



Maryland

STATE DEPARTMENT OF EDUCATION

Career and Technical Education: Comprehensive Local Needs Assessment - AACPS

A Systemic Review Guidebook for Secondary Schools
Version 3.0

Office of College and Career Pathways

2024 - 2026

MARYLAND STATE DEPARTMENT OF EDUCATION

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DOCUMENT HISTORY

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1.0	February 2024	Initial Document
2.0	March 2024	Modified: Formatting for accessibility Added: State Level Performance Data Added: Appendices with Strategies and Resources to Consider
3.0	April 2024	Modified the data tables in Activities B.1 and B.4.

Purpose

The federal Strengthening Career and Technical Education for the 21st Century Act (Perkins V), provides funding to support educators in developing the technical and employability skills and academic knowledge of secondary and postsecondary education students enrolling in career and technical education (CTE) programming.

Perkins V requires that grant recipients complete a Comprehensive Local Needs Assessment (CLNA) every other year to identify needs or gaps that should be addressed to strengthen the delivery of high-quality CTE programming.

The Maryland State Department of Education (MSDE) has created this document to assist LEA in conducting your CLNA. Information contained within it will assist local education agencies to align improvement efforts with the College and Career Readiness Pillar contained in the Blueprint for Maryland's Future. Key action steps include assessing the alignment of CTE programs of study (POS) to labor market needs; reviewing student participation and performance in CTE coursework; evaluating site progress in making CTE offerings accessible to students; and considering efforts to recruit, train, and retain CTE instructors.

Results from this CLNA should be incorporated into the LEAs Perkins V Local Application, which details how you plan to use federal funds to improve CTE instruction and expand equitable student access to quality programs.

The CLNA and the Local Application will be reviewed and approved on a rolling basis, and must be fully completed by the LEA, negotiated (LEA and MSDE), and approved by the State Director of Career and Technical Education or their designee prior to July 1st of each year.

Appendices A - E are included in this document that may help you align your priorities to your Local Application. If you have questions about how to use this guide, please contact your designated Secondary Program Coordinator in the Office of College and Career Pathways.

Instructions

Conducting this needs assessment could take several months to complete and must precede the creation of your Perkins V Local Application.

This guide provides a framework to help you investigate the status of your CTE programming and identify areas for improvement. It is organized into six sections:

- Guiding Principles
- Assembling a Stakeholder Team
- Component A: Labor Market Alignment
- Component B: Student Participation and Persistence
- Component C: Program Performance
- Component D: Professional Development

While you may choose to cover topics in any order, you should begin by assembling a stakeholder team to inform your effort. This group must include representatives from the stakeholder groups that are identified in the Perkins V legislation.

You may complete this document online or electronically by typing directly into the provided fillable fields. Alternatively, you may print out a copy of this form and enter information by hand. Do not alter or remove sections. Those choosing to complete the document offline should upload a completed copy using SharePoint.

Guiding Principles and Logic Model

OVERVIEW

MSDE has identified a set of guiding principles to inform the creation of CTE programming. It includes the expectation that all learners should have access to high-quality CTE coursework that:

- aligns to high-skill, high-wage, in-demand careers,
- leads to industry-recognized and/or postsecondary credentials that supports entrance or advancement in a specific career cluster, and
- offers career-based learning experiences (e.g., work-based learning, apprenticeship) that require the application of academic and technical knowledge and skills in a work setting.

LOGIC MODEL

Despite the growing emphasis on CTE as a pivotal pathway for students in Maryland, there is a significant gap in the systematic evaluation of current CTE programs. Maryland's dedication to aligning educational experiences with the demands of the real-world labor market faces challenges:

1. **Lack of Comprehensive Oversight:** There isn't a unified method to holistically assess the state's CTE programming capacity. This absence has led to disparities among various student groups across CTE clusters, hindering equitable access to quality education.
2. **Inefficient Funding Application Process:** Potential CTE grantees in Maryland lack a structured Local Application process for Perkins V grant funds, affecting their ability to optimally leverage these resources for student outcomes.

The combined effect of these challenges puts Maryland's CTE programs at risk of not fully aligning with the Perkins V requirements and, more importantly, not meeting the evolving needs of students and the labor market. Consequently, there is an urgent need for a systematic approach to bridge these gaps, ensuring the delivery of equitable, high-quality career and technical training that truly mirrors labor market demands.

LOGIC MODEL CHART

	Strategies	Outputs	Short-Term Outcomes	Long-Term Outcomes	Impacts
Tangible: Funding from Perkins V	Develop a CLNA	Comprehensive report detailing current state of CTE programs	Identification of gaps and disparities in CTE programs	Enhanced quality and inclusivity of CTE programs	A workforce better prepared for Maryland's labor market demands
Tangible: Labor Market Information (LMI) Data	Analyze LMI to align CTE programs with labor market demands	List of high-demand sectors and occupations in Maryland	CTE curriculum adjustments based on labor market needs	Improved alignment of CTE tracks with workforce demands	Higher employment rates for CTE program graduates
Tangible: Interview and Focus Group	Conduct interviews and focus groups with stakeholders	Collection of feedback and insights from stakeholder groups	Immediate feedback loop established with stakeholders	Strengthened collaboration and partnerships	Enhanced stakeholder trust and investment in CTE programs
Intangible: Expertise in CTE Programming	Design a structured Local Application process for Perkins V funding	Guideline document for potential CTE grantees	Streamlined application process for Perkins V funding	Increased number of high-quality grant applications, earlier in the process	Optimal leverage of grant funds for improved student outcomes
Intangible: Stakeholder Relationships	Engage regularly with stakeholders for continuous feedback	Periodic stakeholder engagement sessions	Fostered sense of community ownership and involvement	Stronger community ties and support for CTE programs	CTE programs that resonate more deeply with community needs
Intangible: Knowledge of federal and state education guidelines	Ensure CTE programs align with Perkins V, the Blueprint for Maryland's Future, and other relevant guidelines	Regular compliance checks and reports	Immediate course correction when misalignments are found	Consistent alignment with state and federal guidelines	Sustained funding and support for CTE programs due to compliance

INTERPRETATION

3. **IF** we intentionally and strategically allocate Perkins funding in the planning process, **THEN** we can develop a CLNA leading to a comprehensive report that identifies gaps in the CTE programs, ultimately enhancing the quality and inclusivity of CTE programs and preparing the workforce better for Maryland’s labor market demands.
4. **IF** we utilize LMI data, **THEN** we can better align CTE programs with current labor market demands, leading to adjustments in the CTE curriculum, improving the alignment of CTE tracks with workforce demands, and resulting in higher employment rates for CTE program graduates.
5. **IF** we employ interview and focus groups effectively, **THEN** we can gather valuable feedback from stakeholders, establishing an immediate feedback loop, strengthening collaboration, and enhancing stakeholder trust and investment in CTE programs.
6. **IF** we leverage our expertise in CTE programming, **THEN** we can design a structured Local Application process for Perkins V funding, streamlining the application process, increasing the number of successful grant applications, and optimizing the use of grant funds for improved student outcomes.
7. **IF** we nurture and maintain stakeholder relationships, **THEN** we can engage more deeply and regularly for feedback, fostering a sense of community ownership, strengthening community ties, and creating CTE programs that resonate more deeply with community needs.
8. **IF** we stay updated on federal and state education guidelines, **THEN** we can ensure consistent alignment of CTE programs with these guidelines, leading to immediate course corrections when needed, sustained alignment, and thereby securing sustained funding and support for CTE programs.

PROGRAM DESIGN

All CTE programming in Maryland must be delivered through Programs of Study (POS) developed by the state or a local school system. To be considered “state approved,” each program of study must meet these criteria:

- Strengthens the academic, career, and technical skills of students to prepare them for careers and further education.
- Incorporates input from diverse stakeholder groups, including industry and postsecondary partners.
- Fits within one of 10 state-recognized career clusters that help students learn about their work options so that they may make informed career decisions.
- Includes opportunities for students to earn industry or postsecondary credentials and participate in career-based learning experiences.
- Prepares students for both college and careers through the completion of a planned sequence of coursework that blends academic, technical, and workplace skills.
- Incorporates a coherent set of academic, employability, and technical skills based on national and state standards that offer students a competitive advantage in the workplace.
- Offers multiple options to prepare students for entry into careers and further education through articulation agreements, supervised career-based learning experiences (e.g., work-based learning, internship, apprenticeship, etc.), and/or industry-mentored or capstone projects.
- Is based on enrollment and outcome data to inform program improvement and increase student performance.

Refer to these criteria as you conduct your CLNA to ensure your programming is rigorous and of uniformly high quality.

STUDENT ENGAGEMENT

A CTE POS includes a course sequence from grades nine through 12 and two or more years of postsecondary education courses. A student may meet the following thresholds of engagement:

Participant — Student completing not less than one credit in a MSDE approved CTE POS.

Concentrator — Student completing at least two courses in a single MSDE approved CTE POS.

Completer — Student who meets all requirements in a state approved CTE POS.

PROGRAM DELIVERY

Local school systems must meet **Size, Scope, and Quality** criteria to qualify for federal funding. Detailed information on these and additional expectations relating to CTE programming can be found in Maryland’s [Policies & Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study](#).

Any program that fails to meet all the following criteria will need to be brought into compliance or removed from your program approval request, invalidating it for Perkins V funding. While you are not expected to develop plans to address deficiencies as part of the CLNA process, you are encouraged to assess each CTE POS against these criteria to help prepare for developing your local application.

SIZE

At least two, state-approved CTE POSs are offered in recognized clusters.

SIZE

Each POS consists of a coordinated, non-duplicative sequence of academic and technical coursework comprising at least 3 credits.

Each CTE concentrator-level course (typically the 3rd in a program) has a minimum of 10 concentrators over a 4-year period. If not, evidence must be offered of continued progress toward meeting this requirement.

Each POS has the required number of staff, availability of equipment, and student access to facilities.

SCOPE
Curricula are aligned to state-approved industry standards that allow students to earn recognized credentials, certifications, licenses, college credit, or degrees
Curricula offer a progression from secondary to postsecondary education and/or employment (including attainment of an industry-recognized credential or apprenticeship), and from community college to bachelor's degree programs
Curricula allow students to learn and demonstrate academic, technical, and employability skills
Curricula include differentiated supports and modifications to meet the needs of diverse learners
Each CTE student has a written career and academic plan in place that includes the: <ul style="list-style-type: none"> • required courses to complete a POS and graduate; • required assessments to earn a certification, license, credential, or degree; • required academic assessments to graduate; and • a timeline to take courses, assessments, and complete career-based learning experiences.
All students, regardless of race, color, national origin, sex, or disability, have equitable access to high-quality CTE programs as required by Code of Maryland Regulation 13A.04.02.04
Approved POSs are guided by Local Advisory Councils and Program Advisory Committees according to the CTE Local Advisory Council and Program Advisory Committee Policies and Procedures (COMAR EA Title 21. Sec.101)
All CTE POS adhere to CTE Development Standards, which are required by Code of Maryland Regulations 13A.04.02.03
All programs meet the definitions for high-skill, high-wage, in-demand occupations

QUALITY
The site achieves or consistently makes progress towards local targets established for state and federal core indicators of performance
POS are delivered by teachers who meet state requirements to teach content at the secondary level
CTE POS are delivered by teachers who earned a minimum of effective on their teacher evaluation as defined by Code of Maryland Regulation 13A.07.09 within three years
Each CTE POS meets all the requirements of the MSDE evaluation criteria found in the Policies and Procedures for the Development and Continuous Improvement of CTE Programs of Study (page 45).

QUALITY

All students, including students in special populations, are offered the opportunity to:

- Participate in at least one career-based learning experience (e.g., work-based learning, internship, apprenticeship, etc.),
- Earn college credit and/or industry credentials, and
- Participate in CTSOs.

Professional learning opportunities, informed by data, are provided for administrators, teachers, faculty, counselors and support personnel to improve student learning outcomes. All secondary professional learning must be guided by the Maryland-endorsed National Learning Standards

Local and state annual data-reporting requirements are met, and reviews conducted of all annual Program Quality Index reports to inform improvement

Human resources are included in the recruitment process to ensure a diverse CTE teacher and faculty member candidate pool

Metrics are used to ensure that CTE teacher and faculty member recruitment strategies are successful

Teacher retention rates are reviewed annually, for the most recent 3 years, with data used to identify the top three contributing factors to CTE teacher and faculty member turnover

Assembling a Stakeholder Team

Assemble a diverse stakeholder team to assist you in conducting your CLNA. Representation in the listed categories is required by federal statute, except where indicated. While Perkins V requires more than one representative for each group (with an exception for CTE coordinators and data analysts), it is permissible for one person to fulfill up to two roles.

STAKEHOLDER TEAM COORDINATOR

[This is the individual responsible for planning and holding stakeholder meetings and completing CLNA]

Name	Ryan Sackett
Organization	Anne Arundel County Public Schools
Title	Coordinator- Career and Technical Education
Email	rsackett@aacps.org

STAKEHOLDER TEAM MEMBERS

When Selecting Stakeholders, consider:

- Recruit individuals who are knowledgeable about CTE at your site and influential in the field.
- Ensure that members understand the time commitment and can attend all scheduled meetings.
- Perkins V requires *more than one representative for each group* (with an exception for the coordinators and data analyst). Members may not represent more than two stakeholder groups.
- If you are unable to recruit a member to fulfil a required role you should keep a record of your outreach efforts to demonstrate you acted in good faith.

Stakeholder Team Responsibilities

- Review Maryland Department of Labor employment and projections data, district student participation and performance data, and educator support efforts to identify priority areas for improvement.
- Ensure that program offerings are aligned to local, regional, and/or state employment priorities.
- Help to communicate the importance of delivering high-quality CTE POS in your site and champion local efforts to achieve improvement goals.
- Meet on a quarterly basis to track your progress in improving CTE programming and make annual updates to this needs assessment.

Note that stakeholder team meetings may be held in person, virtually, or using a hybrid approach. If scheduling conflicts make holding a full team meeting impractical, stakeholders may meet in subgroups to review data and consider strategies to strengthen programming. Ultimately, all stakeholders should contribute to identifying challenges and formulating solutions, and publicly support your findings.

Stakeholder Team Roster

SECONDARY

Role	Name	Title	Affiliation
Administration (e.g., principal, assistant principal)	Tamara Bauer	Principal	AACPS, CAT South
	Joseph Rose	Principal	AACPS, CAT North
	Brian Love	Assistant Principal	AACPS, CAT South
	John Yore	Principal	AACPS, Chesapeake High School
	Stacey Smith	Principal	AACPS, South River High School
Professional career or academic counselor	Lauren Smith	School Counselor	AACPS, CAT North
	Susan Love	Coordinator- Secondary School Counseling	AACPS
	Shirley Avery-Jackson	Coordinator- Primary & Middle School Counseling	AACPS
	Valicia Beaty	Manager of Career Coaching	AACPS
Teachers	Tom Dickinson	Work Based Learning Facilitator	AACPS
	Lynne Fowlkes	Teacher- Family and Consumer Sciences	AACPS
	Jacori Cannon	Teacher- Technology & Engineering Education	AACPS
	Scott Bernstein	Department Chair- Technology & Engineering Education	AACPS
Instructional Support and Paraprofessionals (Psychologists, Social Workers, etc.)	Chris Michaels	Teaching Assistant	AACPS, CAT North
	Nina Marcellino	Special Education Specialist	AACPS, CAT South
	Rosaria Jablonski	Department Chair	AACPS, CAT South

POSTSECONDARY

Role	Name	Title	Affiliation
Administration (e.g., dean, division chair)	Bolton, Kathleen E.	Special Assistant to Vice President for Learning	AACC

	Jones, Sandra J.	Dean of Continuing Education	AACC
Faculty	Sara Eger	Director of Instructional Pathways and Partnerships	AACC
	Stephanie Goldenberg	Academic Chair Entrepreneurial Studies School of Business and Law	AACC

WORKFORCE

Role	Name	Title	Affiliation
Local Workforce Development board member	Kirkland Murray	President and CEO	AAWDC
	Bekki Leonard	Director of Strategic Initiatives	AAWDC
	Elizabeth Dupree-Leonard	Director of In-School Youth Services	AAWDC
	John Zuknick	Vice President- Business and Industry Solutions	AAWDC
*Regional Economic Development organization member	Jane Sinclair	Apprenticeship Navigator	MD Department of Labor
Local business & industry representative	Grant Dopheide	Director of Volunteer Services	UM, Baltimore Washington Medical System
	Warren Butrim	Service Training Specialist	Central Atlantic Toyota
	Bryan Lynch	Director of Human Resources	UM, Baltimore Washington Medical System
	Rose Bayat	Director of Customer Retention	RRR Automotive Group

OTHER

Role	Name	Title	Affiliation
Parent or caretaker	Brenda Mulhall	Parent	Crofton Cluster
Student			

Representative of Special Populations	Leanne Riordan	Coordinator of English Language Development	AACPS
Out-of-School youth / unhoused youth / corrections	Laurietta Jones	Coordinator of Pupil Personnel Workers	AACPS

* Not required under Perkins V but recommended to include.

Component A: Labor Market Alignment

OVERVIEW

Career programming in Maryland must address the economic and workforce development needs of the state and align to high-skill, high-wage, and/or in-demand (HS/HW/ID) careers. These are defined as:

High-Skill — Careers that: (1) require previous work-related skills, knowledge, or experience of one or more years; (2) have a Specific Vocational Preparation (SVP) rating of at least six as defined by [O*Net](#); (3) require state or federal licensing or industry-recognized certification; or (4). require a recognized postsecondary credential or degree.

High-Wage — Careers that exceed the state average annual wage of \$69,750 in 2022.

In-Demand — Careers with a growth rate over ten years of at least 7% or a two-year occupational projected growth of 2.5%.

The Division of Career and College Readiness has evaluated all secondary and postsecondary State and Local approved POS against these HS/HW/ID criteria. Ideally, your CTE POS will meet all three of the criteria, or at least one to qualify for funding. You may access additional information on these programs at the [Maryland CTE Data website](#). The Maryland Department of Labor has also developed [Long Term Occupational Projections](#) thru 2030, which can help you to identify high demand careers and the education and job training necessary to secure them.

ACTIVITY A.1: TAKING STOCK

The following table details the CTE POS offered at your district in the 2022-23 school year, their alignment with high-skill, high-wage, and in-demand careers, and the relative proportion of students concentrating in each area. Although it is not *required* that each POS meet the criteria for high-skill, high-wage, *and* in-demand, it should be the goal of each POS to do so.

Note: Prior to sharing this table with your stakeholder team, you will need to suppress numbers and percentages in cell that do not include the minimum number of students required to protect student confidentiality. Maryland state policy is to suppress data for cells or percentages that are based on fewer than 35 students. Please consult your district policies to determine which data cells should be suppressed and how this information should be communicated (e.g., by entering 'LOW N' or '<35 students' in effected cells).

Program	Alignment to current statewide industries (enter ✓)			Number of CTE participants 2022-23	Percent of all CTE Participants 2022-23
	High Skill	High Wage	In Demand		
Academy of Health Professions - Allied Health Intern	✓	✓	✓	15	0.15%
Academy of Health Professions - Certified Clinical Medical Assistant	✓		✓	62	0.48%
Academy of Health Professions - Certified Nursing Assistant	✓		✓	**	
Academy of Health Professions - Dental Assistant	✓		✓	28	0.22%
Academy of Health Professions - Pharmacy Technician	✓		✓	**	
Accounting and Finance	✓	✓	✓	735	5.75%
Airframe Mechanics and Aircraft Maintenance Technology*	✓	✓	✓	*	
Apprenticeship Maryland Program	✓			197	1.54%
Army Junior Reserve Officers Training Corps (AJROTC)	✓			135	1.06%
Autobody/Collision Repair Technician	✓	✓		65	0.51%

Automotive Technology Maintenance and Light Repair- Plus (NATEF)	✓	✓	✓	96	0.75%
Baking And Pastry Arts (ACF)	✓		✓	52	0.41%
Barbering	✓		✓	26	0.20%
Biomedical Science (PLTW)	✓	✓	✓	236	1.85%
Business Administrative Services	✓	✓		397	3.10%
Business Management	✓	✓	✓	453	3.54%
Career Research and Development	✓			498	3.89%
Careers In Cosmetology	✓		✓	103	0.81%
Computer and Information Sciences	✓	✓	✓	3934	30.77%
Construction Design and Management	✓	✓	✓	20	0.16%
Construction Maintenance Professions - HVAC	✓		✓	89	0.70%
Construction Maintenance Professions - Welding			✓	102	0.80%
Construction Trades Professions - Carpentry	✓	✓		94	0.44%
Construction Trades Professions - Electrical	✓	✓	✓	105	0.82%
Construction Trades Professions - Masonry	✓	✓	✓	40	0.31%
Construction Trades Professions - Plumbing	✓	✓	✓	50	0.39%
Culinary Arts (ACF)	✓		✓	101	0.79%
Curriculum For Agricultural Science Education (CASE)	✓	✓	✓	94	0.74%
Drafting and Design Technology	✓	✓		101	0.79%

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Early Childhood Education Child Development Associate (CDA) Preschool	✓	✓	✓	1707	13.35%
Early Childhood Education/Childcare			✓	132	1.03%
Engineering Systems*	✓			*	
Food and Beverage Management (ProStart)	✓	✓	✓	654	5.11%
Graphic Communications (Print ED)	✓			78	0.61%
Health Professions/Allied Health Professions and Related Sciences	✓	✓	✓	**	
Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement	✓	✓	✓	61	0.48%
Homeland Security and Emergency Preparedness - Homeland Security Sciences	✓	✓	✓	*	
Homeland Security and Emergency Preparedness - Information/Communications Technology	✓	✓	✓	217	1.70%
Interactive Media Production	✓	✓	✓	92	0.72%
It Networking Academy (Cisco) - CCNA Security	✓	✓	✓	72	0.56%
Local Construction Maintenance - Building/Property Maintenance	✓	✓	✓	41	0.32%
Manufacturing Engineering Technology (MSSC)	✓	✓		39	0.31%
Marine Corps Junior Reserve Officers Training Corps (MJROTC)	✓			53	0.41%
Marine Maintenance and Repair Technology	✓		✓	26	0.20%
Marketing	✓	✓	✓	205	1.60%

Medium/Heavy Truck Technician - Diesel (NATEF)	✓		✓	42	0.33%
Natural Resources and Conservation	✓	✓	✓	44	0.34%
Navy Junior Reserve Officers Training Corps (NJROTC)	✓			87	0.68%
Pre-Engineering (PLTW)	✓	✓	✓	1323	10.35%
Teacher Academy of Maryland (TAM)*	✓	✓	✓	*	
Transportation, Logistics and Cargo Security	✓	✓	✓	63	0.49%
				Total	12764 students

Are you planning on adding any new or phasing out any existing POS in the upcoming year? If so, which CTE POS(s) are you considering and why?

Program/CIP Code	Adding or deleting	Rational for change
Early Childhood Education/ Childcare 200201	Deleting	Transitioning to Early Childhood Education CDA Preschool Program of Study 131209.
Digital Design and Production	Adding	Modifying existing IMP program that runs at our comprehensive high schools to capture more students and increase completers/concentrators.

ACTIVITY A.2: ASSESSING PROGRAM ALIGNMENT TO LABOR MARKET AND INDUSTRY NEEDS

Based on a review of the CTE POS data for high-skill, high-demand, and in-demand standards, rate each statement as a strength or area for improvement. Provide an explanation for any answer with which you identify as an ‘area for improvement.’

	Meets	Area for Improvement	Explanation
AACPS CTE stakeholders review workforce and economic data to assess current and anticipate future local employment needs in HS/HW/ID industries	✓		Workforce and local economic data is reviewed at LAC and PAC meetings. The AAWDC and AA County’s Local Workforce Development Board share workforce data quarterly with council members, AACPS, and AACC to review current and future employment needs as well as review the school system’s and college’s programs of study.
Processes are in place to identify and expand high school level registered apprenticeship opportunities.	✓		AACPS received a Maryland Works Grant in 2023 which provided the school system with funds to identify and expand high school-level registered apprenticeship opportunities. This includes hiring two new staff members dedicated to recruiting new apprenticeship sites and student participants as well as funding an AAWDC Apprenticeship Specialist position to identify and work with new business partners.
Processes are in place to update or phase out CTE POS that do not align with HS/HW/ID industries	✓		All programs are HS, HW, and/or ID; 50% of the programs meet all three criteria; 36% meet two of the three. Processes are in place to update or phase out any program that no longer aligns with at least one of the Labor Market criteria.
A majority of our students are concentrating in POS aligned to HS/HW/ID industries	✓		
Processes are in place to recruit business and industry stakeholders to participate on Program Advisory Committees	✓		As new business and industry partners are recruited for apprenticeship sites, they are also approached to serve on PACs. Additionally, social media and other marketing strategies are leveraged to recruit new members.

ACTIVITY A.3: REFLECTION

Based on your responses in this component of the needs assessment guide, consider the following questions:

1. What is your rationale for offering programming that is not fully aligned with high wage, high skill, and in-demand criteria you rated in Activity 1.1)?

Most of AACPS’ programs (86%) are aligned with at least two of the three labor market criteria. The school system is in the final stages of transitioning an older locally developed Early Childhood Education Program to MSDE’s CDA Early

Childhood Education Program.

2. What are the top five priorities you will address in the coming year to update or phase out misaligned CTE programs and/or expand student participation in CTE programming aligned with HW/HS/ID careers?
 1. **Improve Curriculum: Alignment and Certification Opportunities:** 11 of our CTE programs do not have any identified industry credentials and/or do not have curriculum aligned to approved certifications. Of these programs, five of them account for 45% of student enrollment in CTE. Programs need to be aligned with industry credentials and redesigned curriculum that includes employability competencies to ensure students acquire skills that meet current industry needs and make students more competitive in the job market.
 2. **Improve Labor Market Alignment with CTE Programs at Comprehensive High Schools:** PAC participation for programs that run at comprehensive programs is low. Reinvigorating PACs for programs offered at comprehensive high schools will increase curricular/industry alignment, increase student engagement, and increase the opportunities for aligned industry experiences such as job shadowings, internships, and apprenticeships. We can also enlist PACs to identify local demand for industry credentials and certifications.
 3. **Align with Career Coaches to increase awareness of CTE programs:** Utilizing career coaches to promote and expand student knowledge of CTE programs, to help students make informed decisions about their education and career paths. This includes providing information on HS/HW/ID careers, labor market trends and the benefits of pursuing CTE programs. It also includes assisting students with their scheduling choices.
 4. **Pathway Development and Articulation Agreements:** To enhance the success and participation of CTE students, partner with Anne Arundel Community College (AACC) and other postsecondary institutions to develop clear pathways guiding students from high school graduation to postsecondary credentials or degrees and into the workforce. This includes establishing articulation and proficiency agreements and providing opportunities for high school teachers to become postsecondary adjuncts.
 5. **Creating a Sunsetting Process:** Utilize the assistance of PACs and the LAC to create an objective process for sunsetting CTE programs that no longer prepare students for HS/HW/ID careers and concrete steps to take when a decision to discontinue is made.

Component B: Student Participation and Persistence

OVERVIEW

To ensure that all students have equitable access to CTE programming, MSDE encourages districts to assess rates of student participation and persistence in CTE overall, as well as within each POS offered for the state approved Career Clusters. Enrollments also should be tracked using the disaggregates for student gender, race-ethnicity, and special population status detailed in Perkins V.

ACTIVITY B.1: TAKING STOCK

The following table asks you to enter the number and percentage of 2023 high school graduates statewide and in your district who participated in CTE coursework and persisted to achieve concentrator status in CTE programming, disaggregated by selected student demographics.

Please use the district heat maps to complete the requested information. If you have any questions regarding the data entry, please contact MSDE staff.

Once you have entered the data, review the information to determine whether there are any concerning gaps in student participation and/or persistence. Note that small numbers of students may have large impacts on your participation and concentrator status rates; consequently, use care when interpreting data with cell sizes of less than 10 students.

Notes:

- Data Suppression:** Prior to sharing this table with your stakeholder team, you will need to suppress numbers and percentages in cell that do not include the minimum number of students required to protect student confidentiality. Maryland state policy is to suppress data for cells or percentages that are based on fewer than 35 students. Please consult your district policies to determine which data cells should be suppressed and how this information should be communicated (e.g., by entering 'LOW N' or '<35 students' in effected cells).
- 2023 Statewide Graduate Data:** Currently, MSDE does not disaggregate four-year cohort participation in CTE. However, we have identified this area as a growth opportunity in data collection and reporting.

Student Group	2023 Graduates Statewide				2023 Graduates in Your District			
	Number	Percent	Percent participating in CTE	Percent of participants who achieved concentrator status	Number	Percent	Percent participating in CTE	Percent of participants who achieved concentrator status
All 2023 Graduates (4-year cohort)	58,206	85.81%			5300	87.7	34.1	16.6
Gender								
Male	28,576	82.60%			2591	48.9	38.4	22.6
Female	29,581	89.16%			2705	51.1	31.6	17.8
Race and Ethnicity								
American Indian	140	85.89%			1	N/A<35	N/A<35	N/A<35
Asian	4,559	96.16%			247	4.7	32.4	15.0
Black	18,648	84.68%			1074	20.3	35.7	20.3
Hispanic	10,446	71.37%			840	15.8	29.4	17.3
Multi-race	2,485	89.36%			322	16.1	36.3	21.1
White	21,838	93.38%			2793	52.7	36.4	21.3
Special Populations								
Economically disadvantaged	17,049	80.83%			1167	22.0	33.8	20.3
Multi-lingual learners	3,140	55.78%			243	4.6	17.7	8.6
Individuals with disabilities	4,697	69.47%			356	6.7	40.2	32.6
Nontraditional fields	-	-			795	36.1	100.0	48.6
Single parents	-	-				N/A	N/A	N/A
Out of workforce	-	-				N/A	N/A	N/A
Unhoused Individuals	833	62.03%			74	1.4	33.8	18.9
Youth in foster care	66	40.24%			1	N/A<35	N/A<35	N/A<35
Youth with parent in military	1,028	95.10%			479	9.0	40.1	25.31
Migrant students	-	-			N/A	N/A	N/A	N/A

Note that since special population status is not mutually exclusive (i.e., a student may belong to more than one category), these data may not sum to 100%.

ACTIVITY B.2: ASSESSING YOUR PROGRAM

Based on a review of the overall CTE program data—relative to the state and across student groups—rate each statement as a strength or area for improvement. Provide an explanation for any answer with which you identify as an ‘area for improvement.’

	Meets	Area for Improvement	Explanation
Our district ensures all students—irrespective of gender, race, or special population status—are provided unbiased, inclusive, and non-discriminatory information about CTE courses and POS		✓	CTE programs are currently advertised in the AACPS High School Program of Study each year. This publication is available to all in a digital format and in multiple languages. AACPS has recently revised the CTE website to increase access to information for all stakeholders. This site provides information for students as well as families on the available programs in the district and more specifically in their assigned high schools. All images and descriptions of our programs are created with inclusivity in mind. However, AACPS does not have translated materials about all CTE programs and is currently working to make these accessible to all stakeholders. Improvement will be focused on marketing programs to special populations and increasing the general awareness for all stakeholders including school counselors and career coaches.
Our district has processes in place to recruit students traditionally underrepresented in CTE to improve diversity in CTE POS	✓		AACPS comprehensive high schools and Centers of Applied Technology hold annual open houses and course selection events to encourage students to explore available programs. Students are invited to attend business and community sponsored career awareness events. (Example Engineering Expo, Marine and Maritime Career expo) However, there continues to be a stigma associated with CTE. AACPS is currently focused on community outreach to make parents aware of the opportunities available to students that includes direct entry into the workforce, apprenticeships, and technical training.
Processes are in place to ensure that students traditionally underrepresented in CTE have options to <u>enroll</u> in CTE POS	✓		There are no barriers for the enrollment processes for CTE programs that would prohibit underrepresented students from enrolling. Programs in the comprehensive high school are open to all students. Applicants for some CAT Centers exceed availability, when this occurs, we utilize a lottery system. We will continue to market all courses and POS to all students and ensure that they are unbiased, inclusive, and non-discriminatory.

	Meets	Area for Improvement	Explanation
Processes are in place to ensure that students traditionally underrepresented in CTE <u>persist</u> in CTE POS once enrolled		✓	We are looking for ways to assist students struggling in CTE programs to persist. It should also be noted that due to scheduling difficulties and students who struggle with reading and math requirements, they are forced to drop CTE courses. We will be working in collaboration with support services and counseling to address retention and persistence.
Processes are in place to ensure that all eligible students have equitable access to career-based learning experiences		✓	Transportation continues to be a barrier to equitable access. We will continue to brainstorm innovative ideas to overcome this barrier. To assist in the mitigation of this barrier, AACPS has worked on creating virtual work-based learning experiences and increasing alternative scheduling options to include Evening High School.
Career guidance and advisement services are provided to student prior to enrolling in a CTE POS	✓		All high schools have School Counselors and Work-Based Learning Facilitators to assist students. Per Blueprint, we are expanding Career Coaches to all high schools. This expansion should be complete in the 24/25 SY.
All students have access to career planning and support services to help them successfully transition to advanced education and/or the workforce	✓		<p>Students in middle school and high school can utilize Pathful, an online platform for career exploration. The new CTE website clearly outlines the complete program pathways making it easier for students to see how it fits in with their schedules.</p> <p>School counselors utilize Naviance for career inventory surveys and post-secondary planning. Counselors also push into the classroom and provide career counseling lessons.</p> <p>Career Coaches are presently available in middle schools, with plans for expansion to high schools by the 2024-2025 school year.</p> <p>Currently, students and parents lack awareness of the complete range of career pathways and programs offered at their schools. The presence of Career Coaches in all middle schools should help alleviate this gap.</p>

ACTIVITY B.3: REFLECTION

Based on your review of your data and responses in Activity B.2, consider the following questions:

1. Are there any student groups in your district that have concerning gaps in their CTE participation or persistence rates? If so, which groups are underperforming?

Students, as identified by any demographic, are participating at about a 33% rate, except for Multi-lingual learners, who are participating at about a 18.3% rate.

2. What are the top five priorities you will address in the coming year to expand student participation in CTE programming and reduce participation and/or persistence gaps among students? *[Note: At least one priority area you identify should address the needs of gender, race-ethnicity, or special population groups.]*
 1. **Awareness of CTE Programs-** Awareness of CTE programs continues to be an underlying factor influencing low enrollment and persistence. To address this, we must expand our marketing efforts to increase student participation, specifically for multilingual learners, and increase retention by informing parents, students and the community about the benefits of CTE programs. We need to promote programs including HS/HW/ID data ensuring that parents and students understand the criteria and projected labor market demand for jobs in AA Co, the region and state.
 2. **Student Persistence-** Programs that run at comprehensive high schools have a particularly low rate of persistence due to multiple variables including- institutional scheduling priorities of graduation requirements around University of MD Completer, lack of awareness of the value of CTE programs with all stakeholders, and institutional biases of CTE programs.
 3. **Awareness of Value of CTE Programs-** Beyond awareness, programs are not marketed for their value, their ability to award college credit and industry certifications, and work-based learning opportunities.
 4. **Lack of Vertical Alignment of CTE programming-** While there is high enrollment in middle school CTE related courses, there is a gap in the alignment of the middle school to high school program pipeline.
 5. **Career Awareness-** The primary focus and marketing of “what does success look like after high school” continues to be on acceptance to a four-year university. There is a need to shift the parameters of what success looks like, so that students plan for entrance into a career field of their choice, regardless of whether that path requires post-secondary education or not.

NOTE: Sample strategies that may help you align your priorities are listed in Appendix B.

ACTIVITY B.4: CAREER CLUSTER PARTICIPATION AND PERSISTENCE

Student participation and persistence rates may differ across Career Clusters. Use the following tables to enter the number and percentage of 2023 CTE students in your district enrolled by cluster and student demographics.

Most of this information can be found in your CTE Storyboards located on MoveIT. Work with your district data team to find any other requested information. You may contact staff at MSDE if you have questions about the data to be entered.

Note: *Prior to sharing this table with your stakeholder team, you will need to suppress numbers and percentages in cell that do not include the minimum number of students required to protect student confidentiality. Maryland state policy is to suppress data for cells or percentages that are based on fewer than 10 students. Please consult your district policies to determine which data cells should be suppressed and how this information should be communicated (e.g., by entering ‘LOW N’ or ‘<10’) students’ in effected cells.*

CAREER CLUSTER KEY:

AMC: Arts, Media, and Communication

BMF: Business Management and Finance

CD: Construction and Development

CRD: Career Research and Development

CSHT: Consumer Services, Hospitality, and Tourism

EANR: Environmental, Agricultural, and Natural Resources

HB: Health and Biosciences

HRS: Human Resource Services

IT: Information Technology

MET: Manufacturing, Engineering, and Technology

TT: Transportation Technologies

CRD: (Career Research and Development & Apprenticeship MD)

AI: American Indian/Alaskan Native

A: Asian

H: Hispanic

B: Black/African American

W: White

PI: Hawaiian/Pacific Islander

M: Multi-Racial

SWD: Students with Disabilities

ED: Economically Disadvantaged

NT: Non-Traditional

SP: Single Parents

OOW: Out of Workforce

MLL: Multilingual Learners

MV: Students served under the McKinney-Vento Act (Unhoused)

FY: Foster Youth

AD: Active Duty

MT: Migrant

CLUSTER-LEVEL DATA: USE THIS TABLE TO PUT IN YOUR NUMBERS

Cluster	Enrollment Number (2023-2024)	Number of Concentrators (2023-2024)	Number of Graduates (2022-2023)	Gender		Race/Ethnicity							Special Populations								
				M	F	AL	A	H	B	W	PI	M	SWD	ED	NT	SP	OOW	EL	MV	FY	AD
AMC	76	11	37	50	26	NA	NA	16	NA	46	NA	NA	NA	11	NA	-	-	NA	NA	NA	
BMF	1136	103	13	753	382	NA	59	183	240	581	NA	68	68	285	475	-	-	51	23	NA	
CD	125	75	50	112	13	NA	NA	26	19	66	NA	10	20	34	13	-	-	NA	NA	NA	
CRD	309	127	183	216	93	NA	NA	53	96	132	NA	23	82	125	NA	-	-	19	NA	NA	
CSHT	403	93	89	212	191	NA	13	76	119	173	NA	21	42	152	24	-	-	20	NA	NA	
EANR	36	7	15	18	17	NA	NA	NA	NA	24	NA	NA	NA	10	NA	-	-	NA	NA	NA	
HB	73	51	120	16	57	NA	NA	23	10	34	NA	NA	NA	26	NA	-	-	NA	NA	NA	

Cluster	Enrollment Number (2023-2024)	Number of Concentrators (2023-2024)	Number of Graduates (2022-2023)	Gender		Race/Ethnicity							Special Populations								
				M	F	AL	A	H	B	W	PI	M	SWD	ED	NT	SP	OOW	EL	MV	FY	AD
HRS	1015	138	89	163	852	NA	29	177	275	457	NA	72	79	348	153	-	-	39	22	NA	
IT	490	46	43	289	200	NA	45	53	81	270	NA	39	NA	80	200	-	-	11	NA	NA	
MET	376	198	94	233	143	NA	39	54	61	199	NA	21	NA	68	143	-	-	12	NA	NA	
TT	108	70	79	82	26	NA	NA	24	20	56	NA	NA	17	33	26	-	-	NA	NA	NA	
WBL			129																		
Total	4147	919	941			10	201	689	933	2038	NA	269	334	1172	1038	-	-	181	71	0	

CLUSTER-LEVEL DATA: USE THIS TABLE TO PUT IN YOUR PERCENTAGES

For the “Enrollment” column, the denominator is your total CTE Enrollment from the previous table. For all other columns, the denominator is your total cluster enrollment.

Cluster	Enrollment %	Concentrators %	Graduates %	Gender		Race/Ethnicity							Special Populations								
				M	F	AL	A	H	B	W	PI	M	SWD	ED	NT	SP	OOW	EL	HL	FY	AD
AMC	2	14.5	4	66	34	NA	NA	21	NA	61	NA	NA	NA	15	NA	-	-	NA		NA	
BMF	27	9.1	1	66	34	NA	5	16	21	51	NA	6	6	25	42	-	-	5		NA	
CD	3	60	5	90	10	NA	NA	21	15	53	NA	8	16	27	10	-	-	NA		NA	
CRD	8	41.1	20	70	30	NA	NA	17	31	43	NA	7	10	41	NA	-	-	6		NA	
CSHT	10	23.1	10	53	47	NA	3	19	29	43	NA	5	10	38	6	-	-	5		NA	
EANR	1	19.4	2	50	47	NA	NA	NA	NA	67	NA	NA	NA	28	NA	-	-	NA		NA	
HB	2	69.9	13	16	84	NA	NA	32	14	47	NA	NA	NA	36	NA	-	-	NA		NA	
HRS	25	13.6	10	16	84	NA	3	17	27	45	NA	7	8	34	15	-	-	4		NA	

Cluster	Enrollment %	Concentrators %	Graduates %	Gender		Race/Ethnicity							Special Populations									
				M	F	AL	A	H	B	W	PI	M	SWD	ED	NT	SP	OOW	EL	HL	FY	AD	
IT	12	9.4	5	59	41	NA	9	11	17	55	NA	8	NA	16	41	-	-	2		NA		
MET	9	52.7	8	62	38	NA	10	14	16	53	NA	6	NA	18	38	-	-	3		NA		
TT	3	64.8	8	76	24	NA	NA	22	19	52	NA	NA	16	31	24	-	-	NA		NA		
WBL			14																			

Review your cluster-level data and consider the following questions:

1. In which clusters does it appear that students in your district are not participating at rates equivalent to their representation in the population? What factors might be affecting their decisions?
 - ML - All clusters
 - SWD – All clusters except for CRD

Awareness of CTE program benefits as well as the challenges of fitting CTE courses into students' schedules due to remedial and other course requirements, as well as institutional scheduling priorities.

2. In which clusters does it appear that all students participating are not persisting at equivalent rates? What factors might be affecting their decisions?
 - ML - All clusters
 - SWD – All clusters except for CRD

Ability to comprehend technical vocabulary and training materials, capacity of teachers to support special populations.

3. How might student participation and persistence differ by program of study or cluster? Which programs of study or career clusters are under or over-performing?

Student participation is high in our Information Technology cluster, but persistence is low. All programs that run at comprehensive high schools, besides PLTW- Pre-Engineering, suffer from sporadic enrollment in courses- mostly caused by a historical understanding of CTE courses as elective options for students to explore rather than a sequence of courses, a program of study, to prepare students for careers.

4. What are the top five priorities you will address in the coming year to expand student participation in CTE programming and reduce participation and/or persistence gaps among students? *[Note: At least one priority area you identify should address the needs of gender, race-ethnicity, or special population groups.]*

1. **Increase enrollment of underrepresented student groups through targeted outreach and recruitment-** It was identified that Multilingual Learners, one of our fastest growing student groups, and Students with Disabilities have minimal representation in many of our career clusters, particularly in programs that run at comprehensive high schools.
2. **Student Persistence, Community Inclusion, and Industry Engagement-** There are 21 programs with a persistence rate of under 20%. The leading causes were identified as lack of awareness for all stakeholders and a lack of industry engagement- specifically with programs running at comprehensive schools.
3. **Focus on high enrollment/low persistence of Information Technology cluster-** The highest enrollment rate for any one program is in our Computer and Information Sciences program. We have recently modified the sequence of this program to potentially capture more students, but more work could be done to market this program to stakeholders, as well as increasing alignment with post-secondary partners.
4. **Institutional Norms-** So many variables of student enrollment are controlled by adults- specifically school counselors and classroom teachers. Both stakeholder groups need to better promote CTE programs as a sequence of three or four related/aligned courses rather than stand-alone courses- specifically at comprehensive high schools.
5. **Teacher preparation-** More than 85% of CTE teachers hired in the past three years were hired with a conditional teaching certification. These teachers require significant support to remain in the classroom. Experienced teachers are more adept at student recruitment and more accomplished at encouraging student retention. (Veteran teachers lack the time and skills to coach peers on engaging learning and high achievement.)

NOTES:

- A. Depending on your program offerings, you may find it necessary to do a more granular analysis of your data to assist in identifying priorities.
- B. Sample strategies that may help you align your priorities, are listed in Appendix B.

Component C: Program Performance

Federal law requires that you collect data on the performance of CTE concentrators. The accountability indicators cover a range of outcomes to help you assess whether students are making educational progress, graduating, and making successful transitions into advanced postsecondary education and training or employment. These include:

1S1: Four-year graduation rate: The percentage of CTE concentrators who graduate high school, as measured by the four-year adjusted cohort graduation rate used in ESSA.

2S1: Academic proficiency in reading/language arts: The percentage of CTE concentrators achieving proficiency on the Districtwide high school reading/language arts assessment.

2S2: Academic proficiency in mathematics: The percentage of CTE concentrators achieving proficiency on the Districtwide high school mathematics assessment.

2S3: Academic proficiency in science: The percentage of CTE concentrators achieving proficiency on the Districtwide high school science assessment.

3S1: Post-program placement: The percentage of CTE concentrators who are in postsecondary education or advanced training, military service, a national community service program, or employed in the second quarter after exiting from secondary education¹

4S1: Nontraditional program concentration: The percentage of CTE concentrators in CTE programs of study that lead to non-traditional fields.

5S1: Attained Recognized Postsecondary credential: The percentage of CTE concentrators graduating from high school who met or exceeded proficiency on industry standards to attain a recognized postsecondary credential.

5S4a: Technical Skill Attainment: The percentage of CTE concentrators graduating from high school who met state recognized CTE standards, including earning and industry-recognized credential.

5S4b: Apprenticeship: The percentage CTE concentrators graduating from high school who participated in an apprenticeship.

To establish performance expectations, MSDE has set performance targets for each indicator based on an analysis of statewide data. All providers are expected to achieve the performance targets established for each indicator. Moreover, to ensure that all students make progress, you are expected to monitor performance on an annual basis.

In the following table, use your District’s heatmap to fill in your District’s performance on the federal measures. On the heatmap, cells highlighted in green indicate your district met or exceeded the statewide performance level; yellow indicates your district performance did not meet the performance level but was within 90% of the target; and red indicates that your district did not meet the performance level and was less than 90% of the target. Districts failing to achieve the state performance level are expected to develop a program improvement plan to bring them into compliance.

DISTRICT PERFORMANCE BY STUDENT GROUP

	Federal Accountability Indicator 2023 Graduates								
	1S1	2S1	2S2	2S3	3S1*	4S1	5S1	5S4a	5S4b

¹ Note: this is a lagged indicator, meaning that data should be reported on graduates for the previous academic year. For example, you should report placement data for 2022 graduates in 2023 (i.e., outcomes achieved between October-December 2022).

Comprehensive Local Needs Assessment: Secondary Schools

State Performance Target	89.97%	52.3%	48.00%	0.00%	76.50%	28.72%	78.41%	78.41%	0.00%
District Performance	98%	63%	80%	26%	81%	28%	86%	80%	2.4% (129 students)
Gender									
Males	98%	63%	83%	29%	75%	3%	87%	82%	53%
Females	99%	64%	76%	23%	89%	67%	85%	77%	47%
Race-ethnicity									
American Indian	100%	50%				25%	100%	100%	
Asian	99%	88%	92%	57%	93%	37%	80%	79%	
Black	99%	49%	62%	18%	84%	27%	85%	80%	
Hispanic	98%	50%	60%	26%	79%	22%	81%	78%	
Multi-race	98%	67%	86%	33%	80%	31%	85%	75%	
White	99%	68%	85%	28%	79%	28%	89%	81%	

SPECIAL POPULATIONS

	Federal Accountability Indicator 2023 Graduates								
	1S1	2S1	2S2	2S3	3S1*	4S1	5S1	5S4a	5S4b
State Performance Target	89.97%	52.3%	48.00%	0.00%	76.50%	28.72%	78.41%	78.41%	0.00%
District Performance	98%	63%	80%	26%	81%	28%	86%	80%	2%
Economically disadvantaged	97%	42%	54%	20%	78%	25%	79%	77%	
Multilingual learners	100%	13%	0%	9%		9%	54%	71%	
Individuals with disabilities	97%	16%	27%	11%	64%	11%	66%	84%	
Nontraditional fields									
Single parents									
Out of workforce									
Students served under the McKinney-Vento Act (Unhoused)	93%	36%	33%	0%		27%	50%	70%	
Youth in foster care									
Youth with a parent in active military	100%	79%	86%	48%	77%	30%	92%	88%	
Migrant students									

* Data for the 3S1 indicator reflect outcomes for 2022 graduates 6 months following their graduation.

ACTIVITY C.1: ASSESSING PROGRAM PERFORMANCE

	List
Looking at <i>overall performance</i> , on which indicators are you <u>substantially underperforming</u> * the district performance target?	AACPS has exceeded seven of the eight 2023 targets. The 2023 target for 4S1 was 28.72%; performance was 28%, which exceeds the 90% target of 25.8%.
Looking at <i>overall performance</i> , on which indicators are you <u>substantially exceeding</u> the district performance target?	The school system exceeded Academic Proficiency in Math (2S2) by 32%.

- Substantially underperforming is defined as achieving an outcome that is less than 90% of the district performance target, and substantially over-performing is achieving an outcome that is more than 110% of the district performance target.

ACTIVITY C.2: DETERMINING ROOT CAUSES

1. For each indicator for which you are substantially underperforming the district performance target, identify the key factors that might affect student performance, including any disparities or gaps in performance by program. Ideally, these factors should be the primary drivers of the results that you see.
 - 4S1: Marketing to stakeholders and lack of industry engagement to include representation of non-traditional genders as models of potential career outcomes- i.e. non-trad guest speakers, career awareness, mentoring.
 - 5S1: Multilingual Learners (ML) may face increased difficulty understanding the specific technical language required on industry credentials, which may affect their performance. Current curriculum materials are highly technical and not designed to be conducive to language acquisition. Many teachers lack the capacity to deliver inclusive lessons.
 - 5S4a: Technical Skill Attainment: The percentage of EL and SWD CTE concentrators graduating from high school who met state recognized CTE standards, including earning an industry-recognized credential. Teachers have not built capacity in addressing the learning needs of these identified populations.
2. The data provided reflects the performance of all students within your district. Remember that aggregate data can hide considerable variation. As you think about strategies to improve performance, consider how program performance might differ within programs of study. Might some programs be performing above or below the site average?
 - 5S4: Health & Biosciences – The following student groups drastically underperform compared to their peers in this cluster: Male, ED, SWD, Non-trad, homeless.
 - 5S4: MET- Significant gains have been made in this cluster in closing gaps between specialized populations. It is essential to continue these efforts to maintain positive results.
3. Resource constraints may affect the activities you might undertake. What might be the most efficient and effective approach to making changes (e.g., taking into consideration the relative size of your program enrollments)?

Leverage PACs and LACs: Utilize Program Advisory Committees (PACs) and Local Advisory Committees (LACs) to gain community and industry support for our programs. This support can help secure opportunities for internships, apprenticeships, and job shadowing, as well as efficiently procure instructional materials.

Invest heavily in the professional development of CTE instructors. Well-trained professionals can maximize the use of available resources and materials, allowing them to achieve more with less.

Embed scaffolds and culturally responsive teaching strategies into the CTE curriculum. This approach ensures that the curriculum is accessible and effective for all students, enhancing learning outcomes without requiring additional resources.

4. What are the top five priorities you will address in the coming year to improve student performance outcomes on indicators on which you are substantially underperforming? *[Note: At least one priority area you identify should address the needs of gender, race-ethnicity, or special population groups.]*

NOTE: Sample strategies that may help you align your priorities, are listed in Appendix C.

1. **Increase ML IRC Pass Rates-** Multilingual Learners consistently underperformed in comparison to their peers in all measurable categories. To address their low performance on industry credentials, we will review and explore options for curriculum and resources. Additionally, we will provide professional development for CTE instructors focused on culturally responsive teaching practices. We will also provide more opportunities for exploration into the variety of careers in each cluster, with the goal of inspiring students to perform successfully.
2. **Increase SWD IRC Pass Rates-** Students with Disabilities consistently underperformed in comparison to their peers in all measurable categories due to the challenges that they face. To address this issue, we will focus on improving their access to industry credentials by reviewing and exploring options for curriculum adaptations and providing necessary resources. Furthermore, we will implement professional development programs for CTE instructors aimed at incorporating inclusive teaching practices to better support students with disabilities. We will also provide more opportunities for exploration into the variety of careers in each cluster, with the goal of inspiring students to perform successfully.
3. **Non-traditional enrollment-** Implement recruiting and marketing methods that increase interest in CTE programs from non-traditional populations and portray a broad range of occupational opportunities with images that support inclusivity and diversity.
4. **Increase ED IRC Pass Rates-** Economically disadvantaged students perform significantly lower than their counterparts on industry credentials. To address this issue, we will ensure that MOI is of no cost to students and available in the classroom. We will embed scaffolds within CTE curriculum and provide professional development for teachers on strategies that support executive function and reduce cognitive loads. Additionally, we will provide more opportunities for exploration into the variety of careers in each cluster, so that students can begin to internalize their connections with future career pathways.
5. **Teacher Capacity-** Build teacher capacity in pedagogy by providing professional development to enhance student engagement, persistence and increase performance on Technical Skill Assessments (SS4).

Component D: Recruiting, Developing, and Retraining CTE Educators

The quality of your CTE programming depends upon the skills of your workforce. This extends to all members of your educational team, including secondary teachers, support staff, paraeducators, professional school counselors, and more. Ideally, staff should also be representative of the populations served and retained over time to promote program sustainability.

ACTIVITY D.1: REVIEW DATA ON CURRENT STAFF

Reviewing current staff demographics is critical to understanding where there are opportunities to strengthen staff skills and diversify your workforce. Create a separate table for each CTE Career Cluster or program of study offered.

NAME OF CAREER CLUSTER OR CTE POS:					
Staff demographic	Percentage of 2023-2024 CTE staff	Percentage of students participating in CTE programming 2023-2024	5-year staff turnover rate (Percentage of staff who did not return for years 2018-19 thru 2022-23)		
			Teachers	Support staff/ paraprofessionals	Professional School Counselors
Gender					
Male	43.25%	52%	51.1%		
Female	56.42%	48%	48.9%		
Race-ethnicity					
American Indian	0	0.28%	0		
Asian	1.69%	4.75%	0.54% (1)		
Black	15.88%	24.10%	17.39% (32)		
Hispanic	2.7%	17.17%	3.26% (6)		
Multi-race	3.72%	6.22%	1.09% (2)		
White	76.01%	47.31%	77.17% (142)		
Credential					
Properly Licensed	73.65%				
Granted Temporary Waiver	26.35%				

ACTIVITY D.2: ASSESS EDUCATOR SUPPORT OPPORTUNITIES

It’s critical to create consistent opportunities that allow your staff to maintain their licensure and grow within this field. Professional development is a key strategy for retention and ensuring a high-quality workforce.

Based on your knowledge of professional licensure requirements and the availability of content-specific professional development opportunities across clusters, rate the extent to which you strongly agree or disagree with each statement. Where applicable, please add an explanation for your assessment with examples.

	Strength	Area for Improvement	Explanation
Staff acquire content-specific professional development required to maintain licensure.	✓		AACPS utilizes national and state trade associations and conferences to ensure CTE teachers can maintain industry licensures.
Staff are aware of the requirements to maintain endorsement.	✓		The AACPS HR Certification Office provides certification services for AACPS teachers.
Staff have equal access to content-specific professional development opportunities across industries.	✓		Staff are encouraged to take advantage of any PD opportunity that will enhance their teaching performance.
Data are collected on the effectiveness of professional development to ensure it meets the needs of educators.		✓	Although professional development is encouraged and provided, the CTE Office currently lacks a mechanism to track data and conduct trend analysis. This prevents continuous growth in the professional development offered and makes it difficult to track the success rates of implementation. We are currently researching best practices and methods to address this issue.

ACTIVITY D.3: REFLECTION

Based on your responses in this section of the needs assessment guide, consider the following questions:

1. Does your staff demographic characteristics reflect the students they serve across programs of study?

Currently AACPS staffing demographics do not reflect the students that they serve. AACPS and the CTE Office continue to strive to maintain an inclusive environment by actively engaging in recruitment and retention efforts to develop a diverse and inclusive teaching staff.

2. Are instructors adequately credentialed, including licenses, certifications, or endorsements for the courses they're teaching? If not, what mechanisms can be put in place to get them endorsed, or what recruitment efforts are necessary to attract properly credentialed instructors?

The majority of AACPS CTE instructors come directly from the workforce with industry expertise and credentialing and are not certified educators. AACPS has established a robust process to ensure that conditional teachers obtain the necessary endorsements from the Maryland State Department of Education (MSDE) for teacher certification. This process includes the Resident Teacher Program, designed for career changers, and the New CTE Teacher Academy. Both programs provide comprehensive support through Right Start advisors and opportunities for Professional Growth and Development, ensuring that new teachers are well-prepared and meet all certification requirements.

3. To what extent does your school offer regular, substantive content-specific professional development opportunities? Do all staff members have equal awareness of, and opportunities to participate in content-specific professional development opportunities, necessary to maintain their industry credentials and endorsements?

The Office of Professional Growth and Development currently offers a variety of learning opportunities for teachers. However, conditional CTE teachers face significant barriers. They are required to obtain their teaching certification within two years while managing their classroom responsibilities and maintaining their industry licenses and credentials. This demanding schedule leaves them with little to no time to build additional capacity.

4. What barriers exist to offering and participating in content-specific professional development?

Several barriers exist to offering and participating in content-specific professional development: such as time away from the classroom and after-hours course requirements. Teachers often struggle to find time for professional development without sacrificing valuable classroom instruction time. Engaging in professional development after work hours is challenging, particularly for those who are also taking required college courses for certification. Balancing these additional responsibilities with their teaching duties makes it difficult for them to participate in further training.

5. What are the top five priorities you might wish to address in the coming year to recruit, develop, and retain CTE instructors and improve their professional skills?

1. **Retaining & Training Conditional Teachers** – Of the 296 teachers covering over 50+ CTE programs, 70% hired within the last three years are conditionally certified. The CTE Office needs to develop mechanisms to support first- and second-year teachers to include PD, veteran teacher mentorship, and resources.
2. **Recruitment of Diverse CTE Educators & Staff** – Within the last five years 184 CTE teachers have resigned, retired, or were terminated (consisting mostly of newly hired conditional teachers). This represents a 62% turnover rate of teachers over a five year period. Only by recruiting new teachers and retaining veteran teachers will the CTE Office reach their programmatic goals. We need to focus on recruiting a diverse teaching staff and supporting existing teachers to stem the high turnover rate of CTE professionals.

3. **Targeted Professional Development** - Professional development opportunities focused on the latest industry trends, educational technology, pedagogical strategies, and student engagement techniques.
4. **Marketing** – Developing marketing materials that emphasize the benefits of the teaching profession that focus on benefits other than salary.
5. **Recognition** – Recognizing the achievement of teachers and programs- specifically around student recruitment, student retention, and student performance.

NOTE: Sample strategies that may help you align your priorities, are listed in Appendix D.

Next Steps

With the completion of the CLNA), you are now poised to embark on the crucial next phase of securing Perkins V funding. This stage involves translating the insights and findings from the CLNA into actionable and strategic plans.

UTILIZING CLNA ANALYSIS FOR LOCAL PERKINS APPLICATION S.M.A.R.T.I.E. GOAL SETTING

The first step for LEAs is to use their CLNA analysis to formulate S.M.A.R.T.I.E. goals. These goals should be Specific, Measurable, Achievable, Relevant, Time-bound, Inclusive, and Equitable. The essence of this process is to ensure that the goals set for CTE programs are not only aligned with the identified needs and opportunities but are also focused on inclusivity and equity.

LEAs should look at areas highlighted in the CLNA, such as skill gaps, program areas needing enhancement, and disparities in student participation and success rates. From here, specific goals can be set. For example, if the CLNA indicated a gap in technology-related skills among students, a S.M.A.R.T.I.E. goal could be to increase enrollment in technology-focused CTE programs by 15% within the next two years while ensuring equitable access for all student groups.

CONNECTING GOALS TO AN ANNUAL BUDGET FOR PERKINS FUNDING

Once S.M.A.R.T.I.E. goals are established, LEAs must then align these objectives with an annual budget for Perkins funding. This budgeting should be a reflective exercise, considering not just the cost of program enhancements but also the broader resources required to meet these goals. This includes faculty development, curriculum updates, equipment purchases, and any necessary infrastructure improvements.

For instance, if one of the goals is to enhance a manufacturing CTE program, the budget may include expenses for new machinery, professional development for educators to teach advanced manufacturing techniques, and outreach initiatives to increase program enrollment.

ENSURING ALIGNMENT WITH PERKINS REQUIREMENTS

Throughout this process, LEAs need to ensure that their plans align with the requirements of the Perkins V Act. This means that the goals, strategies, and budgeted activities should contribute to developing more effective and equitable CTE programs, as stipulated by Perkins V.

Appendix A: Sample Strategies for Component A: Labor Market Alignment

PROBLEM: EXISTING CTE PROGRAMS ARE NOT ALIGNED TO MARYLAND’S LABOR MARKET PROJECTIONS.

Root Cause	Strategy	Sample Activities	Resource	Description	
The district maintains programs that have been historically offered but are no longer aligned to Maryland’s labor market needs	Sunset programs that are no longer preparing students for high-skill, high-wage in-demand careers	<ul style="list-style-type: none"> Analyze program enrollments, standards, postsecondary pathways, and employers to assess whether sunsetting is warranted. Develop strategy and timeline for sunsetting a program and internal and external communication plans to share information. Explore alternative educational options for students currently enrolled that will allow them to transition to other programs. Consult with the union and educators to arrange transition options, which may include reassignment or retraining. Review state regulations and district policies to identify barriers to sunsetting programs 	How to sunset an educational program	This blog post describes considerations in sunsetting and educational programming, including warning signs of need, considerations before moving forward, and concrete steps to take when a decision to discontinue is made.	
	Introduce new programs that are aligned to Maryland or regional employment projections	Review Maryland state and/or regional economic and workforce projections to assess current and future workforce needs		Maryland Occupational Projections 2020-2030	The State of Maryland publishes occupational projections that indicate changes in employment. Use this interactive website to identify careers anticipated to grow in the coming years.
		Recruit industry partners in high-wage, high skill, in-demand fields to offer guidance on new program design and adoption		Cheat Sheet: Opportunities for Employer Involvement in CTE	Use this factsheet developed by Advance CTE and ACTE to identify

				strategies for engaging employers in CTE programming.
		Support existing teachers in updating their certifications in new fields, hire new CTE teachers with requisite skills, and explore other hiring options	Maryland CTE Teacher Certification	Maryland has identified eight types of CTE certifications. Consult this document to see the expectations by CTE Program of Study.
		Review strategies developed by other states to align programs with labor market needs	Georgia Alignment Toolkit	Georgia has compiled a toolkit to help schools align programs to best serve students and local business. Includes a report and worksheets.
The cost of introducing new programs is prohibitive	Identify new funding sources	Use Maryland’s Perkins reserve grants to fund new programs.	Maryland Grant Information Guide: Perkins Reserve Grant FY 2024	This document describes how Maryland is using its Perkins Reserve funds to support new programs. Consult it for ideas to pursue funding in future years.
		Seek to braid funding from other federal legislation (e.g., Adult Education, Workforce), federal grant programs (e.g., Institute of Education Sciences (IES) CTE grant competitions), and philanthropic organizations	IES Research Programs Maryland Foundation Grants	The federal government periodically offers funding to support research into CTE programs. Review the IES webpage to get an idea of the types of funding that exist and how you might apply. Foundation grants also may exist within Maryland. See the grants page maintained by the Governor’s Grant Office for potential funders
		Work with industry partners to obtain donations of materials and supplies.	Employer Engagement in CTE	This report from Advance CTE profiles ways that employers may support educational programming.

PROBLEM: CTE PROGRAMS ARE NOT PREPARING STUDENTS FOR THE HIGH-SKILL, HIGH-WAGE, IN-DEMAND OCCUPATIONS IDENTIFIED IN STATE EMPLOYMENT PROJECTIONS.

Root Cause	Strategy	Sample Activities	Resource	Description
<p>Instructional resources are outdated and do not prepare students to enter or retain employment in high-wage, high-skill, and/or in-demand fields</p>	<p>Update program standards, curriculum, assessments, certifications, and links to postsecondary programs</p>	<p>Review related program offerings in high-performing Maryland districts.</p>	<p>Maryland CTE Performance Dashboard</p>	<p>Maryland has developed this interactive CTE dashboard that lists performance by cluster, program and student group. Use this resource to identify districts and colleges that are attaining high levels of performance.</p>
		<p>Create and use employer advisory boards to inform necessary updates</p>	<p>Strategies for Developing Employer Partnerships Michigan Program Advisory Toolkit</p>	<p>The CTE Technical Assistance Center of New York created a comprehensive website with resources to support educators in engaging with employers. Similarly, Michigan has created a toolkit with guidance and tools you may adapt for your own use.</p>
		<p>Review program resources in other states to identify potential instructional design resources</p>	<p>Texas CTE Administrative Code</p>	<p>Texas has specified the knowledge and skills to be taught in CTE programs. Use this website to find examples of required skills by cluster, programs, and course.</p>

	Offer professional development to assist CTE educators in upgrading their curricular resources	Engage industry experts to review curriculum and offer recommendations to strengthen offerings	Increasing Access to Industry Experts in High Schools http://wbltoolkit.cte.nyc/workplace-tour/	This report by Advance CTE profiles state strategies to recruit industry experts. Consult it to gain insights on promising strategies that might be adapted for district or college use.
		Consult with local business to offer workplace tours or externships for instructors	Teacher Externship Industry Partner Planning Guide http://wbltoolkit.cte.nyc/workplace-tour/	South Dakota has developed this resource to support educators and employers in developing externship opportunities

Appendix B: Sample Strategies for Component B: Student Participation and Persistence

PROBLEM: STUDENTS ARE NOT PARTICIPATING IN CTE PROGRAMMING.

Root Cause	Strategy	Sample Activities	Resource	Description
<p>Students lack awareness of CTE programming and the benefits of program participation</p>	<p>Implement awareness campaigns to inform students about program offerings and benefits</p>	<p>Offer career exploration activities in the middle grades to expose students to career options and the benefits that participation in CTE offers.</p>	<p>Middle School CTE design options and resources</p>	<p>ACTE has developed resources to support educators in expanding CTE options in the middle grades. Offerings include program design principles, a repository of state-level strategies, research studies, examples of ways to implement and improve programs, and podcasts and webinars.</p>
		<p>Schedule informational sessions for entering 9th grade students to introduce them to school CTE offerings.</p>	<p>Freshman Cruise</p>	<p>Roseburg Public Schools (OR) takes all 9th grade students on a ‘cruise’ of CTE offerings to allow students to meet teachers and learn about CTE studies that are available.</p>
		<p>Schedule career fairs and informational events to help students learn about CTE offerings.</p>	<p>Career Fair Options</p>	<p>Gainesville High School (AL) offers students a career fair experience to introduce them to CTE options. See the video to learn about their approach</p>

		<p>Create online assets that support students in identifying the CTE opportunities at their school.</p>	<p>CTE Options at my School</p>	<p>Fairfax County Public Schools (VA) hosts a webpage that helps students learn about CTE programs offered in their school replete with videos and detailed program descriptions.</p>
<p>Families and educators do not appreciate CTE’s benefit and discourage youth from enrolling</p>	<p>Improving messaging to families, community groups, and educators to help them understand the benefits CTE confers</p>	<p>Undertake a comprehensive marketing campaign to educate families about CTE</p>	<p>CTE Vision Toolkit CTE Marketing Best Practices & Campaigns</p>	<p>Advance CTE has created a 5-part series of issue briefs and posters detailing how CTE contributes to students’ success and strengthens our nation’s economy.</p> <p>Washington State has developed this playbook detailing strategies and providing resources to promote CTE programs to students, parents, and educators.</p>
		<p>Host CTE Signing Days to celebrate and publicize CTE students who demonstrate their intent to enter a postsecondary institution to continue their studies or take a job with a community employer</p>	<p>CTE Letter of Intent Signing Day: College CTE Signing Day: Employment</p>	<p>Linn Benton Community College (OR) publicly recognizes high school seniors who sign letters of intent to guarantee a spot in the coming semester. Similarly, SkillsUSA holds a national signing day for students planning to enter employment, apprenticeship, or advanced technical training. Calvert Career and Technology Academy (MD)</p>

				participated in such an event to honor its students.
Students are not provided career guidance that supports them in choosing CTE as an educational pathway.	Educate high school guidance counselors on the benefits that CTE offers and the advanced education and employment options that students may follow.	Develop and conduct professional development for school counselors aimed at increasing awareness and benefits of CTE programs.	<u>School Counselor Playbook: Unlocking Career Success</u>	Unlocking Career Success offers this playbook that includes practical tools, resources, and information to assist counselors in discussing college and career pathways with students.
		Design tools and resources for counselors to use in their career exploration activities with students that highlight CTE offerings.	<u>ACTE High Quality CTE: Student Career Development</u>	ACTE offers webinars, online courses, toolkits, and more designed to support counselors and college/career navigators as they offer guidance to students.

PROBLEM: STUDENTS ARE NOT PERSISTING IN CTE PROGRAMS.

Root Cause	Strategy	Sample Activities	Resource	Description
Historically underrepresented students or those with special needs do not feel welcome in CTE programs.	Remove obstacles to success for students who may need additional supports to persist.	Implement evidence-based strategies to support special population students in succeeding in CTE programming.	<u>Maximizing Access & Success for Special Population Students</u> <u>Strategies for Special Population Success</u> <u>Recruiting Special Populations into CTE: Toolkit</u>	<p>Advance CTE and ACTE have partnered to offer a series of briefs offering definitions, strategies, and guiding questions to assist educators in supporting special population students.</p> <p>The National Alliance for Partnerships in Equity created</p>

				<p>this brief documenting the obstacles students with special needs face and tools CTE educators may apply to recruit and retain youth.</p> <p>The Ohio Department of Education has developed this toolkit to promote the recruitment of special population students into CTE programs. Use it to find ideas for using data and leveraging</p>
		Explore why students from some racial-ethnic groups face obstacles in CTE programming and take steps to address them.	<u>A Guide to Discussing Racial Equity</u>	Review this guidebook to learn how to hold discussions around racial equity to identify.
		Conduct a curricular review to identify and remove unintentional gender bias.	<u>Assessing the Enrollment and Retention of Nontraditional Learners</u>	The Wisconsin Technical College System has developed a tool that educators can use to assess the adoption of promising practices to increasing enrollments and retention of nontraditional learners based on their gender.
Students do not understand the personal and economic benefits of completing advanced coursework and entering the field.	Offer students mentors and real-world workplace experiences to inform their career decisions.	Pair students with mentors who can offer them one-on-one guidance to encourage them to pursue a career.	<u>Partnering Students with Industry Mentors</u>	Parkways School District (MO) connects students with industry mentors who provide guidance, connections, expertise, and course supports intended to

				motivate youth to solve real-world problems.
		Place students in authentic work-based learning (WBL) experiences, including internships and apprenticeships, to help them learn about the benefits from obtaining advanced skills.	Work-based Learning Toolkit	The U.S. Department of Education created this resource to support state and local program administrators in learning about WBL, engaging employers, measuring outcomes, and scaling effective practices.

Appendix C: Sample Strategies for Component C: Program Performance

PROBLEM: CTE CONCENTRATORS ARE UNABLE TO ACHIEVE PROFICIENCY ON STATE ACADEMIC PERFORMANCE STANDARDS.

Root Cause	Strategy	Sample Activities	Resource	Description
<p>Students are not provided with academic content as part of their CTE coursework</p>	<p>Integrate academic content into CTE programming offered at all levels.</p>	<p>Review current efforts to integrate academic and CTE instruction and take steps to address ineffective practices.</p>	<p>CTE and Academic Integration Self-Assessment Rubric</p> <p>ACTE Integration of Academics and CTE Section</p> <p>Math-in-CTE</p>	<p>New York has developed a four-level rubric that educators can use to assess the status of district/college integration of academic skills in CTE programming.</p> <p>ACTE hosts a virtual collaboration to share ideas and effective practices. Visit the Resource Section to download tools to fuel your integration efforts.</p> <p>The Southern Regional Education Board has developed curricular tools that enhance the teaching of math that is already embedded in CTE programs.</p>
		<p>Incorporate reading and writing activities, technical manuals, industry-related texts, and project-based assignments that require critical thinking and communication skills.</p> <p>Incorporate math skills into CTE classrooms.</p> <p>Encourage collaboration and co-teaching between CTE and academic teachers.</p>	<p>Rigorous K-12 Assessments Help Reduce Remediation</p>	<p>This brief from offers examples of how higher states are 11th grade test results as a college readiness signal and as a means of targeting services for at-risk youth</p>
		<p>Use results from academic assessments to target educational remediation so that high school students enter college ready to learn.</p>		

<p>Students face financial or geographical barriers that prevent them from pursuing an industry-recognized credential.</p>	<p>Identify obstacles to students earning an industry recognized credential and take steps to resolve them.</p>	<p>Use Maryland’s Perkins V basic grant to fund student attainment of an industry-recognized credential.</p> <p>Develop strategies to identify students who may face challenges in paying for exams and find ways of offsetting costs.</p> <p>Work with exam providers, employers, and community organizations to provide fee waivers or scholarships for certification exams, materials, and training courses.</p> <p>Work with credentialing vendors to expand testing sites and administer exams in convenient and accessible locations.</p>	<p>Maryland CTE Perkins Reserve Grant Information Guide</p> <p>Credential Currency: Promoting Credentials of Value</p> <p>Aligning State CTE Programs with Industry Needs and Priorities</p>	<p>Maryland offers a competitive grant program that includes options for using funding to strengthen the award of industry-recognized credentials in POS.</p> <p>This report offers strategies to expand student obtainment. While focused on the state level, some recommendations may be adapted for district/college use.</p> <p>ExcelinEd produced this toolkit to support states in aligning CTE programs with industry needs and priorities. While intended for state policymakers, some recommendations may be adapted for use at the district/college level.</p>
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PROBLEM: STUDENTS ARE NOT EARNING INDUSTRY-RECOGNIZED CREDENTIALS.

Root Cause	Strategy	Sample Activities	Resource	Description
<p>Students face financial or geographical barriers that prevent them from pursuing an industry-recognized credential.</p>	<p>Identify obstacles to students earning an industry recognized credential and take steps to resolve them.</p>	<p>Use Maryland’s Perkins V basic grant to fund student attainment of an industry-recognized credential.</p> <p>Develop strategies to identify students who may face</p>	<p>Maryland CTE Perkins Reserve Grant Information Guide</p> <p>Credential Currency: Promoting Credentials of Value</p>	<p>Maryland offers a competitive grant program that includes options for using funding to strengthen the award of industry-recognized credentials in POS.</p>

		<p>challenges in paying for exams and find ways of offsetting costs.</p> <p>Work with exam providers, employers, and community organizations to provide fee waivers or scholarships for certification exams, materials, and training courses.</p> <p>Work with credentialing vendors to expand testing sites and administer exams in convenient and accessible locations.</p>	<p>Aligning State CTE Programs with Industry Needs and Priorities</p>	<p>This report offers strategies to expand student obtainment. While focused on the state level, some recommendations may be adapted for district/college use.</p> <p>ExcelinEd produced this toolkit to support states in aligning CTE programs with industry needs and priorities. While intended for state policymakers, some recommendations may be adapted for use at the district/college level.</p>
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PROBLEM: CTE CONCENTRATORS ARE NOT TRANSITIONING INTO ADVANCED TRAINING OR EMPLOYMENT FOLLOWING GRADUATION.

Root Cause	Strategy	Sample Activities	Resource	Description
<p>Students do not understand the steps needed to pursue a career.</p>	<p>Offer workplace experiences and access to career planning tools to help students plan for labor market entry.</p>	<p>Develop in-school and worksite experiences that help students understand the world of work and how to prepare for the transition to employment following graduation.</p>	<p>Maryland's Work-based Learning Continuum</p>	<p>This resource describes the research, common practices to support students in learning about work, and tools to help in career seeking and advancement.</p>

Appendix D: Sample Strategies for Component D: Recruiting, Developing, and Retaining CTE Educators

PROBLEM: IT'S DIFFICULT TO RECRUIT CTE EDUCATORS.

Root Cause	Strategy	Sample Activities	Resource	Description
Salaries in the private sectors are higher than for educators in the same field, making it difficult to attract educators.	Develop a range of teacher recruitment strategies that motivate individuals to pursue a CTE instructional career.	<p>Offer bonuses for specific fields or tuition reimbursement for teachers trying to get credentials.</p> <p>Consult with employer advisory groups for potential teacher candidates.</p> <p>Create a 'grow your own' initiative to recruit instructors.</p> <p>Hire a recruiter to identify potential applicants.</p> <p>Conduct outreach to entice retiring industry workers or those seeking a change to enter the field.</p>	36 CTE Teacher Recruitment Strategies	The Oklahoma Department of Career and Technology Education developed this list of CTE teacher recruitment strategies compiled from expert resources.
The pool of CTE educators is small, making it difficult to hire new instructors.	Identify non-traditional pathways for teachers to earn the necessary credentials to become a CTE educator.	Launch a targeted CTE teacher recruitment campaign to motivate educators and industry professionals to become teachers.	Teach CTE Recruitment Toolkit Becoming a CTE Teacher in Maryland	<p>ACTE has created this toolkit to raise awareness of CTE teacher shortages and provide tools to build interest in the profession.</p> <p>The Maryland Division of Career and College Readiness has</p>

		<p>Engage with local industry to pair experienced workers with current to support their development and ability to teach in new fields.</p> <p>Explore the multiple pathways to becoming a CTE teacher in Maryland.</p> <p>Develop alternative pathways to certification for individuals with industry experience who lack teaching credentials.</p>		<p>created this guidance document that summarizes teacher certification options for each CTE program of study offered in the state.</p>

PROBLEM: NEW CTE EDUCATORS LACK ACCESS TO PROFESSIONAL DEVELOPMENT SUPPORTS TO STRENGTHEN THEIR INSTRUCTION.

Root Cause	Strategy	Sample Activities	Resource	Description
Individuals transitioning from industry may lack the pedagogical skills to succeed in the classroom.	Offer targeted professional development to support new CTE instructors in strengthening their teaching skills.	<p>Pair new first and second year CTE teachers with seasoned veterans who can serve as mentors and provide resources and guidance.</p> <p>Facilitate networking events, conferences, and workshops where CTE educators can</p>	CTE TEACH Mentor Programs	The Colton-Redlands-Yucaipa Regional Occupational Program (CA) partners with the California Department of Education to offer mentorship supports and professional development for new CTE teachers.

		connect with colleagues, share best practices, and collaborate on innovative teaching strategies.		
CTE educators are unable to offer academic credit to students taking CTE coursework.	Create policy and practices to support CTE educators in offering academic credits.	Pair academic and CTE educators to design courses that allow students to earn academic and technical credit simultaneously.	Credit Quandaries: How CTE Instructors can Teach Academic Credit	This document from the Center on Great Teachers & Leaders explores strategies that states and districts are using to enable CTE teachers who lack the necessary credentials to award academic credit for their courses.

PROBLEM: THE TURNOVER RATE IS HIGHER FOR EDUCATORS WHO IDENTIFY AS PEOPLE OF COLOR.

Root Cause	Strategy	Sample Activities	Resource	Description
Educators who are nontraditional for their field are not recruited and those who begin are not offered supports to persist in the occupation.	Undertake targeted efforts to recruit individuals who are nontraditional for their field.	<p>Promote CTE as a career choice by collaborating with professional organizations to promote CTE teaching careers and develop pathways to teacher preparation programs.</p> <p>Offer professional development targeted to address the needs of nontraditional educators, which include creating inclusive workplaces and offering</p>	<p>State and Local Strategies for Diversifying the CTE Educator Workforce</p> <p>Diversifying the Teaching Profession: How to Recruit and Retain Teachers of Color</p>	<p>This document identifies issues and offers solutions for diversifying the secondary CTE educator workforce. Includes suggested activities to both promote recruitment and retention of teachers.</p> <p>The Learning Policy Institute created this resource to support diversifying the teaching profession overall. Use it to find</p>

		mentoring and professional learning communities.		options that might apply to the CTE workforce.
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Appendix E: Additional Resources

While specific evidence-based resources may vary depending on the context and location, several organizations and research institutions focus on educational best practices, including those related to Career and Technical Education (CTE). Here are some resources and organizations that often provide evidence-based insights:

Advance CTE

The State CTE Directors association offers a wealth of resources in their learning center.

Website: [Advance CTE](#)

American Institutes for Research (AIR) - Educator Quality:

AIR conducts research on various aspects of education, and their educator quality resources often include evidence-based strategies for teacher retention.

Website: [AIR Educator Quality](#)

Association for Career and Technical Education (ACTE):

ACTE provides resources and research related to CTE.

Website: [Association for Career and Technical Education](#)

CTE Research Network

Federally funded website focused on strengthening CTE research.

Website: [CTE Research Network](#)

Learning Policy Institute (LPI):

LPI conducts research on education policy and practice. Their reports and publications often include evidence-based recommendations.

Website: [Learning Policy Institute](#)

National Center for Education Statistics (NCES)

The NCES, part of the U.S. Department of Education, offers data and reports on various aspects of education. Their website is a valuable resource for accessing national education statistics.

Website: [National Center for Education Statistics](#)

National Comprehensive Center for Teacher Quality (TQ Center):

The TQ Center focuses on improving teacher quality and effectiveness. They offer resources and research on teacher recruitment and retention.

Website: [National Comprehensive Center for Teacher Quality](#)

RAND Corporation - Education Research:

RAND Corporation conducts research on various education-related topics, and their reports often include evidence-based insights.

Website: [RAND Education](#)

Regional Education Laboratories (RELs):

Funded by the U.S. Department of Education, the RELs conduct research and provide resources on various educational topics.

Website: [Regional Education Laboratories](#)

What Works Clearinghouse (WWC):

WWC reviews and assesses the quality of educational research. While it covers various educational topics, it can be a valuable resource for finding evidence-based practices related to teacher retention.

Website: [What Works Clearinghouse](#)