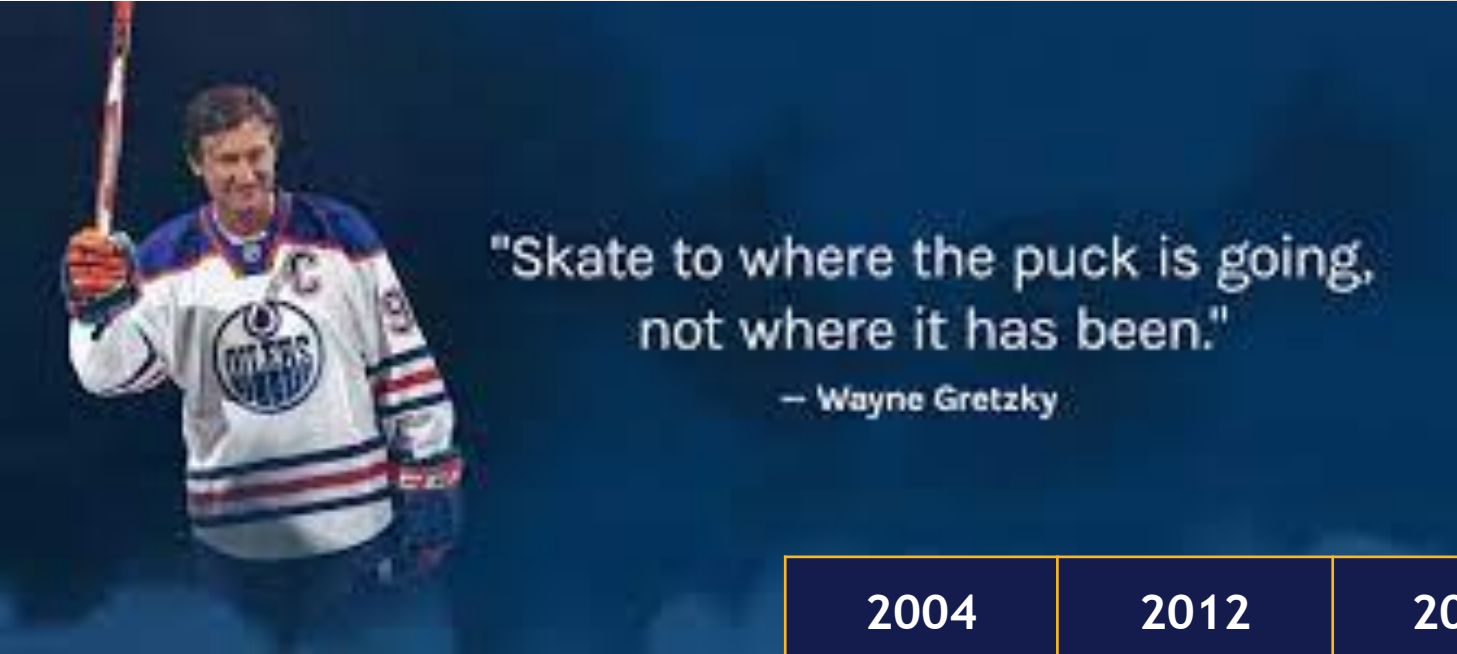


Will Pennsylvania be left behind?



- **Ammon, ID** has **1 GBPS** for **\$15 per month** from two different providers
- In **Oakland, CA** today Sonic offers **\$50 10 GBPS with first month free**
- April 2023, Zply Fiber launched **10 GPBS service across Washington, Idaho, Oregon, Montana**
- **ACE Fiber Co-op** is 10 Gig capable in **rural NE Mississippi**
- In July 2023, Altice launched **8 GBPS service across 1.7 million homes in NY State**
- **Dublin, Ohio** announced **10 GBPS to every residence** being built by AltaFiber in June 2023
- **Google Fiber** announced **20 GBPS** in Kansas City, North Carolina, Arizona, and Iowa

Will Pennsylvania be left behind?



2004	2012	2015	2020	2021	2025
Act 183	CAF I	CAF II	RDOF	BEAD	FCC?
1.5 MBPS	4 MBPS	10 MBPS	25 MBPS	100 MBPS	1,000 MBPS

Why “Better” and “Good Enough” Aren’t Good Enough for Rural PA in Broadband

We don’t accept less electricity in Rural PA



Why should Rural internet be 6x slower than the Space Station?



The Space Station is Getting Gigabit Internet

Aboard the *International Space Station* (ISS), astronauts and cosmonauts from many countries will live and work in space. For more than 20 years, the ISS has supported a wide range of microgravity, biology, agriculture, and communications experiments. This includes the use of the station's high-speed internet, which transmits information at a rate of 600 megabits per second (Mbps) – ten times faster than most rural broadband connections.

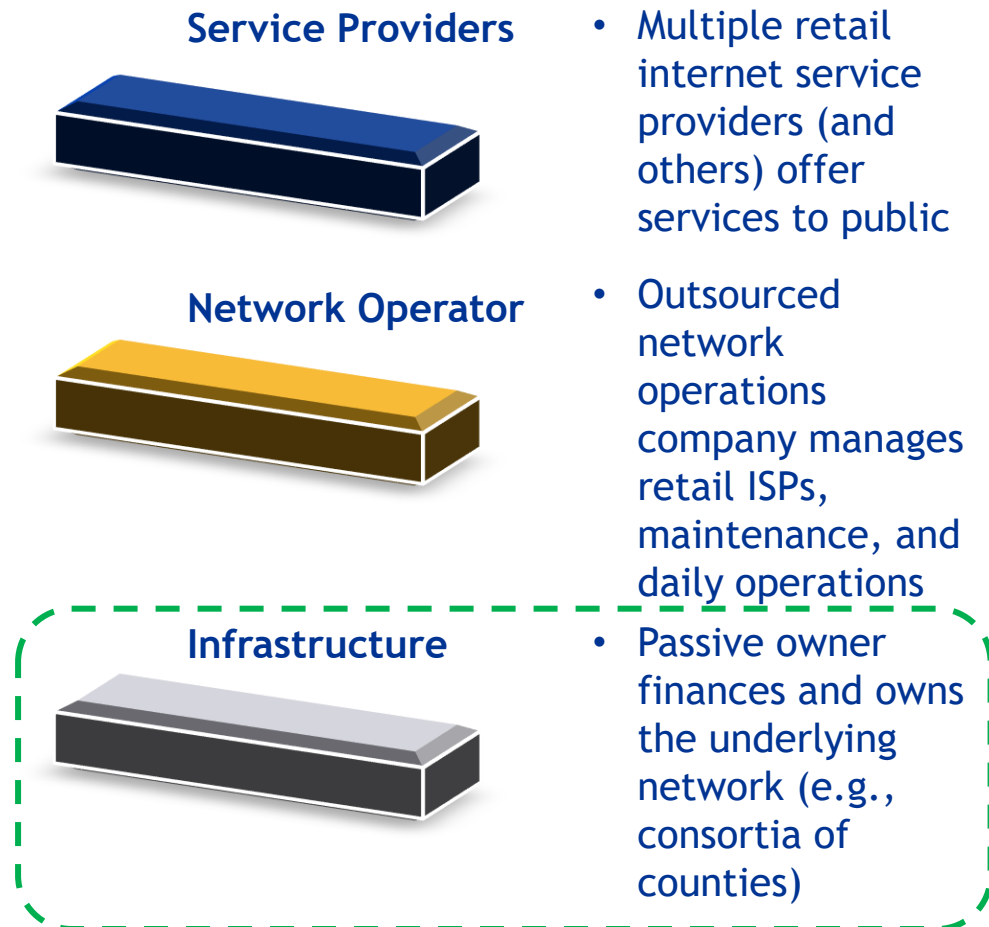
What will people even do with 10 or 20 GBPS?



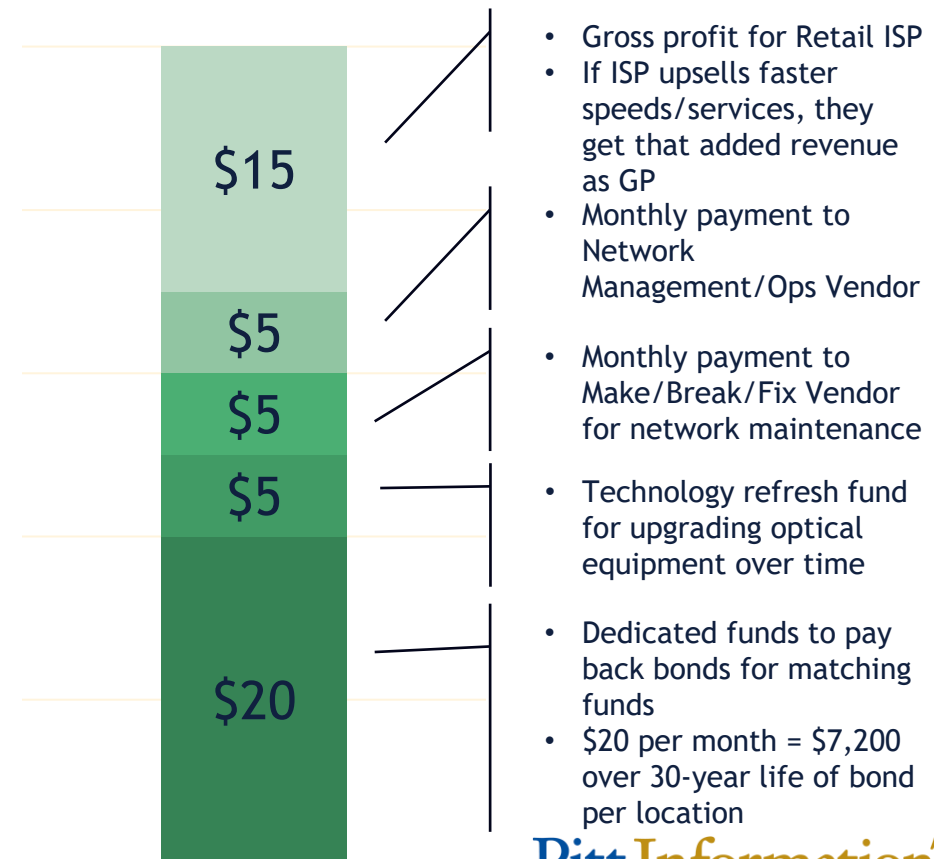
How Can Rural PA Get the Best Speeds and Prices? Shared Internet Infrastructure Is Like Shared County Roads



Shared Open Access Infrastructure can create the competition and economies of scale to allow Rural PA to have the fastest, most affordable internet in America



Customer pays Retail ISP \$50 per month for 1 Gigabit per second symmetric service



Open Access Networks are active and thriving all across America



18 Retail ISPs offering service to rural Utah

<https://www.utopiafiber.com/>



61 last mile providers on NoaNet's 2,000 mile network

[NoaNet FAQ](#)



5 Retail ISPs offering service to Ammon, Idaho (\$15 1 GB plan)

<https://ammonfiber.com/>



Four Retail ISP partners for new Montana Network

[Yellowstone Fiber](#)



Open access network planned across 40 rural California counties



Brand new network with 2 ISPs ([Fybercom](#) and [FiberSpark](#))

Since 2004, UTOPIA has been serving rural Utah with speed, affordability, and CHOICE, with over 18 active retail internet service providers today



UTOPIA FIBER RESIDENTIAL BUSINESS CITIES NEWS CONTACT SIGN U

May 8th, 2024

UTOPIA FIBER ADDS THREE NEW RESIDENTIAL INTERNET SERVICE PROVIDERS TO ITS OPEN ACCESS NETWORK

[READ MORE ABOUT IT](#)

Now Offering Utah Communities a Choice of 18 ISPs: New Pricing Includes 10 Gbps Symmetrical for as Low as \$149 and a New 2.5 Gbps Option

WiFi Pros

FUSION Networks

ETS TELCO

- 18 Active Retail ISP choices for all the residents in rural Utah
- Over 62,000 subscribers
- 2.7 million feet of fiber optic cable
- Over 20 communities across hundreds of square miles in rural Utah
- Active since 2004

What can Pennsylvania do to seize this moment?

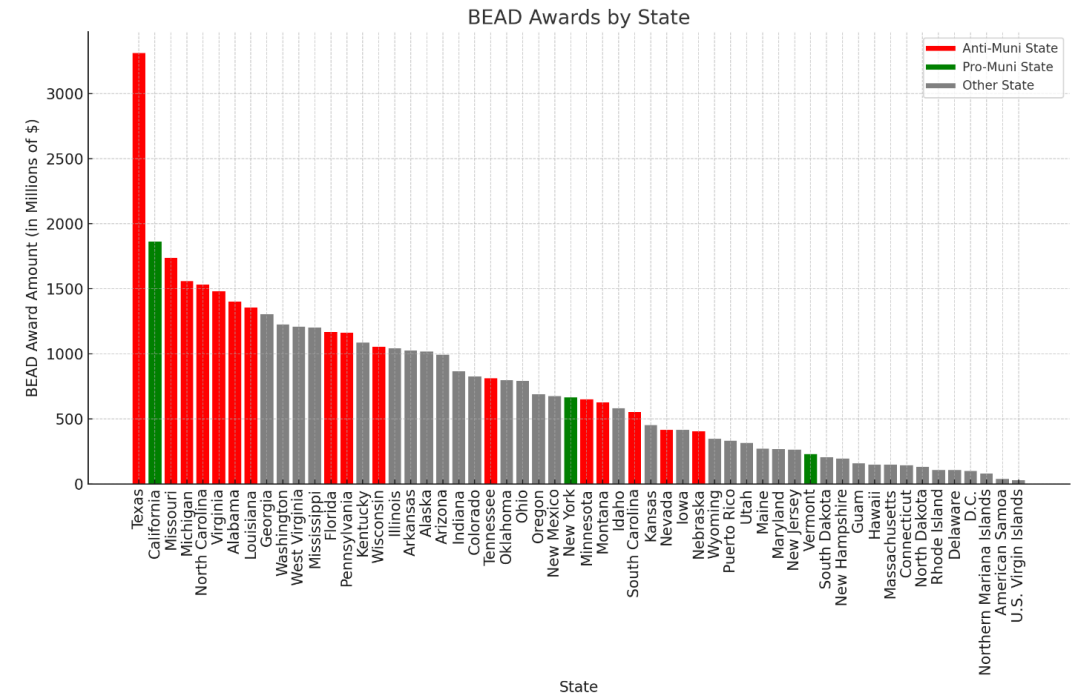
BEAD Rules and Encouraging Affordability and Speed Focused Applications

Removing Barriers to Broadband Competition, like Act 183

Aggressively Addressing the Challenges of Poles and Pole Attachments

Ensuring We Have the Workforce

- The PBDA-proposed Volume 2 had some very good elements prioritizing Affordability and giving points for Open Access Applications — we must ensure the process truly rewards both and that public-private partnership applications are encouraged
- Pennsylvania is amongst the minority of states with regulatory red tape that stifles public-private partnerships and competition in broadband — and the evidence shows those laws are holding us back
- Make-ready plus pole attachment fees can sometimes end up costing over \$18,000 per pole over the 30-year life of a project — but a new pole from a CLEC can cost as little as \$500–700.
- We need enough Pennsylvanians from these communities to be trained and skilled in deploying fiber so these projects get off the ground right away and the jobs benefit our communities



Thank You

If you are interested in further discussions, **please reach out to us:**



Aadil Ginwala –
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Commissioner, SPC
Former Chief of Staff, NTIA
ginwala@pitt.edu
617-519-8681 (cell)



Chris Field –
Digital Equity and
Infrastructure Specialist
chrisfield@pitt.edu

Closing Plenary:

What Are Other States Up To? Best Practices for Rural Workforce Challenges



Natalie Roper

Director of Federal Access Center
Just Transition Fund



About the Just Transition Fund

We created the Just Transition Fund, a national philanthropic hybrid, to help communities overcome the economic challenges brought about by the decline of the coal industry.

Leaders in the Just Transition Field

- Worked on the ground with coal communities for almost 10 years
- Long track record of helping coal communities access federal funding
- Advocated for the historic federal funding levels we're seeing today, via our National Economic Transition Initiative

What We Do

Access

- **Federal Access Center:** Grants and technical assistance to help communities access federal funds

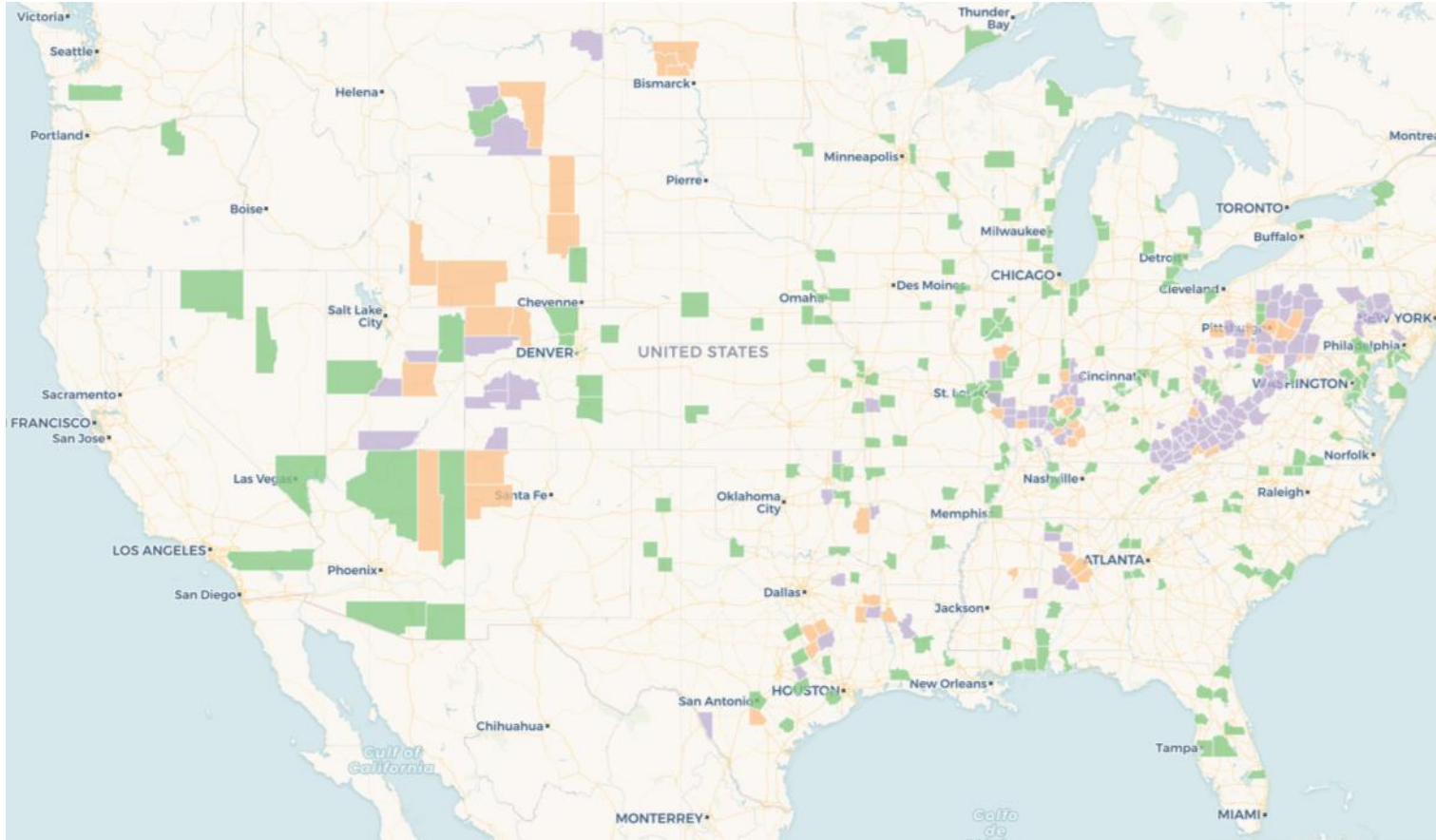
Advocate

- National Economic Transition Initiative
- State and federal policy grantmaking

Convene

- Annual convenings and peer-to-peer learning exchanges

Where We Work



- Rural communities across the country impacted by the decline of the coal industry.
- 372 counties—more than 10 percent of the country—are home to a coal mine, plant, or both.
- We prioritize communities that are hardest hit — places with the most economic distress and that are home to the most marginalized populations.

Framework for Economic Transition

The most sustainable economic development projects build from the assets of a place and are created by local leaders. Communities need the right mix of economic development strategies, workforce programs, and infrastructure investments — which collectively build local capacity to catalyze change. We support:



**Community
Economic
Development**



**Workforce
Development**



**Infrastructure
(Broadband)**

Economic diversification initiatives across a range of sectors, including but not limited to clean energy, sustainable agriculture, remote work, outdoor tourism, manufacturing, and mine land and plant reclamation.

Workforce development programs providing targeted “wraparound” services (such as pay, education, childcare, counseling, etc.) ensure trainees have what they need and can link to in-demand, high-quality jobs.

Broadband infrastructure and affordability initiatives. Broadband access is linked to increased job and population growth, higher rates of new business formation, and lower unemployment.

Federal Access Center

Our **one-stop resource hub** provides grants and technical assistance to help coal communities secure federal funding for **economic development**, **workforce development**, and **broadband** projects.

Application-Ready Support



Grants of up to \$100,000 to support costs associated with developing federal applications, including grant writers and match.



Technical assistance from experts who can review proposals before submission, provide guidance on program requirements, and more.

Early-Stage Support



Coal Communities, Get Ready!

Challenge is closed for this year, but stay tuned for future opportunities!



We will develop **future Early-Stage programming** based on the needs we are hearing from communities. If you need support with accessing federal funds, reach out!

Informing and Coordinating with Federal Agencies



Share lessons learned back with agencies about barriers for communities applying for federal funds.



Work with IWG and their Rapid Response Teams where there is geographic alignment.

Effective Workforce Elements in Transitioning Communities

What we've seen nationally from our nearly decade of grantmaking is that workforce initiatives are successful when they include two key elements:

Training for in-demand jobs with private partners engaged, at the table, and ready to hire

Holistic, wraparound support services so that people can complete training

Key Partners



CASE STUDY: Employer Partnerships

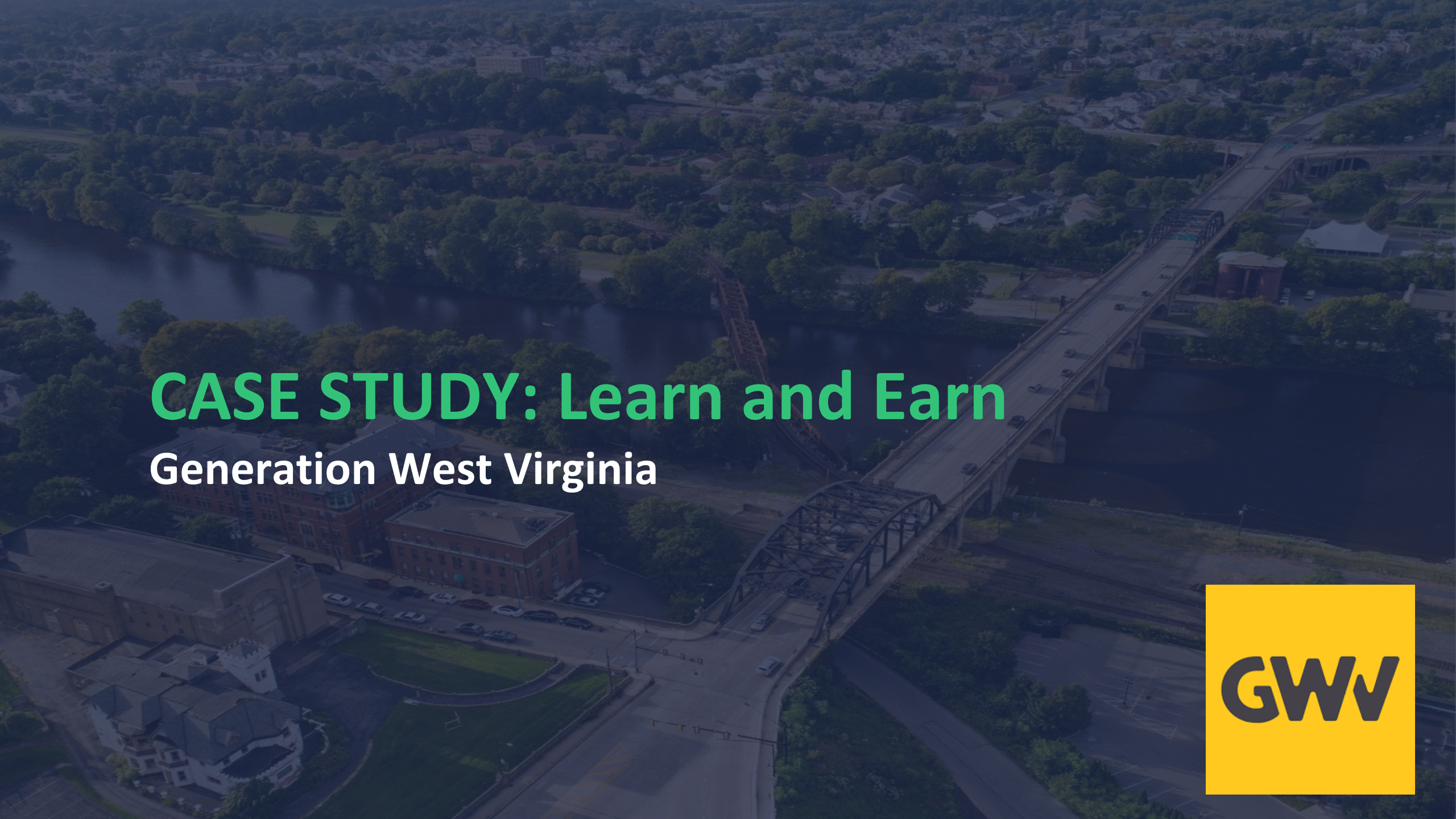
Southern Ohio Diversification Initiative + Steelworkers Local
689



CASE STUDY: Wrap-Around Services

Survivor Advocacy Outreach Program



An aerial photograph of a city scene featuring a river with several bridges. In the foreground, there are large brick buildings and a parking lot. A bridge with a truss structure crosses the river, followed by a larger concrete bridge. The background shows a dense residential area with many houses and trees.

CASE STUDY: Learn and Earn

Generation West Virginia

GWW

Opportunities for Broadband Workforce

Workforce funding available now to support pilot projects in advance of BEAD and DEA funding:

- **DOL WORC (Due June 20th)** – Up to \$1.5M per project and no match requirement
- **DOL Building Pathways to Infrastructure Jobs (Due July 1st)** – Up to \$5M per project
- **ARC ARISE (Rolling)** – Up to \$10M per project





Support Available for Communities

1

Grants

- Up to \$100,000 to fund federal application development costs (grant writing, staff time)
- Up to \$150,000 to fund organizational and project development costs to get ready to apply to federal funds in the future (staff capacity, pilot project funding)

2

Technical Assistance

- Pro bono support to identify federal grant programs that are a good fit for your program; review grant application drafts; assist in project, organizational development

3

Grants + Technical Assistance

- A combination of the above based on your needs!

Our Process

Eligibility

- ❑ 501c3 nonprofits, local and Tribal governments, Tribal organizations, any of these entities who are building a public-private partnership
- ❑ Located in coal-impacted community
- ❑ Economic development, workforce, or broadband infrastructure project
- ❑ Plan to apply for federal funds

Process

Rolling basis, with a 2–3 week turnaround time for the entire process.

1

Submit Inquiry

Fill out 1 minute form with basic project and organizational information.

2

Eligibility Check

If needed, we'll schedule a brief call to learn more and help determine eligibility to apply for specific JTF services.

3

Submit Application

If eligible to apply for Application-Ready support, we'll send a 1 page application for a grant, technical assistance, or both. If eligible for Early Stage support, we'll be in touch with future opportunities.

4

Decision

We'll provide feedback within a few weeks of receiving application.

Contact Information

Natalie Roper

Just Transition Fund

nroper@justtransitionfund.org



Christine Hallquist

Executive Director

Vermont Community Broadband Board



Vermont Community Broadband Board presentation to Rural Economic Development Summit

Apprenticeship Program

Christine Hallquist – Executive Director

May 21, 2024

The VCBB was created to coordinate, facilitate, support, and accelerate the development and implementation of universal community broadband solutions.



The Workforce Development Plan

- Team formed in fall of 2022 includes
 - Communication Workers of America
 - International Brotherhood of Electrical Workers
 - Representatives from Communication Union Districts
 - Representatives from Key Employers
 - Vermont Department of Labor
 - Vermont Universities
 - Vermont Works for Women
- Great Plan
 - Pay it forward, apprenticeships, certified fiber optic technician training (144 hours), strong employer interest, career paths
 - \$531k grant from the legislature to Vermont Technical College

Sample Career Paths



The Challenges

- Budget shortfalls in the University system. Staff shortages at Vermont Department of Labor. No one to pick up the grant.
- VCBB took on the grant at the last minute
- Implemented classroom training following traditional model
- Only 3 people showed (cost to carry out 144 hours of classroom training is about \$30k). Canceled the program
- Moving to 2,000 hr. apprenticeship model with embedded certifications
- Need 200 trained technicians – 1 succeeds for every 3 trained
- Will never get there 2 or 3 at a time!
- Need to radically rethink the model – labor shortages cross all sectors – Vermont unemployment is at 1.9%

Questions?



[Learn More](#)

[Contact Us](#)

[Register](#)

Thank You!