

**Pennsylvania Broadband Development Authority**  
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**Pennsylvania Broadband Development Authority**

**November 10, 2022**

**9:00 AM**

Virtual Meeting Only

Dial-In: +1 267-332-8737

Phone Conference ID: 982 992 138#

- I. Call to Order
- II. Approval of October 18, 2022, Meeting Minutes
- III. Approval of Contract with Penn State for the Broadband Availability, Access, Equity, & Utilization Proposal
- IV. Public Comment
- V. Adjournment

*\*This meeting will be recorded, and your participation is your consent to being recorded.*

Board Meeting Minutes  
Special Meeting  
October 18, 2022  
In-Person: Desert Room, Keystone Building Meeting Center  
Microsoft Teams Meeting

Board members and voting designees in attendance:

- Representative Pam Snyder, Chair
- Dr. Kyle Kopko, Center for Rural Pennsylvania
- Chairwoman Gladys Brown-Dutrieuille
- Senator Kristin Phillips-Hill, Secretary
- Senator John Kane
- Phil Kirchner, on behalf of Representative Carl Walker Metzgar
- Mark Critz, Department of Agriculture, on behalf of Secretary Russell Redding
- Dr. David Volkman, Department of Education, on behalf of Acting Secretary Eric Hagarty
- Matt Bembenick, Department of General Services, on behalf of Acting Secretary Joe Lee
- Zach Reber, Office of the Budget, on behalf of Secretary Ben Lukens
- Secretary Neil Weaver, Department of Community and Economic Development

Designees in attendance:

- Chloe Mandara, Senator Kristin Phillips-Hill's Office
- Joe Witmer, Public Utility Commission
- David Screven, Public Utility Commission

Department of Community and Economic Development (DCED) staff in attendance:

- Brandon Carson
- Erin Wachter
- Kalie Snyder
- Lori A. Butler
- Leigh Walter
- Terri Wills
- Paul Opiyo
- Lori Irwin
- Rob Teplitz
- Pam Frontino
- Penny Ickes
- Britte Earp

Guests in attendance:

- Nate Regotti, Comcast
- Pablo Adam
- Nate Regatti, Comcast
- Jim Skjeveland, Rolka Loube
- Nicholas Bibby, Duquesne light
- Kristin Ritchey, Comcast

- Dane Higby, Delta One
- Pedro Romero, Verizon Wireless
- Jennifer McClellan, Verizon
- Jennifer Halaszynski, Comcast
- David Kerr, AT&T
- Kimberly Sokoloski, Buchanan, Ingersoll & Rooney
- Barrett Sheridan Office of Consumer Advocate

#### **I. Call to Order**

Chairwoman Snyder called the meeting to order at 9:00 AM. Kalie Snyder conducted a roll call of the board members and confirmed quorum.

#### **II. Approval of September 15<sup>th</sup> Meeting Minutes**

Chairwoman Snyder called for a motion to approve the minutes as presented to the board. Brandon Carson commented that Counselor Rob Teplitz was not included in the attendance for the meeting, so the minutes will be updated. Chairwoman Snyder made a motion to amend and approve the minutes as presented to the Board. Motion made by Senator Phillips-Hill. Motion was seconded by Senator Kane. Chairwoman Snyder asked for all Board members to approve or deny the motion. Motion passed unanimously.

#### **III. Penn State Extension Presentation Broadband Availability, Access, Equity and Utilization Proposal**

Brandon Carson provided an introduction of the Penn State Extension team and the purpose for securing their assistance in our mapping efforts.

Jim Ladlee and Harry Crissy of Penn State Extension provided introductions and an overview of the proposal. Jim presented and explained the four categories outlined within the proposal, 1) Broadband Availability, Access, Equity, & Utilization 2) Prioritized Projects 3) Project Timeline 4) Budget Estimation. Harry Crissy provided a broad overview of their data collection process and how it's configured into different data sets that fit strategically into the map.

Chairwoman Snyder thanked and welcomed Penn State's involvement, addressing their work to date and how important their role will be in our success in securing the maximum amount of federal dollars.

Brandon Carson added that the Authority has requested the Fabric data from CostQuest, Rob Teplitz and Lori Irwin are working on how we can share this information with our counties. He also noted that Penn State Extension will be presenting to the joint sub-committee meeting taking place the following day.

Brandon Carson also touched on the timeline in the proposal aligns nicely with when we're required to submit our 5-Year Action Plan for funding. He closed by recognizing that this data will not be proprietary and will be publicly available.

Senator John Kane remarked on the proposed Broadband Vision & Objectives section of the proposal regarding the utilization of transdisciplinary public/private project teams. The Senator

asked for further details regarding what those teams are, why are they important, and can you provide examples of what the teams will look like. Jim and Harry responded by acknowledging the need to avoid silos and to engage several entities that have experience and understanding in areas they do not. They also explained that transdisciplinary can include internal Extension folks who can bring a plethora of information to support the mapping work. Chairwoman Snyder added in that she feels this will enhance the work, many of these entities have their own efforts in place that can help to avoid duplicating work already complete.

Chairwoman Brown-Dutrieuille remarked the Public Utility Commission partners with the Extension to assist with education. She also recognized the Federal Communications Commission (FCC) acknowledgement of the work Penn State Extension has done to date.

Phil Kirchner, on Behalf of Representative Metzger, requested resumes of all individuals on the Extension team, sub-contractors, as well legal counsel, to which Jim Ladlee agreed. Phil also asked if the Extension is involved in any litigation with the FCC regarding mapping, to which Harry confirmed they only provided presentations. Phil also asked for confirmation that they only do work in PA, to which Harry Crissy replied that the Extension offers free services within the Commonwealth, but Harry has worked on other mapping projects outside of Pennsylvania as a consultant. Phil questioned the recourse for resolving non-performance or compliance breach, to which Lori Irwin stated the contract could be terminated under certain conditions.

Dr. Kyle Kopko asked for confirmation on how this will facilitate the challenge process moving forward. Harry Crissy responded that ISPs would have to share very specific information and when the data is available from CostQuest.

Mark Critz asked how many individuals are on staff to help facilitate the project, to which Jim Ladlee mentioned 6 to 10 depending upon the need. Jim Ladlee thanked Mark for his partnership with Penn State Extension as they began the mapping work.

#### **IV. Approval of Penn State Extension Scope of Work and Cost**

Chairwoman Snyder asked for a motion to approve the Penn State Extension proposal as presented to the Board.

Phil Kirchner requested a motion to table the vote. Chairwoman Snyder asked for clarification on when this would be reconsidered and offered the idea of a special meeting. Phil Kirchner agreed to that, Chairwoman Snyder also agreed to entertain a motion to postpone to a special meeting.

Motion made by Phil Kirchner to postpone vote of the Penn State Extension proposal to a special meeting. Motion seconded by Senator Kristin Philips-Hill, who acknowledged the time constraints and the limited number of entities who operate in this space and cautioned against delaying the process much longer.

Dr. Kopko asked for a timeline of the next special meeting, to which Chairwoman Snyder stated the meeting will be schedule as soon as the requested information is provided from Penn State Extension.

Chairwoman Snyder called for a roll call vote. Kalie Snyder conducted a roll call vote, and the following votes were recorded:

- Mark Critz on behalf of Secretary Redding, No
- Secretary Neil Weaver, No
- Dr. David Volkman on behalf of Acting Secretary Hagarty, No
- Matt Bembenick on behalf of Acting Secretary Joe Lee, No
- Zack Reber on behalf of Acting Secretary Ben Lukens, Yes
- Dr. Kyle Kopko, Yes
- Chairman Brown-Dutrieuille, Yes
- Senator Kristin Phillips-Hill, Yes
- Senator John Kane, Yes
- Chairwoman Pam Snyder, Yes
- Phil Kirchner on behalf of Representative Carl Metzger, Yes

Motion carries.

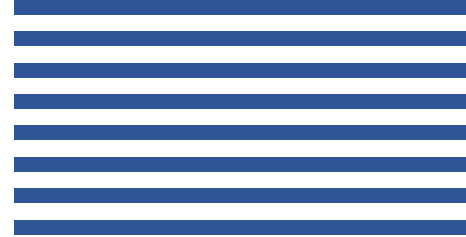
**V. Public Comment**

Kalie Snyder called for public comment, there were none.

**VI. Adjournment**

Chairwoman Snyder asked for a motion to adjourn the meeting. Motion made by Dr. Kopko motioned. Motion seconded by Phil Kirchner. Meeting Adjourned at 10:00 AM.

Respectfully submitted,  
Senator Kristin Phillips-Hill  
Secretary



# BROADBAND AVAILABILITY, ACCESS, EQUITY, & UTILIZATION PROPOSAL

September 28, 2022



## Penn State Extension Engagement

- Pennsylvania received \$368,743,200 in RDOF funding
- 327,000 Pennsylvanians will gain access to high-speed internet
- 66 of 67 counties received funding
- Pennsylvania ranked 7th in the nation for RDOF auction money awarded
- As a trusted community partner
- Offices in all 67 counties
- Uniquely positioned to collaborate with stakeholders on efforts to expand high-speed internet access

## Overview

The Pennsylvania State University College of Agricultural Sciences is pleased to share the following Broadband Availability, Access, Equity, and Utilization Proposal. The broadband initiative seeks to explore mapping and spatial analysis tools relevant to stakeholder needs; inform the FCC challenge process; offer deployment cost estimation tools, and explore options to expand digital literacy and equity.

Penn State Extension has an established track record of pioneering applied research and outreach beyond the university walls that helps residents navigate the issues and opportunities of new technology and connected digital infrastructure. Specifically, the College has focused on technology development, deployment, application, utilization, and economics that support the ability of individuals, organizations, and businesses to enhance their capacity to manage resources more effectively and efficiently.






## Background

Penn State Extension is a modern educational organization dedicated to delivering science-based information to people, businesses, and communities. In support of Extension's public good mission, in March of 2020, the Pennsylvania Public Utility Commission (PA PUC) reached out with an idea to create a map highlighting funding available through the Rural Digital Opportunity Fund (RDOF) by federal, state, and local legislative districts. Chairman Gladys Brown-Dutrieuille tasked her staff to assist with RDOF adoption. General Counsel Joe Witmer contacted Extension with insightful mapping suggestions. Together, an easily accessible online map was created that empowered stakeholders to quickly visualize where local funding was available and to use map tools to drill down to additional community-level data. The new visual representation of broadband data encouraged elected officials, especially county commissioners, to engage potential bidders. The combination of easily accessible and visual information is widely credited with helping the Commonwealth:

- Receive \$368,743,200 in RDOF funding
- Up to 327,000 Pennsylvanians will gain access to high-speed internet over the next ten years
- 66 of 67 counties received funding
- Pennsylvania ranked 7<sup>th</sup> in the nation for RDOF auction money awarded

## Broadband Availability, Access, Equity, & Utilization

Penn State Extension spatial analytic capabilities developed for the FCC RDOF project can now assist Commonwealth, agencies, organizations, communities, and industry with mapping and spatial analysis in the following ways:

- Assisting in any FCC service claim challenges based on mapping data
  - Working with individual counties and economic development districts on identifying priority broadband deployment projects
  - Assisting internet service providers, agencies, and organizations with downloadable mapping data
  - Providing mapping tools to estimate the cost of serving unserved/underserved populations
  - Conducting statewide and individual county broadband needs assessments
  - Incorporating updated data and demographics from trusted secondary data sources
  - Locating unserved or underserved homes and businesses
  - Providing viewshed tools to estimate wireless tower reach
  - Displaying the locations of vertical assets owned by federal, state, and local entities
  - Identifying utility infrastructure locations that can be leveraged for fiber installations
- 





## Prioritized Projects

### 1. Public Broadband Spatial Analysis and Mapping Tools

Utilizing FCC Form 477 data and CostQuest fabric data, Penn State Extension will develop and update state broadband maps. Beyond simple broadband mapping, the FCC provider data will be combined with public data (i.e., census-demographics, BLS-employment/jobs, EPA-environmental justice, general services-emergency management pole, tower, and viewshed data, PDA Ag census, etc.) and with permission, private data (i.e., fiber runs, taps, towers, etc.).

### 2. FCC Challenge Applied Research Process

In collaboration with a scientific steering committee, Penn State Extension will evaluate the accuracy of industry-provided FCC data to inform the Commonwealth challenge process. Spatial and secondary data analysis will verify Form 477 claims and identify potential anomalies. Further, the Penn State Extension network across all 67 counties will be engaged to confirm broadband availability through provider website data and compared to the official Form 477 data to identify additional FCC challenges and funding opportunities.

### 3. Broadband Deployment and Fiber Cost Modeling support

Penn State Extension will work at the county, Local Development Districts, and/or Economic Development Districts level to provide geo-analytics, data analysis, and cost estimating for fiber to the premises to support local data-driven decisions about broadband deployment. As other future-proof broadband deployment technologies are developed, they may be incorporated into future costing models.

### 4. Digital Literacy and Equity

Beyond broadband deployment to underserved areas and communities, Penn State Extension will work to promote digital equity in underserved populations through community, industry, agency, government, and public-private partnerships. Digital equity and utilization applied research and education will focus on developing new digital skills and using them to address/access new opportunities such as jobs, education, health, and quality of life. Examples of Extension digital equity work can be found through national 4-H, which has the Tech Changemakers program in place to empower young people to close the digital divide and provide opportunities for all people in all communities through digital education tools for youth and adults.



## Project Timeline

November 1, 2022 – June 30, 2023

The project timeline depends on the timely release of accurate FCC/NTIA data and funding availability. If unforeseen data or funding delays occur, the Penn State Extension Broadband team respectfully requests the option to implement a one-time no-cost extension to last no longer than October 30, 2023.



## Budget Estimation

• Faculty Researchers, Extension Educators, & Staffing .....	\$375,219
• Programming, Design, Integration, & Development .....	\$333,964
• Materials & Equipment .....	\$55,600
• Travel & Project Support	\$57,500
<hr/>	
Total .....	\$822,283

Note: The budget is designed to begin new project development, education, and applied research. As such, project funding will be prioritized based on actual cost, sustainability, and the potential to help stakeholders positively manage broadband deployment options.

## Broadband Vision & Objectives

In keeping with the unique land-grant mission, the value of engaged knowledge work, and the desire to foster positive innovation, the broadband initiative will focus on:

- Providing publicly accessible and open-source data mapping and analysis tools where stakeholders can visually identify unserved broadband areas
- Making transparent current FCC broadband data, demographics, and infrastructure data to inform the challenge processes for the residents of the Commonwealth
- Empowering local officials, economic development professionals, and communities to reasonably estimate deployment costs of fiber to the premises (home or business)
- Enhancing broadband accessibility, equity, adoption, utilization, security, and policy conversations through the implementation of transdisciplinary public-private project teams and transparent data analysis
- Exploring broadband infrastructure relevant to stakeholder needs to support data-driven decision-making for health, education, business efficiency, sustainability, growth, competitiveness, and profitability
- Utilizing broadband technology to empower individuals, businesses, and communities across the Commonwealth with options that enhance their capacity to access and manage resources more effectively and efficiently
- Continuing to be a trusted educational institution as a neutral source of quality information that supports data-driven decisions





## Extension Qualifications Overview

Penn State Extension maintains active offices in all 67 counties throughout the Commonwealth. As a result, Extension personnel can quickly connect new broadband ideas, information, and opportunities to stakeholder needs through applied research and education. The direct relationship with local citizens and county commissioners informed Extension's broadband effort by building awareness about the need for accurate broadband mapping, potential funding available, and deployment implications for Pennsylvania. The network of connections to residents is unique to the Penn State land-grant mission and truly makes Penn State Extension exceptionally qualified to help residents across the entire state with the most challenging issues and opportunities.

As mentioned previously, Penn State Extension, in partnership with the PA Public Utility Commission, was instrumental in helping to bring more than \$368 million in broadband infrastructure funding to 66 of Pennsylvania's 67 counties (7th most in the US). Additionally, the broadband team developed a costing model to help local governments, counties, schools, and nonprofits identify the areas with the largest underserved populations with the lowest broadband availability. In a recent interview, FCC Commissioner nominee Gigi Sohn referred to the Penn State Extension map as "the Gold Standard" in state mapping.

Concerning agriculture, farmers will require broadband access to support emerging technologies such as augmented reality, artificial intelligence, robotic milking, autonomous vehicles, and blockchain-based supply-chain tracking. Farms and food-based businesses across the state without access to high-speed internet will be at a considerable economic disadvantage and unlikely to maintain their efforts to enhance efficiency, sustainability, growth, competitiveness, and profitability. Moving beyond the food system, residents without broadband access will lack the ability to utilize telemedicine, education, entertainment, and discover employment opportunities benefitting those in connected areas.

As an illustration of urgency, over the next 12-24 months, tech companies expect to release 20+ new augmented reality devices. When integrated with other technologies like blockchain for security or connected information infrastructure for data-driven decisions, the emerging technologies may be a competitive tool for all-size farm operations and businesses. However, Pennsylvania will lose a competitive edge to other states without deploying a future-proofed broadband infrastructure with the capacity to support emerging technologies in areas with the most need.

Further, over the last 24 months, Penn State Extension partnered with the Smeal College of Business Supply Chain and Information Systems Department to work on a blockchain feasibility survey and pilot farm project. Business blockchain is an emerging technology that may connect producers to consumers, offer real track & traceability, expand verification of carbon markets, enhance inventory management, speed transaction efficiency, and offer immutable security options for businesses. However, PA businesses will not be able to leverage the potential competitive advantages of business blockchain without robust and connected broadband infrastructure.

The combination of Penn State Extension's broadband partnership success, current blockchain project(s), awareness building about emerging technologies, and many other successes place the entire College in a position to be at the forefront of broadband development. The College actively seeks projects that will bring transdisciplinary approaches to bear on emerging technology and broadband infrastructure while leveraging the incredible power of the unique land grant teaching, research, and extension (outreach) mission.



## For more information, please contact:

James Ladlee  
Penn State Extension  
State Program Leader  
Energy, Business, and Community Vitality

Harry Crissty  
Penn State Extension  
Extension Educator  
Geospatial Intelligence Analyst

Tom Beresnyak  
Penn State Extension  
Client Relations Manager

### Version:

July 7, 2022 – Original proposal

September 12, 2022 – Timeline Update

September 28, 2022 – Timeline and Broadband Availability, Access, Equity, & Utilization Section

The University is committed to equal access to programs, facilities, admission, and employment for all persons. It is the policy of the University to maintain an environment free of harassment and free of discrimination against any person because of age, race, color, ancestry, national origin, religion, creed, service in the uniformed services (as defined in state and federal law), veteran status, sex, sexual orientation, marital or family status, pregnancy, pregnancy-related conditions, physical or mental disability, gender, perceived gender, gender identity, genetic information or political ideas. Discriminatory conduct and harassment, as well as sexual misconduct and relationship violence, violates the dignity of individuals, impedes the realization of the University's educational mission, and will not be tolerated. Direct all inquiries regarding the nondiscrimination policy to the Affirmative Action Office, The Pennsylvania State University, 328 Boucke Building, University Park, PA 16802-5901, Email: [aao@psu.edu](mailto:aao@psu.edu), Tel 814-863-0471.



## Penn State Extension Engagement

- 31.2M website pageviews
- ~ 10 million users
- 439,000+ program registrants
- 190,000+ email subscribers
- 481,939 publications distributed



**PennState Extension**