GO VIRGINIA REGION 8
MOVERS, MAKERS & GROUNDBREAKERS

SVWDB
Shenandoah Valley Workforce Development Board

Talent Pathways Initiative

GO Virginia Region 8 and
Shenandoah Valley
Workforce Development Board

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Executive Summary

The Shenandoah Valley stands at a crossroads—where deep-rooted industrial heritage meets a rapidly evolving labor market. The GO Virginia Region 8 Talent Pathways Initiative (TPI) was launched to address this pivotal moment, with a mission that extends far beyond another workforce development study. This initiative is a call to action for educators, employers, policymakers, and community leaders who recognize that sustaining regional prosperity hinges on building a modern, resilient, and highly skilled workforce.

The TPI effort represents one of the most comprehensive workforce assessments the region has seen—blending insights from 41 employer interviews, six focus groups, four roundtables, and a robust labor market analysis. The result is a rich, ground-level understanding of where the region excels, where it struggles, and where bold new strategies can take root.

Priority Industry Clusters

Manufacturing and Transportation & Logistics clusters were identified as the primary industry clusters vital to the region's economy. Manufacturing employs over 31,000 individuals at nearly 600 business locations, with food and beverage production standing out as a major sub-sector tied closely to the Valley's agricultural legacy. Transportation & Logistics provide employment for more than 17,000 workers, concentrated heavily in warehousing, distribution, and freight trucking activities along the I-81, I-66, and I-64 transportation corridors. These industries are deeply ingrained in the region and present both significant growth opportunities and urgent workforce challenges.

Workforce Challenges

Labor shortages remain one of the most pressing issues facing Region 8. Employers across Manufacturing and Transportation & Logistics report high turnover rates, particularly within the first 90 days of employment, creating instability and increasing recruitment and training costs. Commercial Drivers License (CDL) trained employees, vital to the Transportation & Logistics sector, show an especially low first-year retention rate. These patterns are driven by wage competition, implausible job expectations among new workers, and a broader cultural shift away from long-term loyalty to a particular employer.

A persistent skills shortage compounds these labor supply gaps. Employers consistently cited skills needed in mechatronics, hydraulics, electrical systems, diesel mechanics, and commercial driving. The shortage of qualified instructors in these fields further limits the region's ability to close skills shortages and meet industry needs. Additionally, foundational durable (soft) skills such as punctuality, communication, and workplace reliability were frequently noted as areas where many new hires fall short, hindering long-term retention and productivity.

The mismatch between labor supply and industry demand surfaced as a critical issue. Despite the strength and potential stability offered by Manufacturing and Transportation & Logistics careers, many students, families, and counselors continue to perceive these fields as less desirable. This perception has led to low enrollment rates in technical education

programs, exacerbating the shortage of skilled workers. Educators emphasized the need for early exposure to industry careers and a reimagining of how these career pathways are introduced and marketed to young people.

Regional Strengths and Emerging Innovations

Despite these challenges, the region has already begun responding with innovative strategies. Employers are increasingly developing internal "apprenticeship-like" training models, allowing them to cultivate talent from within while fostering loyalty and reducing reliance on external pipelines. Initiatives such as Worlds of Work, Network 2 Work, and similar career exploration events are exposing individuals to Manufacturing and Transportation & Logistics opportunities earlier in their educational experience, helping to shift perceptions and expand interest. Strong cross-sector partnerships between employers, community colleges, workforce development boards, and economic development organizations are aligning more closely around the goal of demand-driven training and workforce readiness.

Strategic Considerations for the Future

The Talent Pathways Initiative findings emphasize the importance of expanding sector-based partnerships to drive more workforce initiatives, demand-driven training, economic growth, and the development of tailored training programs. Several strategic imperatives are recommended to strengthen the regional workforce:

- **Build upon successful sub-regional models to convene region-wide employer-led, sector-based partnerships** to facilitate collaboration among economic development, education, and workforce stakeholders, ensuring regional solutions are aligned with evolving industry needs.
- **Increase flexible work-based learning opportunities** such as internships, apprenticeships, and job-shadowing programs that allow students and jobseekers to gain real-world experience while building valuable technical skills.
- **Work with employers to develop career pathways and define job roles**, enabling clearer entry points, advancement ladders, and training needs for high-demand occupations within priority industries.
- **Support enhanced job development and career counseling options** to promote more effective transitions from training to employment that enhance longer-term labor force attachment.
- **Invest in durable (soft) skills development**, including communication, reliability, teamwork, and critical thinking—competencies that employers across sectors consistently identify as essential but lacking.
- **Expand the talent pipeline** by promoting community solutions, addressing barriers to education and employment, utilizing strong postsecondary institutions, and increasing outreach to underrepresented and rural populations.
- **Transform perceptions of manufacturing and transportation & logistics careers** through early and sustained engagement with students, parents, and educators that elevates these fields as viable, respected, and high-quality career options.

Through intentional collaboration, strategic investment, and innovative workforce solutions, Region 8 is well-positioned to secure its economic future and ensure that residents across the Shenandoah Valley have access to meaningful, high-quality career opportunities.

Introduction & Talent Pathways Initiative Overview

Talent Pathway Initiative Region 8 Objectives

The GO Virginia Region 8 Talent Pathways Initiative (TPI) aims to align workforce capabilities with the needs of high-growth industries, while fostering sustainable economic growth and understanding the context in which the various sub-regions are operating. By leveraging collaboration among businesses, educational institutions, and government entities, TPI seeks to address regional workforce challenges through targeted strategies.

Region 8 TPI prioritizes key industry clusters—Manufacturing and Transportation & Logistics—by identifying alignment between career training and education programs to meet the specific needs of regional employers. This alignment ensures a more competitive and adaptable workforce that can drive economic progress across the region.

A core focus of the TPI effort is the use of data-driven decision-making to identify imbalances in workforce supply and demand. Through situational and gap analyses, this report incorporates labor market trends, worker capabilities, and educational resources to develop actionable strategies that enhance workforce participation and talent availability across the Shenandoah Valley Region (*see Actionable Recommendations & Funding Priorities section*). These insights support the development of sustainable industry coalitions, which guide the implementation of effective workforce strategies.

Priority Industry Clusters

Region 8 and sub-region stakeholders identified several priority industry clusters that drive economic development efforts. These sectors have been chosen for their potential to create jobs, foster innovation, and strengthen the regional economy along with alignment to the GO Virginia Region 8 Economic Growth & Diversification Plan that was updated in 2021. Prior data and findings highlight anticipated employment growth in high-wage jobs, regional competitiveness, and alignment with existing assets.

Manufacturing

The Manufacturing cluster represents a wide range of manufacturing industries focused on the production of machinery, parts, materials, and products. This cluster accounts for more than 31,000 jobs and nearly 600 payrolled business locations throughout the Region.[1] In terms of employment, five of the top 10 industries within the cluster are involved with Food & Beverage Manufacturing, reflecting the region's strong agricultural base.[2]

See the *Manufacturing* subsection within the *Virginia Region 8 Situational Analysis* section for more information.

Transportation & Logistics

The Transportation & Logistics cluster focuses on aviation, warehousing, distribution, logistics, and wholesale suppliers. This cluster accounts for more than 17,000 jobs and nearly 700 payrolled business locations throughout the Region. A majority of the jobs in the Cluster (nearly 60%) are within the Warehousing and Storage industry, though there are also large employment concentrations in Freight Trucking and related support activities.[3] This Cluster is heavily concentrated in the Northern and Central sub-regions, especially around both I-81 and I-64, as well as the I-81 and I-66, interchanges.

See the *Transportation & Logistics* subsection within the *Virginia Region 8 Situational Analysis* section for more information.

1 A "payrolled business location" is defined as a business that has at least one paid employee on its payroll and are distinct from non-employer businesses or self-employed individuals. One business may include multiple payrolled business locations.

2 The top five industries being referred to include a) Meat Processing, b) Dairy Product Manufacturing, c) Sugar and Confectionary Product Manufacturing, d) Bakeries and Tortilla Manufacturing, and e) Beverage Manufacturing.

3 Location quotient (LQ) is a way of quantifying how concentrated a characteristic of a particular region is compared to the nation. These characteristics could be an industry's or occupation's share of employment, resident demographic, online profiles or job postings. The LQ is the calculation that reveals what makes that particular region "unique" in comparison to the national average.

Actionable Recommendations & Funding Priorities

Aligned with GO Virginia's mission to enhance regional collaboration and build a resilient workforce, the following actionable recommendations and funding priorities draw directly from the comprehensive data and stakeholder insights presented throughout this report. Using comprehensive qualitative and quantitative data collection, a clear set of themes emerged that lead to clear priorities for boosting the talent level of regional workers while facilitating more efficient connections between labor supply and labor demand.

For additional information on Virginia's efforts to strengthen its workforce and economy, see the Virginia Economic Development Partnership's (VEDP) FY24 Annual Report found here.

Five main challenges exist that these recommendations are designed to address:

1. An overall shortage of workers for available jobs in Manufacturing and Transportation & Logistics.
2. An inability of employers to engage all sources of talent in the region, particularly non-college bound high school seniors, older workers or those who have not been in education programs, individuals with disabilities and neurodivergent people, and those who are long-term unemployed.
3. Opportunities to retain workers and promote longer term labor force attachment.
4. Worker shortcomings in using critical analysis or adaptability to changing job roles and tasks, new technology, or changing market conditions.
5. Deploying talent strategies on a regional and comprehensive basis rather than on a case by case basis.

The Actionable Recommendations and Funding priorities are organized into three main priority areas:

Funding Strategy 1: Sector-Based Training and Partnerships

Sector Coordination, Communication, and Business Engagement

- Deliverable 1: Create a Business Outreach Network for Manufacturing and Transportation & Logistics
- Deliverable 2: Form Regional Industry Councils to Develop Ongoing Training Strategies
- Deliverable 3: Build Upon Successful Foundational Efforts Led by Education and Economic Development Organizations in the Region
- Deliverable 4: Leverage Public-Private Investments
- Deliverable 5: Align Metrics and Incentives

Career Pathways, Job Roles, and Career Mobility

- Deliverable 1: Catalog Employer Career Pathway Maps and Tools

- Deliverable 2: Integrate Career Pathways into Workforce Outreach
- Deliverable 3: Embed and Update Career Pathways with AI Skills

Job Development and Labor Force Attachment

- Deliverable 1: Implement a Region-wide Job Development and Career Coaching Network
- Deliverable 2: Support Additional Employers with Job Development Services
- Deliverable 3: Assist Workers with Labor Force Attachment

Industry and Education Instructor Model

- Deliverable 1: Develop a Pipeline of New Instructors for Manufacturing and Transportation & Logistics Programs
- Deliverable 2: Engage Employers in Expanding Manufacturing and Transportation & Logistics Training
- Deliverable 3: Engage Faculty in Adjunct Instructor Mentoring

Funding Strategy 2: Education and Training Alignment

Work-Based Learning

- Deliverable 1: Increase the number of Region 8 student and Workers Utilizing Work-Based Learning
- Deliverable 2: Create and Maintain a Regional Work-Based Learning Coordination Hub
- Deliverable 3: Integrate Career Readiness and Counseling

Durable Skills Development

- Deliverable 1: Embed Durable Skills into Curricula
- Deliverable 2: Co-Design Assessment Rubrics with Employers
- Deliverable 3: Implement Work-Readiness Badges and Micro-Credentials
- Deliverable 4: Align Employer Hiring Practices

Funding Strategy 3: Engaging all Sources of Talent

Expansion of Talent Pipeline

- Deliverable 1: Improve Labor Force Participation Among Nontraditional Adult Students
- Deliverable 2: Build on Unique Models
- Deliverable 3: Develop and Expand Youth Engagement Models

Community and Family Outreach and Industry Exposure

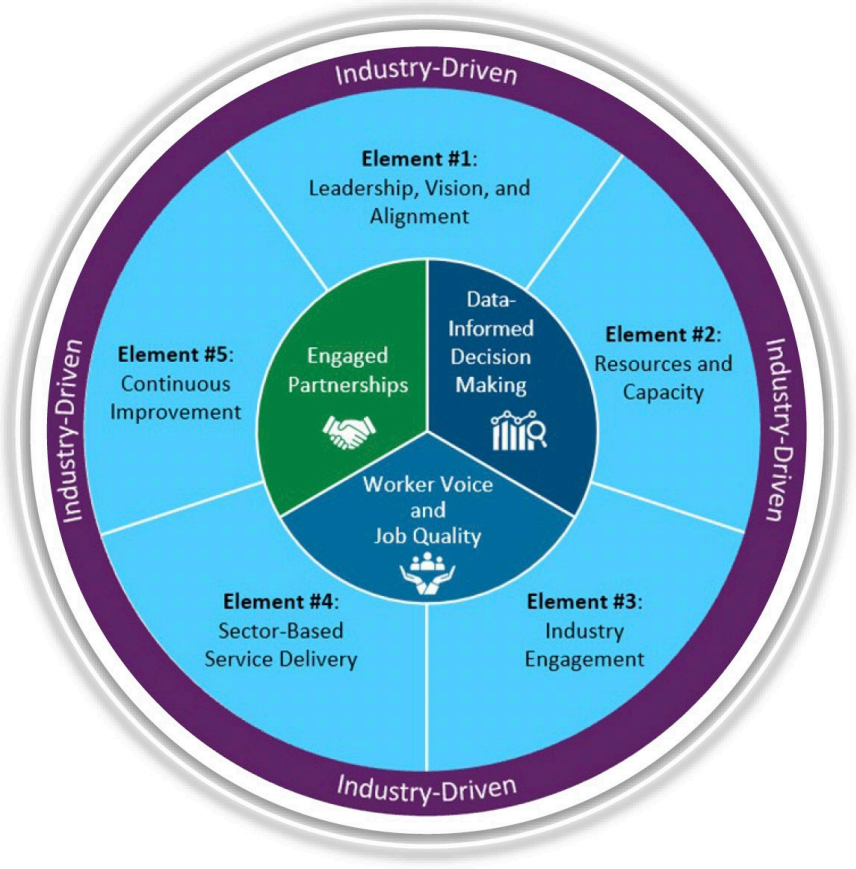
- Deliverable 1: Engage Families and Counselors Through a Regional Awareness Campaign
- Deliverable 2: Engage High School Seniors Who Will Be Entering Employment
- Deliverable 3: Expand Career Awareness Initiatives in Middle Schools
- Deliverable 4: Integrate Virtual Reality (VR) Career Exploration Tools

Within each of these priority areas, specific fundable recommendations are made that address the themes and findings of this report. Recommendations contain a summary of the issue, the key challenge facing Region 8, proposed solutions for funding consideration, and anticipated outcomes. This provides a clear blueprint for scaling practices that will have impact on improving employment and economic growth in Region 8.

Funding Strategy 1: Sector-Based Training and Partnerships

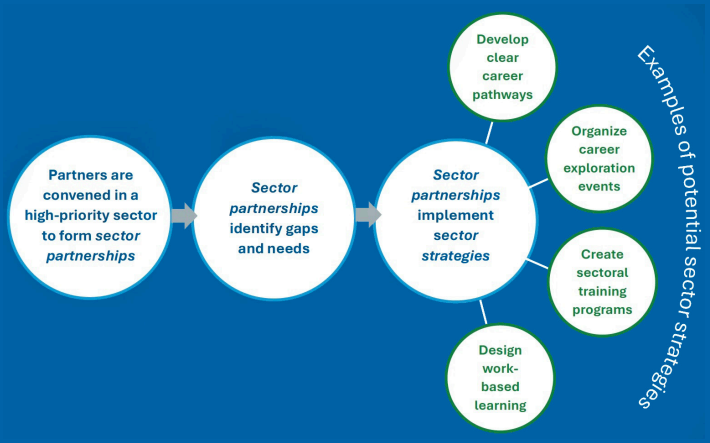
Summary: Sector-based training and partnerships that emphasize the leadership of employers in driving training investments are foundational to a comprehensive talent development effort. National public policy emphasizes implementation of sector strategies, and it is an emerging evidence-based practice gaining momentum in the workforce development field. Communities of Practice such as Next Gen Sector Partnerships highlight the foundational importance of sector-led partnerships and research of sector-led initiatives demonstrate that these programs increase worker training services received and credentials obtained, substantial earnings increases for workers, and an increased share of workers participating in higher-wage jobs (J-Pal, 2022).

The U.S. Department of Labor has published a Sector Strategies Framework that outlines the Core Components and Key Elements of a successful sector-led effort.



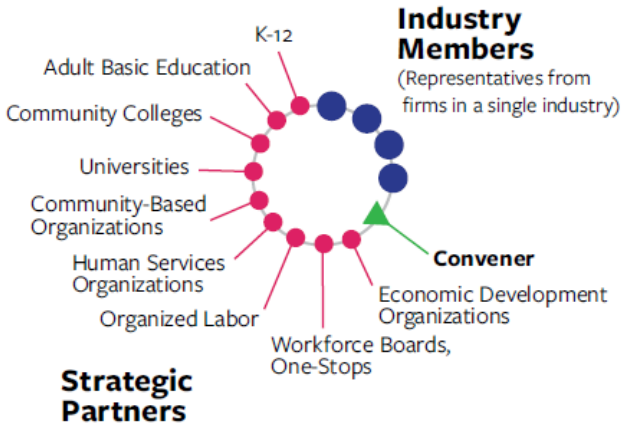
Region 8 Challenge: Throughout the TPI qualitative research process, stakeholders consistently emphasized the need for more coordinated, industry-and employer-led engagement. Employers noted that while partnerships exist, they are often informal, fragmented, or reactive. Educators expressed a desire for more consistent input from employers to inform program design, particularly as they navigate resource constraints and rapidly evolving skill requirements. National best practices affirm the value of regional sector strategies highlighted by interview, focus group, and roundtable participants.

Employers are also individually addressing labor force attachment, and issue that is pronounced with the employee "churn" that is ongoing. Efforts include internally mapping career pathways and job roles and providing transparency for employees to see how career mobility can be effectuated within a single company. However, these potential internal best practices are not clearly understood throughout Region 8 and its employers or how these efforts can influence training strategies. A strong sector-led partnership framework forms the basis for education and training strategies.



Funding Strategy: Sector Coordination, Communication, and Business Engagement

Sector-led training and partnership efforts require a regional convener to organize, communicate, and be accountable for activities and outcomes. This convening role builds upon strong efforts underway at the sub-regional and community levels led by economic development agencies and the Region's three community colleges.



Source: https://www.maine.gov/swb/sector_strategies/sector_partnerships.shtml

Using the foundational strengths of Region 8's partners, supporting successful sub-regional efforts and promoting a region-wide approach is recommended. This includes funding a Sector Strategies Director who can catalog various sector-led efforts, convene and communicate with stakeholders, and initiate the larger, region-wide effort. Leveraging business engagement efforts is critical to building a talent development training infrastructure.

The role of the Sector Strategies Director will be to engage stakeholders to identify, streamline, document, and incubate best practices emerging from across the region to help Manufacturing and Transportation & Logistics employers find and retain workers with needed skills and competencies.

The Shenandoah Valley Workforce Development Board (SVWDB) is the primary organization that has coverage across the entire Region 8 and is responsible and focused on workforce development. With its existing cross-sector relationships and infrastructure, SVWDB is well-positioned to serve as the regional sector convener in partnership with economic development and educational organizations. In conjunction with supporting successful sub-regional sector partnership initiatives, SVWDB can house the Sector Strategies Director position and be responsible for documenting outcomes and achievements of the region-wide effort. Taken together, this initiative promotes a sustainable model for long-term workforce development, ensuring local businesses have access to the skilled workforce they need to grow and thrive.

DELIVERABLES:

1. Create a Business Outreach Network for Manufacturing and Transportation & Logistics

Various education, economic development, community, and workforce development organizations are conducting ongoing business outreach for independent initiatives or efforts. While some coordination is ongoing, having a comprehensive network and a method of communicating and informing to the network will streamline outreach to employers and leverage efforts to more efficiently utilize limited resources.

2. Form Regional Industry Councils to Develop Ongoing Training Strategies

The SVWDB and economic development, postsecondary education, secondary education, and community partners can stand up Manufacturing and Transportation & Logistics Councils to promote engaged partnerships where business partners inform curriculum, programming, recognition of credentials needed for skills-based hiring, and opportunities for work-based learning. Councils can build on current efforts and leadership provided by the Region's economic development directors and staff to ensure efforts are not duplicative. Business representatives on the Councils can represent the different facets of respective industries, including small employers.

3. Build Upon Successful Foundational Efforts Led by Education and Economic Development Organizations in the Region

A strength of Region 8's talent development efforts is the work of economic development and educational organizations to engage businesses and develop infrastructure that promotes a more skilled workforce. The Region's three community colleges are each leading efforts—Blue Ridge Community College and the Merck project, Mountain Gateway Community College and its new Joe Wilson Workforce Center, and Laurel Ridge Community College's growing advanced manufacturing and mechatronics programming—that provide a foundation for a comprehensive regional approach. The economic development leadership and infrastructure also provides a foundation for measuring sustainable success in growing a region-wide sector-led training and partnership framework.

4. Leverage Public-Private Investments

Due to the myriad of public and private funding coming into the region, sometimes uncoordinated and unknown to all partners, the SVWDB, as regional convener, can develop an ongoing catalog of resources and initiatives taking place throughout Region 8 to braid and leverage funding that supports ongoing talent development efforts and ensures that coordinated strategies are being deployed.

5. Align Metrics and Incentives

To the extent possible, data collection occurring as part of initiatives, grant-funded projects, and other efforts should seek to utilize common definitions and metrics—such as placement rates, credential completion, and employer satisfaction—to evaluate impact and guide continuous improvement. Further, coordinated data collection and reporting can lead to dashboards and other transparent materials being developed to help guide regional leaders in decision-making.

Funding Strategy: Career Pathways, Job Roles, and Career Mobility

Building strong, transparent career pathways and clearly defined job roles is essential to strengthening the workforce pipeline for Region 8's Manufacturing and Transportation & Logistics sectors. Throughout the TPI qualitative research process, one of the best practices that emerged is the work employers have undertaken to define career pathways within their organizations, create job roles that promote upward mobility, and demonstrate the longer-term commitment to labor force attachment and increased wages available by staying with the company.

The U.S. Department of Labor states, "Career pathway systems offer an effective approach to the development of a skilled workforce by increasing the number of workers in the U.S. who gain industry-recognized and academic credentials necessary to work in jobs that are in-demand. To align educational offerings with business needs, career pathways systems engage business in the development of educational programs up front."

Region 8 employers and educators emphasized the need for clearer articulation of career progression opportunities, particularly in a competitive labor market where candidates weigh job options based on advancement potential. Many employers acknowledged that while internal career pathways exist, they are not always formally documented, marketed, or communicated effectively to current or prospective employees. Focus group participants also stress that defining entry-level job expectations, mid-level progression, and leadership opportunities would help align educational training and candidate preparation more closely with industry needs.

In conjunction with the sector convening role, a Career Pathways mapping initiative can be undertaken as part of the Sector-Based Training and Partnership initiative. The intent of this initiative it to capture the best practices occurring with Region 8 Manufacturing and Transportation & Logistics employers and scale them region-wide.

DELIVERABLES:

1. Catalog Employer Career Pathway Maps and Tools

Using methodologies for career pathway mapping, SVWDB and the Sector Partners can work in conjunction to document existing Region 8 employer-developed career pathways and job roles and undertake the development of a comprehensive set of career pathway maps for the growth occupations in Manufacturing and Transportation & Logistics. These career pathway maps and job roles then become the definitive set of tools used for targeting education and training investments. The career pathway maps will contain the technical and durable skills needed for advancement and the aligned credentials needed for career mobility.

2. Integrate Career Pathways into Workforce Outreach

Career pathway information would be integrated into all regional workforce development marketing materials, outreach campaigns, and youth engagement initiatives to showcase long-term career opportunities in Manufacturing and Transportation & Logistics. This includes not only promoting career ladders and earning potential but also ensuring that materials are visually engaging, accessible across platforms, and tailored to resonate with different audiences—including students, parents, educators, and career switchers. Messaging should emphasize both the upward mobility and the variety of roles available, while aligning with regional branding strategies and employer testimonials to enhance authenticity and impact.

3. Embed and Update Career Pathways with AI Skills

As part of career pathways development and cataloging, sector partner stakeholders should prioritize the integration of artificial intelligence (AI) literacy and application into career pathways. According to a recent analysis by the Federal Reserve Bank of Atlanta, over 628,000 job postings in 2024 required at least one AI-related skill, reflecting a growing demand across all educational tiers—from high school diplomas to graduate degree level employment. This trend reinforces the need to equip learners with foundational AI competencies to ensure adaptability across sectors.

Funding Strategy: Job Development and Labor Force Attachment

Perhaps the greatest challenge facing employers in Region 8 is retaining talent once someone has been hired. Multiple employers reported that efforts to recruit people for jobs are resulting in short-term attachment to companies. Reasons for leaving quickly vary, including small increases in wages, an inability to balance work and life issues, and challenges with adapting to workplace expectations and teamwork situations.

To combat this labor force attachment challenge, employers are resorting to hiring job coaches or contracting with organizations to provide one-on-one help to new employees. Workforce development and education professionals also report funding gaps in providing job development and services to help people transition from training and career services to long-term employment. It is no longer enough to just help people find employment; labor force attachment is the new focus.

Employers requested help with job development and coaching. A strategic approach is to develop a job development and coaching transition pilot. Such pilot can engage multiple organizations in a coordinated approach to support new entrants to the labor force with assistance in solving issues and coordinating with employers to help these workers with initial career success. The Region's community colleges have a career coach model that can be considered for expanding further to involve job placement assistance with employers. Job development coaches can work with participants while in the final stages of career or training services and then work with employers to support the new employee with longer term career success for the first few months after hire.

Job development coaches should coordinate efforts as part of the larger sector-led partnership model with a focus on assisting small employers who have less resources to dedicated to job supports.

DELIVERABLES:

1. Implement a Region-wide Job Development and Career Coaching Network

As part of the Region 8 sector-led partnership model, organizations can be identified to deploy job development and career coaches using a network model. This model can build upon existing career coaching efforts to develop a consistent and evidence-based approach to job development and transitions for new entrants to the workforce. A further consideration is identifying professional development opportunities for job development and career coaches.

2. Support Additional Employers with Job Development Services

Regional employers, particularly small and medium size businesses do not have the resources to support new entrants with issues and supports that might be needed to stay labor force attached. Therefore, a measure of success can be the number of these employers who are served by a pilot program and the number of employees they are able to employ and retain.

3. Assist Workers with Labor Force Attachment

Participants can be tracked longitudinally to measure improvements in job retention and labor force attachment. If an employee leaves a particular employer, services to help that worker remain employed with a similar Manufacturing or Transportation & Logistics company will support talent connections with these sectors and boost employment over time.

Funding Strategy: Industry and Education Instructor Model

Community colleges, technical schools, and other training providers are often limited in their capacity to offer training programs for in-demand Manufacturing and Transportation & Logistics jobs. A chronic challenge is finding instructors who have both the technical expertise in their respective fields and an aptitude to teach. To address instructor shortages, a collaborative industry-training institution model should be funded that can compensate employers for release time to provide adjunct teaching services and fund educational institutions to provide faculty mentors an opportunity to help industry experts with teaching practices and learning outcomes.

DELIVERABLES:

1. Develop a Pipeline of New Instructors for Manufacturing and Transportation & Logistics Programs

The initiative will promote new instructors who provide needed training for skills need in Manufacturing and Transportation & Logistics employment.

2. Engage Employers in Expanding Manufacturing and Transportation & Logistics Training

The number of employers providing release time and engaging in the initiative will demonstrate sector-led commitment to addressing a consistent gap and challenge in increasing training institution capacity to educate and credential more workers.

3. Engage Faculty in Adjunct Instructor Mentoring

Faculty at training institutions in the region will actively participate in building capacity for teaching and learning and helping generate more professionals involved in building the educational attainment of Region 8 residents.

Funding Strategy 2: Education and Training Alignment

Summary: Fulfilling Region 8's talent development needs requires a multi-faceted approach to education and training. Region 8 has strong educational assets, offering extensive courses and credentials (see Asset Map in Appendix). However, employers continue to express that employees are lacking durable (soft) skills needed to successfully maneuver through changing work environments and processes. Further, employers are interested in providing work-based learning opportunities beyond traditional registered apprenticeships. For those offering registered apprenticeships, they are struggling with filling those opportunities with apprentices.

Region 8 Challenge: Employers, educators, and workforce professionals repeatedly highlighted the need for expanded and more adaptable work-based learning models. Employers note a disconnect between the competencies of entry-level candidates and real-world job expectations, while educators shared that legal, safety, and logistical constraints often prevent students—particularly high schoolers—from participating in traditional work-based learning experiences such as internships and apprenticeships in Manufacturing and Transportation & Logistics.

Additionally, employers consistently shared that even when technical skills are present, deficiencies in workplace behaviors and attitudes often lead to poor retention and low job performance. Stakeholders noted that durable skills are being taught in formal settings; however, the practice and coaching of the appropriate use of those durable skills is lacking. As one employer emphasized, *"attendance is probably the biggest* [*issue*] *I see,"* and *"the issue is not the number of people applying, but the mismatch in skills."*

Moreover, focus group and roundtable participants identified that early reinforcement of these skills is essential, beginning as early as middle school and continuing through higher education and workforce development programs, again emphasizing the need to put the durable skills learned into practice.

Funding Strategy: Work-Based Learning

Expanding and diversifying work-based learning opportunities is critical to strengthening the talent pipeline in Region 8's Manufacturing and Transportation & Logistics sectors. These opportunities bridge the gap between classroom instruction and on-the-job experience, ensuring that learners develop the practical, technical, and soft skills needed to succeed in the workplace. A flexible, responsive work-based learning infrastructure also enhances employer engagement, improves student career readiness, and increases retention of new hires.

Any education and training investments in Region 8 should include a work-based learning component. These work-based learning opportunities could range from paid internships to on-the-job training where employers receive funding to offset training costs for new entrants or incumbent workers. A key feature of this strategy is cataloging current and emerging work-based learning initiatives through a centralized coordination hub—potentially housed within the sector convening organization (SVWDB), which can be a transformative step toward aligning labor supply with employer demand across Region 8. A model demonstrating the efficacy of this approach is the Valley Internship Experience Workgroup (VIEW) hosted through James Madison University, which currently employs a full-time Coordinator focused exclusively on increasing college internships. This coordinator functions as a centralized liaison connecting students with regional business services and internship opportunities. However, to maximize impact, this model should be expanded beyond college students to include adult learners, incumbent workers, and those already in the workforce.

DELIVERABLES:

1. Increase in the Number of Region 8 Students and Workers Utilizing Work-Based Learning

Investments in work-based learning can be measured by the number of individuals participating and through an outcome matrix that measures job retention, earnings, and other indicators. Funding applications may propose the type(s) of work-based learning proposed and specific performance metrics.

2. Create and Maintain a Regional Work-Based Learning Coordination Hub

A work-based learning hub can be part of the sector strategies approach of Region 8 and housed in SVWDB or another partner organization. The hub can serve as a comprehensive resource for work-based learning and track all related activities, including an employer database of interests, engagement, and training.

3. Integrate Career Awareness and Counseling

One emerging strategy in Region 8 is the integration of virtual reality (VR) technology into career awareness activities. For example, initiatives like Transfr VR are expanding access to immersive career exploration experiences, providing students with virtual simulations of skilled occupations. With 12 VR headsets already in use and growing investment in virtual work experiences, these tools offer an innovative and scalable approach to career counseling—particularly in rural areas or schools with limited access to in-person work-based learning. Investments in training technologies like VR can improve both awareness and access to high-demand technical careers across the region.

Funding Strategy: Durable Skills Development

Strengthening Region 8's workforce requires a robust focus on the development of "durable skills"—competencies such as punctuality, teamwork, critical thinking, adaptability, problem-solving, and professionalism. These foundational skills, often referred to as "soft skills," were repeatedly cited by employers and educators as critical gaps among entry-level workers in the Manufacturing and Transportation & Logistics sectors.

However, embedding durable skills into curricula must go beyond merely stating their importance. Durable skills development must be intentional, requiring both faculty and students to identify, practice, and reflect on how these skills are used in real employment contexts. General discussions about communication or teamwork are not enough—students must be given structured opportunities to develop and apply these competencies over time.

National research affirms that embedding durable skills into technical training pathways significantly improves employment outcomes, particularly for traditionally underserved populations. Employers are increasingly seeking "work-ready" candidates who demonstrate adaptability, resilience, and problem-solving capabilities alongside technical proficiency.

A concerted regional effort to integrate durable skills development across talent pipelines will create immediate positive impact.

DELIVERABLES:

1. Embed Durable Skills into Curricula

Many education and training programs inherently embed durable skills into curricula, so the challenge is being more intentional with students and faculty in identifying, isolating, and focusing on durable skills attainment. Syllabi, lesson plans, and transcripts should all identify the durable skills being taught and attained so students and employers have a complete picture of what has been learned and can apply to the workplace.

2. Co-Design Assessment Rubrics with Employers

Assessments of durable skills attainment and expression are critical and should be utilized on a wide-scale and consistent basis across Region 8. To ensure relevance and applicability, assessment rubrics can be co-designed with employers through existing or newly formed sector partnerships. This collaborative approach ensures that assessments reflect real-world expectations and industry standards, creating alignment between skill-building programs and employer needs. Education and training providers, along with workforce development organizations, may adopt these shared rubrics as a standard for evaluating work readiness, enabling greater consistency, credibility, and comparability of talent across the region.

3. Implement Work-Readiness Badges and Micro-Credentials

To address workforce gaps and better align education with industry needs, Region 8 stakeholders highlighted the growing use of badges and micro-credentials. These tools offer flexible, targeted validation of skills—particularly for soft skills and technical competencies.

A best practice that can be adopted is the QA Commons Essential Employability Qualities (EEQ) Certification, which assesses career readiness across traits like communication, teamwork, and problem solving. Several education partners in the region are using or considering QA Commons to enhance curriculum relevance and signal employability to businesses.

Other platforms such as Credly, Badgr, and Skillful are gaining interest for issuing digital badges tied to CTE competencies, industry certifications, and durable skills. These badges help students and jobseekers demonstrate progress even before completing full programs.

4. Align Employer Hiring Practices

As part of sector partnerships, employers and partners can work together to initiate skills-based hiring efforts that incorporate durable skills and measure the number of employers adopting technical and skills-based hiring.

Funding Strategy 3: Engaging All Sources of Talent

Summary: To ensure a future-ready workforce, Region 8 should prioritize early and sustained engagement with students around career pathways in Manufacturing and Transportation & Logistics. Qualitative research revealed a concerning lack of awareness and interest among K-12 students regarding opportunities in these sectors, stemming largely from outdated perceptions and limited exposure. Further, employers consistently did not understand how to tap into nontraditional sources of talent throughout the region.

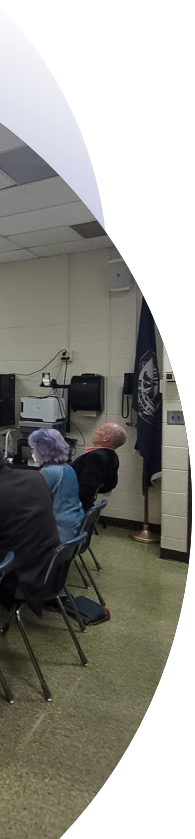
Region 8 Challenge: Educators and employers alike emphasized that outreach efforts often begin too late, typically in the latter years of high school, missing critical windows when students form career aspirations. Focus groups also highlighted the need for hands-on experiences that connect academic learning to real- world careers.

Best practices on the national level suggest that early exposure programs significantly increase enrollment in high-demand career and technical fields, particularly when integrated with work-based learning opportunities and industry-recognized credential pathways.

Outdated perceptions about Manufacturing and Transportation & Logistics careers continue to limit the ability to attract new talent into these fields. Stakeholders across Region 8 emphasized that many students, parents, and even educators still view these industries through a historical lens of low-skilled, low-wage, and "dirty" work, failing to recognize the technological innovation, career mobility, and family-sustaining wages these fields now offer.

Multiple focus group participants noted the need for a "rebranding" effort to modernize the public narrative surrounding these industries. Evidence from the sub-regions suggests that coordinated, multi-channel marketing and branding campaigns can meaningfully shift perceptions, particularly when they feature real stories of career success and focus on pathways to advancement.

Other talent pools remain disconnected from the workforce without an easy means to engage with employers. Organizations in Region 8 are serving various talent pools with barriers to education and employment; however, efforts remain at the individual initiative level and not as part of a regional strategic process.



Funding Strategy: Expansion of Talent Pipeline

Expanding workforce development in Region 8 requires a broader view of talent pipelines that moves beyond traditional participants such as high school or college graduates. Many individuals—particularly adult learners, individuals in generational poverty, and those with limited educational attainment—face significant barriers to upskilling and employment that are deeply tied to family and community contexts.

Efforts to better expand the talent pipeline should focus on scaling successful practices already in place. Region 8 already has some innovative models for talent expansion that can be scaled and sustained. One such model is Network 2 Work, a statewide program hosted by Piedmont Virginia Community College. Regionally, it operates as Network 2 Work in the Valley, managed by the Shenandoah Valley Workforce Development Board (SVWDB) and supported through state funding. The model leverages sector partnerships and worker engagement strategies to connect job seekers—often from underserved or "hidden" talent pools—with in-demand careers through outreach, documentation, and coordinated employer connections.

> ***"The younger generations aren't interested in manufacturing. They don't even consider it as a viable job option, and this contributes to turnover and skill shortages."***
>
> **Chamber of Commerce Representative**

Other initiatives that provide employment and training assistance to formerly incarcerated individuals returning to society, low income working and non-working adults, including those on public assistance, individuals with disabilities and neurodivergent people, and discouraged or long-term unemployed workers should be cataloged, identified for use as best or evidenced-based practices, and targeted for scaling through funding support.

Additionally, funding for training models that expand the pipeline of high school students and graduates for work in Manufacturing and Transportation & Logistics should be considered. This includes expansion of dual enrollment models, targeted funding for technical schools that are directly training for growth occupations in the target sectors, successful community college training efforts, and youth apprenticeship programs that provide structured pathways for individuals to earn wages while gaining industry-recognized credentials and, in some cases, academic credit. For youth, this may include high school juniors and seniors earning both credit and postsecondary credentials through dual enrollment and paid work-based learning.

DELIVERABLES:

1. Improve Labor Force Participation Among Nontraditional Adult Students

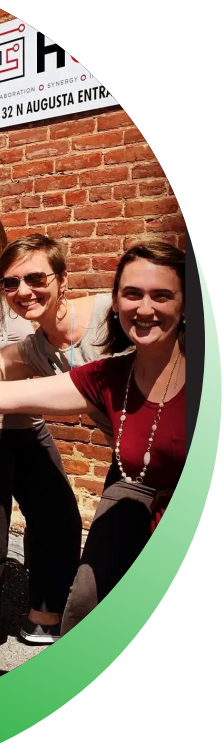
Various demographic groups can be identified up-front and engagement growth in these different groups increase regarding training enrollment, work-based learning use, and employment.

2. Build on Unique Regional Models

Capacity expansion in current models looking to scale regionally can increase, such as Network 2 Work enrolling more individuals in services or employers engaging in hiring. Additionally, the number of models that successfully scale and realize employment and training outcomes can increase and be positioned to impact more individuals and improve talent access to jobs.

3. Develop and Expand Youth Engagement Models

Building on a baseline of successful practices in dual enrollment and youth apprenticeship, the youth talent pipeline can be specifically expanded by investing in more organizations interested in expanding programs, initiating new programs, and engaging more students in educational and skills attainment activities.



Funding Strategy: Community and Family Outreach and Industry Exposure

Outreach and exposure to the Manufacturing and Transportation & Logistics sectors—and the jobs they offer—are widely viewed as essential. To address this, concerted funding efforts should be deployed to support and measure targeted outreach and exposure initiatives. Any outreach and exposure initiative should have concrete objectives and outcomes stated to inform the greater region and its stakeholders as to the impact of such outreach efforts. A specific focus should be on developing creative means to educate the greater public and families regarding opportunities in Manufacturing and Transportation & Logistics and do not limit efforts to just middle school and high school students (however, these groups should clearly be targeted as well).

To effectively reach and support these populations, Region 8 should implement intentional strategies that engage not only the individual learner or worker, but also their families and support systems. Outreach efforts should include parents, spouses, guardians, and other influencers who often shape decisions about education, employment, and reskilling. This can involve community-based workshops, family-inclusive career counseling, and trusted messengers to communicate opportunities in manufacturing, logistics, and other high-demand sectors.

Positioning workforce development as a community-wide opportunity—rather than an individual responsibility—can increase participation from non-traditional populations and deepen impact across the region.

DELIVERABLES:

1. Engage Families and Counselors Through a Regional Awareness Campaign

Families who are experiencing generational poverty or lack of educational attainment or other barriers to entry often struggle with breaking these cycles with their children. Therefore, recognizing that a community approach to addressing talent deficits means discovering innovative ways to engage the whole family and support system around students and workers.

A measurable outcome can include developing and launching a multi-faceted, multi-media campaign targeted generally at changing perceptions, and specifically at reaching key talent pools. Stories utilizing different content can highlight modern Manufacturing and Transportation & Logistics careers, feature testimonials from young professionals and local employers, and demonstrate the earnings and career mobility options of the two sectors.

2. Engage High School Seniors Who Will Be Entering Employment

A strategic opportunity exists to better support high school seniors who plan to enter the workforce immediately after graduation but lack clear postsecondary plans. Many of these students are overlooked in traditional college or credential-focused pipelines, yet they represent a critical untapped segment of the emerging workforce.

A coordinated, regional campaign engaging students before graduation can result in more students entering Manufacturing or Transportation & Logistics training programs and/or directly into employment. An initiative can include career exploration resources, employer showcases, on-the-spot interviews, and structured entry points into employment, training, or apprenticeships.

3. Expand Career Awareness Initiatives in Middle Schools

Many individuals interviewed feel a more intentional effort to reach middle school students through career exploration programs is beneficial for raising awareness and excitement about careers in Manufacturing and Transportation & Logistics. Awareness events can incorporate the variety of jobs and careers available to students by remaining in the region. Events that promote interaction are key.

4. Integrate Virtual Reality (VR) Career Exploration Tools

As VR training equipment becomes more affordable, utilizing this technology to provide immersive experiences of manufacturing and transportation work environments can garner interest and excitement for students and job seekers. Use of VR technology also provides a cost-effective way to train for skilled positions within Manufacturing and Transportation & Logistics industries.

Report Design & Methodology

GO Virginia's Region 8 TPI assessment, hereafter referred to as the TPI Report, implemented a rigorous mixed-methods approach. This approach utilized a multi-stage framework that: a) identified all relevant qualitative and quantitative data sources needed to provide an accurate and representative assessment of the region; b) implemented a strategic and holistic approach to analyzing and synthesizing the data into comprehensive findings and recommendations; and c) identified inherent limitations that impact outcomes and findings.

Data Sources

A variety of qualitative and quantitative data sources were leveraged to better understand the regional and sub-regional landscape of Region 8.

Qualitative data collection consisted of several interviews, focus groups, and roundtable discussions which included a total of 103 participants representing various businesses, universities, community colleges, career and technical education (CTE) and trade schools, K-12 school districts, chambers of commerce, and economic development agencies.[4] People interviewed provided an array of perspectives on talent opportunities, stakeholder needs, and the unique challenges faced within the target sectors and respective sub-regions.

Interviews

A total of 41 virtual interviews were held with employers, secondary educators, and postsecondary educators. Interviews were conducted in a 30-45 minute timeframe and probed topics such as a) employer labor market needs and existing partnerships, b) employee skills and training, and c) anticipated future trends, barriers, or changes within Region 8 and the talent development landscape.

Focus Groups

A total of six focus groups were held with economic development directors and local chambers of commerce board members, representing the various sub-regions and respective localities. The focus groups were conducted in a 45-60 minute timeframe and probed into topics such as a) regional and community labor market needs, b) regional trends and labor forecasts, and c) potential barriers faced in driving industry growth.

4 Roundtables took place in Harrisonburg (city), Winchester (city), Augusta County, and Shenandoah County.

Employer Roundtables

A total of four employer round tables were held throughout Region 8, and each roundtable inluded between 7 and 16 employer participants.[5] Employer roundtable discussions were facilitated in a two hour window and probed into two main topics: (1) industry trends and labor market perceptions (i.e., key trends, competitive landscape, perceptions of workforce gaps, and skill shortages), and (2) collaboration, partnership, and future strategies (i.e., workforce partnerships, alignment with educational curriculum, and future industry needs).

Annotated Bibliography

An annotated bibliography review was conducted, collecting and analyzing 24 different literature sources that informed recommendations around the development of sector-based partnerships, work-based learning, and career pathway model development. Additional research on existing workforce development strategies, both domestic and international, can be found in Appendix G.

Quantitative data collection consisted of collecting, analyzing, formatting, and visualizing data from a variety of sources to give a clear picture of the economic landscape within Region 8. Data involving economic performance, workforce, key industries, and demographics were collected to assess current and projected needs for the Region. Both private and public data sources were used, with a heavy emphasis on data provided by federal sources like the Bureau of Labor Statistics and the US Census Bureau.

Lightcast

Lightcast is a labor market analytics tool that provides data regarding workforce trends. Lightcast draws its data from a variety of sources, including from the Bureau of Labor Statistics, the National Center for Education Statistics, the Census Bureau, and online job postings. Lightcast was primarily used to aggregate data pulled from Q3 2024 on industry clusters, in-demand occupations, job postings, and regional demographics.

5 CTE programs in GO VA Region 8 include representation of Bath County, Parry McClure High School, Frederick County, Harrisonburg City, Highland High School, Rockbridge County, Staunton City, Rockingham County, Winchester City. Additionally, GO VA Region 8 represents six trade schools, including Blue Ridge Technical Center, Page County Technical Center, Triplett Technical Center, Massanutten Technical Center, Mertz Career and Technical Center, and Valley Career and Technical Center.

US Census Bureau

The US Census Bureau and its associated census and surveys built the basis for much of the demographic information that was accessed. In particular, OnTheMap, a web-based mapping tool from the Census Bureau's Longitudinal Employer-Household Dynamics program, was used to track commuting patterns in and out of Region 8 and provided insights into regional labor market dynamics at a granular level.

Gazelle

Gazelle is a B2B business intelligence platform that provides a large database of companies and contacts, along with data on associated supply chains. Gazelle was used to identify companies in target industry clusters and map company locations throughout the Region.

Data Triangulation and Synthesis

Triangulating and synthesizing qualitative and quantitative data in tandem was a strategic approach in the TPI Region 8 analysis process as it integrates multiple data sources to ensure more robust, accurate, and comprehensive findings. By cross-referencing a wide range of qualitative and quantitative data—interviews, focus groups, roundtables, and secondary datasets such as Lightcast and the US Census Bureau—the TPI Report has validated findings, minimized bias, and uncovered nuanced insights that might remain hidden in single-source analysis. This approach strengthens the credibility and reliability of the conclusions drawn in this report.

This report is structured in a way to facilitate a thematic approach to addressing the various topics. Key findings that are discussed in this report are informed by multiple data sources.

Limitations

A report containing quantitative and qualitative data has inherent limitations. The data and conclusions contained within this TPI Report are offered within the following parameters:

- By using the specific NAICS codes that align with GO Virginia's Regional Priority Industry Clusters, a complete picture of the firms and talent situation of these clusters may be missing if additional related NAICS codes are not included. In this report, two-digit NAICS codes are provided in the Situational Analysis but five-digit NAICS codes are included in Appendix B for more detail.
- Data systems are limited in capturing "real-time" data on employment and hiring. Data sources, particularly those provided at the Federal level, are often too cumbersome to be able to track changing employment trends as they are unfolding. For instance, several data centers are migrating into Region 8, and planning development directors are working to strategically deploy recruiting and staffing assistance. Additionally, data sources, such as Lightcast, use their own data models that update every three months. As this project is a year-long investigation, data pulled representing Q3 2024 throughout the drafting of the report may have slight variations depending on when it was accessed. While information is being gathered through qualitative interviews and roundtables, ultimately, there is a level of information that is unknown.
- Some of the primary data sources provided by the Federal government and used by the TPI Report may provide an "apples-to-oranges" comparison due to the specific needs of the target industry clusters. For example, analysis of postsecondary program completions may not tell the full story of the talent supply-demand gap, as many of the occupations in the Manufacturing and Transportation & Logistics clusters do not require a postsecondary credential. Additionally, some training providers may not have data that is publicly available if they are not an accredited two- or four-year institution.
- The TPI Report focused mainly on addressing employer challenges, successes, and a wide-range of stakeholder recommendations that directly align with meeting regional labor talent, capacity, and demand. The recommendations made in this report will provide varying levels of insight depending on the stakeholder.

Talent Pathway Continuum Approach

A continuum of understanding was established to better contextualize the landscape of GO Virginia Region 8 TPI findings and recommendations.

Identify Talent Pathways

Focusing on the skills, experiences, and qualifications of the Region's existing and potential workforce, the TPI Report assesses current workforce capabilities and availability. As shown in Appendix E, Region 8 lags behind the United States in postsecondary educational attainment. This report informs regional stakeholders and the Shenandoah Valley Regional Workforce Development Board of the current readiness and adaptability of the workforce, as well as the steps to further align and supply talent with economic growth priorities.

Assess Regional Capacity

Capacity examines the ability of employers, educators, and regional stakeholders, such as economic development directors and local leaders, to educate or upskill existing and future workforce laborers for regional demands and occupations. The findings in this report explore the facilitators and barriers to increasing the regional ability to improve upon existing and future workforce gaps.

Measure Employer Demand

Employer demand centers on understanding the workforce requirements of employers in priority industry clusters. Through employer roundtables, interviews, and occupational data, this report identifies critical job roles, skill gaps, and trends shaping regional economic development. Addressing these needs enables the Region to design targeted training programs and initiatives that bridge the gap between workforce capabilities and industry expectations.

GO VA Region 8 Situational Analysis

GO Virginia Region 8 Overview

GO Virginia is a statewide initiative designed to foster private-sector job growth and creation through collaborative partnerships among businesses, public agencies, and educational institutions. Region 8, strategically located along major transportation corridors like Interstates 81, 66, and 64, serves as a critical logistical hub for business enterprises currently established and those looking to expand in the area. This prime location offers unparalleled access to transportation networks and supports thriving industries, including Manufacturing and Transportation & Logistics, as well as secondary sectors such as aviation, agriculture, and poultry processing.

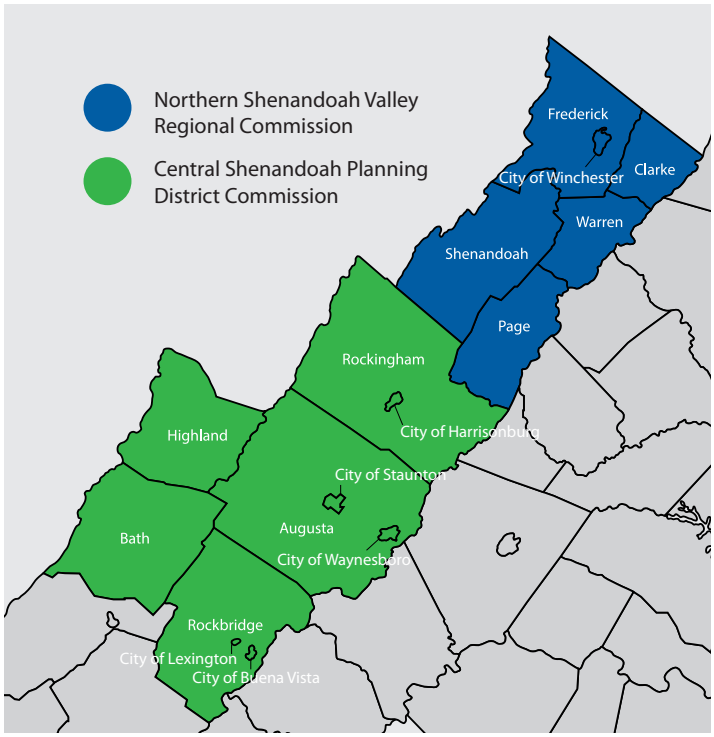
REGION 8 POPULATION OVERVIEW

- **Region 8's population in 2024 was 562,867 a 3.9% increase since 2019.**
- **The Region's population is expected to increase by an additional 3.7% between 2024 and 2029, reflecting an increase of 20,629 residents.**
- **From 2019 to 2024, jobs increased by 4.6% in Region 8 to 262,652. This change outpaced the national growth rate of 3.9%.**
- **As the number of jobs increased, the labor force participation rate increased from 62.5% to 62.7% from 2019 to 2024.**

Region 8 encompasses 16 localities managed by two planning district organizations: the Central Shenandoah Planning District Commission (CSPDC) and the Northern Shenandoah Valley Regional Commission (NSVRC) (see Exhibit A). These organizations oversee a diverse mix of urban centers and rural landscapes, creating a dynamic economic ecosystem that drives continued innovation and growth among Manufacturing and Transportation & Logistics sectors. The region's existing infrastructure further facilitates the efficient movement of goods and services, making it an ideal location for potential business expansion and development from external employers. This economic vitality is reflected in Region 8's remarkable growth and resilience in recent years, particularly in key sectors like Manufacturing and Transportation & Logistics. Trends in wages and employment, sector-specific growth, workforce characteristics, and population changes—alongside the effects of the COVID-19 pandemic—offer critical context for the findings and recommendations outlined in this report and underscore the region's readiness for continued development.[6]

6 Please note that this Situational Analysis pulls data from the Q3 2024 Lightcast Data, unless otherwise noted. Please see the *Report Design & Methodology* section for more details on this data source.

Exhibit A. GO VA Region 8 Planning Districts and Localities



Wage and Employment Trends

As reported in the 2021 Region 8 Economic Growth Diversification Plan, the average annual wage across all industries in Region 8 increased by 12% from $41,052 in 2019 to $46,672 in 2022. Additionally, the number of jobs in the Shenandoah Valley region grew by 4.6%, from 251,121 in 2019 to 262,652 in 2024, outpacing the national growth rate of 3.9%. Future projections suggest jobs are expected to grow by 13,137, or 5% over the next five years through 2029.

Manufacturing

In 2024, the Manufacturing sector ranked among the top sectors in terms of Gross Regional Product (GRP) at over $4 billion. Manufacturing jobs are projected to grow steadily over the next five years, benefiting from the region's strategic location and business expansion. The average earnings per worker in manufacturing, at approximately $77,000, exceed the regional average of $63,900, reflecting the sector's importance in providing high-quality jobs and standard of living among the region's residents.

Transportation & Logistics

In 2024, the Transportation & Logistics sector ranked at the top for the fastest-growing sectors. With increased demand for warehousing, distribution services, and CDL drivers, this sector is expected to continue its upward trajectory. Job opportunities in Transportation & Logistics are bolstered by a focus on infrastructure development and technological advancements, which improve efficiency and drive economic activity.

Employment Trends

Prior to COVID-19, Region 8 experienced low levels of unemployment, with rates below 3% in 2019. The region's unemployment rate peaked at 5.6% in 2020 but steadily declined to 2.4% by December 2024, indicating recovery to pre-COVID-19 rates. Labor force participation (LFPR) increased from 62.5% in 2019 to 62.7% in 2024, showcasing the region's ability to re-engage its workforce post-pandemic.

Population and Workforce Characteristics

In 2024, Region 8's population reached 562,867, a 3.9% increase since 2019, with projections estimating growth to 583,497 by 2029. While the region's population growth is promising, it faces challenges such as a contributing turnover factor of a high level of attrition in retirement due to an aging workforce, with 184,663 residents aged 55 or older, representing 32.9% of the total population. Furthermore, data from the US Census Bureau estimates that there may not be enough younger individuals in the Region to replace these retiring workers, with only 24.3% of the population being under the age of 20 (U.S. Census Bureau American Community Survey, 2023). Additionally, educational attainment levels are slightly below national averages, with 16.3% of residents holding a bachelor's degree and 7.3% an associate degree.

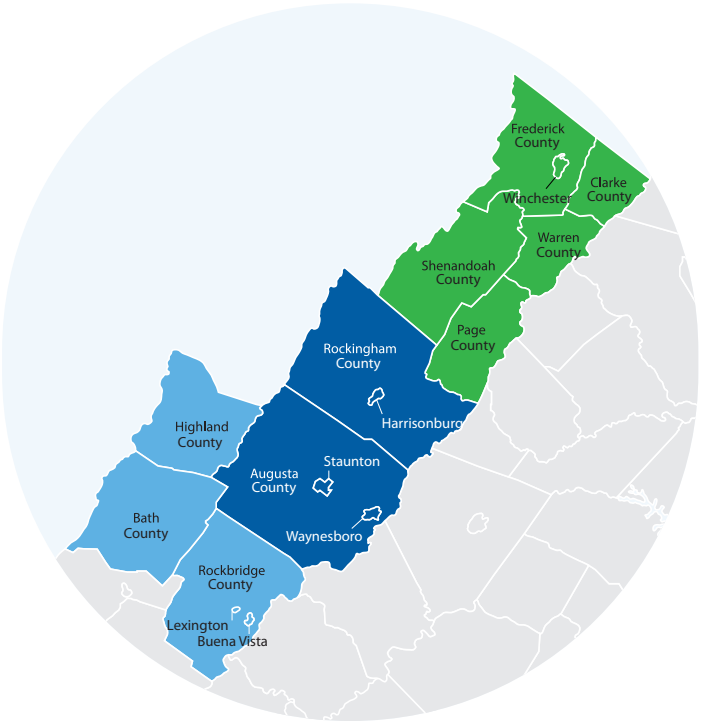
Industry Performance and Business Dynamics

Region 8's economy is supported by 31,318 companies, ranging from large employers like James Madison University and Valley Health System, to small businesses employing between one and four employees, which account for 35.9% of employers. Manufacturing and Transportation & Logistics employers play a pivotal role in sustaining economic growth and job creation, with both Manufacturing and Transportation & Logistics accounting for 31,474 and 17,697 jobs, respectively. These industries provide well-paying jobs, and their expansion has a multiplier effect on ancillary sectors like Construction, Retail, and Professional Services.

Sub-Regional Overview

GO Virginia Region 8 is further divided into three regions referred to as the a) Northern, b) Central, and c) Southern sub-regions in this report (see Exhibit B below) for analytical clarity and context. Analyzing these three areas as sub-regions allows for more granularity in identifying, assessing, and triangulating findings in this report to provide an additional lens in which qualitative and quantitative analysis is conducted.

Exhibit B. GO VA Region 8 Sub-Regional Counties and Cities



Each of the three sub-regions contribute to the unique perspective and cultural understanding of Region 8 and are referenced accordingly throughout the Report.

Sub-Regional Population Growth and Migration

Population growth varies across the sub-regions, reflecting differing demographic and economic dynamics. The Northern sub-region experienced the most rapid growth, increasing by 5.2% since 2019 to reach 252,393 in 2024. The Central sub-region growth was moderate at 3.3%, while the Southern sub-region showed modest growth of 0.2% during the same period. Looking ahead, growth projections indicate continued strength in the Northern and Central sub-regions, with increases of 4.2% and 3.5%, respectively, by 2029 (see Table 1). The Southern sub-region is expected to accelerate its growth to 1.5%, though its population base remains significantly smaller.

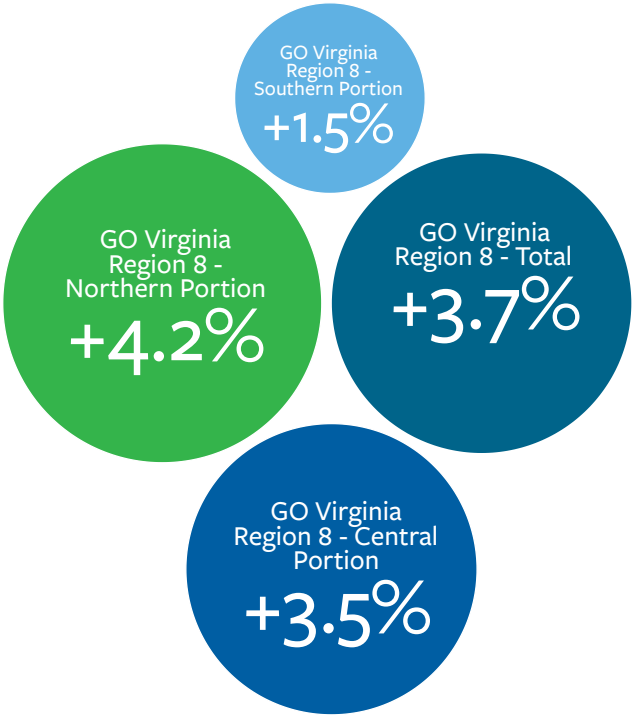


Table 1. GO VA Region 8 Sub-Regional Population Growth, 2024 – 2029

Region	Population (2024)	Population % (2024)	Population (2029)	Population Change % (2024-2029)
GO Virginia Region 8 - Northern Portion	252,393	44.8%	262,869	4.2%
GO Virginia Region 8 - Central Portion	269,704	47.9%	279,264	3.5%
GO Virginia Region 8 - Southern Portion	40,770	7.2%	41,363	1.5%
GO Virginia Region 8 - Total	**562,867**	**100%**	**583,497**	**3.7%**

Source: Lightcast, 2024

Migration patterns further underscore the appeal of the Northern sub-region, which saw a net migration gain of 1,838 people to the region in 2022, driven by its strategic location and economic opportunities. In contrast, net migration gains in the Central and Southern sub-regions were more modest at 1,111 and 43 people, respectively.

Sub-Regional Employment Growth and Labor Force Participation

Employment growth across the region also shows notable variation. The Southern sub-region leads in job creation, with employment increasing by 9.1% from 2019 to 2024, followed by the Northern sub-region at 5.8% and the Central sub-region at 2.9%. Over the next five years, as shown in Table 2, job growth is expected to continue across all sub-regions, with the Southern sub-region projected to grow by 9.3%, the Northern sub-region by 5.2%, and the Central sub-region by 4.2%.

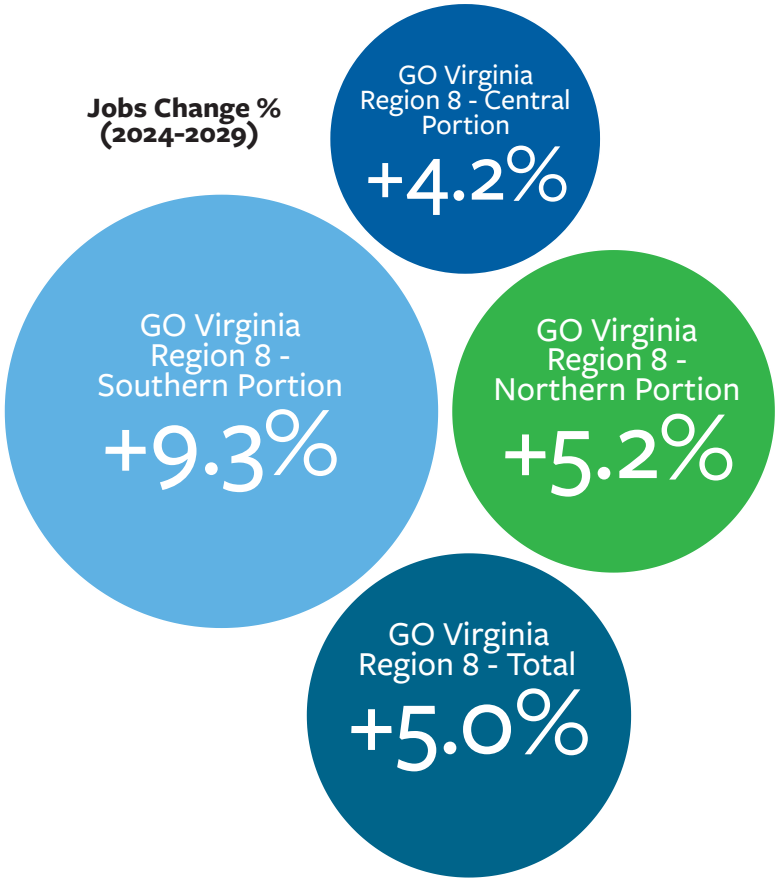


Table 2. GO VA Region 8 Sub-Regional Job Growth and Projections, 2024 – 2029

Region	Jobs (2024)	Jobs % (2024)	Jobs (2029)	Jobs Change % (2024-2029)
GO Virginia Region 8 - Northern Portion	112,191	42.7%	118,033	5.2%
GO Virginia Region 8 - Central Portion	130,967	49.9%	136,441	4.2%
GO Virginia Region 8 - Southern Portion	19,494	7.4%	21,315	9.3%
GO Virginia Region 8 - Total	**262,652**	**100%**	**275,789**	**5.0%**

Source: Lightcast, 2024

The LFPR has risen region-wide, reflecting increased workforce engagement.[7] The Northern sub-region boasts the highest participation at 65.5%, a slight decline from 66.2% in 2019 (as shown in Table 3 below). The Central sub-region follows at 61.1%, while the Southern sub-region trails at 56.8%, although it has shown steady improvement from 55.4% in 2019.

Table 3. GO VA Region 8 Sub-Regional Available Workforce and Participation Rate, 2024

Region	Labor Force (Dec 2024)	% of Regional Labor Force	Participation Rate (Dec 2024)	Unemployment Rate (Dec 2024)
GO Virginia Region 8 - Northern Portion	132,444	46.5%	65.5%	2.4%
GO Virginia Region 8 - Central Portion	132,954	46.7%	61.1%	2.4%
GO Virginia Region 8 - Southern Portion	19,490	6.8%	56.8%	2.5%
GO Virginia Region 8 - Total	**284,888**	**100%**	**62.7%**	**2.4%**

Source: Lightcast, 2024

Sub-Regional Industry Composition and Economic Drivers

Manufacturing accounts for 12% of jobs in both the Central and Southern sub-regions, compared to 10% in the Northern sub-region. Key employers like Merck and Pilgrim's Pride in the Central sub-region and Modine Manufacturing in the Southern sub-region exemplify the sector's significance.

Transportation & logistics, leveraging the region's proximity to major highways like Interstates 81 and 66, plays a crucial role in all sub-regions. It accounts for 7% of jobs in the Northern sub-region and 6% in both the Central and Southern sub-regions. This sector is particularly dynamic in the Northern sub-region, where strategic location supports rapid growth in logistics and goods movement.

7 Labor Force Participation Rate (LFPR) is an economic indicator that describes how much of the population is active in the economy, either working or searching for work.

Sub-Regional Wages and Cost of Living

Wage levels vary considerably across the sub-regions, reflecting differences in economic activity and industry concentration. The Northern sub-region has the highest average earnings per job at $64,900, followed by the Central sub-region at $61,400, and the Southern sub-region at $54,500. Despite these disparities, all sub-regions maintain a competitive edge due to relatively low costs of living. The Central sub-region has the lowest cost of living index at 99.3, slightly below the national average of 100, while the Northern and Southern sub-regions are slightly above at 102.5 and 101.7, respectively.

Sub-Regional Education and Workforce Development

Educational attainment levels show consistent gaps compared to national averages across all sub-regions. As shown in Table 4, the Central sub-region leads in bachelor's degree attainment at 17.4%, followed by the Southern sub-region at 17%, and the Northern sub-region at 15.3% shown in Table 4. Associate degree attainment is highest in the Northern sub-region at 7.6%, with the Central and Southern sub-regions slightly lower at 7.4% and 6.3%, respectively.

Table 4. GO VA Region 8 Sub-Regional Educational Attainment, 2024*

	Less Than 9th Grade	9th Grade to 12th Grade	High School Diploma or equivalent	Some College	Associate's Degree	Bachelor's Degree	Graduate Degree and Higher
Region 8 - Northern Portion	4.2%	7.5%	34.1%	21.0%	7.6%	15.3%	10.4%
Region 8 - Central Portion	4.6%	6.3%	35.7%	17.2%	7.4%	17.4%	11.3%
Region 8 - Southern Portion	3.7%	6.8%	31.3%	19.4%	6.3%	17.0%	15.5%
Region 8	**4.4%**	**6.9%**	**34.6%**	**19.1%**	**7.4%**	**16.4%**	**11.2%**
United States	4.6%	5.8%	26.0%	19.3%	8.9%	21.4%	13.9%

Source: Lightcast and US Census Bureau, 2024
**This table reflects a population aged 25 and older within GO VA Region 8 as reported by individuals regarding their past and present schooling, and does not distinguish their prior academic enrollment in a university, college, CTE program, or trade school. Please note that a trade school certification or license can be accomplished at the secondary or postsecondary level. Participants who responded to the US Census Bureau survey are potentially representative of all levels of education, including trade schools.*

Strong educational pipelines support workforce development throughout the region. Institutions like James Madison University, Shenandoah University, Virginia Military Institute, and the other universities, colleges, trade schools, and CTE programs in the region (see Exhibit C) collectively graduated 11,959 students in 2022, equipping the region with a steady flow of talent.

Sub-Regional Economic Outlook

While all sub-regions are experiencing economic growth, there are notable differences across each of the three:

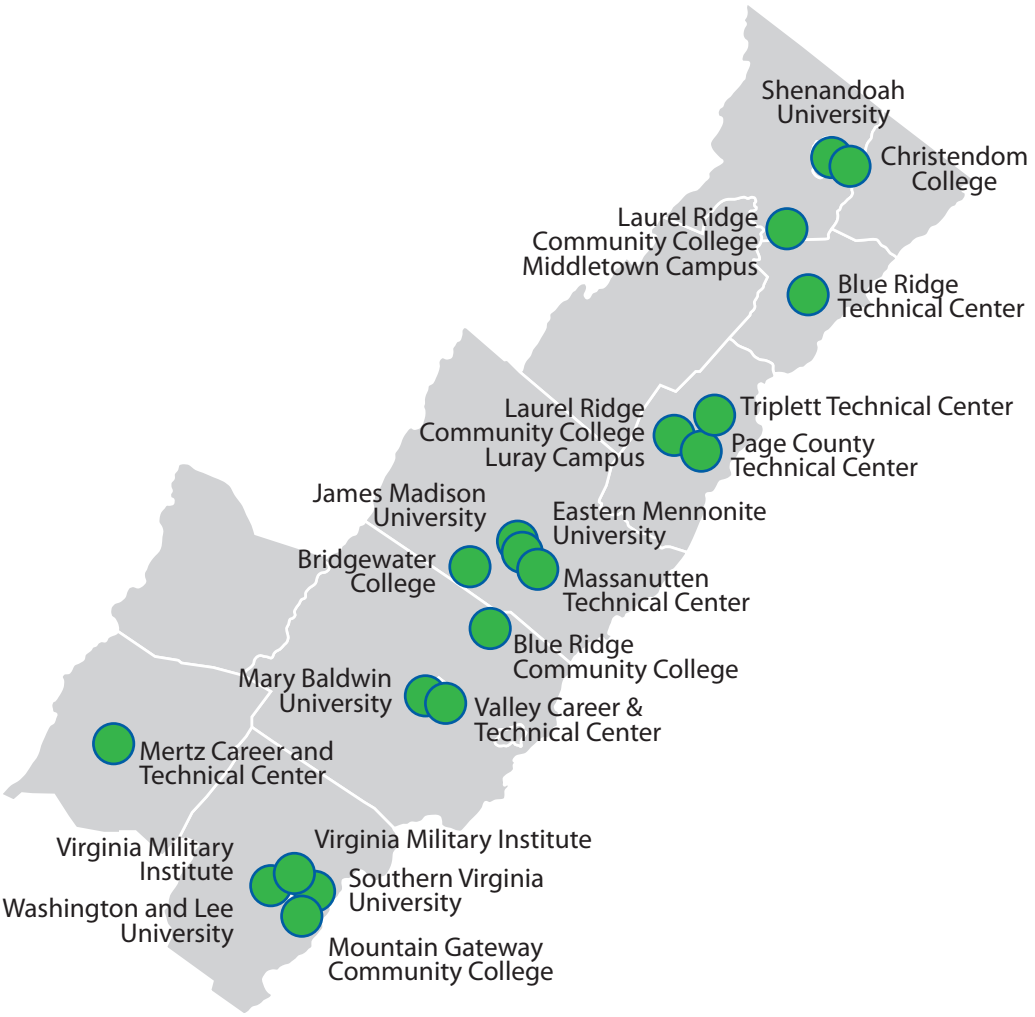
- The ***Northern*** sub-region stands out as the most dynamic, with strong population growth, job creation, and migration gains.
- The ***Central*** sub-region offers a balanced economic profile, with steady growth and significant contributions from its Manufacturing sector.
- The ***Southern*** sub-region, though smaller in scale, has the highest rate of job growth and is emerging as an economic hub with expanding opportunities in Manufacturing and Transportation & Logistics.

With unemployment rates ranging from 2.4% to 2.5% as of December 2024, Region 8, as a whole, is nearing full employment. Together, these sub-regions form a robust economic landscape, leveraging their unique strengths to drive Region 8's overall prosperity.

Higher Educational Landscape

In addition to the established regional Manufacturing and Transportation & Logistics industry landscape, Region 8 is further complemented by 12 colleges and six trade schools that provide a foundation for addressing the future workforce labor-related needs in the region (see Exhibit C). This network of community colleges, universities, and trade schools provide the region with the talent and capacity to further develop talent pipelines for high-demand sectors. Private technical training providers also contribute to the talent development landscape, but are not depicted in the map below.

Exhibit C. GO VA Region 8 Higher Educational Institution and Trade School Representation



Across Region 8, there is a significant gap between program completions and openings for in-demand jobs. Although many entry-level jobs in these industry clusters do not require a postsecondary credential, a substantial number of roles—especially in engineering, repair, and precision production, as shown in Table 5—do require formal training or certification. However, too few individuals are completing these programs to meet employer demand. The gap between program completions and annual openings underscores the need for expanded access to both postsecondary and credentialing pathways.[8]

8 Educational requirements vary by occupation. Many roles in Engineering, Repair, and Precision Production require postsecondary credentials or certifications, while others in Transportation or Construction may offer pathways with on-the-job training or apprenticeships.

Table 5. GO VA Region 8 Postsecondary Program Completions and Related Openings, 2023*

Program	Postsecondary Program Completions	Annual Openings in Related Occupations
Engineering/Engineering-related Technologies/ Technicians	510	4,475
Construction Trades	609	3,418
Transportation and Materials Moving	353	2,465
Mechanic and Repair Technologies/Technicians	125	1,601
Precision Production	373	1,223
TOTAL	**1,970**	**13,182**

Source: Sources: Lightcast (2025), BRCC (2025), LRCC (2025)
** All programs listed are directly associated with either the Manufacturing and Transportation & Logistics sectors and subsequent clusters therein. Please note that the data shown reflects completions reported by institutions to the National Center for Education Statistics (NCES) and accessed via Lightcast and IPEDS. Discrepancies may exist due to underreporting, alternative program coding, or institutional reporting practices.*

The data presented in Table 5 and list of credit and non-credit programs in *Appendix C: Educational Resource Asset Mapping* collectively highlight an imbalance between educational output and labor market demand across Region 8's Manufacturing and Transportation & Logistics sectors. While Appendix C catalogues a broad spectrum of relevant academic programs—ranging from precision machining and welding to logistics, CDL training, and mechatronics—Table 5 demonstrates that demand exceeds supply beyond the current rate of student completers. With 1,970 annual program completions across six occupationally aligned fields, the region falls dramatically short of meeting the 13,182 annual job openings identified in those sectors as of 2025. This ratio of demand to supply signals a systemic shortfall, not in program diversity, but in enrollment and throughput.

Despite the presence of highly targeted and technically aligned programs at community colleges, training centers, and trade schools throughout the region, the regional capacity to address labor shortages remains constrained. This is due to a combination of factors (see *Workforce Challenges in Key Findings* section for more details): low student interest or awareness, skills deficiencies among labor force, and persistent barriers to access for underrepresented populations. These findings underscore the need for a more integrated approach—one that not only strengthens the visibility and value proposition of these career pathways but also expands institutional capacity to meet demand at scale. Without such interventions, the region's most strategically vital sectors will continue to face debilitating talent shortages.

Industry Clusters and Employment

Both Manufacturing and Transportation & Logistics industries have a long history in the Shenandoah Valley and are projected to grow in terms of available future employment of the regional workforce, making them key investments for regional economic growth. It is important to note that:

- **Manufacturing** accounts for 12% of jobs in both the Central and Southern sub-regions, compared to 10% in the Northern sub-region. The industry encompasses traditional manufacturing, advanced manufacturing, and food and beverage manufacturing.
- **Transportation & Logistics** industry leverages the region's proximity to major highways like Interstates 81, 66, and 64, which play crucial roles in industry success. The industry accounts for 7% of jobs in the Northern sub-region and 6% in both the Central and Southern sub-regions.

Manufacturing

The manufacturing industry is crucial to the Shenandoah Valley economy, encompassing a blend of traditional manufacturing and emerging industries. Manufacturing in the valley includes food processing, advanced machinery, textiles, packaging, electronics, metal fabrication, among other sub industries. The Shenandoah Valley's rich natural resources, business friendly environment, and strategic location along major transportation routes, history and heritage in agribusiness, and skilled workforce make it an attractive manufacturing hotspot for many top producers.

REGION 8 MANUFACTURING KEY STATS

2024 Jobs: 31,474

2029 Jobs: 33,072

Projected Growth: 5.1%

Average Earnings per Job: $77,322

2024 Hires: 13,952

2024 Separations: 13,789

2024 Turnover Rate: 44%

Industries & Occupations

Region 8's manufacturing sector encompasses a diverse range of industries, each contributing to the region's economic strength and job market. Leading industries, as shown in Table 6, include Meat Processing, Plastics Product Manufacturing, Printing and Related Support Activities, and Dairy Product Manufacturing.[9]

Manufacturing industries vary in terms of job growth, employment concentration, and earnings potential. Meat Processing ranks first in total jobs, with 6,743 jobs in 2024 and is expected to increase by 4% to 7,005 jobs in 2029. Bakeries and Tortilla Manufacturing stands out with the highest growth rate of 37%, increasing from 1,252 jobs in 2024 to 1,719 jobs in 2029.

9 Other leading industries include a) Sugar and Confectionery Product Manufacturing, b) Bakeries and Tortilla Manufacturing, c) Beverage Manufacturing, d) Household and Institutional Furniture and Kitchen Cabinet Manufacturing, e) Other Wood Product Manufacturing, f) Ventilation, Heating, g) Air-Conditioning, and h) Commercial Refrigeration Equipment Manufacturing and Plastics Product Manufacturing.

Employment concentration also varies significantly; Sugar and Confectionery Product Manufacturing leads with an employment concentration of 11.39, indicating that the industry is highly specialized and concentrated in the region. Earnings are similarly diverse, with Dairy Product Manufacturing offering the highest average earnings at $105,029 per job, while Household and Institutional Furniture and Kitchen Cabinet Manufacturing provides the lowest at $57,728 per job. This variation reflects the differing levels of skill, automation, and market demand across the industries.

Table 6. GO VA Region 8 Top Manufacturing Industries

NAICS	Industry	2024 Jobs	2029 Jobs	2024 - 2029 % Change	2024 Employment Concentration	Avg. Earnings Per Job
3115	Dairy Product Manufacturing	1,747	1,947	11%	6.91	$105,029
3261	Plastics Product Manufacturing	4,279	4,400	3%	4.75	$97,328
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	874	918	5%	4.00	$97,057
3113	Sugar and Confectionery Product Manufacturing	1,416	1,635	15%	11.39	$95,078
3121	Beverage Manufacturing	1,178	1,367	16%	2.38	$79,677
3118	Bakeries and Tortilla Manufacturing	1,252	1,719	37%	2.41	$76,960
3231	Printing and Related Support Activities	2,252	2,270	1%	4.09	$67,041
3116	Meat Processing	6,743	7,005	4%	8.08	$65,212
3219	Other Wood Product Manufacturing	930	951	2%	2.52	$61,012
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	1,087	1,225	13%	3.22	$57,728

Source: Lightcast, 2024

The region's manufacturing sector also relies on a range of occupations that support production and operations. Production-related roles dominate the workforce, but there is also a need for workers in transportation, administrative support, maintenance, and management. High-demand occupations include Production Occupations, Transportation and Material Moving Occupations, Office and Administrative Support Occupations, and Installation, Maintenance, and Repair Occupations. Additionally, specialized fields like Management and Business and Financial Operations play an increasingly important role in overseeing and supporting manufacturing operations.

Production Occupations lead in both total employment and projected growth, with 16,537 jobs in 2024 expected to increase by 6% to 17,533 jobs in 2029—accounting for over 53% of total industry employment (as shown in Table 7 below). Transportation and Material Moving Occupations are expected to grow by 7%, adding 272 jobs over the five-year period. Meanwhile, Installation, Maintenance, and Repair Occupations are projected to grow by 11%, reflecting the need for skilled trades to maintain and enhance manufacturing infrastructure. Wages also vary, with Management Occupations offering the highest median hourly rate at $49.71, while Food Preparation and Serving Related Occupations have the lowest at $14.07. These differences reflect the varying levels of training, experience, and responsibility required across different roles in the manufacturing sector.

Table 7. GO VA Region 8 Top Occupations in Manufacturing Cluster (2-Digit)

SOC	Occupation	Employed in Industry Group (2024)	Employed in Industry Group (2029)	Change (2024 - 2029)	% Change (2024 - 2029)	% of Total Jobs in Industry Group (2024)	Median Hourly Earnings	Average Earnings per Job
11-0000	Management Occupations	1,181	1,299	118	10%	3.8%	$49.71	$103,396.80
17-0000	Architecture and Engineering Occupations	747	834	87	12%	2.4%	$39.42	$81,993.60
13-0000	Business and Financial Operations Occupations	1,184	1,275	91	8%	3.8%	$34.25	$71,240.00
49-0000	Installation, Maintenance, and Repair Occupations	1,907	2,111	204	11%	6.2%	$24.58	$51,126.40
53-0000	Transportation and Material Moving Occupations	4,051	4,323	272	7%	13.2%	$20.74	$43,139.20
51-0000	Production Occupations	16,537	17,533	996	6%	53.7%	$19.43	$40,414.40
43-0000	Office and Administrative Support Occupations	2,078	2,125	47	2%	6.7%	$19.43	$40,414.40
41-0000	Sales and Related Occupations	1,059	1,188	129	12%	3.4%	$15.57	$32,385.60
37-0000	Building and Grounds Cleaning and Maintenance Occupations	336	365	28	8%	1.1%	$15.55	$32,344.00
35-0000	Food Preparation and Serving Related Occupations	430	513	83	19%	1.4%	$14.07	$29,265.60

Source: Lightcast, 2024

Economic Importance

Manufacturing in the Shenandoah Valley, Virginia. The Shenandoah Valley has become a national hub for the Manufacturing sector, being recognized as a strategic location for expansion. In the 19th century, counties of the Shenandoah Valley were known as the Virginia breadbasket (National Park Service, 2022). The region's rich soils are suitable for flour and agricultural production and as a result, related food manufacturing thrives. Early in the 19th century, the region also attracted a high concentration of infrastructure construction suitable to support manufacturing, including roads, railways, industrial enterprises, agribusiness, mills, and furnaces (Thomas, 2004). Infrastructure set a foundation for an ever-improving interstate and railway system that attracted 20th century industrial enterprises like Coors, Tyson, Wampler, and Merck. The region continues to be a manufacturing hotspot, attracting large manufacturers and ongoing factor openings.

Compared to most other regions in Virginia, manufacturing is more highly concentrated in the Shenandoah Valley. According to the 2020 Smart Asset Report, two metro areas in the region ranked in best places to work in manufacturing, with Staunton-Waynesboro Metro Area ranking #5 and Harrisonburg ranking #24 (Feier, 2020). Further, the Shenandoah Valley houses 11 of the top food and beverage companies in the U.S. based on job generation, according to Food Processing Media Group (Food Processing's Top 100, 2020). These companies include Coca-Cola Bottling Co., Dr. Pepper, Hershey, McKee Foods, Molson Coors Beverage Company, PepsiCo Inc., Perdue Farms, and Pilgrim's Pride. The region also produces successful entrepreneurial manufacturing enterprises. For instance, in 1992, Route 11 Potato Chips started in Shenandoah Valley and is now a contender in international markets.

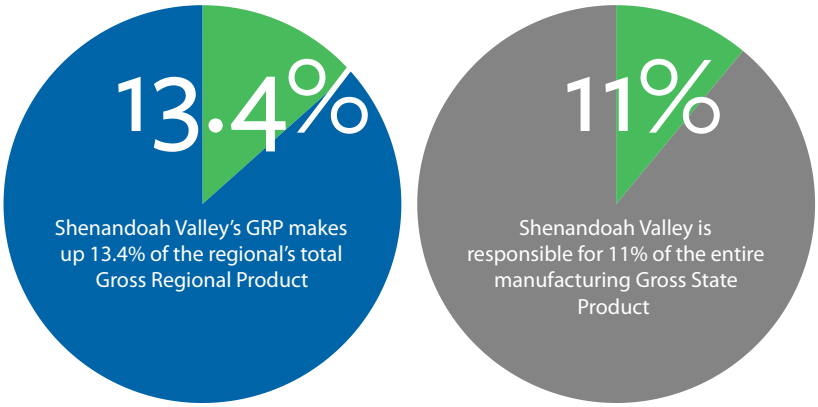
Employment Concentration. Today, manufacturing is heavily concentrated in the Shenandoah Valley. The employment concentration metric measures how concentrated an industry (in this case the Manufacturing sector) is in a specific geography compared to a baseline (in this case the rest of the nation). As shown in Table 8, the Shenandoah Valley is almost twice as concentrated in manufacturing compared to the rest of the nation, with a metric of 1.99. The central sub-region has the highest concentration, at 2.16, compared to the northern sub-region (1.80) and the southern sub-region (1.88).

Table 8. GO VA Region 8 Employment Concentration by Sub-Region, 2023

Region	Employment Concentration (2023)	Gross Regional Product	% of Cluster GRP
GO Virginia Region 8 - Northern Portion	1.80	$1,625,648,112	37.8%
GO Virginia Region 8 - Central Portion	2.16	$2,428,451,129	56.4%
GO Virginia Region 8 - Southern Portion	1.88	$252,147,192	5.9%
GO Virginia Region 8 - Total	**1.99**	**$4,306,246,433**	**100%**

Source: Lightcast, 2024

Gross Regional Product. As a whole, manufacturing contributes over $4.3 billion to the Shenandoah Valley's GRP, which is about 13.4% of the regional's total Gross Regional Product. When considering Virginia's entire manufacturing production, the Shenandoah Valley is responsible for 11% of the entire manufacturing Gross State Product.



Manufacturing is more heavily concentrated in the Central sub-region, which also has the most economic throughput totaling $2.4 billion or 56.4% of all manufacturing production in the Shenandoah Valley, reflecting the concentration of manufacturing around the I-81, I-64, and I-66 interchanges in and around the Central and Northern sub-regions. The Southern sub-region contributes 5.9% of the manufacturing GRP, reflecting is smaller population and lower concentration. The Northern sub-region contributes the remaining 37.8%.

Projected Growth. Across the region, manufacturing accounts for 31,474 jobs (as shown in Table 9). Between 2024 and 2029, job growth is projected to grow by 5.1%, outpacing job growth in other industries.

In 2024, manufacturing jobs represented over ten percent of the total jobs in the region. In the Northern sub-region, manufacturing jobs (12,208) represented over ten percent of the total jobs (102,047), while the Southern and Central sub-region manufacturing jobs (2,076 and 17,189, respectively) represented 13% and 14% of total jobs (31,474 and 119,302, respectively).

Table 9. GO VA Region 8 Manufacturing Cluster Jobs Data, 2024

Region	Jobs (2024)	Jobs % (2024)	Jobs (2029)	Job Change % (2024-2029)
GO Virginia Region 8 - Northern Portion	12,208	38.8%	12,731	4.3%
GO Virginia Region 8 - Central Portion	17,189	54.6%	18,038	4.9%
GO Virginia Region 8 - Southern Portion	2,076	6.6%	2,304	11.0%
GO Virginia Region 8 - Total	**31,474**	**100%**	**33,072**	**5.1%**

Source: Lightcast, 2024

Payroll Business Locations. The Manufacturing sector is concentrated around the I-81 corridor with large concentrations in the Northern sub-region and around Harrisonburg, Staunton, and Waynesboro. Most of the manufacturing business locations are clustered in the Central sub-region, which alone contains approximately one-half (50.6%) of the manufacturing business locations (see Table 10 below). Nearly 40% of the remaining businesses are clustered in the Northern sub-region, and the other 10% are clustered in the less populated Southern sub-region.

Table 10. GO VA Region 8 Number of Business Locations by Sub-Region, 2023

Region	Payrolled Business Locations in Cluster*	% Payrolled Business Locations in Cluster	Average Earnings by Location (2023)
GO Virginia Region 8 - Northern Portion	230	39.5%	$77,835
GO Virginia Region 8 - Central Portion	294	50.6%	$78,188
GO Virginia Region 8 - Southern Portion	58	9.9%	$66,925
GO Virginia Region 8 - Total	**582**	**100.0%**	**$77,322**

Source: Lightcast, 2024
**Note that the data provided does not represent the number of unique businesses in the region but rather the total number of business locations. One business, for example, may have multiple locations.*

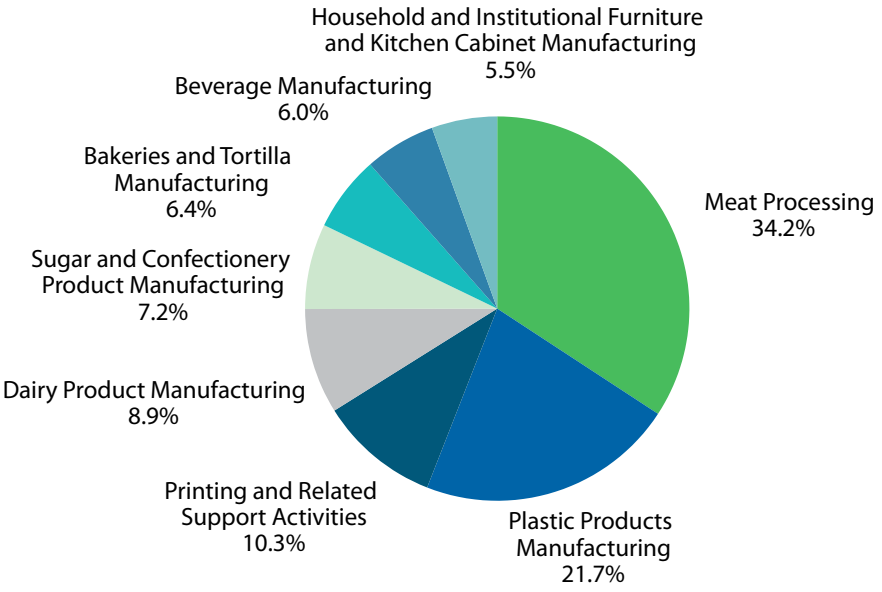
Across the Shenandoah Valley major manufacturing employers include Berry, Cadence, Daikin Applied, Everbrite, Graphic Packaging International, Hollister Incorporated, IAC Group, Intrapac Inc. LSC Communications, Merck, Mercury Paper, Modine, Montebello Packaging, Neuman Aluminum, Nibco, Packaging Corporation of America, Pactiv Corporation, Provides U.S. Inc., Rexnord Industries, SRI International, Sumitomo Drive Technologies, Supply One, Sunlite Plastics, T&E Meats, Tenneco Automotive Inc., Variform Inc., and VIRTEX (Leading Employers, 2025).

Major Food & Beverage Manufacturing employers include Andros Foods North America, Cargill, Coca-Cola Bottling Co., DanoneWave, Devil's Backbone Brewing Company, Dr. Pepper Distribution, Flow Alkaline Spring Water, George's Chicken, Kerry, McKee Foods Corporation, Molson Coors Beverage Company, Pepsi-Cola Bottling Company of Central Virginia, Perdue Farms, Pilgrim's Pride Corporation, Route 11 Potato Chips, Shamrock Farms, Shenandoah Growers, Shenandoah Valley Organic, Shenandoah Valley Water, T&E Meats, The Hershey Company, Turkey Knob Growers, Veronesi Spa, and Virginia Poultry Growers Cooperative.

Earnings. Average earnings per worker in manufacturing is approximately $77,322, which exceeds the regional average earnings per worker of $62,400, demonstrating the quality of the average manufacturing job in the region. On average, earnings are higher in the Central and Northern sub-regions, and lower in the southern regions, reflecting regional diversity and partially reflecting regional differences in cost of living. The average earnings from the payroll business locations are around $77,000 in the central and northern sub-regions and around $66,925 in the southern sub-region.

Regional Specialization

Top Industries. The Shenandoah Valley has a diversity of manufacturing industries including both traditional and emerging industries. Top industries include Meat Processing, Dairy Product Manufacturing, Sugar and Confectionary Product Manufacturing, Plastic Products Manufacturing, and Printing and Related Support Activities.



Shenandoah Valley specializes in food and beverage manufacturing, in part because of the region's thriving agribusiness. Four of Virginia's top five agricultural counties—Rockingham, Augusta, Page and Shenandoah—are in the Shenandoah Valley. These counties collectively produce more than $1.3 billion annually in agricultural commodities according to the U.S. Department of Agriculture Census (Agribusiness, 2025).

- **#1 Meat Processing:** The top industry in the region is Meat Processing, which is 8 times more concentrated in Region 8 than the rest of the United States. The industry provided 6,743 jobs in 2024 and is projected to grow around four percent between 2024 and 2025. Workers' average earnings in the Meat Processing industry are $65,212, which is lower than the average for the Manufacturing sector in the Shenandoah Valley. The industry also has a higher turnover rate at 70 percent, likely in part because of the lower earnings (see *Workforce Challenges in Key Findings* section for more detail).

  The Valley is home to numerous meat processing plants, which handle large volumes of meat production including poultry, pork, and beef. Many of the meat and animal processing companies have an international affiliation.

- **#2 Plastic Products Manufacturing:** The second ranked industry is Plastics Products Manufacturing, encompassing 4,279 jobs in 2024. The Plastics Manufacturing industry is 4.75 times more concentrated in the Shenandoah Valley than the rest of the country and is projected to grow three percent between 2024 and 2029.

Workers' average earnings in this industry are $97,328, which is higher than in the Meat Processing industry, potentially a facilitating factor in a lower turnover rate of 33 percent.

Plastics Manufacturing in the Shenandoah Valley includes the production of packaging materials, consumer goods, and industrial components. In February 2025, Serioplast announced it would be opening a 140,000-square-foot industrial facility in the Shenandoah Valley to produce rigid plastic packaging. Other key employers include Blue Ridge Industries, Inc. and Virginia Industrial Plastics (Serioplast to Open Manufacturing Site in Shenandoah County, 2025).

Other Industries. The other top industries include Printing and Related Support Activities (employing around 2,000 workers), Dairy Product Manufacturing (1,747 workers), Sugar and Confectionery Product Manufacturing (1,416 workers), Bakeries and Tortilla Manufacturing (1,252), Beverage Manufacturing (1,178), and Household and Institutional Furniture and Kitchen Cabinet Manufacturing (1,087).

- **#1 Highest Concentrated Industry:** The industry with the highest employment concentration compared to the rest of the country is Sugar and Confectionery Product Manufacturing, which is 11.39 times as concentrated in the region compared to the rest of the country. While the industry only provides 1,416 jobs, it is projected to grow 15 percent between 2024 and 2029, and the jobs generally pay higher than the other industries with an average earnings of $95,078 and a lower turnover rate of 28 percent (see *Workforce Challenges in Key Findings* section for more details).

  The Sugar and Confectionery Production Manufacturing industry benefits from the other agribusiness manufacturing in the region, including proximity to flour production and dairy production as well as honey production, allowing for efficient production of baked goods and confectionery.

- **#1 Fastest Growing Industry:** Of the top 10 industries in the Manufacturing sector, the one projected to grow the fastest is the Bakeries and Tortilla Manufacturing industry, with a 37 percent increase projected between 2024 and 2029. The industry is projected to grow from 1,252 jobs in 2024 to 1,719 jobs in 2029, with the jobs paying on average $76, 9760 and a turnover rate of 37 percent. Similar to Confectionery, the Bakery and Tortilla industry benefits from efficient access to flour and dairy in the Shenandoah Valley (Lightcast, 2024).

- **#1 Highest Paying Industry:** Of the top industries, Dairy Product Manufacturing has the highest average earnings, at $105,029 per job, associated with a 30 percent turnover rate. Dairy Product Manufacturing is also 6.91 times as concentrated in the region compared to the rest of the United States (Lightcast, 2024). The Shenandoah Valley hosts both large scale dairy farms and family-owned operations. The dairy manufacturers benefit from rich pastureland which helps to employ diary technicians, equipment operators, and other related dairy manufacturing jobs.

Occupational Profiles & Top Occupations. More than two-thirds (68.4%) of the jobs in Manufacturing as well as in Transportation & Logistics (covered in the next section) are in production or material moving-related occupations. The high concentration of occupations in production or material moving demonstrates the integration between Manufacturing and Transportation & Logistics in the region. Growth in one sector offers an opportunity for growth in the other sector, and vice versa.

- **#1 Production:** Over one-half of the total jobs in manufacturing are in production occupations (53.7 percent). Production occupations in manufacturing vary drastically by industry and may require operating machinery, assembling products, and inspecting quality. In the Shenandoah Valley, the most prominent roles include assemblers and fabricators, packaging and filling machine operators and tenders, and line supervisors of production and operation. Other prominent roles include food matchmakers, food processing workers, and meat, poultry and fish cutters and trimmers.

  Over 16,000 people are employed in production occupations within the Manufacturing sector, and the median hourly wage is $19.43 an hour. As the Manufacturing sector continues to grow, skills in production occupations will continue to be in demand. Between 2024 and 2029, another 1,000 jobs are expected to be added in this occupational group.

- **#2 Transportation and Material Moving:** Another 13 percent (13.2 percent) of manufacturing jobs are in the transportation and material moving occupation categories. Transportation and materials moving jobs in manufacturing specialize in ensuring that product inputs, outputs, and finished products are transported and distributed to the appropriate locations for the production process.

Occupations can include operating forklifts, working within warehouses to take inventory and prepare shipments, coordinating logistics, handling materials and freight, packaging and loading goods, and coordinating logistics. These roles are essential to ensuring that the goods produced in the region have the appropriate inputs and that the final products are able to reach distributers and eventually consumers. Approximately 4,000 people have jobs in this category, and the median hourly wage is $20.74.

- **#3 Administrative Support:** Another 6.7 percent of manufacturing jobs are in the office and administrative support occupation category which includes around 2,000 people. These jobs have an associated median hourly wage of $20.74. The most prominent jobs relate to operations, communications, logistics, office management, and customer services.

- **#4 Installation, Maintenance, and Repair:** Another 6.2 percent of jobs are in the installation, maintenance and repair occupations. The median hourly wage in this occupation type is slightly higher at $24.58.

Highest Paying Occupations in Manufacturing. A smaller portion of the top occupations include business and financial operations occupations, management occupations, and architecture and engineering occupations. For these occupations there is a much higher median hourly earnings rate. Each occupation group makes up around 3 to 4 percent of the jobs in the region with median hourly earnings over $30.00.

Lower Paying Occupations in Manufacturing. Another group of occupations makes up a smaller portion of the jobs and makes a lower median hourly wage. Sales occupations, food preparation occupations, and building and grounds cleaning occupations all make up less than 3 percent of the jobs and make around $15.00 in median hourly earnings.

Transportation & Logistics

Transportation & Logistics is vital to the Shenandoah Valley economy. Benefiting from an efficient interstate, railway, and port system, the Transportation & Logistics industry is deeply integrated with manufacturing success. Transportation & Logistics encompasses aviation, warehouse, storage, freight and trucking, delivery, and material moving occupations. The region's strategic location along important international and national transport routes make it a hub for Transportation & Logistics. The importance of this industry is projected to grow as manufacturing continues to grow in the region.

REGION 8 TRANSPORTATION & LOGISTICS KEY STATS

2024 Jobs: 17,697

2029 Jobs: 18,663

Projected Growth: 5.5%

Avg Earnings per Job: $68,821

2024 Hires: 12,251

2024 Separations: 12,217

2024 Turnover Rate: 69%

Industries & Occupations

Region 8's Transportation & Logistics sector includes a variety of industries, as shown in Table 11, that play a vital role in supporting the regional economy and supply chains. Major industries include Warehousing and Storage, General Freight Trucking, Couriers and Express Delivery Services, and Specialized Freight Trucking. The mix of transportation, storage, and wholesale activities reflects the broad infrastructure supporting trade and logistics in the region.

Table 11. GO VA Region 8 Top Transportation & Logistics Industries

NAICS	Industry	2024 Jobs	2029 Jobs	2024 - 2029 % Change	2024 Employment Concentration	Avg. Earnings Per Job
4812	Nonscheduled Air Transportation	192	133	(31%)	2.20	$143,033
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	202	204	1%	0.18	$100,422
4239	Miscellaneous Durable Goods Merchant Wholesalers	184	201	9%	0.38	$89,137
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	1,106	1,129	2%	0.94	$85,004
4841	General Freight Trucking	2,348	2,187	(7%)	1.44	$82,881
4842	Specialized Freight Trucking	834	836	0%	1.21	$76,777
4859	Other Transit and Ground Passenger Transportation	120	172	44%	0.73	$68,824
4931	Warehousing and Storage	10,120	11,448	13%	3.56	$66,009
4884	Support Activities for Road Transportation	325	328	1%	1.86	$52,399
4921	Couriers and Express Delivery Services	1,341	1,524	14%	0.99	$52,049

Source: Lightcast, 2024

Job growth and earnings vary across the industries. Warehousing and Storage leads the sector in total jobs, with 10,120 jobs in 2024 and expected to increase by 13% to 11,448 jobs in 2029, driven by the rising demand for e-commerce and supply chain efficiency. In contrast, General Freight Trucking is projected to decline by 7%, reducing from 2,348 jobs in 2024 to 2,187 jobs in 2029. The largest decline is expected to take place in Nonscheduled Air Transportation, which is forecasted to shrink by 31%, from 192 jobs in 2024 to 133 jobs in 2029. Meanwhile, Couriers and Express Delivery Services is set to grow by 14%, adding nearly 200 jobs.

Earnings also vary widely, with Professional and Commercial Equipment and Supplies Merchant Wholesalers offering some of the highest average earnings at $100,422 per job, while Couriers and Express Delivery Services offers one of the lowest at $52,049 per job. This reflects the different levels of specialization, skill, and capital investment across the industries.

The Transportation & Logistics sector supports a broad range of occupations, from frontline transportation roles to administrative and management positions. The largest occupational group is Transportation and Material Moving Occupations, which accounts for over 70% of total jobs in the industry, as shown in Table 12 below. Other key occupational groups include Office and Administrative Support, Installation, Maintenance, and Repair, and Management Occupations. Smaller but essential occupational groups include Sales and Related Occupations, Business and Financial Operations, and Production Occupations. High-skilled fields such as Computer and Mathematical Occupations and Life, Physical, and Social Science Occupations are also represented, though they make up a smaller share of total employment.

Table 12. GO VA Region 8 Top Occupations in Transportation & Logistics Cluster (2-Digit)

SOC	Occupation	Employed in Industry Group (2024)	Employed in Industry Group (2029)	Change (2024 - 2029)	% Change (2024 - 2029)	% of Total Jobs in Industry Group (2024)	Median Hourly Earnings	Average Earnings per Job
11-0000	Management Occupations	495	554	59	12%	2.9%	$49.71	$103,396.80
15-0000	Computer and Mathematical Occupations	137	160	23	16%	0.8%	$45.94	$95,555.20
19-0000	Life, Physical, and Social Science Occupations	78	91	13	17%	0.5%	$34.29	$71,323.20
13-0000	Business and Financial Operations Occupations	475	532	57	12%	2.8%	$34.25	$71,240.00
49-0000	Installation, Maintenance, and Repair Occupations	971	1,038	67	7%	5.7%	$24.58	$51,126.39
53-0000	Transportation and Material Moving Occupations	12,082	13,100	1,018	8%	70.9%	$20.74	$43,139.20
43-0000	Office and Administrative Support Occupations	1,741	1,834	92	5%	10.2%	$19.43	$40,414.40
51-0000	Production Occupations	274	301	27	10%	1.6%	$19.43	$40,414.40
41-0000	Sales and Related Occupations	573	604	32	6%	3.4%	$15.57	$32,385.60
37-0000	Building and Grounds Cleaning and Maintenance Occupations	82	95	13	16%	0.5%	$15.55	$32,344.00

Source: Lightcast, 2024

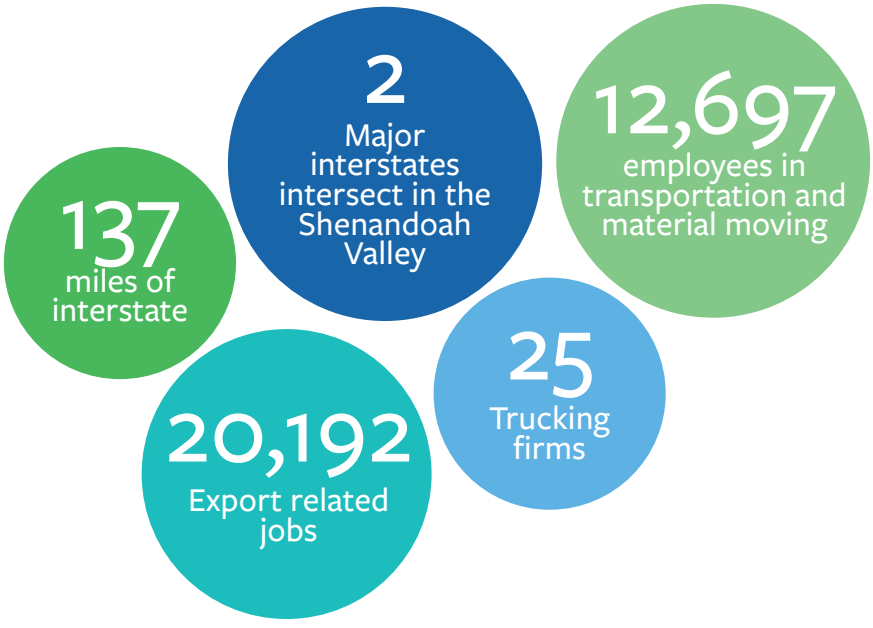
Employment growth varies across occupations. Transportation and Material Moving Occupations are expected to grow by 8%, adding over 1,000 jobs by 2029. Management Occupations and Business and Financial Operations Occupations are projected to grow by 12% each, reflecting the increasing complexity of managing transportation networks and financial operations. Computer and Mathematical Occupations and Building and Grounds Cleaning and Maintenance Occupations are expected to see some of the highest percentage increases at 16% each, though from a smaller base. Wages also vary significantly, with Management Occupations offering the highest median hourly wage at $49.71, while Sales and Related Occupations and Building and Grounds Cleaning and Maintenance roles offer some of the lowest at $15.57 per hour. This variation reflects the range of skills and expertise required across different segments of the Transportation & Logistics sector.

Economic Importance

Transportation & Logistics in the Shenandoah Valley of Virginia. Strong transportation infrastructure and business friendly environment is a major reason the transportation industry flourishes in the Shenandoah Valley. Interstate lines, railways, and inland port facilities create an interconnected and efficient Transportation & Logistics infrastructure.

Today, three major interstates intersect in the Shenandoah Valley,I-81, I-64, and I-66, providing trucking access to major markets across the country including Chicago, Detroit, Boston, Atlanta, Nashville, and Indianapolis. Railways including the CSX and Norfolk Southern provide transportation to major markets. Short line railroads including the Shenandoah Valley Railroad and Buckingham Branch Railroad also contribute to Transportation & Logistics efficiencies. The Shenandoah Valley Airport (SHD) also offers nonstop get service to Chicago O'Hara and Washington-Dulles (Trade and Transportation: Connecting the Valley in the Global Economy, na).

In the north of the region, there is proximity to Virginia Inland Port (VIP) which provides a link to international markets, including direct services to 45 countries worldwide. The port occupies 161 acres of land and consolidates and containerizes local cargo for export. The port was directly and indirectly supporting to over 374,000 jobs in 2021, or about 9.4 percent of Virginia's total workforce.



The Valley hosts numerous trucking firms and third-party logistics providers, 12,697 employees in transportation and material moving, and eight industry degrees and certifications from regional providers. The region also supports over 20,192 export related jobs and hosts 12 foreign countries' operating facilities.

Because of the ease of access to local, regional, national, and international markets, warehousing, trucking, supply chain management, and retail distribution companies find the region attractive and have located there for decades. The continued growth of manufacturing in the region makes Transportation & Logistics a promising industry for continued investment. In a 2021 report by Colliers, the Shenandoah Valley was named one of the top ten markets to watch because of its booming demand supported by the Transportation & Logistics corridors (Colliers, 2021).

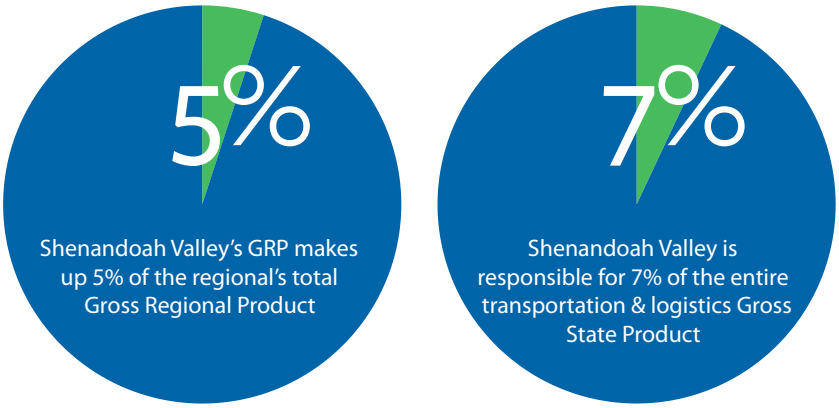
Employment Concentration. As previously described, the employment concentration metric measures how concentrated an industry (in this case the Transportation & Logistics industry) is in a specific geography compared to a baseline (in this case the rest of the nation). Today, Transportation & Logistics is highly concentrated in the Shenandoah Valley. The Shenandoah Valley is about 1.44 times as concentrated in Transportation & Logistics compared to the rest of the nation (as shown in Table 13 below). The Central and Northern sub-regions are the most heavily concentrated with metrics of 1.42 and 1.65, respectively. The Southern sub-region has less concentration in Transportation & Logistics than the nation, with a metric of 0.28, demonstrating the distinct nature compared to its counterparts. South of the I-81 and I-64 intersection, and further from the ports and international airport hubs, the Southern sub-region is comparably less attractive for Transportation & Logistics companies.

Table 13. GO VA Region 8 Employment Concentration by Sub-Region, 2023

Region	Employment Concentration (2023)	Gross Regional Product	% of Cluster GRP
GO Virginia Region 8 - Northern Portion	1.65	$886,851,299	48.0%
GO Virginia Region 8 - Central Portion	1.42	$919,509,184	49.8%
GO Virginia Region 8 - Southern Portion	0.28	$41,789,970	2.3%
GO Virginia Region 8 - Total	**1.44**	**$1,848,150,454**	**100%**

Source: Lightcast, 2024

Gross Regional Product. The Transportation & Logistics industry in the Shenandoah Valley contributes over $1.8 billion to the Valley's Gross Regional Product, which is about 5% of the region's total GRP. Compared to the state's Transportation & Logistics production, the Shenandoah Valley contributes 7% of Virginia's entire Transportation & Logistics Gross State Product.



The majority of the contributions to the GRP from the Transportation & Logistics sector take place in the Northern and Central sub-regions. The Northern sub-region contributes about $886 million in Transportation & Logistics production to the GRP (or 48 percent), and the Central sub-region contributes $919 million (or 49.8 percent). The Central sub-region benefits from housing the interstate intersection, making it the most attractive of the sub-regions for Transportation & Logistics companies. Again, the Southern sub-region is less concentrated, producing only 2.3 percent of the region's GRP in Transportation & Logistics.

Projected Growth. Across the region, Transportation & Logistics accounts for 17,697 jobs, and this number is expected to grow between 2024 and 2029 by approximately 5.5 percent to a total of 18,663 (as shown in Table 14).

Of the total 562,867 jobs in the region, Transportation & Logistics jobs make up approximately 3 percent of that total. In the Northern sub-region, Transportation & Logistics jobs are about 8.7 percent of all jobs, making up 8,829 jobs out of the total of 102,047. In the Central sub-region, the percentage is approximately 7 percent, with Transportation & Logistics jobs totaling 8,609 out of the total 119,302 jobs. In the Southern sub-region the percentage is around 1.5 percent, with 260 jobs in Transportation & Logistics out of the total of 16,401.

Table 14. GO VA Region 8 Transportation & Logistics Jobs Cluster Data, 2024

Region	Jobs (2024)	Jobs % (2024)	Jobs (2029)	Job Change % (2024-2029)
GO Virginia Region 8 – Northern Portion	8,829	49.9%	9,680	9.6%
GO Virginia Region 8 – Central Portion	8,609	48.6%	8,648	0.5%
GO Virginia Region 8 – Southern Portion	260	1.5%	335	28.8%
GO Virginia Region 8 – Total	**17,697**	**100%**	**18,663**	**5.5%**

Source: Lightcast, 2024

Transportation & Logistics is projected to grow across all of the sub-regions, with the highest growth rate being in the Northern sub-region, which is projected to have a 51.9 percent growth in jobs between 2024 and 2029, adding almost a thousand jobs. The Central sub-region is projected to add hundreds of jobs, growing 46.3 percent. The Southern sub-region is not projected to have significant growth in this industry.

Payroll Businesses. The Transportation & Logistics industry is concentrated around the I-81 corridor and at the I-81 and I-64 intersection with around 50 percent of Transportation & Logistics business locations located in the Central sub-region (see Table 15). The second highest concentration is in the Northern sub-region with the Southern sub-region experiencing lightest concentration.

Major employers in the Transportation & Logistics sector include Amazon DC, UPS, White's Travel Center, Walmart Distribution, Target Distribution, Sysco, Shenandoah Valley Airport, Railside Enterprise, Marshalls Distribution, J.B. Hunt Transport, Interchange Group Inc., Houff Transfer Inc, FedEx Ground Distribution, Elk Logistics, Eagle Express Lines, Dr. Pepper Distribution, Crosby Trucking Services, Family Dollar Distribution, Amazon Distribution, Home Depot Distribution, and Best Buy Warehousing Logistics Inc.

Table 15. GO VA Region 8 Number of Business Locations by Sub-Region, 2023

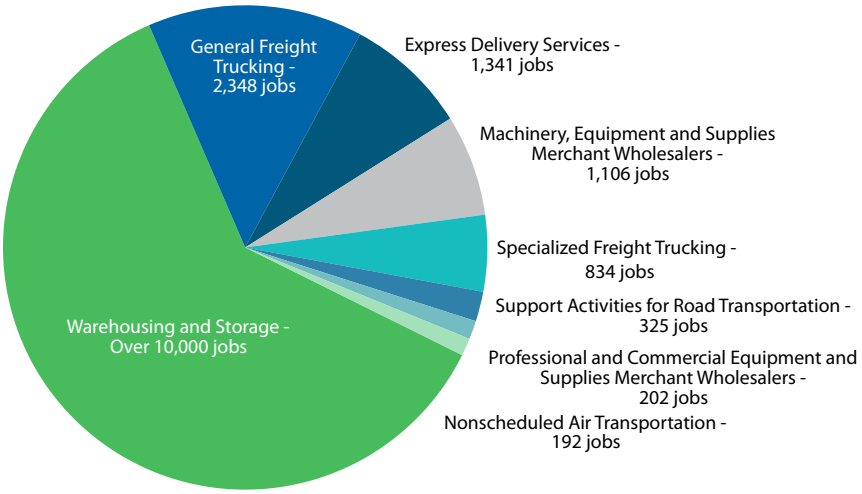
Region	Payrolled Business Locations in Cluster*	% Payrolled Business Locations in Cluster	Average Earnings by Location (2023)
GO Virginia Region 8 - Northern Portion	296	43.2%	$71,690
GO Virginia Region 8 - Central Portion	354	51.8%	$66,136
GO Virginia Region 8 - Southern Portion	35	5.0%	$63,072
GO Virginia Region 8 - Total	**684**	**100%**	**$68,821**

Source: Lightcast, 2024
**Note that the data provided does not represent the number of unique businesses in the region but rather the total number of business locations. One business, for example, may have multiple locations.*

Earnings. Average earnings per worker in Transportation & Logistics are approximately $68,821 which exceeds the regional average earnings per worker of $62,400. Sub-regional variation reflects slightly lower average earnings in the Southern sub-region, with the average being $63,072. The highest average earnings are in the Northern sub-region, reflecting in part a higher cost of living, with earnings being $71,690. Average earnings in the Central sub-region are $66,136.

Regional Specialization

Top Industries. The Shenandoah Valley has a diversity of Transportation & Logistics industries, including warehouse and storage, general freight trucking, couriers and express delivery services, machinery, equipment and supplies wholesalers, and specialized freight trucking.



- **#1 Warehousing and Storage:** Most of the jobs in the Transportation & Logistics sector are in Warehousing and Storage. In 2024, there were over 10,000 jobs in Warehousing and Storage. By 2029, over one thousand jobs will be added to this sector, with a growth rate of 13 percent. Compared to the rest of the nation, the Valley is 3.56 times as concentrated in Warehousing and Storage. The jobs have average earnings slightly above the regional average at $66,000 with a turnover rate of 72%.

  There are numerous third-party Logistics (3PL) companies in the region, including the InterChange group, based in Harrisonburg, which employs between 300 and 500 people. Other major distribution companies in the region include Target Distribution, which has a major facility in Augusta County that employers over 500 individuals.

- **#2 General Freight Trucking:** The second most important industry in the region is General Freight Trucking, which encompasses 2,348 jobs. While the industry is vital to the region, it is projected to shrink 7 percent before 2029, reflecting national trends. The average earnings are higher at $82,881 with a turnover rate at 53% (Lightcast, 2024).

  The location along interstate routes makes General Freight Trucking particularly attractive in the region. Notable companies in the region include IDM Trucking Inc. as well as the Interchange Group. Distribution centers including FedEx, Best Buy, and Target, which undergird the demand for freight trucking in the region.

- **#3 Express Delivery Services:** The third most prominent industry is Couriers and Express Delivery Services, which encompasses 1,341 jobs. These jobs are expected to grow 14 percent. However, earnings in this industry are below the average for the region at $52,049, and the turnover rate is the highest at 151 percent.

  Express Delivery Services employs only slightly more people than Machinery, Equipment, and Supplies Merchant Wholesalers which encompasses 1,106 jobs. Machinery, Equipment, and Supplies Merchant Wholesalers is projected to grow 2 percent. However, the average earnings are higher at $85,004, and the turnover rate is much lower at 31 percent, indicating higher stability in these jobs.

  Specialized Freight Trucking (834 jobs), Support Activities for Road Transportation (325 jobs), Professional and Commercial Equipment and Supplies Merchant Wholesalers (202 jobs), and Nonscheduled Air Transportation (192 jobs) all make up a smaller portion of the important industries.

Highest Paying Industries. Professional and Commercial Equipment and Supplies Merchant Wholesalers and Nonscheduled Air Transportation are lucrative industries with average earnings over $100,000. However, the projected growth for these industries is small in the case of Professional and Commercial Equipment Wholesalers and negative for Nonscheduled Air Transport.

Occupational Profiles & Top Occupations. Similar to Manufacturing, more than two-thirds (68.4 percent)of the jobs in Transportation & Logistics are in production or material moving-related occupations.

- **#1 Transportation and Material Moving:** The top occupation in the Transportation & Logistics industry is Transportation and Material Moving, which employed 12,082 workers in 2024. The most prominent roles within this occupational category are heavy and tractor-trailer truck drivers, stockers and fillers, laborers and freight stock and material movers, industrial truck drivers, line supervisors of transportation and material moving workers.

  The industry is projected to add over one-thousand jobs between 2024 and 2029, growing 8 percent. Roles within this occupational category make up over 70 percent of the total industry in the region. Median hourly earnings are $20.74.

- **#2 Office and Administrative Support:** The second most important occupational type in the Transportation & Logistics industry is Office and Administrative Support, which employs 1,741 people and is projected to grow 5% between 2024 and 2029. The median hourly earnings for this occupational category are $19.43 (Lightcast, 2024). Of those employed in this occupational category, the most prominent roles include shipping and receiving inventory clerks (Lightcast, 2024).

- **#3 Installation, Maintenance, and Repair:** The third most prominent occupation type is Installation, Maintenance and Repair, which employed 971 people in 2024. The average hourly earnings for this occupational category are higher than the previous two categories at $24.58 (Lightcast, 2024).

Highest Paying Occupational Categories. The vital occupation categories include Management occupations, Business and Financial Operations occupations, Computer and Mathematical occupations, and Life, Physical, and Social Science occupations, all of which make over $34.00 per hour on average. However, these categories each contain less than 3 percent of the total workers in the industry. Sales and Related occupations, Production occupations, and Building and Grounds Cleaning and Maintenance occupations are also prominent in the industry and make less than $20.00 per hour on average (Lightcast, 2024).

Key Findings

Several key findings were identified through qualitative and quantitative research. These findings have been classified into two broad categories: Workforce Challenges and Industry Successes and Highlights.

Workforce Challenges

Local and regional employers, industry experts, educators, economic development directors, and chambers of commerce representatives provided a wide range of perspectives on the regional workforce development landscape. The challenges highlighted in this section, as listed below, reflect the discussions facilitated in various contexts, which include interviews, focus groups, and employer roundtable discussions.

- Labor Shortage & Retention
- Technical Skills Gaps
- Soft Skill Deficiencies & Impact
- Barriers to Entry for Younger Workers
- Structural Barriers to Workforce Participation
- Regional Disparities
- Employer Expectations & Educational Outcomes

Labor Shortage & Retention

The Manufacturing and Transportation & Logistics sectors in GO Virginia Region 8 face persistent labor shortages and workforce retention challenges, a recurring theme emphasized by stakeholders in interviews and focus groups. While employers face hiring and retention difficulties at face value, these challenges are intertwined with multiple interrelated workforce barriers combined with low participation in educational pathways and credentialing pipelines. Mismatched job expectations, under skilled entry-level workers, and an aging workforce have collectively exacerbated recruitment and retention struggles across the region and industries.

This section examines the key factors contributing to labor shortages and retention challenges, including:

- High Turnover & "Job Hopping"
- Mismatched Employee Expectations & Workplace Disengagement
- Aging Workforce & Recruiting Challenges

High Turnover & "Job Hopping." Labor shortages and low retention in Manufacturing and Transportation & Logistics are frequently linked to employees leaving jobs shortly after being hired for slightly better compensation or benefits elsewhere. This recurring issue surfaced throughout employer interviews, roundtables, and economic development discussions. A transportation supervisor noted, *"You have overqualified individuals that are job hopping...they're leaving or looking for another career path or job hopping to other places."* While not exclusive to any one industry, this trend is particularly visible among younger and entry-level workers.

Based on Lightcast data shown in Table 16, both Manufacturing and Transportation & Logistics clusters display very high turnover rates, reaffirming employer sentiments. The Manufacturing cluster contends with a 44% turnover rate, while the Transportation & Logistics cluster's turnover rate is even higher at 69%. In all sub-regions, the Transportation & Logistics cluster highlights higher turnover rates than manufacturing.

Table 16. GO VA Region 8 and Sub-Region Job Hires and Separation, 2024

Sub-Region/ Region	Industry Cluster	Jobs (2024)	Hires (2024)	Separations* (2024)	Turnover Rate (2024)
Northern	Manufacturing	12,208	5,005	4,901	40%
	Transportation & Logistics	8,829	7,257	6,690	76%
Central	Manufacturing	17,189	7,895	7,880	46%
	Transportation & Logistics	8,609	5,047	5,318	62%
Southern	Manufacturing	2,076	1,052	1,008	49%
	Transportation & Logistics	260	217	208	80%
Region 8	**Manufacturing**	**31,474**	**13,952**	**13,789**	**44%**
	Transportation & Logistics	**17,697**	**12,521**	**12,216**	**69%**

Source: Lighcast, 2024

**A separation occurs when an employee leaves a company's payroll, as tracked by changes in Social Security Numbers across quarters. This may result from resignations, layoffs, retirements, or other departures. Turnover rate is calculated by dividing the number of separations by the total number of jobs, indicating the frequency at which employees exit their positions in a given industry.*

Frequent early departures—often within a year—strain employer resources and disrupt production. One employer shared,

> *"We spend three to six months getting them trained, and then somebody will pull them. You [feel] like all that time was wasted."*

Economic Development Directors and Chambers of Commerce leaders echoed these concerns, with one Director explaining, *"A lot of people are jumping. They stay two or three months, get the perks, then they go somewhere else."*

A representative provided context around the historical nature of job hopping in the region, explaining:

> *"Because we have so many manufacturers in our area, there are many open positions at any given time. And what we've been seeing, and this has been going on for years, [employees] are going from manufacturer to manufacturer for a quarter or 50 cent raise. They're there for a couple of weeks, and then they're going back [to their original job]."*

Educators and administrators at both the high school and postsecondary levels recognized the turnover challenges in the Manufacturing and Transportation & Logistics sectors, particularly in occupations such as mechatronics, electricians, and hydraulic technicians, but viewed it from a supply and demand perspective. One school district official represented this perspective saying,

> *"Manufacturing continues to have a high presence in the area and also significant turnover. There are open jobs, but it's not considered a high growth area, which becomes a challenge from the education end to even get new programs approved."*

Mismatched Expectations & Workplace Disengagement. Region 8 employers continue to face challenges stemming from a disconnect between worker expectations and the realities of Manufacturing and Transportation & Logistics careers. Many new hires lack awareness of job demands and leave early due to disillusionment or mismatched expectations.

In Transportation & Logistics, new CDL holders are often unaware of the schedules, conditions, and workplace expectations of the profession. One supervisor shared, *"We have a [low] retention rate for people coming out of CDL [programs]...a quarter of them end up leaving that job and starting another career because they're not happy with the trucking industry."*

Manufacturing roles face similar perception issues. Though many offer advancement through internal training, they are often seen as low-skill and stagnant. As one employer noted, *"The issue is not the number of people applying but the mismatch in skills. Companies are hiring people with potential but then lose them due to lack of proper training or opportunities for growth".*

Aging Workforce & Recruiting Challenges. Region 8 faces growing concern over labor shortages as its workforce ages. As shown in Table 17, the Southern sub-region has the highest percentage of residents aged 55 and older (37.2%), followed by the Northern (33.6%) and Central (31.6%) sub-regions.

A representative from the Southern sub-region emphasized the urgency, explaining that, *"Success for us is to attract more young families because all these people that are aging out. If there was some type of really small manufacturing facility that we could support, that would be a starting point."*

Table 17. GO VA Region and Sub-Region Aging Population, 2024

Region	Total Population (2024)	Population 55 & Over	% of Population 55 & Over
Region 8 - Northern Portion	251,856	84,690	33.6%
Region 8 - Central Portion	268,251	84,678	31.6%
Region 8 - Southern Portion	41,068	15,295	37.2%
Region 8 - Total	**561,175**	**184,663**	**32.9%**

Source: Lightcast, 2024

Educators echo the need to attract and retain younger talent by promoting career opportunities in Manufacturing and Transportation & Logistics. A public school official noted, *"We don't have a lot of interest in the programs...but rarely do students think of that as a career pathway."* A university representative added, *"...there is not a strong pipeline into the local top industries for graduates within a four-year degree."*

Postsecondary plans for high school graduates, shown in Table 18, reflect this challenge. While 55.2% plan to attend a two- or four-year college, 32.9% either plan to enter the workforce directly or have no plans—representing a critical yet underutilized talent pool.

Employers report increasing difficulty filling trade and technical roles, especially in rural areas. *"It is a shallow pool that I think everyone is competing against. It's tight from a business standpoint,"* said one employer. Another HR manager highlighted how dire the need has become: *"Walmart has actually started training their associates to become drivers, because that's how hard it is to find diesel mechanics right now."*

Table 18. GO VA Region 8 Postsecondary Plans of Secondary Graduates and Completers Schools, 2023-24*

Plans After Graduation	Graduates & Completers (2023-2024)	% of Graduates & Completers
Attending Two-year Colleges	1,171	20.8%
Attending Four-year Colleges	1,939	34.4%
Other Continuing Education Plans	525	9.3%
Employment	1,602	28.4%
Military	144	2.6%
No Plans	255	4.5%
TOTAL	**5,636**	**100%**

Source: Virginia Department of Education, 2024
**The data in this table is directly pulled from the Virginia Department of Education and all percentages and options presented are as is from the raw data. The option "Other continuing education plans" includes those who plan to attend any form of non-traditional education after high school graduation, including trade schools.*

Key Takeaways

- ✔ **The Region 8 workforce is aging rapidly.** With 32.9% of the population aged 55 and over, and the Southern sub-region reaching 37.2%, employers are increasingly concerned about replacing retiring workers. This demographic trend signals a looming gap in the labor force that could severely impact regional productivity if unaddressed.
- ✔ **Youth retention is a major barrier to workforce sustainability.** Many high school and college graduates either leave the region or do not enter local industries. Employers and educators agree that without better pathways and incentives to keep young talent in the area, the workforce pipeline will remain insufficient.
- ✔ **Interest in manufacturing and logistics careers among youth remains low.** Despite strong regional STEM programs, students often overlook these sectors as viable career options. This perception gap makes it difficult for educational institutions to build support for new training programs aligned with labor market needs.
- ✔ **A significant portion of graduates are immediately available for employment.** According to Table 18, 32.9% of high school graduates either plan to enter the workforce or have no postsecondary plans. This group represents a sizable untapped labor pool that could be better aligned with regional employer needs through targeted outreach and skills training.
- ✔ **Employers face increasing difficulty filling technical and trade roles.** With shrinking candidate pools and growing demand, companies are developing internal training programs to address shortages. One example includes Walmart retraining associates as drivers, illustrating how urgent and widespread the demand for trade skills has become.

Technical Skills Gaps

The Manufacturing and Transportation & Logistics sectors in Region 8 face widespread technical skill shortages that hinder workforce readiness and employer productivity. Across interviews with educators, employers, economic development leaders, and chambers of commerce representatives, a common theme emerged: employees lack essential industry-specific skills. Employers report that entry-level workers often arrive without fundamental technical competencies, requiring these skill gaps to be addressed through extensive on-the-job training. Educational institutions simultaneously report struggling to mitigate enrollment declines in relevant training programs and a chronic shortage of qualified instructors specific to Manufacturing and Transportation & Logistics.

This section examines the key factors contributing to technical skill gap challenges, including:

- Deficiencies in core technical skills
- Challenges in workforce training and development pipeline
- Preparation for AI adoption
- Barriers to awareness and recruitment in technical fields

Deficiencies in Core Technical Skills. Region 8 employers consistently report that entry-level workers in Manufacturing and Transportation & Logistics lack critical technical skills, impeding productivity.

This lack of readiness places a financial burden on employers who must run their own training programs. Table 19 highlights the scale of the problem: in 2023, only 381 students completed relevant programs, while over 13,000 job openings were posted in aligned occupations—leaving thousands of positions unmet.

Table 19. GO VA Region 8 Postsecondary Program Completions and Related Openings, 2023*

Program	Postsecondary Program Completions	Annual Openings in Related Occupations
Engineering/Engineering-related Technologies/ Technicians	510	4,475
Construction Trades	609	3,418
Transportation and Materials Moving	353	2,465
Mechanic and Repair Technologies/Technicians	125	1,601
Precision Production	373	1,223
TOTAL	**1,970**	**13,182**

Source: Sources: Lightcast (2025), BRCC (2025), LRCC (2025)
** All programs listed are directly associated with either the Manufacturing and Transportation & Logistics sectors and subsequent clusters therein. Please note that the data shown reflects completions reported by institutions to the National Center for Education Statistics (NCES) and accessed via Lightcast and IPEDS. Discrepancies may exist due to underreporting, alternative program coding, or institutional reporting practices.*

Skills deficiencies make it difficult for employers to fill positions that require even entry-level technical expertise. Educators have acknowledged and are actively interested in learning more about these skills deficits, often expressing a desire to work with employers to know exactly what skills are needed from students.

One technical center representative reiterated key questions for producing ready-to-work graduates: *"What are the skills deficits? We know about the soft skills or the employability skills, but what are those hard tangible skills that [employers] want? What are the pieces of essential equipment? What is the certification that is needed?"*

Additionally, as industries integrate more advanced machinery, the lack of electrical and mechanical knowledge further exacerbates skill shortages. One industry representative in a roundtable discussion remarked, *"If your equipment is different, are you thinking that they at least have some basic familiarity? We found people aren't familiar with even basic electrical knowledge."*

Another expressed concern over declining mechanical aptitude, stating, *"There's no mechanical inclination anymore. We used to take someone who could fix a car or something, but now they're just not there."* These insights point to a growing skills gap that extends beyond specialized roles, affecting the overall pipeline of technically competent workers.

Challenges in Workforce Training & Development Pipeline. A critical, and largely indirect, challenge facing the Manufacturing and Transportation & Logistics sectors in Region 8 is the struggle to maintain a robust workforce training and development pipeline that offers the level of technical skills needed. Employers and educators alike report difficulties in aligning training programs with industry needs, exacerbated by declining enrollment in relevant CTE programs.

One CTE representative shared, *"We explored having a mechatronics lab in our second high school and* [*did not pursue it*] *for a variety of reasons, including lack of qualified instructors, but also seeming lack of interest among possible students of that program."*

Similarly, welding programs at local community colleges—despite being high-quality and industry-aligned—are experiencing enrollment challenges, further limiting the pipeline of skilled workers entering the manufacturing sector. This decline in participation suggests broader systemic issues, such as a lack of student awareness about career opportunities and an outdated perception of technical careers as less desirable.

Even when training programs are available, potential workers have misaligned understandings of job expectations. One Head of Talent Management highlighted this challenge, stating, *"We have registered apprenticeship programs, but the expectation given to younger people coming out of these programs versus the reality of industry doesn't often align."* This misalignment results in frustration for both employers and graduates, as new hires may enter the workforce underprepared for the rigor and workplace expectations of these industries.

Economic development leaders provide a similar sentiment from a broader perspective, reporting that companies are increasingly developing their own apprenticeship-style training programs to compensate for gaps in the traditional workforce pipeline. As one regional workforce director noted, *"Companies are making their own apprenticeship-style programs internally because they can't find the skills they need—mechatronics, electrical, hydraulics—those are all in demand."* While these employer-led efforts help bridge the gap, they require significant investments of time and resources and are not always sustainable at scale.

Preparing for AI Adoption. The rapid adoption of artificial intelligence (AI) technologies is reshaping the technical skill demands across the manufacturing and logistics sectors. While AI-driven systems offer the promise of increased efficiency and innovation, employers in Region 8 are grappling with a shortage of workers who possess the foundational and technical knowledge to effectively operate alongside these technologies. As one employer shared during a roundtable discussion,

> *"It's not just robotics anymore. It's artificial intelligence, too. We're seeing systems that can adapt and optimize without human input, and that changes the skill sets we need. We're not just hiring machinists—we're hiring problem solvers who can work with tech."*

This evolution in technology places pressure on workforce pipelines to not only deliver traditional mechanical and technical training but to also integrate competencies in data interpretation, systems thinking, and digital literacy. As technology rapidly changes and advances, this will remain a persistent challenge throughout the region.

Barriers to Awareness & Recruitment in Technical Fields. A major challenge for Region 8's Manufacturing and Transportation & Logistics sectors is the lack of awareness and interest among younger generations. Many students overlook these careers entirely, which contributes to talent shortages. A Chamber representative noted, *"The younger generations aren't interested in manufacturing. They don't even consider it as a viable job option, and this contributes to turnover and skill shortages."*

Manufacturers are also concerned about losing institutional knowledge without a skilled talent pipeline. A different Chamber representative shared, "*Some manufacturers are trying to figure out shifts and hours because they're worried about losing all their institutional knowledge...but the skills gap remains—these aren't skills you can just hire for quickly."*

Demographic and skills-related barriers further limit the workforce. With fewer young people entering the job market and many lacking readiness or technical skills, employers face growing hiring difficulties. One manufacturing representative said, *"One of the big challenges is not having the bodies because of the declining birth rate... [students] don't have the maturity or don't have usable skills that are required in the workplace."*

Transportation employers face similar issues, especially for roles like diesel mechanics and truck drivers. While some companies have developed internal training programs, these solutions are costly and difficult to sustain without broader efforts to promote technical career pathways. Without such initiatives, workforce shortages in these industries are likely to persist.

Key Takeaways

- ✔ **Younger generations lack interest in key industries.** Students often overlook manufacturing and transportation careers altogether, contributing to long-term talent shortages and higher turnover.
- ✔ **Employers fear the loss of institutional knowledge.** With few qualified new hires, manufacturers are restructuring shifts to retain older workers—but these skills cannot be quickly replaced through new hires alone.
- ✔ **Demographic trends are shrinking the labor pool.** The declining birth rate has reduced the number of young workers entering the job market, adding further strain to already limited recruitment pipelines.
- ✔ **Graduates often lack workforce readiness.** Even when students enter the workforce, many lack maturity or an understanding of workplace expectations, the persistence and adaptability needed, or how to mitigate work-life challenges.

Durable (Soft) Skills Deficiencies & Impact

Durable (soft) skills are increasingly identified as a critical gap in the Manufacturing and Transportation & Logistics workforce across Region 8. Employers, educators, and economic development professionals consistently report challenges related to employees' interpersonal skills, workplace readiness, and emotional intelligence. While technical skills are crucial for success in these industries, the lack of foundational durable skills—such as punctuality, communication, and adaptability—significantly hinder workforce performance. Employers frequently encounter challenges in addressing durable skill deficiencies among workers, while educators highlight the need for targeted interventions to better align student preparation with workplace expectations.

This section explores the key dimensions of durable skills deficiencies and their impacts on the Region 8 workforce, focusing on three primary subtopics:

- Workplace Punctuality and Attendance Challenges
- Interpersonal Skills and Emotional Intelligence Gaps
- The Disconnect Between Workplace Readiness and Employer Expectations

Workplace Punctuality and Attendance Challenges. Punctuality and attendance are foundational durable skills, yet employers across Region 8's Manufacturing and Transportation & Logistics sectors cite them as persistent issues. Excessive absenteeism and tardiness are major contributors to lost productivity and turnover. One business development manager stated, *"Excessive calling out, showing up late. I would say attendance is the number one issue that I see."*

For some entry-level roles, simply getting employees to show up regularly is a challenge. A regional medical center HR director noted, *"Our housekeeping department are on track to have a 50-60% turnover rate. [New employees] are scheduled for orientation and never show up."*

Durable skill issues begin as early as the hiring process. Candidates often struggle with basics like punctuality, application completion, and professional appearance. One employer shared, *"Getting them to get to an interview on time was huge...Basically, it's just the basics."*

Educators are also aware of these expectations. As one CTE director summarized, *"The two or three biggies, honestly, are show up to work on time, pass the drug test, and be able to put their cell phone away throughout the day."*

Interpersonal Skills and Emotional Intelligence Gaps. Strong interpersonal skills and emotional intelligence are essential in the workplace, yet many Region 8 employers report serious gaps in these areas. Poor interpersonal skills often escalate routine interactions into conflict.

As one employer put it, *"Interpersonal skills...that's one that always could be better. That can turn what should be a normal interaction into an abnormal interaction very quickly."*

Employers also cite a lack of humility, curiosity, and drive. One general manager noted, *"When I hire anybody... the four attributes I look for are integrity, humility, curiosity, and desire for excellence."*

Additionally, technology is making it harder to assess these traits. Candidates increasingly rely on AI-generated resumes and interview responses, complicating employers' ability to evaluate genuine interpersonal abilities. A roundtable participant observed, *"They came in for interviews, and it was like, wait a minute, this is not the same person."*

Economic development leaders see this as part of a broader societal shift. A director remarked, *"Soft skills that people really seem to be lacking now with all of the technology... it is a standard as a human being that you need to be able to connect."*

The Disconnect Between Workplace Readiness and Employer Expectations. In Region 8, employers in Manufacturing and Transportation & Logistics frequently cite a mismatch between student preparation and workplace expectations. While schools aim to teach foundational soft skills, employers often find that students still lack real-world readiness. As one educator noted, *"What employers often tell us is, 'you guys work on the soft skills, and then we'll train them with industry skills'...but we need* [*students*] *to be in the industry to really give them a reason to learn the soft skills."*

Workplace readiness extends beyond technical skills. Employers emphasize the importance of understanding benefits, communication, and long-term decision-making. A CTC Director shared, *"It's soft skills. It's communication. It's attendance. It's understanding benefits... just because you get a quarter more there, I'm giving you way more benefits here, and you don't get that."*

Some schools are responding proactively. One CTE Director explained, *"Each one of our classes spends time every year working on what we call workplace readiness skills...our teachers do a great job of emphasizing those skills on a daily basis."* Still, educators acknowledge that real-world experience is critical to making these lessons stick.

Bridging this gap requires deeper employer-educator collaboration, including expanded work-based learning and better alignment between educational programs and industry needs.

SPOTLIGHT: DELOITTE & MANUFACTURING INSTITUTE STUDY, 2022

According to a study conducted in 2022 by Deloitte and the Manufacturing Institute, Americans overwhelmingly recognize manufacturing's importance to the economy—but identify barriers preventing from entering the workforce. For example:

- **Promoting Career Growth: While 58% of those familiar with manufacturing see limited career prospects, 80% would consider a job if it offered clear advancement and customized training.**
- **Misconceptions around technology: Only 46% of those unfamiliar with manufacturing believe advanced technologies enhance jobs rather than replace them, compared to 70% of manufacturing executives.**

More information can be found in the report here.

Key Takeaways

- ✔ **Punctuality and attendance remain top concerns.** Employers report chronic issues with excessive absenteeism, tardiness, and failure to meet basic hiring expectations, significantly affecting productivity and increasing turnover.
- ✔ **Interpersonal and emotional intelligence gaps disrupt workplace dynamics.** Many employees lack communication skills and emotional maturity, which can escalate routine interactions into conflicts. Employers emphasize traits like integrity, humility, and curiosity as increasingly difficult to find.
- ✔ **Technology complicates soft skill evaluation.** AI-generated resumes and scripted interviews make it harder for employers to assess authentic interpersonal abilities, highlighting a growing challenge in the hiring process.
- ✔ **Workplace readiness is often misaligned with employer expectations.** Students may receive durable skills training in school, but without real-world application, lessons often fail to translate into professional behavior. Employers seek better understanding and application of workplace norms, benefits, and long-term decision-making.
- ✔ **Stronger school-employer partnerships are needed.** Educators are making efforts to teach professionalism and accountability, but employers and schools must collaborate more closely to provide hands-on learning opportunities that reinforce soft skill development and workplace expectations.

Barriers to Entry for Younger Workers

Younger workers in GO Virginia Region 8 face multiple barriers that hinder their entry into the Manufacturing and Transportation & Logistics sectors. These challenges stem from a combination of structural limitations, safety and age-related restrictions, and a lack of career awareness. As highlighted by educators, employers, and workforce development professionals in interviews and focus groups, these barriers create a disconnect between industry demand and the available talent pipeline.

This section examines key factors contributing to barriers for younger workers, including:

- Lack of Awareness and Perceived Industry Stigma
- Age and Safety Restrictions in Work-Based Learning
- Disconnect Between Education and Workforce Needs

Lack of Awareness and Perceived Industry Stigma. A key barrier for younger workers entering Manufacturing and Transportation & Logistics is a lack of awareness about career opportunities. Educators report low enrollment in CTE programs, with many students and families overlooking these fields as viable paths.

Generational and cultural shifts have amplified this issue. As one HR Director noted, *"There's a generation that doesn't want to work in industry. Now everyone wants to go to college."* Another leader added, *"It starts with a lot of the parents...but want something better for their kids,"* reflecting a preference for four-year degrees over technical training, even when well-paying jobs are available.

A regional Chamber representative highlighted how values have changed: "*Now you* [*younger generation*] *want a purpose...and you don't think of manufacturing when that comes up."* This underscores the need for industries to rebrand and better communicate their value and mission to the next generation.

Age and Safety Restrictions in Work-Based Learning. Work-based learning opportunities are vital for attracting younger workers, yet many face age and safety-related restrictions that limit student participation. One CTE administrator explained, *"These areas can be very challenging...because of working around either dangerous equipment or needing to be old enough to drive."*

Age restrictions also delay workforce exposure and reduce student interest in manufacturing careers. As one educator noted, *"The main thing with manufacturing is the 18-year-old requirement. If that were able to be lifted...we could get a lot more students out into our manufacturing companies."*

In transportation, similar barriers exist. A roundtable participant questioned, *"Why don't we have truck driving in vocational school?...he can't go,"* highlighting the disconnect between students' capabilities and legal limitations that restrict early skill development.

Education Alone is Not Sufficient. Many students graduate with the credentials needed to pursue Manufacturing and Transportation & Logistics careers; however, new entrants are lacking the understanding of workplace environments to be successful. One employer shared, *"I'm dealing with people who are interested...they don't have the skillset to walk into my company and be successful."*

A transportation company supervisor noted, *"You have individuals...just getting their license and expecting a nine to five job like a banker,"* pointing to a flawed understanding of the nature of these types of careers.

Early exposure is key to closing this gap. An Economic Development Director highlighted success stories: *"Somebody who never would have seen themselves going down that career path in seventh grade falls in love...that is an opportunity."*

Flexible workforce training models can also help. One educator described a program where students intern with a contractor four days a week and finish high school online. Expanding similar models could better prepare students for technical careers.

Table 20 reflects employer demand for both hands-on and digital skills. In 2024, truck driving, warehousing, and forklift operation were among the most advertised specialized skills. Common skills like loading/unloading, communication, and leadership remain essential, while software tools such as SAP, Microsoft Excel, and Warehouse Management Systems are increasingly expected in today's digitized workplaces.

Table 20. GO VA Region 8 Top Skills Advertised in Production and Transportation and Materials Moving Job Postings, 2024*

Top Specialized Skills	Top Common Skills	Top Software Skills
Truck Driving	Loading And Unloading	SAP Applications
Warehousing	Lifting Ability	Microsoft Office
Forklift Truck	Communication	Microsoft Excel
Food Safety And Sanitation	Operations	Electronic Logbook
Housekeeping	English Language	Safari (Web Browser)
Pallet Jacks	Customer Service	Firefox
No-Touch Freight	Leadership	Web Browsers
Flatbed Truck Operation	Management	Microsoft Edge
General Mathematics	Good Driving Record	Microsoft Outlook
Palletizing	Coordinating	Warehouse Management Systems

Source: Lightcast, 2024
**As mentioned in Technical Skills Gaps sections, specific credentials and expertise fields that are in high-demand (based on anecdotal feedback from employers) include mechatronics, CDL licensing, hydraulics, and electrical technicians.*

Key Takeaways

- ✔ **Lack of awareness and stigma limit interest in technical careers.** Students and families often overlook Manufacturing and Transportation & Logistics due to outdated perceptions and a societal emphasis on four-year degrees. This mindset persists despite the availability of high-paying, in-demand jobs in these sectors.
- ✔ **Generational values are shifting workforce priorities.** Younger workers increasingly seek purpose-driven careers, and many do not associate manufacturing with fulfilling or meaningful work. This highlights a need for industries to rebrand and better communicate their mission and value.
- ✔ **Age and safety restrictions hinder early exposure.** Work-based learning opportunities are often limited by regulations that prevent students under 18 from participating in hands-on training. This delays workforce engagement and reduces student familiarity with industry career paths.
- ✔ **New job entrants have misaligned job expectations.** Employers report that credentialed job applicants lack an understanding of industry demands, especially in transportation roles. This contributes to early turnover and unmet employer needs.
- ✔ **Early and flexible training models show promise.** Programs that introduce students to industry opportunities in middle school or allow flexible high school schedules for internships are helping bridge the gap. Aligning these efforts with specific skill demands—like those shown in Table 20—can improve workforce readiness and long-term engagement.

Structural Barriers to Workforce Participation

Despite employer demand in the Manufacturing and Transportation & Logistics sectors, structural barriers—including housing shortages, transportation limitations, childcare access, and regional disparities—continue to hinder workforce participation in GO Virginia Region 8. Interviews with economic development directors, employers, and workforce development professionals highlight how these barriers limit access to stable employment and economic mobility for many workers.

This section examines barriers preventing workforce participation in the region, including:

- Housing affordability and availability
- Transportation limitations
- Childcare accessibility and affordability

Housing Affordability and Availability. Affordable housing remains one of the most significant structural barriers in Region 8. Economic development leaders and employers report a shortage of housing options that align with local wages. An Economic Development Director explained, *"There are a bunch of houses going up...but they're not necessarily what I'm going to call workforce housing."*

Employers echo the concern, noting the difficulty of recruiting talent when workers can't find suitable housing. One business development manager shared, *"An issue we have with new employees coming to live here is they can't find anywhere to live."*

The situation drives younger workers to higher-wage areas. *"Talent is going to Northern Virginia where they get paid more,"* one employer observed. Without accessible housing, the region's ability to grow and retain its workforce is severely limited.

Transportation Limitations. Access to reliable and affordable transportation remains a significant challenge, particularly for workers commuting to Manufacturing and Transportation & Logistics jobs. Public transit systems are not adequately aligned with shift-based employment. *"Public transportation isn't running by the time second shift gets out,"* noted one employer. Employers and workforce development leaders have sought solutions, such as modifying shift times, but these adjustments are difficult to implement at scale.

According to one Economic Development Director:

> *"We launched our Shengo public transit in Shenandoah County a couple of years ago, which hits Route 11. And we've been trying to work with employers, but the scheduling is difficult right now, because if the shift starts at 7 AM, and the bus doesn't get there until 7:15 or 7:30, employers are trying to make concessions and work around that."*

Geographic disparities further compound transportation challenges. In more rural parts of Region 8, public transit infrastructure is nearly nonexistent, making it difficult for workers without personal vehicles to access employment hubs.

Childcare Accessibility and Affordability. Many workers in Manufacturing and Transportation & Logistics face significant childcare obstacles, particularly those working non-traditional hours. With limited childcare facilities that offer evening or overnight care, parents struggle to balance employment with caregiving responsibilities.

A roundtable participant explained, *"We talked about transportation because their population basis was up in Winchester and Harrisburg, and there was timely, inexpensive transportation. And* [*another issue*] *is housing. The ones that you notice here* [*are*] *childcare and housing."* Offering more detail, an Economic Development Director said, *"Not only can you not find somewhere to live, but you can't find anyone to watch kids, or you can't find the wraparound services...So depending on the age of your kid, who's getting your kid on the bus? Who's getting your kid off the bus?"*

Employers recognize the strain childcare places on workforce participation but have few immediate solutions. One general manager noted, *"One of the things I think is a challenge for us is childcare, especially in this area. It is very, very expensive for childcare in our area, and we run four ten-hour days."* High childcare costs combined with a shortage of providers further limit the ability of working parents to fully engage in the workforce.

Key Takeaways

- ✔ **Workforce housing is unaffordable and inaccessible.** Despite new residential developments, most housing does not align with prevailing local wages. This mismatch discourages relocation and retention, particularly among younger workers who seek opportunities in higher-wage areas like Northern Virginia.
- ✔ **Public transportation is inadequate for shift-based employment.** Transit systems are often misaligned with early or late shift schedules, limiting accessibility for workers without personal vehicles. Rural areas are especially underserved, leaving large portions of the workforce without viable commuting options.
- ✔ **Childcare access is a major employment barrier.** A lack of affordable, flexible childcare—particularly for evening and overnight shifts—prevents many parents from maintaining consistent employment. This issue disproportionately affects single parents and those with early shift start times.
- ✔ **Comprehensive solutions are urgently needed.** The intersection of housing, transportation, and childcare highlights the need for multi-faceted policy and investment strategies to remove barriers and enable full workforce participation across Region.

Regional Disparities

The economic and workforce development landscape across different sub-regions presents varying levels of opportunities and challenges, with notable disparities between urban and rural areas. Stakeholders voiced concerns regarding resource allocation, talent retention, and industry sustainability in less populated areas. This section examines key regional disparities affecting workforce and economic development, including:

- Unequal Resource Distribution and Industrial Zoning Limitations
- Regional Disparities in Talent and Workforce Drain
- Geographical and Media Market Barriers Impacting Economic Growth

Unequal Resource Distribution and Industrial Zoning Limitations. Economic development directors expressed concerns about how regional projects often favor more populated areas, leaving rural regions with fewer resources and opportunities. One Economic Development Director stated,

"I always get concerned when we do these regional projects that a lot of focus goes to the larger, more populated areas than it does to rural areas." This sentiment underscores the challenge of ensuring equitable economic development across diverse geographical regions.

Additionally, some rural areas have structural limitations that hinder industrial expansion and job creation. An Economic Development Director pointed out, *"In the [Northern sub-region] County, we have 0.4% of our footprint zoned industrial, and [there is] the fear of destabilization of the manufacturers we already have because of the lack of people to service those jobs."* This illustrates how industrial zoning restrictions, combined with workforce shortages, pose significant threats to the economic sustainability of smaller communities.

Regional Disparities in Talent and Workforce Drain. One of the most pressing challenges in rural regions is the migration of talent to urban centers offering higher wages and greater career advancement opportunities. Employers frequently cite workforce retention as a primary concern with one of them noting, *"Talent is going to Northern Virginia where they get paid more."*

This trend reflects a broader challenge where economic development efforts must not only focus on job creation but also on retention strategies that incentivize skilled workers to remain within their communities. As shown in Table 21 below, all sub-regions within Region 8 experienced a net outflow of workers, with more residents commuting out for work than non-residents commuting in. The Northern and Central sub-regions exhibited the largest outflows, with Region 8 overall seeing a net outflow of over 31,034 workers.

SPOTLIGHT: NEW WORKFORCE DEVELOPMENT CENTER IN BUENA VISTA

Opened in June 2025, Mountain Gateway Community College's new $7.5 million workforce center in Buena Vista will expand access to skilled trades training in the Rockbridge region. Developed with support from industry and education partners, the center will offer Virginia's FastForward credential programs in welding, CDL, diesel mechanics, and more.

With dual enrollment from Rockbridge County High School and strong employer backing, the center addresses regional training gaps and serves as a model for rural workforce development.

For more information, please visit Mountain Gateway Community College's website here.

Table 21. GO VA Region 8 Inflow/Outflow by Sub-Region, 2022*

Region/ Sub-Region	Employed within, but living outside	Employed within and living within	Living within, but employed outside	Net Inflow/ Outflow
Northern Sub-Region	38,373	57,001	58,886	-20,513
Central Sub-Region	35,082	80,288	44,040	-8,958
Southern Sub-Region	6,450	8,856	8,048	-1,598
Region 8	**63,372**	**154,507**	**94,406**	**-31,034**

Source: U.S. Census Bureau - Longitudinal Employer-Household Dynamics, 2022
**Slight variations in data due to geographic projections.*

An Economic Development Director reinforced this issue, explaining, *"Employers in the southern Shenandoah Valley struggle to find and retain workers, as younger generations move to Northern Virginia for higher wages and more opportunities."*

As younger workers relocate to urban centers, rural economies face an aging workforce without a sufficient influx of new employees to sustain industries. This migratory dynamic places additional strain on existing businesses and highlights the need for workforce development programs tailored to local needs.

Geographical and Media Market Barriers Impacting Economic Growth. Beyond zoning and workforce migration issues, geographical placement and media coverage also play a role in regional economic disparities. An Economic Development Director described the challenge of being caught between distinct media markets:

> *"It comes into play with our news channels. Everything north of us is a whole different set of news channels than everything south of us. And so we run into a lot of problems here where because we're in between these two regions, we get left out of the mix or we just get overlooked."*

This issue creates barriers for local economic development initiatives that rely on broader regional exposure and investment. Without consistent media coverage and inclusion in statewide initiatives, smaller communities may struggle to attract funding, workforce talent, and business development opportunities.

Addressing Regional Disparities. To bridge these regional disparities, stakeholders emphasize the need for more targeted investments in workforce development programs, infrastructure improvements, and incentives for local talent retention. As an HR leader highlighted, *"We're sitting in one of the major thoroughfares for transportation so that really helps a lot in terms of drawing a lot of good companies in to settle factories and manufacturing here. I think there's a lot of potential for that."* Leveraging logistical advantages while addressing workforce and zoning challenges can create a more balanced economic landscape.

Ultimately, addressing these disparities requires a multi-faceted approach, combining policy adjustments, workforce incentives, and regional collaboration to ensure sustainable economic growth across all areas, not just the most populated or well-funded regions.

Key Takeaways

- ✔ **Rural areas receive fewer resources from regional initiatives.** Economic development efforts often concentrate on more populated areas, leaving rural communities with limited support, infrastructure, and access to job creation opportunities.
- ✔ **Industrial zoning restrictions limit rural economic growth.** Some counties have minimal land zoned for industrial use, making it difficult to attract or expand manufacturing operations—especially when workforce shortages are already straining existing employers.
- ✔ **Talent migration is draining the regional workforce.** Region 8 faces a significant net outflow of workers, particularly from rural areas to higher-paying urban centers like Northern Virginia, weakening local talent pipelines and aging the existing workforce.
- ✔ **Geographic placement hinders media visibility and investment.** Regions situated between media markets often get overlooked in statewide messaging and funding efforts, reducing exposure and support for local institutions and economic initiatives.
- ✔ **Balanced growth requires targeted investments and collaboration.** Stakeholders stress the need for infrastructure upgrades, workforce development programs, and retention incentives tailored to rural needs. Leveraging the region's logistical advantages could help foster more equitable economic growth.

Communicating Employer Expectations & Educational Outcomes

Employer expectations and the preparation of job seekers continues to present a significant challenge for the Manufacturing and Transportation & Logistics sectors in GO Virginia Region 8. Across interviews with employers, educators, and economic development professionals, a consistent theme emerged around misaligned preparation for jobs and a talent-ready workforce needed by employers. Employers repeatedly cite a gap between the knowledge, skills, abilities, and expectations presented by credentialed applicants and what the needed to integrate workers into the productivity needs of companies. This section examines the key factors contributing to this misalignment and explores the impact on the workforce and regional economy.

Communication Gaps Between Employers & Educators. A recurring concern voiced by both employers and educators is the lack of structured and consistent communications regarding workforce expectations. Employers express frustration with graduates' lack of job readiness, often attributing this to quality training programs that are missing workplace contexts or exposure.

As one roundtable participant noted, *"I think there needs to be a more direct communication between our education system and employers on exactly what we're looking for from new prospective employees. The job of education, I would say, is not only to build a person up to a certain level but also to make them competitive in a job market."*

Educators also echoed this sentiment, noting that while some efforts have been made to align training with employer needs, a lack of cohesion between institutions and industries persists. Sometimes educators are challenged with employers clearly expressing what they require. A representative from a community college highlighted the need to identify common training requirements across manufacturers, posing questions such as, *"What are they looking for across the board? What kind of training needs do they have?"* Ultimately, they are *"trying to create common thread fast-forward certifications that we can help individuals get."*

The challenge lies not only in identifying technical and durable skills but also in employers clearly expressing the adjustments to educational programming that serve diverse industry workplace settings without sacrificing core instructional objectives.

SPOTLIGHT: CAREER PATHWAY FRAMEWORK

One manufacturing company representative highlighted an informed career pathway framework designed to guide advancement within the company. The framework helps job seekers and the company understand internal career mobility by identifying:

- **Entry-Level Start Points: Clear roles for new hires with entry-level credentials**
- **Credentialing Laddering: Mapped steps showing what training and certifications lead to advancement**
- **Mobility Options: Visuals for both vertical (promotions) and lateral (cross-functional) career moves**
- **Color-Coded Design: Easy-to-navigate sectors with icons for required skills**
- **Employer-Driven: Built with local industry to reflect real opportunities**

Technological Change and Automation Requiring Upskilling. As the Manufacturing and Transportation & Logistics sectors continue to automate, the demand for higher-level technical skills has grown, creating pressure on both employers and educational institutions to adapt. One food company representative emphasized the difficulty in retraining an older workforce to adapt to technological changes, explaining, *"As companies come with more automation, then the older generation gets stuck in the middle. How do you bring that group of people into that technology knowledge?"*

The shift toward automation requires not only technical training but also a rethinking of how educational institutions design curricula to reflect evolving industry needs. Employers stress the need for targeted upskilling initiatives to meet the rising demand for maintenance technicians, electricians, and machine operators. One packaging company representative described the competitive hiring environment for these skilled roles, explaining that people skilled in technical areas, *"especially with maintenance and electricians and machinists, are hard to find. And they know they're hard to find, so they're not coming cheap."*

Employers report having to invest heavily in internal training programs. One employer noted how automation has reduced turnover in lower-skill positions but increased demand for technically trained workers, stating, *"For us, not having the more manual processes has really helped us. Where we saw a lot of turnover was in those manual processes. If you have less manual, you have more automation, more technical skill sets."*

Lack of Structured Work-Based Learning & Career Continuance. Beyond initial training, employers also cite a need for structured career development pathways to improve worker retention and skill progression. One Chamber of Commerce representative raised concerns about the lack of resources for continuing education and career development, particularly around funding: *"If we're giving out funding, all the funding's going out on the front end right now, getting kids ready, but what are we doing to help companies with career continuance and career training?"*

Key Takeaways

- ✔ **Employer-educator communication lacks consistency and structure.** Both sides recognize the disconnect between academic preparation and workforce expectations. Employers want clearer input into curriculum development, while educators seek unified guidance on the skills industry consistently needs across companies.
- ✔ **Technical education struggles to balance breadth and depth.** Community colleges aim to cover industry-relevant skills but often face limits in how deeply they can train students on specific technologies. The lack of common training frameworks across employers complicates curriculum alignment.
- ✔ **Automation is shifting skill requirements and workforce dynamics.** As companies adopt more automated systems, they face a growing need for upskilled technicians, electricians, and machinists. Older workers may struggle to adapt, requiring targeted retraining and support strategies to stay competitive.
- ✔ **Work-based learning and upskilling are under-resourced.** While employers value earn-and-learn models like the IMT Apprenticeship, such programs are not widespread due to limited funding and logistical hurdles. Flexible delivery formats—like remote or evening training—could help expand access.
- ✔ **Career advancement support is lacking post-entry.** Most current funding and training efforts focus on entry-level preparation. Employers call for more investment in career continuance to help employees grow into higher-skilled roles and support long-term workforce retention.

Programs like the Industrial Manufacturing Technician (IMT) Apprenticeship have been highlighted as promising models for bridging this gap. The IMT Apprenticeship provides foundational postsecondary skills in an "Earn and Learn" format, addressing barriers to pursuing traditional training, As described, *"The IMT Apprenticeship fills a gap in the career ladder for entry-level manufacturing production workers by providing foundational postsecondary skills in an 'Earn and Learn' format."* (Work-Based Learning in Action, p. 6) However, such programs remain underutilized due to funding constraints and logistical challenges. Employers also stress the need for greater flexibility in how training is delivered, including evening or remote options to accommodate working learners.

Industry Successes and Highlights

Local and regional employers, industry experts, educators, economic development directors, and chambers of commerce representatives also highlighted several positive developments and strategic opportunities within the regional workforce development landscape. These findings demonstrate the progress being made in strengthening workforce infrastructure, aligning educational outcomes with employer needs, and expanding career pathways. The key areas of success and opportunity are detailed below:

- Facilitating Infrastructures
- Early Successes of Career Pathway Integration
- Leveraging Economic Strengths
- Internal Recruiting Initiatives
- Expanding Access to Talent Pools and Education

Facilitating Infrastructures

People across Manufacturing and Transportation & Logistics sectors shared successes and highlights that emphasize factors that are expected to continue to bolster the regional industry landscape. Employers, educators, and chambers of commerce members all highlight the importance of various infrastructures that drive success, including physical, communications, or programmatic structuring.

Physical Infrastructure. Physical and business infrastructure that draw young people to the area has been key for meeting workforce needs. One manager explained that young workers have, *"built their own community"* in the area, but that it took time and focus to do so. He highlighted the community-centric importance of physical infrastructure of a town—places to live, to congregate, to relax, to enjoy company with other people—as a way to develop the community that drives workforce development.

SPOTLIGHT: REGIONAL WORKFORCE SYMPOSIUMS

The SVWDB has hosted a series of regional workforce symposiums, each tailored to local needs across GO Virginia Region 8.

- **Greater Augusta Region: A full-scale event at Blue Ridge Community College with a keynote speaker, breakout sessions, and a multi-partner resource fair.**
- **Page County: A flexible open house in Luray focused on business-to-business engagement and workforce collaboration.**
- **Rockbridge County: A southern symposium mirroring Augusta's format, with tours and discussions targeting local workforce issues.**

Without people, the workforce wanes, and physical infrastructure both develops and sustains the community that bolsters the workforce.

Communications Infrastructure. How organizations explain their work helps bolster their success with potential employees. Many educators reported that graduates don't necessarily know about what kinds of jobs are available in Manufacturing and Transportation & Logistics outside of direct training programs like welding, machine operators, truck drivers, etc. For graduates of other programs to connect with the sector, they need a better understanding of how they fit in. One Chamber of Commerce official reported that a key part of industry success is *"companies that are telling their stories better."* When companies report on their successes by telling *"the story of what* [*they*] *are doing"* rather than *"here's the widget we're putting together today,"* potential employees better understand the bigger picture of how the company fits into the region and how and, more importantly, why they should be part of it. The president explained, *"I think these manufacturers who are really connecting to what they're doing, that they're not just producing this part,* [*show*] *that it's something important. It ties into the bigger picture—those have done well when it comes to attracting a different class of workers."*

Programmatic Infrastructure. Educators, in particular, note how programmatic infrastructure can drive industry success. The partnership between Merck, James Madison University (JMU), and Blue Ridge Community College (BRCC) was discussed as a strong success story by multiple parties. The partnership features a strong pathway from education at BRCC to education at JMU to employment at Merck that prioritizes internships, faculty education, and connections between higher education and employers. The Virginia Economic Review reports that, *"The partnership between JMU, BRCC, and Merck has created a model that...can be applied to a variety of degree programs and industries. It has also shown that local colleges and universities have the capacity to meet the workforce needs of major employers in the area, and local graduates have the skills to thrive in these positions."*

One staff member at JMU explained the relationship between employer and educator, stating,

> *"I think sometimes unless an employer is intimately involved in an industry partnership like* [*Merck's*] *with higher education, and they have an ability to kind of influence to a certain degree the curriculum that students are learning, and to have access to those students in a work-based learning situation, then they don't really know what they're going to get* [*from employees*]*."*

The kind of programmatic infrastructure this partnership developed is largely why it was successful, as one staff member affirmed: *"If an employer's not in conversation with the higher ed institution, how do they expect those skills to be there?"*

Similarly, vocational and CTE educators at the K-12 level discussed the importance of having infrastructure in place through personnel. One county level CTE administrator attributed their success to hiring a specific work-based learning coordinator. He explains,

> *"We've got more [business partnerships] than we ever have. And it truly is a testament to the division allowing us to hire a work-based learning coordinator because they've been able to focus their attention on getting kids into our businesses and out to work. We have close to 100 [students] actually going out to the businesses and working in the form of either an internship or an externship or a co-op environment."*

When educator attentions are split between teaching in the classroom, developing relationships for placements, checking on students at internships, and all the other day-to-day work of being a teacher, none of the elements can be particularly strong. Hiring someone whose sole focus is work-based learning frees up time and space for better classroom education and strengthens Work-Based Learning partnerships.

Early Successes of Career Pathway Integration

The Manufacturing and Transportation & Logistics sectors in GO Virginia Region 8 face significant labor shortages and high turnover rates—challenges that have been consistently highlighted in employer interviews, roundtable discussions, and economic development director feedback. Despite these challenges, several employers have implemented innovative strategies to build sustainable talent pipelines and improve employee retention. These successes reflect a strategic effort to address skill gaps, align workforce development with industry needs, and establish career progression pathways that encourage long-term employee commitment.

This section highlights key examples of successful career pathway integration, including:

- Employer-Led Apprenticeship and Training Programs
- Internal CDL and Driver Training Programs
- Leadership and Career Advancement Programs
- Collaboration with Educational Institutions
- Innovative Recruitment and Marketing Strategies
- Employer Engagement in Career Exploration and Early Exposure

Employer-Led Apprenticeship and Training Programs. Several companies have turned to internal apprenticeship programs as a solution to workforce shortages and employee retention challenges. Dynamic Aviation, for example, created an internal apprenticeship-style program to address the growing need for specialized aviation and mechatronics talent. The program integrates new hires into the company culture while providing structured training and professional development.

One Economic Development Director highlighted that companies have shifted toward in-house training to develop talent internally,

> *"Companies are making their own apprenticeship-style programs internally to both recruit and retain workforce. They integrate them into the corporate culture, focus on loyalty, teamwork, and skill sets on top of that. They pay and teach you at the same time."*

Similarly, Accutech and Kennemetal have seen success with apprenticeship-like models focused on Manufacturing and Transportation & Logistics, helping them retain talent while building workforce readiness. These models emphasize long-term commitment and career progression—factors that have contributed to increased retention rates among participants.

Internal CDL and Driver Training Programs. Transportation & logistics companies have faced particularly high turnover rates among new hires, with many CDL-certified drivers leaving within a year. One transportation company addressed this issue by implementing an internal five-week training and mentoring program. The training program pairs new drivers with experienced mentors for three weeks, ensuring they are comfortable with both the equipment and the job's demands before operating independently. This program has not only improved new hire readiness but also increased overall retention rates.

Leadership and Career Advancement Programs. Manufacturers have also sought to retain talent by investing in leadership training and career progression opportunities. Walmart, for instance, launched a program to train associates as diesel mechanics and drivers in response to the difficulty of finding qualified candidates externally. One HR Manager shared the rationale behind this initiative, saying that,

> *"If I had a kid that was in school right now, I would definitely not push them toward college. I would push them toward a trade. Walmart is training their associates now to become drivers because that's how hard it is to find diesel mechanics right now."*

This program reflects a growing recognition that creating internal career pathways, particularly in technical and trade fields, is essential to long-term workforce sustainability. By offering defined career advancement opportunities, Walmart has improved employee retention and increased overall operational stability.

Collaboration with Educational Institutions and Technical Centers. Strong partnerships between employers and educational institutions have been key to addressing skills gaps and creating career pipelines. A CTE director at a school system described the importance of aligning educational offerings with industry demand, explaining, *"We're always looking for the skills that employers want and what certifications we can reasonably provide in a high school setting or through our technical center. We have formal and informal partnerships with industry to make sure the programs we offer match what employers need."* Partnerships result in increased enrollment in technical training programs and a smoother transition from education to employment.

Innovative Recruitment and Marketing Strategies. Employers have also begun leveraging modern recruitment and marketing strategies to attract and retain talent. Dynamic Aviation, for example, invested $20,000 into a focused three-month social media campaign showcasing the career journeys of current employees. One Manufacturers' Association representative described the effectiveness of this approach, *"They got their money's worth. They hired 25 of the 30 applicants. That's a huge success rate—and it shows that telling the story of current employees is a powerful tool for recruitment."* By highlighting career success stories and offering insight into the long-term benefits of Manufacturing and Transportation & Logistics careers, Dynamic Aviation effectively increased applicant interest and improved retention rates.

Employer Engagement in Career Exploration and Early Exposure. To address long-term workforce shortages, some companies and educational institutions have invested in early career exploration programs. The Worlds of Work event, organized by the Blue Ridge Career Pathways Consortium, allows middle and high school students to explore careers in Manufacturing and Transportation & Logistics through hands-on experiences and industry presentations. A school system represented noted the importance of early exposure: *"We really start in earnest in seventh grade. Worlds of Work gives students a chance to see the opportunities available—not just working on the line, but also in management, accounting, and other supporting roles."* This proactive approach has contributed to increased student interest in technical fields and a clearer understanding of career pathways within Manufacturing and Transportation & Logistics.

Leveraging Economic Strengths

The Region has several economic strengths that many were quick to point out. People across sectors and positions noted the importance of manufacturing leadership in the region, the potential for a strong logistics hub, and the possibilities of more cross-regional collaboration. Building on these strengths is key for fast, profitable change that will provide not only short-term advantages but also last long-term.

Manufacturing Leadership. Food and beverage manufacturing has a strong foothold in the region. Many of the larger manufacturers are in this industry, and they represent a strong depth of knowledge of what works and where the economy might grow further. The infrastructure already present for these kinds of companies is deep. Having big leaders like Hershey, Keys, Farm Focus, and Kerry Foods, and several major poultry manufacturers already present in the area shows that the region has an accessible location for supply chains, appropriate workforce, and other desirable factors for bringing in new business.

As one Economic Development Director mentioned, *"Manufacturing, specifically food & beverage manufacturing, has a broad, diverse industry base. There is opportunity that follows along with this strength. They have big industry leaders, which helps spread the economic impact and supply chain opportunities. It helps attract new players."*

Additionally, these companies have provided infrastructure that makes the region seen as a good place to live. In general, residents support food and beverage manufacturing in a way that does not often happen for heavy industrial manufacturing. People are more interested in building their homes in communities with food and beverage manufacturing than they are industrial manufacturing. Because there is already a broad base of manufacturing in the area, the general population have an understanding of the industry and are likely okay with increasing this kind of manufacturing in the area. Ultimately, having a broad, diverse industry base in food and beverage manufacturing helps spread the economic impact of the industry and strengthens supply chain opportunities.

Logistics Hub Potential. The region's proximity to major highways like I-81 and I-64 was brought up repeatedly in interviews. Being situated between these highways makes for strong supply chain opportunities, as noted above, and many incoming businesses are interested in taking advantage of that fact. Some roundtable participants noted a new million-square-foot Amazon distribution center, as well as Walmart and Best Buy facilities, and another said that a food and beverage manufacturer chose Region 8 for its new facility because it is so close to their large east coast customer markets. Companies are seeing the advantages of situating themselves on these routes and want to benefit from them. Using this information to bring desired companies to the table to build new facilities in the region, focusing on the kinds of employers people want to work for and want to see in the community, would only benefit the overall economic growth.

Cross-Regional Collaboration. Collaborating among the North, Central, and Southern sub-regions benefits all partners. In particular, North and Central sub-regions can share resources and expertise to continue developing the economy of the Southern sub-region. Multiple roundtable participants in the South noted how much they appreciate learning from others and collaborating with people across the state. One member of the Southern Economic Development Director roundtable shared,

> *"We're a rural locality, of course. And* [*the Virginia Rural Leader Institute has*] *a program* [*for*] *four months throughout the summer. We go to different regions in the state of Virginia that are rural, and we look at their best practices and how they do things. I have learned so much this summer. I think this program has probably been the most beneficial, even over the International Economic Development Council courses I've taken."*

Another explained the importance of the Shenandoah Valley Partnership, saying it is *"there to advertise for us on a marketing basis and recruitment for the Shenandoah Valley, but they're also there to conduct the conversations between us,* [*such as*] *some of these manufacturing forums we've had have been through the Shenandoah Valley partnership."* Finding out best practices from other similar communities is deeply important to growth in these areas, and developing infrastructure that facilitates those conversations and learning practices must be of key importance when thinking about how to strengthen the Region as a whole.

Strengthening Existing Talent Development Pipelines

People from all sectors are invested in strengthening the talent development pipelines from K-12 through university education and into employment. This commitment is enhanced by the strength of the Region's educational infrastructure including technical schools, community colleges, and universities.

Starting as early as late elementary and middle school, economic development groups, community colleges, technical schools, and employers begin educating students about what kinds of careers are available to them. An Economic Development Director explained, *"We hold a career fair every year with the fifth, sixth, and seventh graders in the area. Then we do a group of seniors too, introducing them to local jobs, local employment, and local career paths. We call it career pathways."* They, and many others, recognize the importance of showing youth possible careers early, so they can envision themselves in a range of kinds of work before deciding how to move forward. Students can't imagine futures or see themselves in careers they don't know about.

Developing various capacities in secondary and postsecondary education is another key step in the pipeline. One Economic Development Director observed that, *"Every year we get twice as many kids wanting to take the electricity program than we can put through it."*

This school district plans to build a new technical education center to house more programs because space is such a constraint. Other educators are considering dual enrollment and how community colleges can meet some of these space and program needs. The Region's community colleges are proactively working to build capacity as evidenced by Mountain Gateway Community College's recent opening of its Joe Wilson Workforce Center, a $7.3 million investment.

Community college faculty who were interviewed said they have a *"pipe dream"* to offer level one and two certificates in local technical education programs through dual enrollment.

Students *"would graduate from high school with probably 30, 33 credits and then come to* [*the college*] *for the last year and then general education if they wanted to go that route."* Dual enrollment opens up opportunities for more students to attain multiple levels of certifications quickly and efficiently, and it solves space problems at the high school level, allowing more options for programs secondary students can enroll in.

Finally, regional leaders know that a strong educational pipeline requires employer input. Training programs cannot educate students differently if they do not know employer needs. Some regional employers take this training upon themselves by offering registered apprenticeship programs, enabling on-the-job training and/or recognizing additional certificates for recent graduates.

Others recognize that while new employees might learn the basics through training programs, work in each company is going to look different.

One person in the transportation sector explained, *"A CDL class can teach people how to drive a truck, but when they get here, they have to learn all the paperwork, how to develop a schedule, how to get from place to place in a timely manner, and stuff. That has to be taught in-house."* Similarly, a community college faculty member said that students need time to learn the ways of working with their particular employer, *"I don't expect anybody to come out of my program and hit the ground running without spending, you know, even six months with an experienced individual on the plant floor and learn about the ways of that facility."*

Talent development pipelines for Manufacturing and Transportation & Logistics are developed and do prepare employees for positions. There is also room for new approaches, greater breadth in pipelines that span from elementary school onward, and additional collaborative connections between educational institutions and employers.

Internal Recruiting Initiatives

People across jobs and sectors pointed to the lack of retention of employees as a serious issue up and down talent pathways. Lack of retention makes it difficult to form strong internal institutional memory among employees as they stay and develop long-term understanding of companies. To combat these issues, several organizations are developing internal recruiting initiatives to strengthen their incoming workforce and to bring in people with long-term ambitions.

Internal apprenticeship programs (not necessarily registered) are a recurring theme among organizations making these kinds of moves. One employer explained, *"it really helped us get a different caliber of candidate in the door who's interested in that long-term view and that career path."*

Internal apprenticeship programs span electrical, maintenance, HR, and operations programs. They all employ people in positions that had previously been difficult to fill while educating them to the company's standard and creating organizational buy-in.

These kinds of paths have been successful when employers are committed to maintaining internal pathways to success. One organization seeing *"long-term commitment"* is Mercury Paper, who are *"putting their 10, 20+ year employees in leadership positions. They're moving them up, and they're staying."*

More investigation into their methods could help answer some of the questions people have about continued development. One person asked, *"All the funding is going on the front end right now of kids getting career ready, but what are we doing to help companies within with continued career training?"*

Learning more about the methods Mercury is using to sustain organizational commitment could be the key for encouraging programs like internal apprenticeships that bring new employees in the door with a long-view model to keep educating, strengthening, and rewarding those employees throughout their time at the company.

Expanding Access to Talent Pools and Educational Collaboration

A key theme across the region is a strong interest in expanding access. More people want to strengthen talent pools and/or commit to stronger educational collaboration. One employer said, *"One of my hot buttons is that employers need to take a more active role in helping kids find careers, and that means not only working with local schools and talking about careers in the trades or construction,* [*but also*] *seeing the importance of working together with the local CTE's."*

This sentiment was echoed by CTE representatives. One leader explained that they need more agencies, *"whether it's in the construction world or hospitality or wherever, that have that commitment to working with young employees, those just entering the workforce."*

Several organizations are starting to see more of these partnerships come to fruition. Several employers and economic development directors discussed having partnerships across high schools, community colleges, and universities in the area. One strong example was when an educational institution found that they did not have enough people enrolled in a class to offer it, so they "joined forces" with Laurel Ridge Community College and *"used our scholarship to pay for our students to go to Laurel Ridge and take the classes up there, so the class could continue—a win-win situation."*

Another educational leader discussed how multiple community colleges are starting fiber optic programs and are incredibly open to partnerships across other educational institutions and employers. That said, one educational leader warned that starting new secondary vocational programs can be challenging, because schools must show that they are being offered in *"high growth, not just high demand"* fields. Educators must ask—are we getting more jobs in this field or the same jobs turning over? When manufacturers and transportation employers can show significant prospective growth, that makes establishing educational pathways easier on educators.

Another important idea for expanding access is engaging older workers, especially as many young people choose to leave the area. One Chamber of Commerce member explained, *"In Shenandoah Valley, we get a lot of retiree age. We don't get a lot of working age moving here, so that's part of it too, the age gap. That's one thing we've talked to a couple of our manufacturers—if they can come up with some kind of part-time shift or something for people that are of retirement age who would still like to work a few hours a week."*

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Appendix A: Occupational Profiles

GO VA Region 8 Top Occupations in Manufacturing Cluster (5-digit)

SOC	Occupation	Employed in Industry Group (2024)	Employed in Industry Group (2029)	Change (2024 - 2029)	% Change (2024 - 2029)	% of Total Jobs in Industry Group (2024)	Median Hourly Earnings
51-2098	Miscellaneous Assemblers and Fabricators	1,779	1,761	(17)	(1%)	5.8%	$18.66
51-9111	Packaging and Filling Machine Operators and Tenders	1,734	1,899	164	9%	5.6%	$22.84
51-1011	First-Line Supervisors of Production and Operating Workers	1,234	1,329	94	8%	4.0%	$31.24
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	1,065	1,149	84	8%	3.5%	$19.15
53-7051	Industrial Truck and Tractor Operators	968	1,009	41	4%	3.1%	$23.17
51-3092	Food Batchmakers	928	1,073	144	16%	3.0%	$18.61
49-9041	Industrial Machinery Mechanics	909	1,039	130	14%	3.0%	$28.95
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	735	776	41	6%	2.4%	$20.99
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	706	742	36	5%	2.3%	$17.84
51-3099	Food Processing Workers, All Other	590	639	49	8%	1.9%	$17.23

Source: Lightcast, 2024

GO VA Region 8 Top Occupations in Transportation & Logistics Cluster (5-digit)

SOC	Occupation	Employed in Industry Group (2024)	Employed in Industry Group (2029)	Change (2024 - 2029)	% Change (2024 - 2029)	% of Total Jobs in Industry Group (2024)	Median Hourly Earnings
53-3032	Heavy and Tractor-Trailer Truck Drivers	2,853	2,863	11	0%	16.7%	$25.11
53-7065	Stockers and Order Fillers	2,528	2,771	243	10%	14.8%	$17.77
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	2,404	2,752	348	14%	14.1%	$19.15
53-7051	Industrial Truck and Tractor Operators	2,259	2,463	204	9%	13.3%	$23.17
53-3033	Light Truck Drivers	674	767	93	14%	4.0%	$18.51
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	436	494	58	13%	2.6%	$28.64
43-5071	Shipping, Receiving, and Inventory Clerks	417	445	28	7%	2.4%	$18.01
53-7064	Packers and Packagers, Hand	293	325	33	11%	1.7%	$17.27
11-1021	General and Operations Managers	257	279	22	9%	1.5%	$45.23
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	216	226	10	5%	1.3%	$30.18

Source: Lightcast, 2024

Appendix B: NAICS Codes Used in Industry Analysis

GO VA Region 8 Aligned Manufacturing Industry Cluster

3111	Animal Food Manufacturing
3112	Grain and Oilseed Milling
3113	Sugar and Confectionery Product Manufacturing
3114	Fruit and Vegetable Preserving and Specialty Food Manufacturing
3115	Dairy Product Manufacturing
3116	Meat Processing
3118	Bakeries and Tortilla Manufacturing
3119	Other Food Manufacturing
3121	Beverage Manufacturing
3122	Tobacco Manufacturing
3133	Textile and Fabric Finishing and Fabric Coating Mills
3141	Textile Furnishings Mills
3149	Other Textile Product Mills
3152	Cut and Sew Apparel Manufacturing
3211	Sawmills and Wood Preservation
3212	Veneer, Plywood, and Engineered Wood Product Manufacturing
3219	Other Wood Product Manufacturing
3221	Pulp, Paper, and Paperboard Mills
3222	Converted Paper Product Manufacturing
3231	Printing and Related Support Activities
3253	Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing
3254	Pharmaceutical and Medicine Manufacturing
3259	Other Chemical Product and Preparation Manufacturing
3261	Plastics Product Manufacturing
3271	Clay Product and Refractory Manufacturing
3272	Glass and Glass Product Manufacturing
3273	Cement and Concrete Product Manufacturing
3312	Steel Product Manufacturing from Purchased Steel
3315	Foundries
3322	Cutlery and Handtool Manufacturing
3323	Architectural and Structural Metals Manufacturing
3327	Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing
3329	Other Fabricated Metal Product Manufacturing
3331	Agriculture, Construction, and Mining Machinery Manufacturing
3332	Industrial Machinery Manufacturing
3333	Commercial and Service Industry Machinery Manufacturing
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing

3341 Computer and Peripheral Equipment Manufacturing
3344 Semiconductor and Other Electronic Component Manufacturing
3345 Navigational, Measuring, Electromedical, and Control Instruments Manufacturing
3353 Electrical Equipment Manufacturing
3359 Other Electrical Equipment and Component Manufacturing
3363 Motor Vehicle Parts Manufacturing
3364 Aerospace Product and Parts Manufacturing
3366 Ship and Boat Building
3369 Other Transportation Equipment Manufacturing
3371 Household and Institutional Furniture and Kitchen Cabinet Manufacturing
3372 Office Furniture (including Fixtures) Manufacturing
3379 Other Furniture Related Product Manufacturing
3391 Medical Equipment and Supplies Manufacturing
3399 Other Miscellaneous Manufacturing

GO VA Region 8 Top Manufacturing Industries

NAICS	Industry	2024 Jobs	2029 Jobs	2024 - 2029 % Change	2024 Employment Concentration	Avg. Earnings Per Job
3115	Dairy Product Manufacturing	1,747	1,947	11%	6.91	$105,029
3261	Plastics Product Manufacturing	4,279	4,400	3%	4.75	$97,328
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	874	918	5%	4.00	$97,057
3113	Sugar and Confectionery Product Manufacturing	1,416	1,635	15%	11.39	$95,078
3121	Beverage Manufacturing	1,178	1,367	16%	2.38	$79,677
3118	Bakeries and Tortilla Manufacturing	1,252	1,719	37%	2.41	$76,960
3231	Printing and Related Support Activities	2,252	2,270	1%	4.09	$67,041
3116	Meat Processing	6,743	7,005	4%	8.08	$65,212
3219	Other Wood Product Manufacturing	930	951	2%	2.52	$61,012
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	1,087	1,225	13%	3.22	$57,728

Source: Lightcast, 2024

GO VA Region 8 Aligned Transportation & Logistics Industry Cluster

4234 Professional and Commercial Equipment and Supplies Merchant Wholesalers
4238 Machinery, Equipment, and Supplies Merchant Wholesalers
4239 Miscellaneous Durable Goods Merchant Wholesalers
4811 Scheduled Air Transportation
4812 Nonscheduled Air Transportation
4821 Rail Transportation
4841 General Freight Trucking
4842 Specialized Freight Trucking
4855 Charter Bus Industry
4859 Other Transit and Ground Passenger Transportation
4862 Pipeline Transportation of Natural Gas
4871 Scenic and Sightseeing Transportation, Land
4872 Scenic and Sightseeing Transportation, Water
4881 Support Activities for Air Transportation
4882 Support Activities for Rail Transportation
4883 Support Activities for Water Transportation
4884 Support Activities for Road Transportation
4885 Freight Transportation Arrangement
4889 Other Support Activities for Transportation
4921 Couriers and Express Delivery Services
4931 Warehousing and Storage
541614 Process, Physical Distribution, and Logistics Consulting Services

GO VA Region 8 Top Transportation & Logistics Industries

NAICS	Industry	2024 Jobs	2029 Jobs	2024 - 2029 % Change	2024 Employment Concentration	Avg. Earnings Per Job
4812	Nonscheduled Air Transportation	192	133	(31%)	2.20	$143,033
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	202	204	1%	0.18	$100,422
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	1,106	1,129	2%	0.94	$85,004
4841	General Freight Trucking	2,348	2,187	(7%)	1.44	$82,881
4842	Specialized Freight Trucking	834	836	0%	1.21	$76,777
4931	Warehousing and Storage	10,120	11,448	13%	3.56	$66,009
4921	Couriers and Express Delivery Services	1,341	1,524	14%	0.99	$52,049
4884	Support Activities for Road Transportation	325	328	1%	1.86	$52,399

Source: Lightcast, 2024

Appendix C: Educational Resource Asset Mapping

Education Provider	Institution Type	Programming	Degree/Credential	Program Type
Blue Ridge Community College	College/ University	Engineering	A.S.	Engineering
Blue Ridge Community College	College/ University	Advanced Manufacturing Technology	A.A.S.	Precision Production
Blue Ridge Community College	College/ University	Advanced Manufacturing Technology: Manufacturing Engineering Technology	A.A.S.	Precision Production
Blue Ridge Community College	College/ University	Advanced Manufacturing Technology: Mechatronics	A.A.S.	Precision Production
Blue Ridge Community College	College/ University	Engineering Technology	A.A.S.	Engineering/Engineering-related Technologies/ Technicians
Blue Ridge Community College	College/ University	Technical Studies	A.A.S.	Mechanic and Repair Technologies/Technicians
Blue Ridge Community College	College/ University	Computer Aided Drafting	Career Studies Certificate	Precision Production
Blue Ridge Community College	College/ University	Commercial Driving and Logistics	Certificate of Completion (Non-Credit)	Transportation and Materials Moving
Blue Ridge Community College	College/ University	Machining	Certificate of Completion (Non-Credit)	Precision Production
Blue Ridge Community College	College/ University	Welding	Certificate of Completion (Non-Credit)	Precision Production
Blue Ridge Community College	College/ University	Engineering Assistant	Career Studies Certificate	Engineering/Engineering-related Technologies/ Technicians
Blue Ridge Community College	College/ University	Senior Engineering Assistant	Career Studies Certificate	Engineering/Engineering-related Technologies/ Technicians
Blue Ridge Community College	College/ University	Computer and Electronics I	Career Studies Certificate	Engineering/Engineering-related Technologies/ Technicians
Blue Ridge Community College	College/ University	Computer and Electronics II	Career Studies Certificate	Engineering/Engineering-related Technologies/ Technicians
Blue Ridge Community College	College/ University	Cybersecurity & Networking	Career Studies Certificate	Engineering/Engineering-related Technologies/ Technicians
Blue Ridge Community College	College/ University	Intermediate Cybersecurity	Career Studies Certificate	Engineering/Engineering-related Technologies/ Technicians
Blue Ridge Community College	College/ University	Computer & Electronics Technology	A.A.S.	Engineering/Engineering-related Technologies/ Technicians

Education Provider	Institution Type	Program Type	Programming	Degree/Credential
Blue Ridge Community College	College/ University	Computer & Electronics Technology: Secure Computer Networking	A.A.S.	Engineering/Engineering-related Technologies/ Technicians
Blue Ridge Community College	College/ University	Mechatronics I	Career Studies Certificate	Precision Production
Blue Ridge Community College	College/ University	Mechatronics II	Career Studies Certificate	Precision Production
Blue Ridge Community College	College/ University	Mechatronics III	Career Studies Certificate	Precision Production
Blue Ridge Community College	College/ University	Mechatronics IV	Career Studies Certificate	Precision Production
Blue Ridge Community College	College/ University	Applied Mechatronics I	Career Studies Certificate	Precision Production
Blue Ridge Community College	College/ University	Applied Mechatronics II	Career Studies Certificate	Precision Production
Blue Ridge Community College	College/ University	Auto Mechanical Systems	Career Studies Certificate	Mechanic and Repair Technologies/Technicians
Blue Ridge Community College	College/ University	Undercar and UVAC Systems	Career Studies Certificate	Mechanic and Repair Technologies/Technicians
Blue Ridge Community College	College/ University	Auto Fuel & Electrical Systems	Career Studies Certificate	Mechanic and Repair Technologies/Technicians
Blue Ridge Community College	College/ University	Automotive Analysis & Repair	A.A.S.	Mechanic and Repair Technologies/Technicians
Blue Ridge Community College	College/ University	Light Sport Aircraft Pilot/ Mechanic	Career Studies Certificate	Mechanic and Repair Technologies/Technicians
Blue Ridge Community College	College/ University	Aviation Maintenance Technology	A.A.S.	Mechanic and Repair Technologies/Technicians
Blue Ridge Community College	College/ University	Airframe Maintenance	Certificate	Mechanic and Repair Technologies/Technicians
Blue Ridge Community College	College/ University	Powerplant Maintenance	Certificate	Mechanic and Repair Technologies/Technicians
Blue Ridge Community College	College/ University	Applied Manufacturing Processes	Career Studies Certificate	Precision Production
Laurel Ridge Community College	College/ University	General Engineering Technology - Civil Engineering Technology	A.A.S.	Engineering/Engineering-related Technologies/ Technicians
Laurel Ridge Community College	College/ University	General Engineering Technology - Computer-Aided Drafting Technology	A.A.S.	Engineering/Engineering-related Technologies/ Technicians
Laurel Ridge Community College	College/ University	General Engineering Technology - Mechanical Engineering Technology	A.A.S.	Engineering/Engineering-related Technologies/ Technicians
Laurel Ridge Community College	College/ University	Technical Studies	A.A.S.	Mechanic and Repair Technologies/Technicians
Laurel Ridge Community College	College/ University	Engineering	A.S.	Engineering
Laurel Ridge Community College	College/ University	Basic Electronics Technology	Career Studies Certificate	Construction Trades
Laurel Ridge Community College	College/ University	Drafting	Career Studies Certificate	Precision Production

Education Provider	Institution Type	Program Type	Programming	Degree/Credential
Laurel Ridge Community College	College/ University	Practical Electrical Technician	Career Studies Certificate	Construction Trades
Laurel Ridge Community College	College/ University	Robotics and Automation	Career Studies Certificate	Engineering/Engineering-related Technologies/ Technicians
Laurel Ridge Community College	College/ University	Commercial Driver's License (CDL)	Credential	Transportation and Materials Moving
Laurel Ridge Community College	College/ University	Construction Project Management	Credential	Construction Trades
Laurel Ridge Community College	College/ University	Electrical Level 1 Apprenticeship	Credential	Construction Trades
Laurel Ridge Community College	College/ University	Electrical Level 2 Apprenticeship	Credential	Construction Trades
Laurel Ridge Community College	College/ University	Electrical Level 3 Apprenticeship	Credential	Construction Trades
Laurel Ridge Community College	College/ University	Electrical Level 4 Apprenticeship	Credential	Construction Trades
Laurel Ridge Community College	College/ University	Heavy Equipment Operator	Credential	Construction Trades
Laurel Ridge Community College	College/ University	HVAC Basics	Credential	Construction Trades
Laurel Ridge Community College	College/ University	HVAC Journeyman/Master Exam Prep	Credential	Construction Trades
Laurel Ridge Community College	College/ University	HVAC Level 1 Apprenticeship	Credential	Construction Trades
Laurel Ridge Community College	College/ University	HVAC Level 2 Apprenticeship	Credential	Construction Trades
Laurel Ridge Community College	College/ University	HVAC Level 3 Apprenticeship	Credential	Construction Trades
Laurel Ridge Community College	College/ University	HVAC Level 4 Apprenticeship	Credential	Construction Trades
Laurel Ridge Community College	College/ University	Mechanical Schematics Drawing and Reading	Credential	Engineering/Engineering-related Technologies/ Technicians
Laurel Ridge Community College	College/ University	Mechatronics: Fundamentals of Electricity	Credential	Engineering/Engineering-related Technologies/ Technicians
Laurel Ridge Community College	College/ University	Mechatronics: Fundamentals of Fluid Power	Credential	Engineering/Engineering-related Technologies/ Technicians
Laurel Ridge Community College	College/ University	Mechatronics: Fundamentals of Mechanical Systems	Credential	Engineering/Engineering-related Technologies/ Technicians
Laurel Ridge Community College	College/ University	Mechatronics: Fundamentals of PLC	Credential	Engineering/Engineering-related Technologies/ Technicians
Laurel Ridge Community College	College/ University	Mechatronics: Fundamentals of Robotics	Credential	Engineering/Engineering-related Technologies/ Technicians

Education Provider	Institution Type	Program Type	Programming	Degree/Credential
Laurel Ridge Community College	College/ University	OSHA 10 General Industry	Credential	Construction Trades
Laurel Ridge Community College	College/ University	Plumbing Level 1 Apprenticeship	Credential	Construction Trades
Laurel Ridge Community College	College/ University	Plumbing Level 2 Apprenticeship	Credential	Construction Trades
Laurel Ridge Community College	College/ University	Plumbing Level 3 Apprenticeship	Credential	Construction Trades
Laurel Ridge Community College	College/ University	Plumbing Level 4 Apprenticeship	Credential	Construction Trades
Laurel Ridge Community College	College/ University	Shielded Metal Arc Welding (SMAW)	Credential	Precision Production
Laurel Ridge Community College	College/ University	Flux Core Arc Welding (FCAW)	Credential	Precision Production
Laurel Ridge Community College	College/ University	Gas Metal Arc Welding (GMAW)	Credential	Precision Production
Laurel Ridge Community College	College/ University	Gas Tungsten Arc Welding (GTAW)	Credential	Precision Production
Mountain Gateway Community College	College/ University	Technical Studies	A.A.S.	Mechanic and Repair Technologies/Technicians
Mountain Gateway Community College	College/ University	Electrical and Instrumentation Technology	A.A.S.	Mechanic and Repair Technologies/Technicians
Mountain Gateway Community College	College/ University	Electrical Troubleshooting	Career Studies Certificate	Construction Trades
Mountain Gateway Community College	College/ University	Electrical Wiring Fundamentals	Career Studies Certificate	Construction Trades
Mountain Gateway Community College	College/ University	Instrumentation Technology Fundamentals	Career Studies Certificate	Mechanic and Repair Technologies/Technicians
Mountain Gateway Community College	College/ University	Mechatronics	Career Studies Certificate	Engineering/Engineering-related Technologies/ Technicians
Mountain Gateway Community College	College/ University	Practical Electrical Technician	Career Studies Certificate	Construction Trades
Mountain Gateway Community College	College/ University	Commercial Driver's License (CDL) Program - Class A	FastForward Credential	Transportation and Materials Moving
Mountain Gateway Community College	College/ University	Commercial Driver's License (CDL) Program - Class B	FastForward Credential	Transportation and Materials Moving
Mountain Gateway Community College	College/ University	Flux Core Arc Welding (FCAW)	FastForward Credential	Precision Production
Mountain Gateway Community College	College/ University	Gas Metal Arc Welding (GMAW)	FastForward Credential	Precision Production
Mountain Gateway Community College	College/ University	Gas Tungsten Arc Welding (GTAW)	FastForward Credential	Precision Production
Mountain Gateway Community College	College/ University	Industrial Maintenance Mechanic (IMM) Level 1 (NCCER)	FastForward Credential	Mechanic and Repair Technologies/Technicians

Education Provider	Institution Type	Program Type	Programming	Degree/Credential
Mountain Gateway Community College	College/ University	Industrial Maintenance Mechanic (IMM) Level 2 (NCCER)	FastForward Credential	Mechanic and Repair Technologies/Technicians
Mountain Gateway Community College	College/ University	Industrial Maintenance Mechanic (IMM) Level 3 (NCCER)	FastForward Credential	Mechanic and Repair Technologies/Technicians
Mountain Gateway Community College	College/ University	Industrial Maintenance Mechanic (IMM) Level 4 (NCCER)	FastForward Credential	Mechanic and Repair Technologies/Technicians
Mountain Gateway Community College	College/ University	NCCER Core/Introductory Craft Skills	FastForward Credential	Construction Trades
Mountain Gateway Community College	College/ University	NCCER Electrical Level 1	FastForward Credential	Construction Trades
Mountain Gateway Community College	College/ University	NCCER Electrical Level 2	FastForward Credential	Construction Trades
Mountain Gateway Community College	College/ University	NCCER Electrical Level 3	FastForward Credential	Construction Trades
Mountain Gateway Community College	College/ University	NCCER Electrical Level 4	FastForward Credential	Construction Trades
Mountain Gateway Community College	College/ University	Shielded Metal Arc Welding (SMAW)	FastForward Credential	Precision Production
Mountain Gateway Community College	College/ University	Fundamentals of Welding	Career Studies Certificate	Precision Production
Mountain Gateway Community College	College/ University	Industrial/Structural Welding	Career Studies Certificate	Precision Production
Mountain Gateway Community College	College/ University	Pipe Welding	Career Studies Certificate	Precision Production
James Madison University	College/ University	Engineering	B.S.	Engineering
Eastern Mennonite University	College/ University	Engineering	B.S.	Engineering
Virginia Military Institute	College/ University	Civil Engineering	B.S.	Engineering
Virginia Military Institute	College/ University	Electrical and Computer Engineering	B.S.	Engineering
Virginia Military Institute	College/ University	Mechanical Engineering	B.S.	Engineering
Washington and Lee University	College/ University	Engineering	B.S.	Engineering
Massanutten Technical Center	CTE Center	Building Management	High School Studies	Construction Trades
Massanutten Technical Center	CTE Center	Carpentry	High School Studies	Construction Trades
Massanutten Technical Center	CTE Center	Diesel Technology	High School Studies	Mechanic and Repair Technologies/Technicians
Massanutten Technical Center	CTE Center	Electricity	High School Studies	Construction Trades
Massanutten Technical Center	CTE Center	Welding	High School Studies	Precision Production

Education Provider	Institution Type	Program Type	Programming	Degree/Credential
Massanutten Technical Center	CTE Center	Carpentry	Adult Studies	Construction Trades
Massanutten Technical Center	CTE Center	Certified Manufacturing Associate	Adult Studies	Precision Production
Massanutten Technical Center	CTE Center	Diesel Mechanics	Adult Studies	Mechanic and Repair Technologies/Technicians
Massanutten Technical Center	CTE Center	Electricity (Industrial/ Technical)	Adult Studies	Mechanic and Repair Technologies/Technicians
Massanutten Technical Center	CTE Center	Electricity (Residential/ Commercial)	Adult Studies	Construction Trades
Massanutten Technical Center	CTE Center	Industrial Maintenance	Adult Studies	Mechanic and Repair Technologies/Technicians
Massanutten Technical Center	CTE Center	Metalworking	Adult Studies	Precision Production
Massanutten Technical Center	CTE Center	Welding	Adult Studies	Precision Production
Governor's STEM Academy at Harrisonburg High School	Governor's STEM Academy	Technology & Engineering	Diploma	Engineering
Shenandoah University	College/ University	Engineering	B.S.	Engineering
Shenandoah University	College/ University	Engineering Leadership	Continuing Education Certificate	Engineering
Bridgewater College	College/ University	Engineering	B.S.	Engineering
Blue Ridge Technical Center	CTE Center	NCCER Electrical Level 1	Industry Credential	Construction Trades
Blue Ridge Technical Center	CTE Center	American Welding Society	Industry Credential	Precision Production
Page County Technical Center	CTE Center	Electricity	Diploma	Construction Trades
Page County Technical Center	CTE Center	Welding	Diploma	Precision Production
Page County Technical Center	CTE Center	Construction	Diploma	Construction Trades
Page County Technical Center	CTE Center	Maintenance & Operations	Diploma	Mechanic and Repair Technologies/Technicians
Page County Technical Center	CTE Center	Design/Pre-Construction	Diploma	Construction Trades
Page County Technical Center	CTE Center	Manufacturing Process/ Production	Diploma	Precision Production
Page County Technical Center	CTE Center	Engineering & Technology	Diploma	Engineering/Engineering-related Technologies/ Technicians
Triplett Technical Center	CTE Center	Electricity	Diploma	Construction Trades
Triplett Technical Center	CTE Center	Carpentry	Diploma	Construction Trades
Triplett Technical Center	CTE Center	Masonry	Diploma	Construction Trades

Education Provider	Institution Type	Program Type	Programming	Degree/Credential
Valley Career & Technical Center	CTE Center	Carpentry	Diploma	Construction Trades
Valley Career & Technical Center	CTE Center	Diesel Equipment Technology	Diploma	Mechanic and Repair Technologies/Technicians
Valley Career & Technical Center	CTE Center	Electricity	Diploma	Construction Trades
Valley Career & Technical Center	CTE Center	Industrial Maintenance	Diploma	Mechanic and Repair Technologies/Technicians
Valley Career & Technical Center	CTE Center	Masonry	Diploma	Construction Trades
Valley Career & Technical Center	CTE Center	Precision Machining	Diploma	Precision Production
Valley Career & Technical Center	CTE Center	Welding	Diploma	Precision Production

**All programs in this table are pulled from online catalogues made publicly available by the education institutions (i.e., colleges, CTE programs, trade schools, etc.) in Region 8. The online catalogues of these institutions are presented in the aggregate and do not include campus-specific data. The following institutions were not included for the following reasons: Christendom College (no related programs), Mary Baldwin College (no related programs), Southern Virginia University (no related programs), and Mertz Career and Technical Center (no online catalog of programs).*

Appendix D: Region 8 County Comparison

County or Independent City	Sub-Region	Population (2024)	Percent of Region 8 Population (2024)	Employment (2024)	Percent of Region 8 Employment (2024)	Median Age (2023)	Median Household Income (2023)	Population below poverty level (2023)
Augusta County	Central	78,761	14.0%	33,275	12.7%	44.9	79,972	7.3%
Bath County	Southern	4,062	0.7%	2,474	0.9%	52.3	61,709	21.1%
Clarke County	Northern	15,767	2.8%	4,785	1.8%	48.3	114,185	6.9%
Frederick County	Northern	97,405	17.3%	43,098	16.4%	40.6	95,603	7.1%
Highland County	Central	2,404	0.4%	760	0.3%	57.1	62,946	10.3%
Page County	Northern	23,739	4.2%	6,527	2.5%	45.4	59,396	9.5%
Rockbridge County	Southern	22,303	4.0%	6,928	2.6%	49.7	63,975	8.0%
Rockingham County	Central	87,712	15.6%	39,103	14.9%	40.3	78,468	9.6%
Shenandoah County	Northern	45,661	8.1%	15,454	5.9%	42.9	64,437	12.3%
Warren County	Northern	42,252	7.5%	15,239	5.8%	40.5	84,331	11.3%
Buena Vista	Southern	6,612	1.2%	3,291	1.3%	36.2	54,458	22.0%
Harrisonburg	Central	51,150	9.1%	34,705	13.2%	25.4	59,752	25.6%
Lexington	Southern	7,794	1.4%	6,801	2.6%	22.5	89,598	15.9%
Staunton	Central	26,188	4.7%	12,805	4.9%	41	62,586	12.6%
Waynesboro	Central	23,490	4.2%	10,320	3.9%	38.9	56,364	11.7%
Winchester	Northern	27,568	4.9%	27,087	10.3%	36.7	64,648	19.3%

2024 Data from Lightcast
2023 Data from US Census Bureau American Community Survey 2023 5-Year Estimates

Appendix E: Educational Attainment

County or Independent City	Less Than 9th Grade	9th Grade to 12th Grade	High School Diploma or equivalent	Some College	Associate's Degree	Bachelor's Degree	Graduate Degree and Higher
Augusta County	3.4%	5.6%	40.7%	19.3%	7.7%	15.8%	7.6%
Bath County	7.2%	8.5%	33.7%	24.4%	7.8%	12.9%	5.5%
Clarke County	1.5%	4.4%	29.5%	22.7%	8.2%	22.5%	11.0%
Frederick County	4.7%	7.5%	30.7%	21.0%	7.2%	16.8%	12.1%
Highland County	3.1%	4.6%	37.0%	16.2%	4.1%	23.4%	11.7%
Page County	5.1%	11.5%	45.6%	16.7%	5.8%	8.0%	7.3%
Rockbridge County	3.0%	5.3%	33.7%	20.5%	5.9%	15.8%	15.7%
Rockingham County	4.3%	7.1%	36.9%	15.0%	6.8%	17.6%	12.3%
Shenandoah County	3.4%	7.0%	40.9%	18.2%	9.4%	11.9%	9.3%
Warren County	4.0%	6.6%	33.5%	25.4%	7.6%	14.9%	8.0%
Buena Vista	4.7%	14.5%	28.6%	21.6%	8.6%	13.1%	9.0%
Harrisonburg	10.6%	7.7%	25.7%	13.8%	8.4%	19.0%	14.8%
Lexington	2.7%	3.3%	20.3%	6.5%	4.4%	31.1%	31.7%
Staunton	1.6%	4.5%	30.4%	22.7%	7.1%	18.6%	15.0%
Waynesboro	4.7%	6.6%	35.1%	16.7%	7.6%	17.9%	11.4%
Winchester	4.8%	7.9%	27.1%	21.5%	6.7%	19.1%	12.9%
Region 8 - Northern	4.2%	7.5%	34.1%	21.0%	7.6%	15.3%	10.4%
Region 8 - Central	4.6%	6.3%	35.7%	17.2%	7.4%	17.4%	11.3%
Region 8 - Southern	3.7%	6.8%	31.3%	19.4%	6.3%	17.0%	15.5%
Region 8	**4.4%**	**6.9%**	**34.6%**	**19.1%**	**7.4%**	**16.4%**	**11.2%**
United States	**4.7%**	**6.0%**	**26.2%**	**19.5%**	**8.8%**	**21.2%**	**13.6%**

Source: Lightcast, 2024

Appendix F: Workforce Migration Patterns

County/ Independent City	Employed Within, But Living Outside	Employed Within, And Living Within	Living Within, But Employed Outside	Net Inflow/ Outflow
Augusta	15,553	12,557	24,993	(9,440)
Bath	949	958	1,036	(87)
Clarke	3,026	951	6,991	(3,965)
Frederick	22,410	10,407	33,035	(10,625)
Highland	281	291	546	(265)
Page	2,116	3,162	7,799	(5,683)
Rockbridge	3,260	2,324	7,446	(4,186)
Rockingham	18,385	13,114	29,240	(10,855)
Shenandoah	6,367	6,743	12,795	(6,428)
Warren	8,378	4,827	16,539	(8,161)
Buena Vista	1,432	543	2,307	(875)
Harrisonburg	25,846	7,463	13,441	12,405
Lexington	4,875	959	1,331	3,544
Staunton	9,234	2,701	9,108	126
Waynesboro	7,807	2,143	8,767	(960)
Winchester	23,352	3,630	8,978	14,374

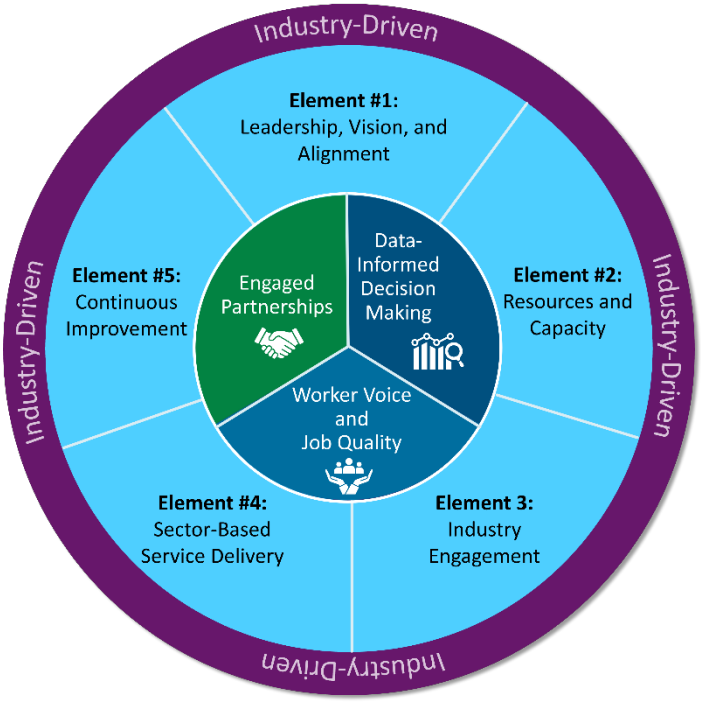
Source: U.S. Census Bureau Longitudinal Employer-Household Dynamics

Appendix G: Domestic and International Workforce Development Success Strategies

Researchers across sectors (academic, governmental, industry) analyze workforce development by gathering qualitative and quantitative data to represent workers and businesses across industries, demographic types, urban and rural environments, and nations. They aim to understand the best strategies for strengthening national, regional, and personal economic development through training workers. Three core strategies sit at the center of this body of research: sector strategies, work-based learning, and career pathways. This appendix offers a brief snapshot of recent studies in the last decade in each of these areas, showcasing contemporary understandings of best practices for workforce development.

Sector Strategies

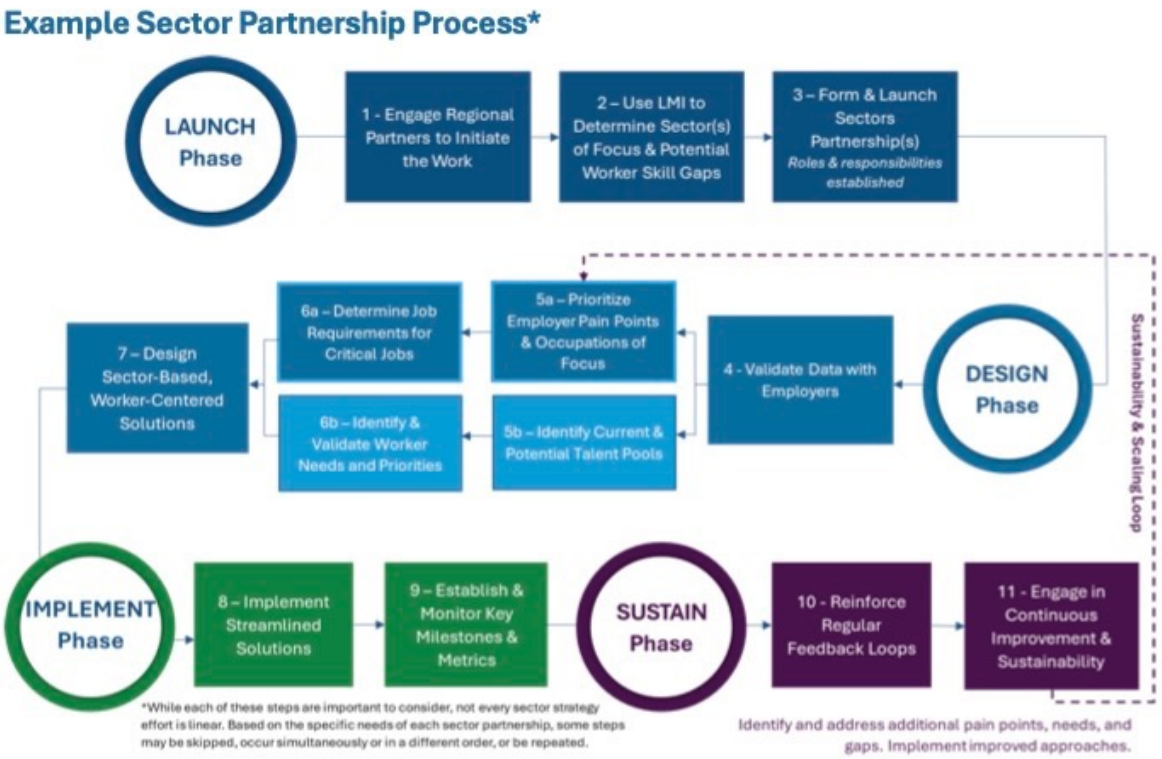
The sector strategies model prioritizes collaboration between industry and workforce partners to address talent development needs at a regional scale, considering the overall growth of the economic job market and access to preparation for good jobs with growth potential. The American Institutes for Research and the US Department of Labor (2024) created the following framework for this approach:



This framework lays out the core principles of sector strategies. They are industry-driven with three core components—engaged partnerships, data-informed decision making, and worker voice and job quality— and five key elements—leadership, vision, and alignment; resources and capacity; industry engagement; sector-based service delivery; and continuous improvement—that underly every step of the process. Essentially, each process will be informed by the three core components to ensure that strategies are data-informed and community-driven, and processes will include leaders who share an aligned vision discussing resources and capacity of an industry, engaging with multiple members of that industry, determining best methods for service delivery, and improving processes continuously. Ultimately, sector strategies is a model for developing workforce training—the exact plans will differ across areas and industries. Likely strategies include: develop clear career pathways, organize career exploration events, create industry training programs, design work-based learning opportunities.

To put sector strategies into action, the DOL offers a breakdown of four phases of work: Launch, Design, Implement, and Sustain. The Launch phase includes identifying the target sector, appropriate partners, and geographic scope to create a unified vision with clearly define roles for all partners. This should include developing funding and resource allocation strategies. The Design phase pinpoints the most critical industry and worker needs through data analysis—reviewing labor market data, industry trends, and feedback from employers. With these priorities and data in mind, the group will design a program that addresses regional challenges. The Implement phase puts the new program into action. Partners should create a coordinated implementation plan that details the steps, timelines, responsibilities, accountability structure, and evaluation/tracking plan that all will follow to create a successful program. Lastly, the Sustain phase is dedicated to long-term impact of the sector partnerships and any connected initiatives. Regular feedback with industry, workers, and partners should be conducted to inform continuous improvement and sustainability planning efforts.

For a more detailed example of the steps of this potential process, see the image on the following page, which lays out multiple phases and steps of a potential project.



Additional resources for each step of the sector strategies process are available in the Sector Strategies Implementation Guide (Bajorek et al, 2024), and the Shenandoah Valley Workforce Development Board is ready to help partners across sectors with developmental, logistical, financial, and other concerns in the process. Funds for sector strategy development and for connected initiatives are available through federal and state grants as well as WIOA funds.

The overall goal is for sector strategies to be flexible and responsive to a regional industry's needs. Thus, examples depict possible ways forward rather than rigid requirements. This framework and the example process map can help interested parties start the process and then tailor it to their own needs. Likely these sector-based workforce development strategies will include aspects of the next two sections: work-based learning and career pathways.

Work-Based Learning

Work-Based Learning is a workforce development strategy that engages hands-on learning experiences at real workplaces where new workers can learn a trade through doing. This strategy aims to 1) give students the opportunity for first-hand learning experiences to combine theoretical and practical knowledge of a trade and 2) ease training processes for employers by engaging students in a deeper understanding of their processes alongside foundational principles.

The ultimate purpose is to create a more skilled workforce that can meet employer needs quickly and effectively while also gaining jobs with family-sustaining wages and long-term growth potential. To meet these goals, Work-Based Learning aligns classroom and workplace learning; includes application of academic, technical and employment skills in a workplace; and features support of academic and/or employer mentors (U.S. Department of Education, 2017). Practically, this can take on many forms. Employers might offer work-based learning through models such as: internships, co-ops, on-the-job training, transitional jobs, and apprenticeships. The flexibility associated with multiple models means that employers can try out work-based learning in smaller contexts, getting a feel for if this strategy works for them rather than starting with a large-scale commitment. Some large companies find that on-the-job training programs where participants apply for a program with them that includes extensive academic education alongside learning their new job can be a great fit for scaling up production and filling needed slots quickly and with people who have the exact training they want. Smaller businesses find that having one or two interns a year can greatly expand their capacity.

Regardless of the approach, employer involvement in the process is key for creating strong programs seen specifically in Merck's role in its partnership with James Madison University and Blue Ridge Community College (Virginia Economic Review, 2022) and employer input to the Hinds Community College TDL program (Sofer, 2018). Ultimately, the best model is one that works well for the employer and participants—leading to strong growth outcomes for all.

A 2016 Jobs for the Future Report highlights seven core principles for effective work-based learning. Programs should:

1. Support entry and advancement in a career track
2. Provide meaningful job tasks that build career skills and knowledge
3. Offer compensation
4. Identify target skills and how gains will be validated
5. Reward skill development
6. Support college entry, persistence, and completion
7. Provide comprehensive student supports.

Job for the Future specifies that work-based learning is a model that should support participants in building a career, not just preparing for a singular job. The best programs engage students in thoughtful, meaningful work where they can better understand the career they are pursuing, not just offering brief administrative supports. Participants should be able to see a clear map of what they are learning, how it aligns with industry needs, and how they can grow along a career path—all while being supported through mentorship and with financial compensation.

Support for employers who want to provide work-based learning opportunities is critical for their success. In particular, financial support is often needed to appropriately compensate participants. Key supports for new work-based learning programs include Workforce Development Boards, community colleges, Career and Technical Education programs and schools, and other employment services or small business offices. In Shenandoah Valley, the regional Workforce Development Board aids employers with gaining on-the-job training wage subsidies, Workforce Innovation and Opportunity Act (WIOA) funded internships, incumbent worker training, Registered Apprenticeships, and more (Virginia Career Works. n.d.). Colleges like Blue Ridge Community College and technical schools like Triplett are prepared to partner with employers to create stronger educational-career connections for students to participate in work-based learning. Connecting with the Workforce Development Board is a strong place to start thinking through how to implement effective work-based learning programs.

For more on models of strong workforce-based learning programs, see the following sources:

- "Creative partnership solves workforce need in the Shenandoah Valley" - Partnership between Merck, James Madison University, and Blue Ridge Community College to prepare workforce for new medical manufacturing facility. (Virginia Economic Review, 2022)
- "Beyond engagement: Employer investments expand TDL opportunities" - Hinds Community College's CDL program quickly produced new truck drivers who could fulfill the region's significant need. (Sofer, 2018)
- "Jobs to manufacturing Careers: Work-based courses" - A more expensive and time intensive model that creates strong hybrid programs where employers and instructors map out what students will learn in the classroom and on-the-job, customizing the program for a specific employer. (Kobes, 2016)
- "The industrial manufacturing technician apprenticeship" - A model with a heavy on-the-job training focus that prepares participants for entry level jobs while also gaining credentials to advance in their careers. (Scott, 2016)

Career Pathways

The Career Pathways approach to workforce development shows clear steps people can take to gain education and certification needed to begin and advance in a particular career. A Career Pathway might include steps toward 1) career workshops or fairs that help people learn about this occupation group, 2) education opportunities that provide credentials at multiple levels (e.g., certificate, associate degree, credential, and bachelor's degree), 3) support services offered for people pursuing this career in the region (e.g., union information, mentorship networks), and 4) amount of time and type of knowledge needed to advance along the path. The goal is for people to be able to easily see a well-articulated version of what they need to do to get started in a career path and what kinds of advancements might be available and how to achieve them.

For example, Virginia's Department for Aging and Rehabilitative Services created Pathways to Careers Academies (2021) where individual with disabilities could gain information about and experience in career pathways of interest. These 1-5 day academies focused on initial pathway steps—helping individuals see if they are interested in continuing through additional training, entry-level work, and beyond. Academies included hands-on experiences with tools used for solar power, manufacturing, welding, IT, and more. These hands-on activities were paired with information sessions about the career path, employer tours and presentations, and a presentation to share what they have learned. Additionally, the Academies offered multiple support services including food provided throughout the day, service and career assessments, and access to WIOA and DARS resources to help them succeed. Pathways to Careers Academies is one example of what a "career pathway" approach might look like—a clear, articulated vision of an occupational path so participants can see how the begin and grow in a particular career.

Other versions of Career Pathways projects focus more on what employers can do to show how workers can move up through different job titles for growth of responsibilities and compensation. Workforce Hub (Strikwerda, 2024) suggests six steps for this process: 1) Update org chart to show the structure of the company; 2) Define responsibilities and performance indicators for all job positions within the org chart; 3) Create a roadmap of skills and growth opportunities showing how people can move up through the company; 4) Identify any training (either offered within or outside the company) needed for employees to move through this path; 5) Create training and development programs specifically for employees' vertical growth in the company; 6) Offer onboarding processes that map out a future career path for each new employee. These processes show that companies are dedicated to their employees' growth, not just the bottom line. Career Pathways can be an important way for employers to show that they are a premier employer of choice, creating stronger retainment of good workers for the long-term.

Conclusion

Through employing any or all of these three career development success strategies—sector strategies, work-based learning, and career pathways—employers can ensure that they are part of the process of developing the best workforce possible for their business and for the region at large. Collaborating with other employers and across industries as well as with educational institutions and workforce development groups engages big picture thinking of how to create economic success for all people in a region—driving the kind of workforce impact that allows sustained profitability for individuals, businesses, and the region at large.

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