

**Building CTE Access and Opportunity in West Virginia Through
Local Workforce Ecosystems**

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In West Virginia, the labor participation rate is one of the lowest in the nation with education attainment ranked 47th nationally (U.S. News & World Report, 2023). Along with the perception of meager educational performance and lack of a skilled workforce, West Virginia's economic development challenges run as deep as the underlying coal veins in this energy-rich, working poor state. The state, designated as rural by the Appalachian Regional Commission (ARC), is home to many federally identified opportunity zones and distressed counties as it lies entirely within the Appalachian Region (ARC, n.d.-c). West Virginia's rural coal-impacted communities and socioeconomically disadvantaged populations experience many barriers to Career Technical Education (CTE), including generational poverty and bias toward education and workforce participation.

Education attainment is critically low. According to the 2021 American Community Survey (United States Census Bureau [U.S. Census], 2023), 16.8% of West Virginia residents live at or below the poverty level, with only 39% of the population having earned a high school diploma or equivalent. The West Virginia Higher Education Policy Commission (WVHEPC) reported only 48.3% of 2021 high school graduates pursued postsecondary education, with one third of the working population (ages 25–64) achieving a workforce-relevant credential (WVHEPC, 2023). Communities with equity barriers to CTE include those in distressed areas affected primarily by the decline of the coal industry. West Virginia continues to rank lowest in labor force participation, returning to 55% since the coronavirus pandemic in 2022, but still 7% less than the national average (U.S. Congress Joint Committee, 2022).

Currently, West Virginia state workforce system agencies, including the West Virginia Community and Technical College System (WVCTCS), engage in collaborative efforts to address workforce and economic development through eight regionally aligned consortiums, led by Workforce West Virginia. However, the many rural and impoverished communities within these regions are frequently overlooked due to the difficulty of reaching deeply within these communities to bring awareness of, resources for, and access to education and economic opportunities.

A *local workforce ecosystem (LWFE)* is an adaptive solution for increased CTE accessibility so that rural adult learners can gain lifelong workforce skills that are relevant to job opportunities in their local region. With increased educational attainment leading to high-demand, high-skilled occupations and wages, the impact of CTE to address economic mobility challenges for rural residents can successfully meet the state's workforce and economic development goals while improving the lives of rural West Virginians.

Project Purpose

The purpose of this real-world project is to initiate the conversation with stakeholders toward formulating a model for LWFEs within the north-central region of West Virginia and drive opportunities to build capacity in postsecondary CTE by

- increasing access to quality CTE programs for postsecondary adult learners;
- addressing equity barriers, especially in marginalized rural populations; and
- creating workforce education pathways based on regional priorities for economic

development, including work-based learning opportunities.

An LWFE consists of organizations actively engaged in activities and sharing resources to ensure that skilled workers are available to meet the ongoing workforce demands based on the occupations and industries supporting and sustaining the local economy. A LWFE may be anchored by the region's community college and made up of local stakeholders representing regional *affinity groups*, including education (secondary, postsecondary), the public workforce system (e.g., workforce development boards, American Job Centers), business and industry, economic developers, social service providers, elected officials and local policymakers, and community-based organizations (Plumlee, 2018).

The ARC has long championed transitional and transformational solutions in Appalachia to increase technical education attainment leading to good jobs and economic mobility. In 2022, the ARC awarded TEAM (Tristate Energy and Advanced Manufacturing) Consortium grant funding for the TEAM Pathways 2.0: Connections that Work project, which aligns with A.R.C. Investment Goals and Priorities: Strategic Goal 2 Building Appalachia's Workforce Ecosystem (ARC, n.d.-a). TEAM is a workforce development network of partners corresponding to increased career opportunities in energy and advanced manufacturing industries in the three-state area of Pennsylvania, West Virginia, and Ohio (TEAM Consortium, 2023). Three community colleges in northern and central West Virginia participate in TEAM, including Pierpont Community and Technical College, along with seven other community colleges in eastern Ohio and southwest Pennsylvania covering TEAM's original 27-county footprint.

In the TEAM Pathways 2.0 ARC grant application, one project element focuses on launching LWFEs to increase CTE capacity by connecting students to good-paying regional jobs and support services to overcome barriers to employment. Additionally, TEAM's scope of work includes engaging marginalized populations and dislocated workers, especially those affected by the deterioration of the coal industry. Along with community-based organizations, secondary and post-secondary leaders, employers of the regional industry, and economic developers, this powerful collaboration includes resource sharing to endorse and support CTE as a viable pathway toward meeting the workforce demands expected to grow in the tristate region in the energy and advanced manufacturing sectors.

An LWFE can identify and address equity gaps and seek opportunities to positively impact marginalized populations of north-central West Virginia through CTE. Initiating the LWFE concept with stakeholders through Pierpont Community and Technical College, aligned with TEAM Consortium's project goals, also supports the Advance CTE real-world project's primary objectives in addressing a postsecondary CTE issue.

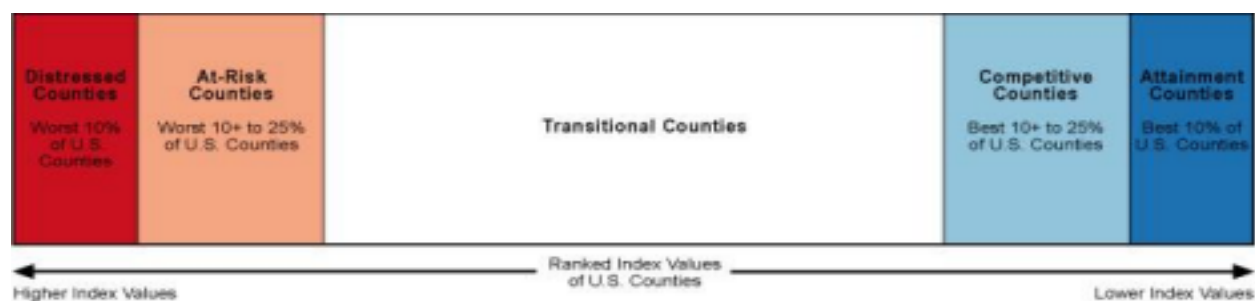
Background

Relevant data was gathered to present to stakeholders to propose the LWFE concept. The data included state-level and, more importantly, county-level data to identify economic and workforce development challenges affecting local communities, as well as barriers to creating a skilled workforce through access to CTE. Two counties specified were Marion and Monongalia, both located in Pierpont's service area and included in the TEAM Consortium regional footprint. Both Marion and Monongalia have rich deposits of fossil fuel and natural gas in the area's Marcellus Shale, which led to the oil and gas industry boom beginning in 2008. The shale extraction created thousands of high-wage jobs and economic vitality for many people and communities within these counties. But like the continuous reduction of coal production since the late 1990s, Marion and Monongalia counties have experienced high levels of unemployment

and fewer good-paying industrial jobs as shale production has plateaued based on global demand and changes in federal energy policies (DiSavino, 2015).

The ARC applies an economic index-based classification system of states within Appalachia, ranking counties within each state based on a 3-year performance average (ARC, n.d.-b). The [Interactive Map of County Economic Status and Distressed Areas, Fiscal Year 2024](#) shows Marion and Monongalia counties both ranked transitional, meaning their economic status is positioned between the nation’s at-risk counties and those considered competitive counties as noted in Figure 1 (ARC, n.d.-b).

Figure 1
ARC County Economic Status Designation by National Index Value Rank



According to the ARC’s 2021 data regarding in-county economic levels, Monongalia County contained one distressed area (or most economically depressed), and Marion County contained five distressed areas (ARC, n.d.-b). This finding reflects that although the county as a whole is transitioning toward improvement, high unemployment and poverty are still present, along with low per-capita income (Workforce West Virginia, 2020). Marion County’s poverty rate is 14.6%, and Monongalia County is 20.2% (U.S. Census, 2023). Statewide, poverty within the working-age population (ages 16–64) is 17.4%.

The economic development efforts of these two counties fall to both local county representatives and policymakers, including regional managers from the state’s Department of Economic Development. In their roles, identifying an incentive package of resources to attract new business and support expansion for successfully established industries, such as energy and manufacturing, requires available skilled workers. Data from the United States Census Bureau shows the population of West Virginia is nearly 1.8 million as of the 2020 Decennial Census, with approximately 20% of the population over 65 years old and 20% below 16 years old. Therefore 40% of the total population lies outside the parameters of the working age for labor force participation. For Monongalia and Marion counties, the demographics reflect the state’s overall population of working-age residents (U.S. Census, 2023). The population size is approximately 106,000 in Monongalia and approximately 56,000 in Marion. Both counties house one larger population area: the cities of Morgantown and Fairmont, respectively. In 2021, TEAM identified within the federal list of Opportunity Zones, Fairmont (Marion County) showed 15.1% of the local population as below the poverty line, and Morgantown (Monongalia County) with approximately 40% below the poverty line. Near these cities are both 2-year and 4-year postsecondary institutions including Pierpont Community and Technical College (U.S. Census, 2023).

The West Virginia Department of Education (DOE) oversees the K–12 secondary education system, including high school CTE centers by county. These CTE centers are funded through the DOE along with funding from the Carl D. Perkins Career and Technical Education

Act for students in Grades 9 through 12. Depending on what industries are prevalent in each county, a CTE along with the DOE identifies high-demand occupations and associated skills within their programs. The Monongalia Technical Education Center and Marion County Technical Center offer several career preparation courses related to energy and advanced manufacturing with some industry-recognized credentials. However, students under 18 are not eligible for most certifications and do not have industry experience to be hired immediately following the successful completion of their technical program.

Career pathways from CTE to community and technical colleges (CTCs) were initiated in 2011 through a federal TAACCCT Grant, which introduced Industry Advisory Councils to support transitional programming, early career exploration, and work-based learning opportunities (U.S. Department of Labor, n.d.). The state's Higher Education Policy Commission instituted in state code the ability for CTCs to provide academic credit for prior learning, including for secondary CTE, called Edge. In 2019, the West Virginia state legislature passed the free community college bill and allocated state funds to support West Virginia Invests, a last-dollar tuition funding program for CTE at the postsecondary level (WVHEPC, n.d.). However, even with these education resources, according to the U.S. Census 2021 data, educational attainment in Monongalia and Marion counties remains low (U.S. Census, 2023).

Figure 2

County	High School (equivalent)	Some College (no degree)	Associate Degree
Monongalia	24.8%	15.2%	6.9%
Marion	40.3%	18.4%	8.5%

Eight regional Workforce Development Boards (WDBs) are overseen by the state's public workforce system, Workforce West Virginia, and are the distributors of Workforce Innovation and Opportunity Act (WIOA) federal funding along with overseeing the One-Stop Career Centers and Sector Strategies initiative. Sector Strategies develops partnerships with industry-based groups of employers to bolster workforce training and meet hiring demands. Through employer incentive programs, as required by WIOA (WIOA, n.d.), training funds for eligible individuals are available to career seekers and employers for wage reimbursement in qualified on-the-job training. Marion and Monongalia are designated counties under the West Virginia Region 6 WDB. Despite efforts of the Region 6 WDB, labor force participation remains low (Workforce West Virginia, 2020). In Monongalia County, 57.2% of the working-age population is in the labor force, which is considerably higher than the state's overall participation rate of 49.2%, while Marion County has a 55.2% participation rate (U.S. Census, 2023).

Method of Evaluation

The method of evaluation to gauge stakeholder interest in developing a model LWFE included two activities: (a) prepare, schedule, and hold initial meetings, or Strategic Workforce Summits, by county to introduce stakeholders to the LWFE concept and gain insight into their understanding and responsiveness to the ideal, and (b) circulate a questionnaire following the Summits to validate stakeholder conceptual understanding of the information presented.

The first activity required generating a comprehensive stakeholder contact list including representatives of the primary affinity groups for each of the two geographic areas identified for the Strategic Workforce Summit meetings: Monongalia and Marion counties. Stakeholders included those directly engaged in advanced manufacturing and energy industries in alignment with TEAM, identified and verified with data supplied by TEAM, the Region 6 WDB, and the college's Industry Advisory Committee members in these sectors.

Next, a presentation was developed to provide stakeholders with data pertinent to their community's workforce needs and barriers affecting industry growth and skills attainment. The presentation outlined the purpose of LWFE collaborative partnerships and introduced how CTE can successfully affect the desired workforce, economic, and educational outcomes. Based on established workforce development relationships, local economic development authorities and WDBs were asked to consider supporting this next step in developing a robust LWFE in these communities.

Two Summit meetings were scheduled, one for each county. These were initially to be 1-hour virtual meetings scheduled for the afternoon of July 18, 2023. A total of 34 attendees were invited, some overlapping between counties. However, due to low response, only eight total stakeholders registered, with only one unique to Monongalia County. Therefore, the Summits were combined into one virtual event. Of the eight stakeholders that registered, five attended.

The Strategic Workforce Summit included the presentation on the LWFE concept, which defined the ecosystem strategy versus the current workforce system strategy, clarified stakeholders' active roles and sharable resources, connected the TEAM Consortium and Advance CTE initiatives for building CTE capacity efforts, and outlined how to leverage data to address equity gaps. This presentation was followed by a facilitated discussion to gain consensus on shared objectives for workforce and economic development, workforce needs, data resources to support activity toward meeting goals, and challenges faced. Further discussion ensued regarding the West Virginia economic outlook and how to address low workforce participation and population decline. Other challenges identified included a lack of awareness of postsecondary CTE programs; limited broadband access; a gap between the occupation skills needed as perceived by workers and the skills gained through education (including cost); employer support for clear, specific workforce needs; lack of accurate local labor market information; and lack of apprenticeships and work-based learning. The Summit participants were engaged throughout the presentation and discussion periods.

The second activity consisted of a questionnaire designed to reinforce the information provided through the Summit meetings and assess further interest in developing a model LWFE. The questionnaire was provided within 2 weeks of the Summit to all who attended as well as those who were invited but did not attend. Summit participants were encouraged to share the questionnaire with colleagues within their agencies. Five surveys were returned within the requested period.

Survey questions were designed to

- act as a knowledge check of how an LWFE can be an adaptive solution and how it differs from the current workforce system and ascertain the level of interest for continued engagement in developing an LWFE;
- acknowledge the value of disaggregated data as a means for connecting diversity in the community to CTE; and
- identify where there might be gaps in stakeholder understanding of how

postsecondary CTE can empower marginalized communities and combat known barriers to the workforce, credentialed education, and training.

Questions varied by type, including multiple-choice, level of importance, Likert scale (agree/disagree), true/false, and open response. Within the open questions, 80% of respondents gave positive responses with regard to CTE as a viable pathway toward economic mobility, the importance of a postsecondary credential, and how diversity in stakeholder representation supports workforce efforts.

Summary of Findings

Regardless of the small sample size, the Summit was successful in the sense that the partnerships already established within this group of stakeholders are strong and continue to be devoted to improving opportunities for West Virginians through collaboration and resource sharing. These representatives serve on multiple and varied workforce system partnerships yet were open and enthusiastic about focusing their participation more directly and purposefully in the form of an LWFE. One specific comment made during the Summit meeting was to not replicate or duplicate current workforce system structures but to modify them into *ecosystems* and to require that taking action toward meeting objectives be a priority. Offering more information sessions such as the Summit to engage more representation within the communities was fully supported.

As long-time partners with the WVCTCS, stakeholders strongly supported the local community college to anchor the LWFE as the organizing partner. In West Virginia, the CTC acts as the hub in postsecondary education, offering career pathways from secondary CTE to 2- and 4-year higher education through articulation agreements. State training funds committed through legislative budget appropriations to the CTCs create opportunities not only for students new to the workforce but also for incumbent workers to gain ongoing career-advancing skills. CTCs also have the flexibility, along with access to funding, to offer short-term, job-ready workforce training to rapidly supply skilled workers in high-wage occupations, fueling the state's economic development.

Questionnaire responses gave positive feedback on the value of the LWFE, and respondents confirmed the vital role of CTE in economic and workforce development. Respondents were generally knowledgeable about the barriers to CTE in West Virginia. All respondents showed interest in continuing to pursue some type of LWFE as an adaptive solution for the state's current workforce needs and as a foundation for future economic development opportunities that require skilled workers.

Additionally, responses recognized that through postsecondary CTE, individuals can achieve valuable credentials with multiple entry and exit points. Over time, a person may earn higher wages associated with advanced career training. Skills that span multiple industries not only benefit the individual but also contribute to the success and economic growth of the region and the state of West Virginia. Further diversity within the stakeholder affinity groups would be impactful in gaining a deeper understanding of known and unknown systemic barriers that are not necessarily revealed within data, especially affecting communities with extreme poverty and low workforce participation.

Several setbacks affected the proposed project timeline due to delays in collecting stakeholder data from the host community college and supporting organizations. This resulted in scheduling the Strategic Workforce Summits at a much later date than anticipated, which in turn yielded a poor response from the stakeholders for two county-specific meeting invitations. The minimal attendance response prompted reducing the schedule to only one combined Summit, which had to be scheduled in mid-July due to these delays. Also, competing priorities were

another factor affecting the project within the stakeholder group. A second Summit was not able to be scheduled due to the project period limitation.

Recommendations

Restructuring current workforce systems into LWFEs requires an *all-in* adaptive leadership approach. Within participating organizations, state or federal regulations may impede an immediate full realignment, as stakeholders cannot stray too far from required duties and resource allocations. Although performance goals within the stakeholder affinity groups overlap some, flexing toward aligning goals and resources into developing a viable LWFE, along with the support of policymakers, optimizes forward progress (Zaber et al., 2019). Suggested systems improvement includes strong connectivity across stakeholders, flexibility and responsiveness, aligned incentives, and data-driven and evidence-based decision making as outlined in RAND’s published research, *A System That Works* (Zaber et al., 2019).

By restructuring this “patchwork quilt of programs” as Plumlee states in *Cultivating Healthy Workforce Ecosystems* (2018), a new and improved ecosystem is interrelated, interconnected, and in a position to act and “ensure that education and training assets are well aligned with, and responsive to, shifting workforce demand skills and learning” (Plumlee, 2018). Stakeholders are already accountable for meeting the workforce and economic needs of the local region but now are enabled to solve issues collectively with better results than what could be achieved independently. Workforce boards working alongside educational institutions and employers identify job skills and skills gaps, with the recurring evaluation of the relevance of the programs and subsequent credentials. Through WIOA, more employers are incentivized to offer work-based learning as a strategy for building a talent pipeline (*New Skills Ready Network*, 2020). In partnership with community-based organizations, stakeholders support technology-enhanced education for rural families facing digital inequity and geographic barriers to quality CTE (Anderson et al., 2021).

Another recommendation for West Virginia is for LWFEs to adopt a value proposition to invigorate the state’s consortium agencies through a deeper reach into the large rural areas and the inequities faced within distressed communities. Suggested language might state:

Value Proposition

LWFEs are impactful and results driven:

- for adult learners, to provide training and education that in the short term provides family sustaining wages and in the long term provides pathways to careers and greater economic mobility
- for employers, to address the skills gap and fill open jobs with qualified workers, increase the sustainability of the local workforce through career-advancing training, and create a talent pipeline
- for the local economy, to revitalize communities and prepare for future opportunities for growth and stability and to increase labor participation and education attainment as an asset to attract and retain industry

Stakeholders dedicated to improving state practices that drive awareness of and access to quality CTE are key to successful workforce and economic development.

Future Strategic Workforce Summits should plan to discuss how the LWFE might

- continue to dialogue with stakeholders to build support for the LWFE within the specified community, engaging all affinity groups and reiterating the value proposition;
- build a framework based on the existing workforce system relationships, incorporating action plans and sharing resources as foundational principles;
- use data and shared knowledge to identify and address multiple barriers to postsecondary CTE and workforce participation in marginalized populations, especially rural or distressed communities experiencing high unemployment and underemployment;
- foster diversity within the stakeholder group to be representative of disadvantaged people within the communities;
- include community-based organizations as a valuable resource for working with marginalized populations to address barriers to workforce participation; and
- identify where funds or stakeholder resources should be directed toward regions with low attainment to improve educational opportunities and outcomes, including equitable access to quality CTE.

This model for an LWFE that actively applies resources to address low educational attainment and labor force participation positively affects disadvantaged populations. As a ladder for all learners, supported by stakeholders, the LWFE would aim to attract more West Virginians into the workforce, beginning with career exploration opportunities in middle school; flowing to CTE skills attainment in high school; incorporating apprenticeships, internships, and other worked-based learning; and investing in degree or credential attainment in postsecondary CTE education, all leading to highly skilled workers earning greater than living wages.

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