



BRIDGING THE DIGITAL DIVIDE

Strengthening the Broadband Workforce: A Policy Toolkit

ExcelinEd Policy Toolkit - 2022

PURPOSE

With the infusion of \$45 billion in federal funds through the Broadband Equity, Access, and Deployment Act and Digital Equity Act over the next five years, states are entering a time of opportunity for closing the digital divide for families. However, there is also an urgent need to strengthen their broadband workforce. Without a prepared workforce, states will be unable to effectively leverage available federal funds or maintain their systems over time. In addition, broadband career pathways offer citizens with varying levels of training and experience opportunities for higher-paying jobs that are in high demand.

This toolkit provides state policymakers with key steps to strengthen their broadband workforce as well as resources to support those efforts. To support these steps, states can also seek out and build on the expertise of industry partners and develop or enhance collaborations between the public, private, and educational sectors. The key steps are:

1. Identify State-Specific Needs
2. Leverage Industry Expertise to Build or Improve Education and Training Programs
3. Provide Training and Support for Educators
4. Coordinate Federal and State Funding Streams
5. Raise Awareness for Broadband Careers

While there is a pressing need for a stronger broadband workforce, this work will be most effective when undertaken as part of a state's overall education to workforce pathways policies and not as a separate, standalone program. This toolkit includes comprehensive model pathways policies with specific callouts for strengthening broadband careers as a priority sector. By working through the steps of this toolkit, state leaders can develop a prepared, skilled broadband workforce and strengthen their overarching pathways policies in the process.

1. Identify State-Specific Needs

States have been leading the way in broadband expansion prior to recent federal investments. It is therefore important that all policies related to strengthening the broadband workforce be aligned with a state's overall broadband strategy, whether that is fiber, 5G, satellite, or a combination of methods. Coordination across state agencies, industry and education partners can ensure a cohesive approach that meets overall and region-specific needs.

To develop an accurate understanding of the scope of workforce demands, states can conduct a **return on investment (ROI) analysis** to identify broadband-related educational and training programs. A high-quality ROI Analysis allows a state to:

- Determine the alignment of career and technical education (CTE) offerings with employer demand.
- Evaluate student participation and outcomes associated with each CTE program.
- Understand how well the state's CTE offerings are delivering on federal, state, and local investments.
- Develop strategies and recommendations to improve the alignment and quality of CTE programs to increase access and successful outcomes for all students.

Recommendations:

- Adopt or enhance a policy on State Cross-Agency Shared Priorities to ensure coordination between state K-12 and higher education agencies, broadband offices, and workforce/economic development departments. [ExcelinEd's model policy](#) addresses this goal and also emphasizes the importance of a shared definition for higher-skill, higher-wage, and higher-demand occupations.
- Adopt or enhance a Return on Investment (ROI) policy. This [ExcelinEd model policy](#) requires biennial ROI analyses for CTE programming and includes a priority sector section to ensure prompt review of the broadband workforce.



2. Leverage Industry Expertise to Build or Improve Education and Training Programs

States can build on existing expertise from the broadband industry, including curricula currently used for in-house training programs, to develop high school and postsecondary career and technical education programs. They can also work with industry to create work-based learning opportunities and remove burdensome regulations that might deter businesses from hosting students in high school. Finally, business and industry partners can help develop and/or validate industry-recognized credentials that high school students can earn and “stack” into more advanced credentials or credit-bearing programs in a postsecondary setting.

Recommendations:

- Create a broadband program of study to make equipment costs allowable expenditures under Perkins Career and Technical Education Funding.
- Eliminate legal barriers that can prevent K-12 students from participating in certain types of work-based learning. [ExcelinEd’s model policy](#) includes a specific section addressing barriers relevant to the broadband sector.
- Adopt or update policies regarding industry-valued credentials, such as this [ExcelinEd Industry-Valued Credentials policy](#), that includes a priority section on broadband careers.

Resources:

- [Wireless Infrastructure Association’s \(WIA\) 5G and Broadband Credentials](#), approved by Ohio’s TechCred program
- [Ohio partner engagement protocol](#) to coordinate efforts between higher education and industry
- [5G Readiness training program](#) from the Wireless Infrastructure Association
- [Certification programs](#) from the Fiber Broadband Association

State Examples:

- Indiana’s [State Earn and Learn \(SEAL\)](#) pre-apprenticeship program includes a [certificate program in routing and switching](#), which allows students to enter the broadband workforce in less than a year. The certificate is stackable with advances possible through a network infrastructure technical certificate or an associate of applied sciences degree in network infrastructure.
- Florida includes several broadband-related credentials on its [Master Credential List](#), such as Broadband Premises Installer, Fiber Optics Installer, Fiber Optics Technician, and Certified Wireless Network Administrator.

3. Provide Training and Support for Educators

One common barrier to implementing career and technical education is lack of qualified educators. Naturally, very few educators have expertise in broadband deployment and maintenance. There are several strategies that states can adopt to ensure broadband courses are taught by trained professionals.

Recommendations:

- Adopt a policy regarding adjunct educators from the private sector to support instruction in technical skills at both the secondary and post-secondary levels.
- Coordinate with industry leaders to encourage current or retired employees to volunteer in education programs and support educators in the classroom.
- Work with industry leaders to develop hands-on training programs for educators, such as Ohio’s teacher bootcamps (beginning in summer 2023) or industry-provided programs, that are eligible for professional development credit or, as in Ohio, graduate credit.
- For each policy or program adopted from these recommendations, collect data regarding the efficacy of the policy or program in increasing access to high-quality CTE instruction in broadband fields.

State Examples:



- [Florida](#), [Tennessee](#), and [Oklahoma](#) have statutes and/or State Board rules establishing adjunct teaching licenses.
- Louisiana has provided Fiber Optic Association, Fiber Broadband Association, and Corning/AT&T train-the-trainer opportunities for full-time and adjunct postsecondary faculty to teach in this space.

4. Coordinate Federal and State Funding Streams

Federal funding streams can support the development of the broadband workforce in several ways. The **Broadband Equity, Access, and Deployment (BEAD) Act** and **Digital Equity Act** both require states to ensure a ready workforce and provide funding to support implementation. The federal government recognized the importance of a broadband workforce in its [notice of funding opportunity](#) for the BEAD Act: states are required to include information on how they will “support the development and use of a highly skilled workforce capable of carrying out work in a manner that is safe and effective” and how they will “develop and promote sector-based partnerships” (p. 59-60). Apprenticeships, pre-apprenticeships, and work-based learning are included under the Act.

Other federal programs related to workforce development and apprenticeships can also support stronger broadband workforces. Many states also have grant programs for broadband deployment, workforce development, and education that can be tailored to incentivize broadband careers.

Recommendation:

- Ensure that broadband apprenticeships and youth apprenticeships are part of the state’s existing programs.
- Provide expanded programming for non-traditional learners, such as evening, weekend, and online courses designed for working adults seeking additional skills or career changes.

Resources:

- ExcelinEd [Youth Apprenticeships Report](#)
- Federal telecommunications apprenticeship program [information](#)
- Telecommunications industry registered apprenticeship program (TIRAP) [information](#)

State Examples:

- Ohio’s [TechCred program](#) offers grant incentives to reimburse employers who sponsor their employees in earning technology-related credentials and includes [credentials](#) such as 5G Ecosystem, 5G and Broadband Deployment, In-building Wireless Solutions, and Wireless Broadband Infrastructures.
- The [Tennessee Promise](#), [Tennessee Reconnect](#), and other state and federal scholarships can be used at Tennessee Colleges of Applied Technology to pursue [programs](#) such as certificates in Telecommunications Cable Installer or Networking Specialist or a diploma program for Telecommunications Electronics Technician.

5. Raise Awareness for Broadband Careers

A critical barrier to strengthening the broadband workforce is lack of awareness of the viable career pathways in this field, both in terms of what broadband careers entail and who might be successful in those roles. There are several strategies that different state agencies can use to raise awareness and interest for students and for individuals seeking a career change, including developing customized visuals of career progressions in the broadband field with state-specific demand and salary data.

In addition, federal and state grant programs come with numerous monitoring and reporting requirements, and the BEAD Act and Digital Equity Act are no exceptions. The BEAD Act’s notice of funding opportunity, for example, requires states to report on how they will “ensure that the job opportunities created by the BEAD Program and other broadband funding programs are available to a diverse pool of workers, including by engaging in targeted outreach... to populations that have traditionally been underrepresented in broadband and information technology jobs, including but not limited to women and people of color.” To make data collection and reporting meaningful for purposes other than monitoring, states can publicly report on key indicators of success related to the broadband workforce and identify ongoing needs or workforce shortages.



Recommendations:

- Recommend the inclusion of content on broadband careers in K-12 career exploration and awareness courses.
- Adapt [career pathways documents](#) to local contexts and disseminate them through K-12 and higher education, as well as departments such as labor or economic development.
- Develop tailored awareness campaigns to strengthen outreach to populations such as veterans or women who may not historically see this field as relevant to their interests.
- Identify key workforce trends from required grant reporting and share that data publicly in an accessible format for non-technical audiences.

State Examples:

- [Florida](#) offers a Broadband Field Technician Apprenticeship program that targets [veterans](#) for employment.

STATE SPOTLIGHTS

Ohio and Louisiana are applying each of the five strategies highlighted in this toolkit to strengthen their broadband workforces.

Ohio

- **Identify State-Specific Needs:** In a strategic plan, *Strengthening Ohio's Broadband & 5G Workforce*, Ohio identified the need to expand its skilled broadband workforce. For example, to effectively use state investments and capitalize on private investments to deploy broadband and 5G, Ohio estimated a need for an additional 1,250 construction jobs and 32,000 jobs in network infrastructure - and those estimates do not factor in extensive new federal grants related to broadband deployment.
- **Leverage Industry Expertise to Build or Improve Education and Training Programs:** Ohio determined that cross-sector coordination was necessary to address this workforce gap and convened the Broadband and 5G Sector Partnership. The Partnership is composed of groups from government (Governor's Office of Workforce Transformation and BroadbandOhio), education (Ohio State University), and industry (Wireless Infrastructure Association) sectors, each with specific roles.
- **Provide Training and Support for Educators:** Ohio is building out teacher bootcamps (for graduate credit) for summer 2023. The teacher bootcamps are going to mix theory with in-person site visits to broadband and 5G employers and their worksites to learn more about the industry and the available career paths. They will integrate what they've learned about the industry and its career paths into their future lesson plans as part of their capstone project for three graduate credits provided by Ashland University.
- **Coordinate Federal and State Funding Streams:** BroadbandOhio, the state's broadband office, coordinates state and federal grants related to broadband expansion. It ensures the requirements for each set of grants are met and that grants do not duplicate efforts. In addition, the Governor's Office of Workforce Transformation ensured existing state workforce programs such as TechCred expanded to include broadband-related careers.
- **Raise Awareness for Broadband Careers:** Working with its industry partner, the Wireless Infrastructure Association (WIA), Ohio has developed four career pathways graphics and plans to create 15 total by mid-2023. These resources will be broadly shared by education, workforce, and industry organizations to encourage students and their parents, and career-changers such as veterans, to explore broadband careers.

Louisiana

- **Identify State-Specific Needs:** In Louisiana, the ConnectLA Office of Broadband Development and Connectivity brings cohesion to local, state, and federal efforts regarding broadband deployment and adoption. ConnectLA is holding regional stakeholder meetings to develop its Digital Equity Plan that will allow it to draw down federal funds. Its work is driven by Gov. John Bel Edwards' vision that, by 2029, all Louisianians will be able to connect to affordable broadband with the technology and digital skills to improve their quality of life.
- **Leverage Industry Expertise to Build or Improve Education and Training Programs:** In September 2022, ConnectLA facilitated a partnership between Bossier Parish Community College (BPCC) and the Fiber Broadband Association's Optical Telecom Installer Certification Path (OpTIC Path) program. This certification program will



ensure Louisiana has a strong workforce ready to support broadband expansion. Louisiana Delta Community College (LDCC), located in one of the poorest and most rural parts of America, is partnering with Etheridge Pipeline and Conduit by creating a customized program to train students for careers installing broadband infrastructure. The program will be based at LDCC's West Monroe campus, but the school has invested in a mobile trailer equipped with heavy machinery simulators to bring the program anywhere in Northeast Louisiana. These programs and others around the state are part of a \$20 million state investment in the Reboot Your Career Initiative/Broadband Workforce Training at Louisiana's Community and Technical Colleges to directly support workforce development and statewide broadband expansion. By strengthening its broadband workforce, Louisiana is better positioned to meet its goal of closing the digital divide by 2029.

- **Provide Training and Support for Educators:** Louisiana has begun to deliver accelerated fiber optic technician bootcamps throughout the state. This training is helping to strengthen the technical capacity of fiber instructors. The state's two-year colleges are also working with secondary career and technical educators to establish dual enrollment pathways in this sector. One college in particular, Bossier Parish Community College, is also working with the Communications Squadron to identify transitioning Airmen from Barksdale Air Force Base who might become fiber optic technician instructors.
- **Coordinate Federal and State Funding Streams:** In August 2022, the National Telecommunications and Information Administration (NTIA) announced that Louisiana was the first state in the nation to receive two grant awards funded by the Bipartisan Infrastructure Law: a Broadband Equity, Access, and Deployment Program planning grant for \$2,000,000 and a State Digital Equity Planning Grant for \$941,542. These grants will help expand internet service statewide. ConnectLA is managing both the federal grant programs and the state Granting Unserved Municipalities Broadband Opportunities (GUMBO) program to ensure coordination of funds.
- **Raise Awareness of Broadband Careers:** Louisiana has been leveraging federal COVID relief dollars to improve connectivity at Historically Black Colleges and Universities (HBCUs). Louisiana is building on this increased access to provide digital skills training and support through state grants and by applying to the National Telecommunications and Information Administration's Connecting Minority Communities pilot program. The state is also working with employers that offer second-chance hiring programs to provide pathways to broadband careers for former offenders who receive training while incarcerated. Taken together, this work will ensure long-term digital equity among Louisianans and raise awareness of broadband careers among populations that may not have previously considered them.

FURTHER RESOURCES

- [ExcelinEd Pathways Matter](#)
- [Broadband Equity, Access, and Deployment Act](#)
- [Digital Equity Act](#)