



TENNESSEE  
VALLEY  
AUTHORITY



IMPLEMENTATION GUIDE

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# Workforce Development

VERSION ONE: 02/2022



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## Acknowledgments

This booklet, created by the Tennessee Valley Authority (TVA), is an informational compilation of existing concepts, examples, resources and considerations, gathered to provide a digestible reference resource for Valley communities and local power companies (LPCs) as they explore implementation of connected community solutions. This booklet is not meant to prescribe the details of how an individual community should implement a specific solution.

Workforce Development supports one of the Valley's identified focus areas: Energy and Environmental Justice. See the [Tennessee Valley Connected Communities Roadmap](#) for more information.

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# Introduction

## Workforce Development for a Digital Future

The skills that businesses and communities need to operate are changing. Rapid digitization of services and advancement of technologies are impacting energy, transportation, education and municipal services, among other sectors.

Foundational digital skills, such as writing an email or navigating a database, are increasingly becoming [required to participate in the workforce](#).<sup>1</sup> Additionally, a community adapting to digitization and pursuing technology and information-based solutions and services requires a workforce with more specialized digital skills to stand up and operate these platforms and tools. For example, in Tennessee, [tech employment increased by 24.4% from 2010 to 2019](#).<sup>2</sup>

Workforce development typically includes education, training and employment initiation services, which doesn't necessarily include foundational or specialized digital skills. Information and technology focused workforce development resources are necessary to prepare local communities to meet evolving employer expectations, deliver greater value to residents and contribute to a more connected future.



**Consider how your community can leverage or coordinate with these resources to develop or improve digital and technology focused programs for your local workforce.**

 For more information, [see additional resources](#).

## WORKFORCE DEVELOPMENT

### Example Skill Sets of the Future



Informative  
systems  
management



Data analysis  
& science



Software  
development



Building  
science



Geographic  
information  
systems (GIS)  
analysis



Computer  
systems  
analysis



WE'VE SEEN A

**24.4%**

**increase in tech  
employment in  
Tennessee**

from 2010 -2019.

# Introduction

## Implementation Framework and Key Questions

The implementation framework below outlines the process and key questions to be used to approach the adoption of workforce development for a digital future.

1

### Engage key stakeholders

What key stakeholders should I engage and what roles should they play?

### Confirm community need

How do I best identify and confirm my community's need?

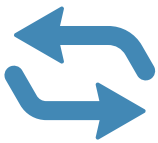
2

### Explore solutions/approaches

What solution or approach options are available?

### Plan for feasibility and risk

What additional risks should I consider?



**While this guide focuses on workforce development, this implementation framework below can be similarly applied for any solution your community is exploring.**

**3**

#### **Identify ownership approach**

Who will lead the solution implementation?



#### **Identify funding approach**

What funding options are available?

#### **Deploy solution**

What are the leading practices around deploying a solution?

#### **Launch ongoing operations**

How do I ensure ongoing success of the solution after deployment?

# Introduction

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## Potential Impacts

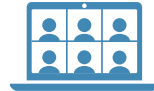


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### Individual Benefits

Workforce development for a digital future directly benefits the participating community members, helping them to:

- Develop new skills
- Connect with new employment opportunities
- Increase household income



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### Community Benefits

Information and technology focused workforce development helps to:

- Create a sustainable local economy aligned with the trends of digitization, technology advancements and increased connectivity
- Build a local pipeline for technology careers
- Attract and/or retain employers
- Enable sustainable pursuit and operation of digitally and technically focused community solutions

 For more information, [see additional resources](#).



## In 2021, the tech industry **ranked 3<sup>rd</sup> in projected job growth nationally.**<sup>2</sup>

The tech industry growth rate is greater than the available workforce in the country. With workforce development programs and higher education, the region can take this opportunity and help meet the demand gap for workers in tech.

### CASE STUDY

## Addressing Long-term Unemployment with Tech Opportunities

The National Urban League's Urban Tech Jobs Program<sup>3</sup> (UTJP) works with private business in the information technology (IT) industry sector, such as Comcast, AT&T and Time Warner Cable, to address skills gaps for workers facing long-term unemployment. As of May 2021, the program had over 500 participants enrolled.

Program resources include job training, placement, one-on-one and group mentoring and customized case management. In addition, UTJP provides behavioral and mental health self-improvement tools. The program has a 73% completion rate.

Participants are placed into entry-level occupations with the expectation that they will work their way up to higher paying jobs. Middle-skill IT occupations include cable installers, network administrators, database administrators, information security analysts, computer support specialists and IT sales managers.

[Learn more >](#)

# Engage Stakeholders

## Identify Key Stakeholders

There are likely broader workforce development resources and programs available at the state, regional or national level for your community. Consider how your community can leverage or coordinate with these resources to develop or improve digital and technology focused programs for your local workforce.



### Stakeholders Roles

The chart on the right identifies potential stakeholders and their roles for exploring and implementing workforce development programs. Stakeholder engagement will vary based on the project. Consider these key questions in your stakeholder selection:

- Do they consider advocacy for technology and digital skills a priority?
- How would they benefit from digital workforce development resources?
- How could they contribute towards digital workforce development?
- Do they currently consider digital/technology-focused workforce development opportunities?

**Consider how your community can leverage or coordinate with these resources to develop or improve digital and technology focused programs for your local workforce.**

## KEY STAKEHOLDERS AND THEIR POTENTIAL ROLES

	ADVOCATE	USER	ADVISOR	PROVIDER
Labor organizations and Chambers of Commerce	✓			
Workforce Investment Boards, community-based organizations, schools and colleges	✓		✓	✓
Policymakers and think tanks		✓	✓	
Job seekers		✓		
Government agencies (local, state, federal)				✓
Employers	✓	✓	✓	✓

# Engage Stakeholders

## Confirm the Community Need

### Perform Assessments

Assessments of the labor market, employer and industry market and workforce development programs can be used to identify and understand a community's needs. Consider the need for: current and potential sustainable employment opportunities, sufficient education and skills and available services and programs.

These methods can be used to better understand whether and to what extent your community could benefit from resources to prepare for more digital and technology-focused jobs. Once needs are validated, potential solutions should be assessed against the ownership types, available funding sources, feasibility and risk considerations.

#### KEY QUESTIONS TO ANSWER

### Labor Market Analysis

Used to understand the future and current dynamics (employment, skills, demographics, etc.) of the local information and technology labor market through statistics, surveys and reports.

- 1 Who is and is not working in my region?
- 2 Do all workers have livable wages?
- 3 What barriers to obtaining employment do residents face?
- 4 What is the role of digital and technology-focused skills?
- 5 What industries are represented?

## KEY QUESTIONS TO ANSWER

## Employer & Industry Analysis

Used to understand current and future dynamics of the local information and technology market through statistics, surveys and reports.

- 6 What jobs are available in my region?
- 7 What jobs and/or industries do we want to attract to the region?
- 8 What skillsets do employers prioritize when hiring in my region?
- 9 Which industries are growing most in my area?

## Program Assessment

Used to determine information and technology workforce development needs currently being addressed by existing programs and identify gaps based on the trends of the labor and employer and industry analysis.

- 10 How is the workforce development system in my region helping people achieve, retain and advance in employment for a digital future?

**i** For more information, [see additional resources](#).

# Engage Stakeholders

## Perform a Gap Analysis

A gap analysis can help to highlight a community's current available resources and identify further needs. This can be achieved by taking the labor analysis, employer and industry analysis and workforce development assessment and identifying how current workforce development resources may need to adapt for an envisioned future state.

Any gap between the current and future state will help you understand your community's highest need and the required workforce development solution to meet that need.



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### Current State Analysis

The current state analysis of your community's labor, employer and industry market and workforce development programs will give you a sense of the current trends and dynamics. Without a full understanding of the current state of your community, it is difficult to select a workforce development solution that is right for you.



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### Future State Analysis

The future state analysis of your community's labor and employer market and workforce development programs will give you a sense of the projected trends and dynamics that may occur. Ultimately, the workforce development solution should bridge the gap between what is currently occurring and what may occur in the future.


## Consider Other Resources

Communities must consider how local efforts could leverage and interact with state, regional or national resources and programs to create a cohesive workforce development system to prepare for more digital and technical jobs.

This will inform what resources need to be provided by the local community and what resources local job seekers and employers can be connected to through state or regional resources

### For your community, consider:

- Do existing programs provide the level of training, education, content and/or specific skills that are needed by current or potential employers in your community?
- What are the gaps?
- What do you need to provide?

 For more information, [see additional resources](#).

# Explore Solutions

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## Select Solutions

### SOLUTION OPTIONS:



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### Build Educational and Technology Foundation

Provide meaningful education and technology opportunities to local community members.

#### EXAMPLE PROGRAMS

- **Education programs**  
(e.g., digital literacy and computer skills, coding in Python, proficiency in Microsoft Office)
- **Certificate programs**  
(e.g., web development, cybersecurity, database support)
- **Technology access programs**  
(e.g., computer labs)

#### TYPICAL PROVIDER STAKEHOLDERS

- **Local schools**  
(e.g., primarily community colleges and high schools)
- **Community based organizations**  
(e.g., education non-profits)

**Communities should explore solutions and select the workforce development solution type that best fits your needs and abilities.** Your understanding of the need, funding approach, feasibility and risk considerations for your community will help you identify the best solution.



## Build Skills and Capabilities

Develop roles of local community members and employers to advance themselves and their businesses

### EXAMPLE PROGRAMS

- **Skills based training**  
(e.g., digital literacy and computer skills, coding in Python, proficiency in Microsoft Office)
- **Technical support for local businesses**  
(e.g., website development, digital marketing, financial accounting)

### TYPICAL PROVIDER STAKEHOLDERS

- **Local schools**  
(e.g., primarily community colleges and high schools)
- **Workforce Investment Boards**
- **Employers**  
(for apprenticeships, etc.)
- **Community based organizations**



## Build a Network

Create greater connections between local community members and employers

### EXAMPLE PROGRAMS

- **Job boards**  
(online job listings for local employment opportunities)
- **Speaking and networking events**  
(e.g., employer and industry panels, job fairs)

### TYPICAL PROVIDER STAKEHOLDERS

- **Chambers of Commerce**  
(local, regional, state-wide)
- **Workforce Investment Boards**  
(local, regional)
- **Employers**  
(for apprenticeships, etc.)
- **Community based organizations**

# Explore Solutions

## Identify Ownership

Once your community understands the organizations that it may work with, understanding the ownership model for any coordination efforts or needed additional programming at the local level will impact what funding channels are available.

Programs are most often provided by government organizations, educational institutions or community-based organizations, and may also have strategic and financial support available via partnership.

### CASE STUDY

## Public Private Partnership

Ignite Tech Talent development program is a partnership between K-12 schools, colleges and employees for the development of the IT workforce in southwest Virginia.

The program addresses the increase in expected regional demand for IT workers. Its focus is to channel students into IT careers across the region. Partnering with schools, the program will reach students in middle school to promote career opportunities in IT. High school students can then take technology-related courses and pursue dual enrollment with community college partners. Industry partners will provide K-12 schools and colleges information on the skills they need to inform educational content.

[Read more >](#)

## OWNERSHIP TYPES:

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### Public

State and local governments run workforce development.

#### PROS

- May be more attuned to the needs of small local businesses and disadvantaged job seekers
- Can offer job seekers better access to support (e.g., transportation, childcare)

#### CONS

- Potentially slow response to rapidly changing industry needs
  - Programs and resources may spread thin as demand increases
  - Limited funding
- 

### Public Private Partnership

State and local government develop partnership for workforce development.

#### PROS

- Provides shared cost for programs and aligned resources
- Benefits from both industry and business knowledge and public access to support

#### CONS

- Difficulty keeping stakeholders organized and engaged
- 

### Private

Private industry or business runs their own workforce development

#### PROS

- Direct involvement in workforce education and skill development
- Has direct knowledge of the skill gaps within each sector

#### CONS

- Specific certifications and training programs can be overly tailored

# Explore Solutions

## Secure Funding

If there are not established programs available to meet your community's need, there are a variety of funding sources available to both public and private entities for workforce development.

Federal and State grants are common funding sources for workforce development, especially for communities that have underserved populations.

Other common funding sources for workforce development include tax incentives for businesses that provide on-the-job training or apprenticeships, as well as funding for higher education institutions that provide skills training and education for workforce development.

### CASE STUDY

## Workforce Development Strategy

Pay for Success (PFS) is a public policy tool. Through contractual agreements, PFS requires measurable outcomes for payments. An independent contractor is used to determine if the conditions of the contract were met. This ensures that funding goes to programs that are succeeding.

In order to address limited funds for social initiatives such as workforce development, PFS shifts the funding from public funding to private institutions. The private institutions pay service providers. The government pays the private institutions back for programs that met goals, therefore ensuring success.

[Read more >](#)

FUNDING SOURCE	CONSIDERATIONS
<b>Government budgets</b>	Standard budget constraints can apply, but leaving projects fully under public control can lead to further funding.
<b>Federal grants</b>	Grants are provided at the Federal level to target workforce development for specific communities.
<b>State grants</b>	Grants related to workforce development and program enhancement are available in many states.
<b>Tax credits/incentives</b>	Federal and State tax incentives for businesses incentivize on-the-job training or apprenticeships.
<b>Colleges/university partnerships</b>	Private and public partnerships with education institutions provide funding to close the skills gap in communities through education funding.
<b>Philanthropic grants</b>	Grants provide initial funding but may be inconsistent.

# Explore Solutions

## Mitigate Risks

Communities should understand and plan for risks or constraints when pursuing workforce development.

### CASE STUDY

#### Base Camp Coding Academy

Located in Water Valley, Mississippi, Base Camp Coding Academy is a hands-on nonprofit program designed to train recent high school graduates to become software engineers. Students work with real-world technologies to learn the fundamentals of coding, app development and life leadership skills to be successful in their career and competitive in the job market upon graduation. Thanks to the support of sponsors, Base Camp offers a full-time, year-long program at no cost to their students. To ensure the students are learning in-demand and relevant skills in a fast-changing industry, the academy's curriculum committee – consisting of industry leaders – meets quarterly to review recent advancements in software engineering and make adjustments to the curriculum as necessary.

[Read more >](#)



**Frequent risks or constraints include individual access to training resources, community access to State or Federal resources or challenges coordinating existing resources.**



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## Funding Requirements

Federal or State funding may have performance requirements. This can create challenges for supporting the most disadvantaged populations in a community, as they may need additional resources or have a lower anticipated rate of success for job placement. Communities should understand what requirements may be in place for funding and consider additional funding sources if needed.



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## Individual Access to Training Resources Risks

Participants may face barriers to attending trainings or classes, such as reliable transportation, childcare or meeting times. Partnerships between the training provider, local government services and/or a community-based organization may enable assistance.

For online training or classes, participants must have access to reliable internet access. For those without reliable internet at home, public places that offer access to Wi-Fi, such as libraries or community centers, should be communicated to participants.



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## Coordination Between Resources

Poor coordination between different facets of workforce readiness (basic education, digital literacy, skills training, certification courses, etc.) can also create barriers or slow down the process for participants to build the qualifications required to pursue technical jobs.

State and local workforce development efforts should be coordinated to best leverage resources and support the economy and workforce development for the broader region.

# Deploy and Operate

## Deploy a Solution

Once a specific approach is identified, you can focus on the specific stakeholders, funding resources and deployment needs for the project.

### CASE STUDY

#### Tennessee Pathways in the Upper Cumberland Region

The mission of the Tennessee Pathways initiative is to provide students with rigorous academic/career pathways, which are linked to economic and labor market needs and trends. In 2012, two region-specific pilots were launched: Upper Cumberland and Southeast.

To support needs for a more digital, connected future, the Upper Cumberland region has an Information Technology (IT)-focused pathway. The region's IT Pathway subcommittee consists of representatives from K-12 schools, postsecondary institutions and employer partners. The subcommittee regularly reviews labor market information for the IT career sector, surveys local employers to identify workforce needs and existing skills gaps and works to ensure education and training programs align with employer needs. Due to the work of this committee, the IT program of study and dual enrollment opportunities offered at the K-12 level have expanded beyond coding and web design to include cyber security and networking – both of which were identified as growing areas of the industry among local employers.

[Read more >](#)

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## Deployment Leading Practices

- 1 **Inform the public prior to deployment** with a dedicated outreach effort to impacted stakeholders. Outreach may involve advertising (digital, print, etc.), local news spots and/or city and town hall discussions. Be sure to meet any requirements for public notice.
- 2 **Support equitable access** to the workforce development resources for all community members. Consider how barriers to access such as language, transportation, childcare or training times could impact different people and groups within the community, particularly disadvantaged populations. Consider how to provide options for all.
- 3 **Host an opening event** to increase the public visibility and excitement around the new workforce development resource or opportunity with an opening ceremony or launch event that includes key deployment stakeholders.
- 4 **Develop internal teams and capabilities** especially if the community is deploying its own program. The community may need program administrators, business development representatives, instructors, trainers, etc.
- 5 **Prepare impacted stakeholders** to meet broader objectives (i.e., reduce barriers of affordability, cross-cultural understanding and accessibility). This may involve community outreach programs, coordination with community-based organizations, pre-trainings or workshops, voucher programs, etc.
- 6 **Manage and drive partnerships with public, private and non-profit institutions** to continue long-term investment and involvement in the deployment strategy. This may involve outreach to review proposals, coordinate deployment steps and track the agreements and grants.
- 7 **Create an incentive structure for individuals that finish the program.** This could include financial or non-financial awards and recognition.

# Deploy and Operate

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## Launch Operations

After deployment, communities must continue to monitor whether the workforce development solution addresses the need that it was intended to.

### ONGOING KEY ACTIVITIES:



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#### Track and Monitor Key Performance Indicators (KPIs)

How the solutions are delivering on the proposed goal. Potential KPIs include:

- Training completion rate
- Job placement rate
- Average wages
- Rate of job retention after placement



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#### Monitor and Maintain a Quality Service Offering

Drive interest from job seekers and businesses by seeking feedback from all involved stakeholders.



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## Engage with Impacted Stakeholders

Address broader efforts to support digital and technical workforce development (i.e., supportive K-12 education).



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## Manage Partnerships

Further the delivery of services at the local, state, regional and/or national level. Maintain recurring check-ins with partners to coordinate future program expansion, ongoing efforts and cross-organizational reporting.



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## Maintain Operational Excellence

Ensure that the service is working as intended for job seekers and businesses. It will be important to effectively coordinate involved parties to ensure continued funding for, access to and success of the program.



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## Ensure the Public is Informed of the Project

Ensure that the service is working as intended for customers and users. Crews should work effectively and efficiently on installation, set-up, maintenance and future deployments.

# Resources

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## Introduction

### Workforce Development for a Digital Future

- <sup>1</sup> Hecker, I. & Loprest, P. (2019). Foundational Digital Skills for Career Progress. Urban Institute. [https://www.urban.org/sites/default/files/publication/100843/foundational\\_digital\\_skills\\_for\\_career\\_progress\\_2.pdf](https://www.urban.org/sites/default/files/publication/100843/foundational_digital_skills_for_career_progress_2.pdf)

### Potential Impact

- <sup>2</sup> International Association for Public Participation (IAP2). (n.d.). Home. <https://www.iap2.org/mpage/Home>
- <sup>3</sup> National Urban League. (n.d.). Urban Tech Jobs Program. <https://nul.org/program/urban-tech-jobs-program>

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# Engage Stakeholders

## Confirm the Community Need

### Labor market analysis examples:

- Nashville Area Chamber of Commerce. (2019). Tech Workforce Study. [https://s3.amazonaws.com/nashvillechamber.com/PDFs/NACC\\_TECH\\_WORKFORCE\\_FINAL\\_3.pdf](https://s3.amazonaws.com/nashvillechamber.com/PDFs/NACC_TECH_WORKFORCE_FINAL_3.pdf)
- United States Census Bureau. (n.d.). American Community Survey (ACS). <https://www.census.gov/programs-surveys/acs>

### Employer and industry analysis examples:

- The Middle Tennessee State University Department of Information Systems & Analytics. (2018). State of Middle Tennessee Tech. <https://www.mtsu.edu/isa/documents/MT-Tech-Workforce-2018.pdf>
- Wayne Economic Development Council. (n.d.). Home. <https://waynecountyedc.com>

### Program assessment example:

- CareerOneStop. (n.d.). Home. <https://www.careeronestop.org>

### Current state analysis example:

- Tennessee Valley Authority. (n.d.). Interactive Workforce Tool. <https://www.tvasites.com/about-the-tva-region/workforce/>

### Future state analysis example:

- Tennessee Government. (n.d.). Occupational Employment Projection Tool. <https://www.jobs4tn.gov/vosnet/Default.aspx>

# Resources

## Workforce Development Sample Programs and Organizations

### National and regional information and technology-specific resources:

- Grow with Google – training, tools and resources including digital basics and IT Support career certificate program. <https://grow.google/>
- National Institute for Cybersecurity Careers and Studies – tools for communities to advance their cybersecurity workforce. <https://niccs.cisa.gov/workforce-development/cybersecurity-resources>
- AWS – training, education and resources to prepare individuals for cloud-based careers. <https://aws.amazon.com/government-education/workforce-development/>
- Esri Academy – training resources on geographic information systems. <https://www.esri.com/training/why-take-training/>
- Urban League - Digital Careers Success Series and Urban Tech Jobs Program. <https://nul.org/jobs>

### Tennessee resources:

- TBR Center for Workforce Development - collaborates with businesses and agencies to deliver workforce training programs. <https://www.tbr.edu/cwd>
- Tennessee Pathways – career advisement and work-based learning, creating alignment between K-12, postsecondary programs and career opportunities. <https://www.tbr.edu/tennessee-pathways/overview>
- Urban League of Middle Tennessee: NextLevel, TechConnect. <https://www.ulmt.org>

### Alabama resource:

- AlabamaWorks - network of interconnected providers of workforce services, including all the governmental, educational and private sector components that train, prepare and match job seekers with employers. <https://alabamaworks.com/>

**Georgia resource:**

- WorkSource Northwest Georgia – education, training and employment opportunities. <http://www.careerdepot.org/>

**Kentucky resources:**

- Kentucky Cabinet for Economic Development – statewide apprentice program, workforce certification program.  
[https://ced.ky.gov/Workforce/Work\\_Ready\\_Communities](https://ced.ky.gov/Workforce/Work_Ready_Communities)
- Kentucky Community and Technical College System – provides workforce education. <https://kctcs.edu/workforce-solutions/>

**Mississippi resource:**

- ReSkillMS – training for workers displaced by COVID-19 to develop new skills in high-demand fields. <https://reskillms.com/>

**North Carolina resource:**

- N.C. Cooperative Extension – job skills programs and overview of resources throughout the state, including NCWorks.  
<https://communitydevelopment.ces.ncsu.edu/workforce-development/>

**Virginia resource:**

- Virginia Career Works – training programs and access assistance (transportation, childcare). <https://viriniacareerworks.com/>

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# Workforce Development

[tva.com/energy/technology-innovation/connected-communities](https://tva.com/energy/technology-innovation/connected-communities) 