Memo

To: State broadband offices

From: Jake Varn, The Pew Charitable Trusts

Date: April 29, 2022

Subject: Broadband workforce development

The following memo details key strategies for broadband workforce development, provides an overview of relevant examples, and highlights best practices from past and ongoing state-led efforts.

Developing the Broadband Workforce

Making the most of the historic funding for new and expanded broadband projects will require an unprecedented number of telecommunications workers for infrastructure deployment, maintenance, and network operations. In order to connect millions of Americans to affordable, reliable internet, federal and state officials will need to work with a range of private sector and nonprofit stakeholders to develop solutions that will address skill gaps. This memo provides an overview of tactics employed by state programs to address these challenges, including creating new training and apprenticeship partnerships, and leveraging past and ongoing state-led workforce development efforts.

Starting With a Workforce Strategy

Incorporating workforce development into ongoing strategic planning will help state broadband offices address an area of critical need. Workforce strategies can also help state broadband offices build relationships with partners, expand awareness of their programs, and more effectively distribute funding. Pew has identified four key components of effective workforce development strategies; they:

- Consider the scope of existing and future needs that the workforce will need to meet.
- Strengthen partnerships between broadband offices, the state workforce development lead agency, and other state institutions, to build understanding around broadband program objectives, establish alignment on broadband and statewide workforce development program goals, promote awareness of job opportunities in the broadband field, and maintain a talent base to ensure that future needs are met.

- Braid new and one-time initiatives with existing resources and programs where strategically relevant.
- Support the creation of jobs that provide opportunities for stable, long-term employment and are connected to career pathways within the industry.

Guiding Program Considerations

When developing a broadband workforce program, program leaders and partners should consider the full life cycle of connectivity—from securing permits and network engineering to marketing and digital literacy efforts. The positions required to fulfill these activities can range from line technicians and fiber splicers to network administration and digital navigators. Considering the full life cycle of connectivity will help offices both estimate the number of employees and identify the specific skills that will be required to complete projects on time, sustain the operation of new or expanded networks, and promote adoption and digital literacy efforts. (For more information on the life cycle of broadband projects and phases of network buildout, see Pew's 2021 white paper with CCG Consulting, "The Rural Broadband Industry.")

State programs that are underprepared for the increased demand for these skilled workers may end up with significantly delayed projects, spending extra resources to compete for a limited labor pool, or be required to rely on temporary, out-of-state contractors, thus diluting the economic opportunity for the state. Importantly, the existing telecommunications workforce significantly lacks racial and gender diversity, and workforce programs will require targeted interventions to increase representation.

Seven components to consider when developing a broadband workforce development strategy:
1. **Identify gaps**: An inventory of the types of jobs that are needed to support the program's goals and comparing those needs with the state's current labor force can serve as a benchmark for the workforce strategy. Workforce estimates should consider the demographic and geographic composition of the labor force to better inform outreach efforts, utilizing the state's Labor Market Information (LMI) data and other data partnerships. [Note: Most states have an LMI contact, identified by the Bureau of Labor Statistics.]
2. **Center around diversity, equity, and economic mobility**: Building a workforce that will help ensure timeliness for meeting federal funding requirements is a top priority, but these programs are also an opportunity to create avenues for long-term economic stability. In each aspect of the program, from design and outreach to placement and retention, consider how the program can support a more diverse and inclusive workforce. Workforce programs built on inclusive-centered frameworks and that build coordination of service and support delivery into their design can proactively mitigate barriers that limit workforce participation, such as physical barriers, language options, and child care.
3. **Find the right partners**: Identify local and national partners who can help establish training/apprenticeship programs in service of primary and secondary objectives.

Potential partners can include internet service providers (ISPs), industry associations, technical and community colleges, state and local workforce development agencies, and more. Ensure that awarded projects are directly connected to the state's workforce development programs and these partnerships. As projects are being designed, conduct direct outreach to community organizations and institutions serving target populations.

4. **Design programs for careers, not jobs**: Ensure that training and apprenticeship programs are part of a clearly articulated professional pipeline that allows for continued employment and growth beyond individual projects.
5. **Evaluate the timeline**: Work with program partners and federal officials to consider the amount of time required to establish programs, recruit participants, earn the necessary certifications, and gain in-field experience. The awarding of funds for projects should be aligned with the amount of time that may be required to train new workers, allowing for a seamless transition from training to career placement.
6. **Adhere to federal labor requirements**: Verify that your program(s) and grant awardees are accounting for required federal labor provisions to ensure job quality.
7. **Evaluate and evolve with the sector**: Establish a process to evaluate progress and ensure that the program has the flexibility to adapt to meet the current needs of the broadband sector.

Key Elements

Each state tailors its workforce development programs to meet their programmatic needs and the needs of individual industries, but key elements for new broadband-targeted efforts can include**:**

Building partnerships to make use of institutional knowledge, local anchor institutions, and community leaders to quickly create and expand the number of available programs.	Expanding awareness to ensure that people, particularly those from disadvantaged communities currently underrepresented in the telecommunications workforce, are connected to the opportunities available to them.
Programmatic alignment between workforce development and the state broadband infrastructure and digital equity programs to incorporate a certification of standard fair labor provisions, as required by the new Treasury and National Telecommunications and Information Administration programs.	Funding that takes advantage of a combination of sources, including local, state, federal, and private opportunities to build out training programs and help ensure that these efforts are sustainable and contribute to a career pipeline of high-quality jobs.

Additional resources

- [Lessons Learned In Workforce Innovation: How Ten Governors Are Redesigning Workforce Systems For Better Employment Outcomes](#), National Governors Association.
- [Governors Broadband Investments Are Creating Jobs](#), National Governors Association.

- Broadband Infrastructure Deployment Job Skills and Training Opportunities Working Group, Federal Communications Commission, Broadband Deployment Advisory Committee.
- Investing in What Works [a three-part series on evidence-based workforce development solutions], National Conference of State Legislatures.

Creating Partnerships
States can leverage the resources and expertise of local institutions and national groups to develop and maintain a trained workforce, including:
- State workforce development agencies and workforce development boards, which are tasked with overseeing their state's workforce development strategy and comprise industry leaders, higher education institutions, labor organizations, and other priority partners throughout the state.
- Community college systems, which have direct experience creating job-specific training programs.
- ISPs, nonprofits, and industry groups, that can provide insight into needed skill sets, inform program development, and support job placement.
- Smaller rural providers and local cooperatives may have existing partnerships with their local community colleges or other groups for regional training programs that can be further leveraged by the state.

State examples
- The Louisiana broadband office is using three tactics to address its workforce shortage. First, it encouraged applicants to its Granting Unserved Municipalities Broadband Opportunities (GUMBO) program to partner with community colleges to align their workforce needs and training requirements. Second, the broadband office is working with community colleges across parishes to support development of broadband-specific training programs. Finally, the broadband office is holding regional workforce summits to foster collaboration between industry partners and local programs.
- In September 2021, the Ohio Governor's Office of Workforce Transformation and the state's broadband office, BroadbandOhio, released "Strengthening Ohio's Broadband & 5G Workforce," a strategy to help the state meet the growing demand for a telecommunications workforce. This plan was drafted after consulting with a range of stakeholders, including ISPs, industry groups, and four- and two-year colleges, to assess the needs and challenges faced in the broadband workforce. It also called for the establishment of a broadband and 5G sector partnership to ensure that the state would meet its goals. In January 2022, Ohio Lt. Governor Jon Husted announced that the Ohio State University was awarded $3 million from the Governor's Emergency Education Relief Fund to design curriculum for the sector partnership to develop a skilled broadband workforce. Once developed, the curriculum will be made available to all higher education institutions in Ohio for implementation.

Additional resources
- [Leveraging Registered Apprenticeship to Build a Thriving and Inclusive Economy](#), National Governors Association.
- [Partnering to Evaluate Workforce Development Programs and Build Evidence Capacity](#), National Conference of State Legislatures.
- [Sectoral Strategies for Low-Income Workers: Lessons From the Field](#), Aspen Institute.

Providing Funding
- As states develop these programs, they should also consider the funding required to support them, including the following activities: supporting partnerships and curriculum development; recruiting new trainees; and providing financial assistance to support trainees through the training and placement process.
- There are many sources of funding available, including from the private sector, philanthropic entities, and the federal government.

Vermont Pay-It-Forward fund
- The Vermont Community Broadband Board is collaborating with Social Finance, an advisory and finance group based in Boston; the Vermont Community Foundation, a public charity that provides advice and investment support; and the Communications Workers of America, the communications and media labor union. Together, they are exploring the feasibility of a "Pay-It-Forward" fund to meet Vermont's broadband workforce needs. The Pay-It Forward program would seek to grow the broadband workforce with [Career Impact Bonds,](#) a student-friendly financing model that relies on investors to provide catalytic capital that covers upfront training costs and critical support services for learners that is then repaid after job placement, through four phases by:
   1) Focusing on recruitment of economically underserved individuals and communities to increase awareness of available, high-quality broadband jobs.
   2) Helping pay for trainees to attend job training programs through the Vermont Technical College.
   3) Placing graduated trainees into jobs with employer partners.
   4) Collecting repayment from placed graduates through an income share agreement. Through this structure of recycling capital, [Social Finance](#) estimates that the training program would be able to increase the number of professionals in Vermont's broadband workforce by over 200% compared to a traditional grant program.

Additional resources
- [Planning and Local Technical Assistance Program](#), the U.S. Economic Development Administration (this program helps support state and local organizations with both short-term and state planning investments in the creation and retention of high-quality jobs. Applications for FY 2023 are accepted on a rolling basis).

- [Workforce Tools, Strategies and Technical Assistance](#), Employment and Training Administration, U.S. Department of Labor.
- [Guide to Learning About Local Workforce Systems](#), Urban Institute.
- [How Federal Infrastructure Investment Can Put America to Work](#), Brookings Institution