

Career and Technical Education: Comprehensive Local Needs Assessment

A Systemic Review Guidebook for Secondary Schools

MARYLAND STATE DEPARTMENT OF EDUCATION

Carey M. Wright, Ed.D.

Interim State Superintendent of Schools

Deann Collins, Ed.D.

Deputy State Superintendent
Office of Teaching and Learning

Richard W. Kincaid

Senior Executive Director
Office of College and Career Pathways

Wes Moore

Governor

MARYLAND STATE BOARD OF EDUCATION

Clarence C. Crawford

President, Maryland State Board of Education

Joshua L. Michael, Ph.D. (Vice President)

Shawn D. Bartley, Esq.

Chuen-Chin Bianca Chang, MSN, PNP, RN-BC

Susan J. Getty, Ed.D.

Dr. Monica Goldson

Nick Greer

Dr. Irma E. Johnson

Dr. Joan Mele-McCarthy, D.A., CCC-SLP

Rachel L. McCusker

Samir Paul, Esq.

Holly C. Wilcox, Ph.D.

Abisola Ayoola (Student Member)

Table of Contents

Document Control Information	3
Purpose	4
Instructions	5
Guiding Principles and Logic Model	6
Assembling a Stakeholder Team	13
Stakeholder Team Roster	14
Component A: Labor Market Alignment	17
Component B: Student Participation and Persistence	21
Component C: Program Performance	28
Component D: Recruiting, Developing, and Retraining CTE Educations	32
Next Steps	35
Appendix A: Sample Strategies for Component A: Labor Market Alignment	32
Appendix B: Sample Strategies for Component B: Student Participation and Persistence	36
Appendix C: Sample Strategies for Component C: Program Performance	41
Appendix D: Sample Strategies for Component D: Recruiting, Developing, and Retaining CTE Educators	45
Appendix E: Additional Resources	49

Document Control Information

Title:	Career and Technical Education: Comprehensive Local Needs Assessment
Security Level:	Public and Shareable
File Name:	CLNA Secondary.docx

DOCUMENT HISTORY

Document Version	Date	Summary of Change
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

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.

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, nonredundant 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 stateapproved 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 • 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.10 1)
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).
All students, including students in special populations, are offered the opportunity to: <ul style="list-style-type: none"> • Participate in at least one career- based learning experience (e.g., work- based learning, internship, apprenticeship, etc.) • Earn college credit and/or industry credentials • 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

QUALITY
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	Adenike Akintilo
Organization	Baltimore City Public Schools
Title	Manager, Work-Based Learning
Email	aakintilo@bcps.k12.md.us

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 fulfill 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)	Tricia Lawrence TLawrence@bcps.k12. md.us	Principal	Baltimore City Public Schools, Mergenthaler Vocational-Technical High
	Qiana Simmons QSimmons@bcps.k12. md.us	Principal	Baltimore City Public Schools, Edmondson- Westside High
	April Myrick AMyrick@bcps.k12.md. us	Principal	Baltimore City Public Schools, Patterson High School
	Mavis Jackson MJJackson@bcps.k12. md.us	Principal	Baltimore City Public Schools, Digital Harbor High School
Professional career or academic counselor	Carly Greer CGreer@bcps.k12.md.u s	Career Coach	Baltimore City Public Schools, Mergenthaler Vocational-Technical High
	Chanee Hutton CHutton@bcps.k12.md. us	Career Coach	Baltimore City Public Schools, Edmondson Westside High
	Chanelle Bland CABland@bcps.k12.md. us	Career Coach	Baltimore City Public Schools, Vivien T. Thomas Medical Arts Academy
	Pamela Romito PARomito@bcps.k12.m d.us	Counselor, Education Specialist	Baltimore City Public Schools, Paul Laurence Dunbar High School
Teachers	Dr. Sherese Moton SMoton@bcps.k12.md. us	Educational Associate/10mth	Baltimore City Public Schools, Patterson High School
	Angela Watts AAWatts@bcps.k12.md .us	Educational Associate/10mth	Baltimore City Public Schools, Mergenthaler Vocational-Technical High
	Tionne Scribner TSScribner@bcps.k12. md.us	Teacher - Vocational	Baltimore City Public Schools, Carver Vocational-Technical High School
	Alvin Booze ADBooze@bcps.k12.m d.us	Teacher - Vocational	Baltimore City Public Schools, Edmondson- Westside High

Instructional Support and Paraprofessionals (Psychologists, Social Workers, etc.)	Raymond Marshall raymondmarshall@yma ryland.org	Community Schools Coordinator	Baltimore City Public Schools, Mergenthaler Vocational-Technical High
	Julian Davis JADavis02@bcps.k12.m d.us	Student Wholeness Specialist	Baltimore City Public Schools, Edmondson Westside High
	Christopher Eutsey CAEutsey@bcps.k12.m d.us	Coordinator - 9th Grade on Track to Graduate	Baltimore City Public Schools, Edmondson- Westside High
	KeAnjane Govan KDGovan@bcps.k12.m d.us	Tutor	Baltimore City Public Schools, Edmondson Westside High
	Megan Rogers MTRogers01@bcps.k12 .md.us	Social Worker	Baltimore City Public Schools, Edmondson Westside High

POSTSECONDARY

Role	Name	Title	Affiliation
Administration (e.g., dean, division chair)	Chuck Marquette cmarquette@bccc.edu	Director, Workforce Development & Continuing Education	Baltimore City Community College
	Karen King-Sheridan kkingsheridan@bccc.edu	Assistant Vice President, Academic Engagement & Partnerships	Baltimore City Community College
Faculty			

WORKFORCE

Role	Name	Title	Affiliation
Local Workforce Development board member	Donnice Brown Donnice.Brown@baltimorecity.gov		Mayor's Office of Workforce Development
	Brady Wheeler BMWheeler@bcps.k12.md.us		Mayor's Office of Workforce Development
	Kate Wolfson kate@baltimorespromise.org		Baltimore's Promise
	Sara Cooper SCooper@aecf.org		Annie E. Casey Foundation
*Regional Economic Development organization member	Marshel Pollock Marshel.Lawrence@Maryland.Gov	Regional Business Services Consultant	Department of Workforce Development and Adult Learning, Maryland Department of Labor
Local business & industry representative	Donald Manekin dmanekin@seawall.com		Seawall
	Chris Hadfield chadfield@abcbaltimore.org	Vice President, Workforce Development	ABC
	Anita Hammond ashammon@lifebridgehealth.org	Manager, Workforce Development	LifeBridge
	Andrew Pham andrew@codeintheschools.org	Co-Executive Director	Code in the Schools

OTHER

Role	Name	Title	Affiliation
Parent or caretaker	Angie Winder angiewinder43@gmail.com	Chair	Mervo PCAB-Parent & Community Advisory Board for City Schools
Student	Sterling Harding sterling1hardy2@gmail.com	CTE Alumni	Requity
Representative of Special Populations	Harrison L Stevens hlstevens@bcps.k12.md.us	Staff Associate - Job Developer, Special Populations	Baltimore City Public Schools

Out-of-School youth / unhoused youth / corrections	Tavon Thomas Tavon.Thomas@baltim orecity.gov	Program Manager	Youth Opportunity Center, MOED
--	--	-----------------	-----------------------------------

* 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).

Table 1: Program Alignment to MSDE Statewide Industries Standards

Program	Alignment to current statewide industries (enter ✓)			Number of CTE participants 2022-23	Percent of all CTE Participants 2022-23
	HS	HW	ID		
Example	HS	HW	ID	###	100%
Graphic Communications (PrintED)	✓			47	1.3%
Interactive Media Production	✓	✓	✓	183	4.9%
Academy of Finance (NAF)	✓	✓	✓	81	2.2%
Accounting and Finance	✓	✓	✓	40	1.1%
Business Administrative Services	✓	✓		75	2.0%
Business Management	✓	✓	✓	87	2.3%
Construction Trades Professions - Carpentry	✓	✓		120	3.2%
Construction Design and Management	✓	✓	✓	98	2.6%
Construction Trades Professions - Electrical	✓	✓	✓	66	1.8%
Construction Maintenance Professions - HVAC	✓		✓	<35	
Construction Trades Professions - Masonry	✓	✓	✓	<35	
Construction Maintenance Professions - Welding			✓	<35	
Careers in Cosmetology	✓		✓	186	5.0%

Food and Beverage Management (Prostart)	✓	✓	✓	234	6.2%
Hospitality and Tourism Management	✓	✓	✓	<35	
Restaurant, Culinary, and Catering Management	✓	✓	✓	63	1.7%
Curriculum for Agricultural Science Education (CASE)	✓	✓	✓	51	1.4%
Academy of Health Professions - Certified Nursing Assistant	✓		✓	65	1.7%
Academy of Health Professions - Dental Assistant	✓		✓	<35	
Academy of Health Professions - Pharmacy Technician	✓		✓	71	1.9%
Academy of Health Professions - Physical Rehabilitation	✓		✓	<35	0.2%
Surgical/Operating Room Technician	✓		✓	315	8.4%
Biomedical Science (PLTW)	✓	✓	✓	134	3.6%
Air Force Junior Reserve Officers Training Corps (AFJROTC)	✓			153	4.1%
Army Junior Reserve Officers Training Corps (AJROTC)	✓			183	4.9%
Early Childhood Education/Child Care			✓	86	2.3%
Fire Emergency Medical Training/ High School Cadet (MFRI)	✓		✓	81	2.2%
Homeland Security and Emergency Preparedness - Homeland Security Sciences	✓	✓	✓	<35	
Homeland Security and Emergency Preparedness - Information/Communications Technology	✓	✓	✓	137	3.7%
Criminal Justice, Law and Society	✓	✓	✓	87	2.3%
Navy Junior Reserve Officers Training Corps (NJROTC)	✓			<35	
Teacher Academy of Maryland	✓	✓	✓	<35	
Computer Science (PLTW)	✓	✓	✓	180	4.8%
Computer and Information Sciences	✓	✓	✓	74	2.0%

IT Networking Academy (CISCO) - CCENT	✓	✓	✓	198	5.3%
Manufacturing Engineering Technology (NIMS) - Machining Operations	✓	✓		<35	
Pre-Engineering (PTLW)	✓	✓	✓	300	8.0%
Local Automotive Collision Repair	✓	✓		<35	
Local Automotive Transportation Technologies	✓	✓	✓	141	3.8%

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

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
Our CTE stakeholders review workforce and economic data to assess current and anticipate future local employment needs in HS/HW/ID industries	x		We conduct an annual review of our student performance data and share the information with our PACs and LACs to ensure that they are on track and we are continuing to meet industry requirements.
Processes are in place to identify and expand high school level registered apprenticeship opportunities.	x		<p>City Schools grew from 2 to 15 active youth apprenticeships since last school year. In the upcoming 24-25SY, City Schools has secured 13 apprenticeship employers with 49 Apprenticeship Maryland Program roles.</p> <p>Through the MarylandWorks grant with Baltimore's Promise, City Schools is co-partnering in the development of a district systems aligned and coordinated intermediary to prepare, recruit, support, and onboard employer and student focused apprenticeships that meet the state requirements.</p>
Processes are in place to update or phase out CTE POS that do not align with HS/HW/ID industries	x		We have a 4-year curriculum redesign and refresh cycle to ensure that our work and materials for our students are meeting industry standards.
A majority of our students are concentrating in POS aligned to HS/HW/ID industries	x		We have realigned our certifications to meet these standards.
Processes are in place to recruit business and industry stakeholders to participate on Program Advisory Committees	x		Through relationships with MOED, GBC, Baltimore City Chamber of Commerce, our LAC and business engagement strategies, over the last two years City Schools has worked to build up and stand PACs for each of its CTE pathways. Currently, City Schools has active PACs for each of its CTE program except for JROTC and Cosmetology which is undergoing a redesign.

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)?

N/A - we meet all requirements listed in Activity A.2.

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?

N/A - we meet all requirements listed in Activity A.2.

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 2023 statewide graduate data and district heat maps, which will be provided by MSDE, 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.

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).

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					3708	100	100	100
Gender								
Male					1718	46	52	53
Female					1990	54	48	47
Race-ethnicity								
American Indian					<35	0	0	0
Asian					52	1	1	2
Black					2916	79	83	83
Hispanic					448	12	11	10
Multi- race					<35	1	1	1
White					265	7	4	4
Special Populations								
Economically disadvantaged					2388	64	70	70
English learners					245	7	6	6
Individuals with disabilities					492	13	14	15
Nontraditional fields								
Single parents								
Out of workforce								
Unhoused Individuals					133	3	3	3
Youth in foster care					<35	1	1	1
Youth with parent in military					<35	0	0	0
Migrant students					0	0	0	0

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	x		
Our district has processes in place to recruit students traditionally underrepresented in CTE to improve diversity in CTE POS	x		
Processes are in place to ensure that students traditionally underrepresented in CTE have options to <u>enroll</u> in CTE POS	x		
Processes are in place to ensure that students traditionally underrepresented in CTE <u>persist</u> in CTE POS once enrolled	x		
Processes are in place to ensure that all eligible students have equitable access to career-based learning experiences	x		
Career guidance and advisement services are provided to student prior to enrolling in a CTE POS	x		
All students have access to career planning and support services to help them successfully transition to advanced education and/or the workforce	x		

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?

Based on our 2023 data, there are more male students participating in CTE programs than female students. However, the variation in participation is between 5-6%, which is not a significant difference particularly as the success rate based on participation is similar for both categories.

- 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.]*

We do not have five priority areas as the share of graduates compared to the share of participants across all subgroups are fairly similar. However, to meet the goals of the Blueprint, we will seek to increase enrollment and the share of students who reach concentrator status across our programs.

ACTIVITY B.4: CAREER CLUSTER PARTICIPATION AND PERSISTENCE

Student participation and persistence rates may differ across Career Clusters. The following table asks you to enter the number and percentage of 2023 high school graduates in your district who participated in CTE coursework and persisted to achieve concentrator status a given Career Cluster, disaggregated by selected student demographics. Create a separate table for each CTE Career Cluster offered.

Work with your district data team to find the 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 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).

Career Cluster Name:
PROGRAMS OF STUDY WITHIN CLUSTER:

Name	Number Program Graduates 2023
<u>Arts, Media, and Communication</u>	<u>230</u>
<u>Business Management and Finance</u>	<u>284</u>
<u>Construction and Development</u>	<u>371</u>
<u>Consumer Services, Hospitality and Tourism</u>	<u>509</u>
<u>Environmental, Agricultural and Natural Resources</u>	<u>51</u>
<u>Health and Biosciences</u>	<u>599</u>
<u>JROTC</u>	<u>343</u>
<u>Human Resource Services</u>	<u>437</u>
<u>Information Technology</u>	<u>452</u>
<u>Manufacturing, Engineering and Technology</u>	<u>301</u>
<u>Transportation Technologies</u>	<u>172</u>

CLUSTER-LEVEL DATA**Cluster: Arts, Media and Communication**

Student Group	Participation Rate			Persistence Rate
	Percentage of 2023 District Graduates (A)	Percentage of 2023 District graduates participating in this cluster (B)	Percent difference (A- B)	2023 District graduates who participated in this cluster and achieved CTE concentrator status
All 2023 Graduates	100	100	0	
Gender				
Male	46	56	10	70
Female	54	44	-10	64
Race-ethnicity				
American Indian	0	0	0	
Asian	1	2	1	50
Black	79	81	2	67
Hispanic	12	11	-1	70
Multi-race	1	1	1	0
White	7	5	-3	100
Special Populations				
Economically disadvantaged	64	74	10	67
English learners	7	6	-1	80
Individuals with disabilities	13	19	6	65
Nontraditional fields				
Single parents				
Out of workforce				
Unhoused Individuals	3	1	-2	100
Youth in foster care	1	0	-1	
Youth with parent in military	0	0	0	

Migrant students	0	0	0
------------------	---	---	---

Cluster: Business Management and Finance

Student Group	Participation Rate			Persistence Rate
	Percentage of 2023 District Graduates (A)	Percentage of 2023 District graduates participating in this cluster (B)	Percent difference (A- B)	2023 District graduates who participated in this cluster and achieved CTE concentrator status
All 2023 Graduates	100	100	0	
Gender				
Male	46	63	17	64
Female	54	37	-17	58
Race-ethnicity				
American Indian	0	1	1	0
Asian	1	0	-1	
Black	79	83	4	67
Hispanic	12	13	1	33
Multi -race	1	0	-1	
White	7	3	-4	50
Special Populations				
Economically disadvantaged	64	74	10	67
English learners	7	6	-1	80
Individuals with disabilities	13	19	6	65
Nontraditional fields				
Single parents				

Out of workforce				
Unhoused Individuals	3	0	-3	
Youth in foster care	1	1	1	100
Youth with parent in military	0	0	0	
Migrant students	0	0	0	

Cluster: Construction and Development

Student Group	Participation Rate			Persistence Rate
	Percentage of 2023 District Graduates (A)	Percentage of 2023 District graduates participating in this cluster (B)	Percent difference (A- B)	2023 District graduates who participated in this cluster and achieved CTE concentrator status
All 2023 Graduates	100	100	0	
Gender				
Male	46	84	38	85
Female	54	16	-38	91
Race-ethnicity				
American Indian	0	0	0	
Asian	1	0	-1	
Black	79	97	18	85
Hispanic	12	1	-11	100
Multi -race	1	0	-1	
White	7	2	-5	100
Special Populations				
Economically disadvantaged	64	73	8	85

English learners	7	0	-7	
Individuals with disabilities	13	20	7	87
Nontraditional fields				
Single parents				
Out of workforce				
Unhoused Individuals	3	3	0	60
Youth in foster care	1	0	-1	
Youth with parent in military	0	0	0	
Migrant students	0	0	0	

Cluster: Consumer Services, Hospitality and Tourism

Student Group	Participation Rate			Persistence Rate
	Percentage of 2023 District Graduates (A)	Percentage of 2023 District graduates participating in this cluster (B)	Percent difference (A- B)	2023 District graduates who participated in this cluster and achieved CTE concentrator status
All 2023 Graduates	100	100	0	
Gender				
Male	46	28	-18	96
Female	54	72	18	95
Race-ethnicity				
American Indian	0	0	0	
Asian	1	0	-1	
Black	79	86	7	96
Hispanic	12	12	0	95

Multi -race	1	0	-1	
White	7	2	-5	67
Special Populations				
Economically disadvantaged	64	73	9	94
English learners	7	7	0	91
Individuals with disabilities	13	17	4	82
Nontraditional fields				
Single parents				
Out of workforce				
Unhoused Individuals	3	4	1	100
Youth in foster care	1	0	-1	
Youth with parent in military	0	1	0	100
Migrant students	0	0	0	

Cluster: Environmental, Agricultural and Natural Resources

Student Group	Participation Rate			Persistence Rate
	Percentage of 2023 District Graduates (A)	Percentage of 2023 District graduates participating in this cluster (B)	Percent difference (A- B)	2023 District graduates who participated in this cluster and achieved CTE concentrator status
All 2023 Graduates	100	100	0	
Gender				
Male	46	52	6	36
Female	54	48	-6	60

Race/ethnicity				
American Indian	0	0	0	
Asian	1	0	-1	
Black	79	95	17	45
Hispanic	12	0	-12	
Multi-race	1	0	-1	
White	7	5	-2	100
Special Populations				
Economically disadvantaged	64	71	7	47
English learners	7	0	-7	
Individuals with disabilities	13	19	6	50
Nontraditional fields				
Single parents				
Out of workforce				
Unhoused Individuals	3	0	-3	
Youth in foster care	1	1	1	100
Youth with parent in military	0	0	0	
Migrant students	0	0	0	

Cluster: Human Resource Services

Student Group	Participation Rate	Persistence Rate
---------------	--------------------	------------------

	Percentage of 2023 District Graduates (A)	Percentage of 2023 District graduates participating in this cluster (B)	Percent difference (A- B)	2023 District graduates who participated in this cluster and achieved CTE concentrator status
All 2023 Graduates	100	100	0	
Gender				
Male	46	45	-2	99
Female	54	55	2	78
Race-ethnicity				
American Indian	0	0	0	
Asian	1	1	-1	100
Black	79	87	8	86
Hispanic	12	10	-2	93
Multi-race	1	1	0	100
White	7	2	-5	100
Special Populations				
Economically disadvantaged	64	75	11	86
English learners	7	8	1	100
Individuals with disabilities	13	12	-1	100
Nontraditional fields				
Single parents				
Out of workforce				
Unhoused Individuals	3	1	-2	100
Youth in foster care	1	0	-1	
Youth with parent in military	0	0	0	

Migrant students	0	0	0
------------------	---	---	---

Cluster: Health and Biosciences

Student Group	Participation Rate			Persistence Rate
	Percentage of 2023 District Graduates (A)	Percentage of 2023 District graduates participating in this cluster (B)	Percent difference (A- B)	2023 District graduates who participated in this cluster and achieved CTE concentrator status
All 2023 Graduates	100	100	0	
Gender				
Male	46	19	-28	64
Female	54	82	28	70
Race-ethnicity				
American Indian	0	0	0	
Asian	1	2	0	100
Black	79	85	7	64
Hispanic	12	7	-5	100
Multi -race	1	1	0	100
White	7	6	-1	88
Special Populations				
Economically disadvantaged	64	79	14	66
English learners	7	4	-3	100
Individuals with disabilities	13	11	-2	87
Nontraditional fields				
Single parents				
Out of workforce				

Unhoused Individuals	3	2	-2	100
Youth in foster care	1	1	0	100
Youth with parent in military	0	0	0	
Migrant students	0	0	0	

Cluster: Information Technology

Student Group	Participation Rate			Persistence Rate
	Percentage of 2023 District Graduates (A)	Percentage of 2023 District graduates participating in this cluster (B)	Percent difference (A- B)	2023 District graduates who participated in this cluster and achieved CTE concentrator status
All 2023 Graduates	100	100	0	
Gender				
Male	46	73	27	71
Female	54	27	-27	81
Race/ethnicity				
American Indian	0	0	0	
Asian	1	4	3	86
Black	79	66	-13	71
Hispanic	12	22	9	79
Multi -race	1	1	0	100
White	7	8	0	75
Special Populations				
Economically disadvantaged	64	59	-5	74
English learners	7	12	5	79
Individuals with	13	15	2	71

disabilities				
Nontraditional fields				
Single parents				
Out of workforce				
Unhoused Individuals	3	3	-1	50
Youth in foster care	1	1	0	100
Youth with parent in military	0	0	0	
Migrant students	0	0	0	

Cluster: JROTC

Student Group	Participation Rate			Persistence Rate
	Percentage of 2023 District Graduates (A)	Percentage of 2023 District graduates participating in this cluster (B)	Percent difference (A- B)	2023 District graduates who participated in this cluster and achieved CTE concentrator status
All 2023 Graduates	100	100	0	
Gender				
Male	46	44	-3	83
Female	54	56	3	62
Race-ethnicity				
American Indian	0	0	0	
Asian	1	3	1	100
Black	79	81	3	77
Hispanic	12	11	-1	33
Multi-race	1	1	1	100
White	7	4	-3	33
Special Populations				
Economically disadvantaged	64	64	0	71
English learners	7	5	-2	50
Individuals with disabilities	13	10	-3	63
Nontraditional fields				
Single parents				
Out of workforce				
Unhoused Individuals	3	5	2	75
Youth in foster care	1	1	1	100
Youth with	0	1	1	100

parent in military			
Migrant students	0	0	0

Cluster: Manufacturing, Engineering and Technology

Student Group	Participation Rate			Persistence Rate
	Percentage of 2023 District Graduates (A)	Percentage of 2023 District graduates participating in this cluster (B)	Percent difference (A-B)	2023 District graduates who participated in this cluster and achieved CTE concentrator status
All 2023 Graduates	100	100	0	
Gender				
Male	46	49	3	65
Female	54	51	-3	62
Race-ethnicity				
American Indian	0	0	0	
Asian	1	3	1	67
Black	79	78	-1	61
Hispanic	12	13	1	64
Multi-race	1	1	0	100
White	7	6	-2	83
Special Populations				
Economically disadvantaged	64	62	-3	61
English learners	7	4	-3	75
Individuals with disabilities	13	4	-10	25
Nontraditional fields				
Single parents				
Out of workforce				
Unhoused Individuals	3	2	-1	50
Youth in foster care	1	0	-1	
Youth with	0	1	1	100

parent in military			
Migrant students	0	0	0

Cluster: Transportation Technologies

Student Group	Participation Rate			Persistence Rate
	Percentage of 2023 District Graduates (A)	Percentage of 2023 District graduates participating in this cluster (B)	Percent difference (A- B)	2023 District graduates who participated in this cluster and achieved CTE concentrator status
All 2023 Graduates	100	100	0	
Gender				
Male	46	89	42	95
Female	54	11	-42	80
Race-ethnicity				
American Indian	0	0	0	
Asian	1	0	-1	
Black	79	93	15	95
Hispanic	12	7	-5	67
Multi-race	1	0	-1	
White	7	0	-7	
Special Populations				
Economically disadvantaged	64	73	8	91
English learners	7	5	-2	100
Individuals with disabilities	13	23	9	100
Nontraditional fields				
Single parents				
Out of workforce				

Unhoused Individuals	3	5	2	100
Youth in foster care	1	2	2	100
Youth with parent in military	0	0	0	
Migrant students	0	0	0	

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?

FEMALE PARTICIPATION

- **Arts, Media & Communication:** 10 percentage point fewer female graduates participating in the cluster than the share of district graduates.
- **Business Management and Finance:** 17 percentage point fewer female graduates participating in the cluster than the share of district graduates.
- **Construction & Development:** 38 percentage point fewer female graduates participating in the cluster than the share of district graduates.
- **Information Technology:** 27 percentage point fewer female graduates participating in the cluster than the share of district graduates.
- **Transportation Technology:** 42 percentage point fewer female graduates participating in the cluster than the share of district graduates.

HISPANIC STUDENT PARTICIPATION

- **Construction & Development:** 11 percentage point fewer Hispanic graduates participating in the cluster than the share of district graduates; however, there are 18 percentage point more Black graduates
- **Environmental, Agricultural, and Natural Resources:** 12 percentage point fewer Hispanic graduates participating in the cluster than the share of district graduates; however, there are 17 percentage point more Black graduates

MALE PARTICIPATION

- **Consumer Services, Hospitality and Tourism:** 18 percentage point fewer male graduates participating in the cluster than the share of district graduates.
- **Health and Biosciences:** 28 percentage point fewer male graduates participating in the cluster than the share of district graduates.

INDIVIDUALS WITH DISABILITIES

- **Manufacturing, Engineering, and Technology:** 10 percentage point fewer students with IEP participating in the cluster than share of district graduates.

Factors that may be affecting their decisions could be the following:

- Program interest by female students in traditionally male dominated industries, e.g., construction & development and transportation technology and vice versa, e.g., male participation in health and biosciences.
- Language barriers which affect our Hispanic students' ability to complete the program of study.
- Staffing challenges could limit our students' ability to complete their program of study particularly in construction & development (i.e., HVAC vacancies) and health & biosciences (i.e., nursing vacancies).
- Technology and procurement barriers had affected some of our students ability to take the necessary assessments in a timely fashion, i.e., construction trades
- Student limited exposure and access to work-based learning opportunities may have limited their ability to either (a) complete their required clinical hours requirements and/or (b) affected their continued interest in the program.

2. In which clusters does it appear that all students participating are not persisting at equivalent rates? What factors might be affecting their decisions?

See #1 for detailed breakdown across clusters and factors affecting student outcomes.

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?

See #1 for detailed breakdown across clusters and factors affecting student outcomes.

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 work-based learning opportunities in health & biomedical sciences to ensure students are able to obtain sufficient clinical hours to complete certification requirements.
- (2) Increase work-based learning opportunities to increase female student interest in and persistence in construction & development and transportation technologies. Please note that this work is underway with our Wind Grant.
- (3) Improve hiring, recruitment, and staff training to ensure that students are able to complete their program of study with a highly qualified instructor that understands both industry requirements as well as educational pedagogy.
- (4) Increase resources for CTE Career Coaches to ensure staff can accurately advise and support students in the selection and persistence in CTE pathways.
- (5) Ensure access to CTE equipment (technology) and software to eliminate barriers to program completion.

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

2S1: Academic proficiency in mathematics: The percentage of CTE concentrators achieving proficiency on the Districtwide high school mathematics assessment

2S1: 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 (2023 LAGGED DATA FROM MSDE)

	Federal Accountability Indicator 2023 Graduates								
	1S1	2S1	2S2	2S3	3S1*	4S1	5S1	5S4a	5S4b
State Performance	89.97	52.3	48.00	0.00	76.50	28.72	78.41	78.41	0.00

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).

Target	%	%	%	%	%	%	%	%	%
District Performance	87%	36%	24%	7%	77%	34%	50%	51%	
Gender									
Males	86	32	27	10	73	3	52	50	-
Females	88	40	21	3	80	71	47	53	-
Race ethnicity–									
American Indian	-	-	-	-	-	-	-	-	-
Asian	100	69	71	-	-	36	100	75	-
Black	86	32	16	8	80	35	49	50	-
Hispanic	86	46	44	-	52	32	50	54	-
Multi -race	100	60	50	-	-	27	50	67	-
White	93	73	62	-	72	25	55	47	-

*Lag data from 2023 Growth Opportunity Storyboard

SPECIAL POPULATIONS (2023 LAGGED DATA FROM MSDE)

	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	87%	36%	24%	7%	77%	34%	50%	51%	
Economically disadvantaged	86	32	17	7	79	35	51	50	-
English learners	79	5	-	-	46	40	46	53	-
Individuals with disabilities	84	6	-	-	64	22	41	38	-
Nontraditional fields	87	47	38	-	77	100	45	55	-
Single parents	-	-	-	-	-	-	-	-	-
Out of workforce	-	-	-	-	-	-	-	-	-
Homeless individuals	79	32	-	-	46	40	46	53	-
Youth in foster care	80	33	-	-	-	29	—	-	-
Youth with a parent in active military	-	-	-	-	-	-	-	-	-
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?	2S1 2S2 5S4a. Technical Skills Attainment (based on cohort performance)
Looking at <i>overall performance</i> on which indicators are you <u>substantially exceeding</u> the district performance target?	[]

* 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

9. 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.

In considering our student performance on their technical skills assessment, conditional on having met concentrator status, we are **27% below our target of 78.41% (5S1)**. However, as part of our commitment to ensure student success and in alignment with Blueprint Goals, we also reviewed our student TSA performance by cohort. On this front, we are not meeting our internal expectations. The primary driver for this trend is that 75% of students who enroll in our program do not persist to “completer” standing, i.e., complete the full course sequence. Our team and teachers identified the following root causes:

- **Internship / WBL Opportunities (Part 1).** Students do not persist to “completer” standing because they lose interest in the program. They lose interest in the program because there are limited opportunities to engage with industry professionals such as job shadow programs, internships outside of the classroom environment, or summer work opportunities.

Identified by: PLTW Engineering; ECE / TAM; Arts, Media, and Communication; Pharm Tech/ Sports Medicine; Construction Trades and Manufacturing; Transportation Technologies; Cosmetology & Cosmetic Services

- **Internship / WBL Opportunities (Part 2).** Students do not persist to “completer” standing because they lose interest in the program. They lose interest in the program because there are limited opportunities to obtain necessary clinical experience/ hours.

Identified by: Hospitality; AOHP; Dental

- **Curriculum.** Students do not persist to “completer” standing because they lose interest in the program. They lose interest in the program because teachers are unable to effectively engage students. They are unable to effectively engage students because they are unable to translate the curriculum into relevant activities for students.... because teachers do not have a full set of curriculum resources (e.g., scope and sequence, lesson plans, etc.) against which to modify / adjust.

Identified by: Arts, Media and Communications; Cosmetology and Cosmetic Services; AOHP; Culinary

- **Materials & Equipment.** Students do not persist to “completer” standing because they struggle to complete course requirements. They are unable to complete their course requirements because they:
 - Do not have access to the most updated equipment (e.g., cosmetology labs are outdated, insufficient IT labs / computer is outdated)
 - Consumables are inaccessible / cannot be purchased on Perkins funds
 - Required certification is inaccessible, e.g., timeline for funding request is unclear to ensure that students can take exams in time, and/or requirements of certification (e.g., drivers ed)

Identified by: Culinary; AHOP; Dental; Cosmetology; Arts, Media, and Communication; ECE / TAM; Biomedical Sciences; Information Technology; Transportation Technologies;

- **Scheduling.** Students do not persist to “completer” standing because they struggle to complete course requirements. They are unable to complete their course requirements because students are transferred to classes needed for graduation. Students are transferred to classes needed for graduation because:
 - Schools prioritize high school graduation requirements.
 - Counselors (or those who are responsible for course placement) are unaware of the course requirements for program completion.

Identified by: Culinary; Hospitality, Transportation Technologies; Business, Management and Finance; Dental; PLTW Engineering; Pharm

- **Staffing.** Students do not persist to “completer” standing because they are unable to complete their program of study owing to teacher vacancies, i.e., students are able to begin the program but cannot complete because a teacher leaves and we are unable to fill the position.

Identified by: AOHP; Information Technology; Construction Trades and Manufacturing

- **Staffing.** Students do not persist to “completer” standing because they are unable to fully engage with the curriculum because our teachers, while skilled industry experts, were not fully trained on high school instruction. Consequently, they may not be able to translate their expertise into classroom teaching.

Identified by: AOHP; Information Technology; Construction Trades and Manufacturing

10. The data provided reflect 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?

While there is variation across our individual programs (+ / - several percentage points), the overarching trend is consistent across our pathways.

11. Resource constraints may affect the activities you might undertake. What might be the most efficient and effective approach to making change (e.g., taking into consideration the relative size of your program enrollments)?

We have been, and will continue to take, a multi-pronged and multi-year approach to improving our student opportunities and performance, including, but not limited to:

1. Staggering our curriculum redesign and refresh processes to ensure that our students have the appropriate curriculum, materials and equipment.

2. Blending and braiding our resources across multiple funding streams (we use a combination of general fund resources, Blueprint resources, Capital improvement funds, Title funds, and Perkins funds) to ensure we have sufficient number of teachers, career coaches, building infrastructure, and materials and supplies for our students. WE also use these resources to provide our teachers with professional learning opportunities.
 3. Streamline our HR processes to remove barriers to entry into the profession as well and offer training / growth opportunities for our traditional content teachers to transition into a CTE teacher.
12. 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.]*
1. Continuing our curriculum redesign and refresh processes for selected pathways to ensure they meet industry standards.
 2. Create more efficiencies in our purchasing and procurement processes.
 3. Establish more, and deeper work based learning opportunities for students to ensure we sustain their interest in the program by demonstrating the instructional relevance.
 4. Improve our recruitment and retention efforts (also part of component D)
 5. Improve and align our professional development efforts by creating an arc learning for our teachers (also part of component D)

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, guidance 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: All					
Staff demographic	Percentage of 2022-23 staff	Percentage of students participating in CTE programming 2022-23	5- year staff turnover rate (Percentage of staff who did not return for years 2018 19 thru 2022 23)		
			Teachers	Support staff/ paraprofessionals	Guidance Counselors
Gender					
Male	49.2%	52%	22.4%	N/A	25%
Female	50.8%	48%	29.6%	N/A	35%
Race-ethnicity				N/A	
American Indian	<5%	0%	*	N/A	*
Asian	<5%	1%	*	N/A	*

Black	<u>69.7%</u>	<u>80%</u>	<u>24.5%</u>	N/A	31%
Hispanic	<u><5%</u>	<u>14%</u>	<u>*</u>	N/A	*
Multi-race	<u><5%</u>	<u>1%</u>	<u>*</u>	N/A	*
White	<u>24.6%</u>	<u>4%</u>	<u>28.6%</u>	N/A	36%
Credential				N/A	
Properly Licensed	<u>53.3%</u>		<u>21.2%</u>	N/A	32%
Granted Temporary Waiver	<u>8.2%</u>		<u>48.4%</u>	N/A	67%

Data Notes

- Data only includes employees of City Schools in the “Teacher – Vocational” Job title
- Data in the above table has been suppressed in alignment with City Schools' Board Policy LCA which includes rules surrounding data suppression for sensitive and protected data points.
- In the Credential section:
 - Properly Licensed = Teacher has unexpired Professional Certificate type
 - Granted Temporary Waiver = Teacher has unexpired Conditional Certificate type

Data Sources

-Daily Review Reports downloaded from Oracle for date tracked 9/1/2018, 6/30/2023, 10/15/2023 (as of 3/25/2024)

-Certificate View Reports downloaded from Oracle for 11/09/2018 and 11/01/2022

ACTIVITY D.2: ASSESS EDUCATOR SUPPORT OPPORTUNITIES

It's critical to create consistent opportunities that allow your staff to maintain 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.	X		Throughout the school year, teachers engage with CTE managers during district professional development and scheduled content specific meetings. Industry representatives are often brought in to conduct training and support for specific content areas.
Staff are aware of the requirements to maintain endorsement.	x		Yes, several times throughout the year, UMES is brought in to discuss the certification process. In addition, district HC communicates with teachers and school leadership to provide certification updates.
Staff have equal access to content-specific professional development opportunities across industries.	x		Throughout the school year, teachers engage with CTE managers during district professional development and scheduled content specific meetings. Industry representatives are often brought in to conduct training and support for specific content areas.
Data is collected on the effectiveness of professional development to ensure it meets the needs of educators.	x		All professional development sessions have evaluations. Teachers are also brought in to help develop and deliver professional development.

ACTIVITY 4.3: 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?

Although we do not have specific cluster data, we believe the following gaps might exist: here is are the following gaps:

- Approximately 10% between the share of teachers who are Black compared to the share of students in CTE programs that have identified as Black
- Approximately 14% of students in CTE programs have identified as Hispanic, but fewer than 5% of our teachers identified as hispanic.
- Approximately 4% of students in CTE programs identified as white, while 24.6% of teachers identified as white.

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?

No, we still see a large gap in teachers having teaching credentials. To address this gap we intend to recruit specifically from institutions conferring credentials, certifications and licenses; i.e colleges and universities. Teachers will then be placed into a New Teacher Cohort that would support their continued professional development and certification (Praxis, Content and Industry). We will also continue the partnership with UMES to ensure that teachers have access to teacher licensing programming within CTE.

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?

Yes, as a district we offer teachers the opportunity to participate in quarterly professional learning sessions based on their content. In addition, teachers participate in pathway specific professional development sessions with teachers with managers and industry partners. Lastly, teachers have the opportunity to participate in curriculum specific professional development opportunities at the regional and national level.

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

Barriers which exist in our ability to offer content-specific professional development include schedule alignment and content-specific collaboration. Additionally, there is an internal barrier around the system of procuring external professional learning opportunities due to the reimbursement process.

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. Alignment with Human Capital to ensure that all vacancies are posted, visible and accessible to the public.
2. Support and retain early career CTE instructors through comprehensive onboarding, mentoring, and professional development using a cohort model.

3. Alignment with schools to ensure that there is a consistent message around recruitment, retention, professional development, expectations and evaluation.
4. Partner with labor, trade and professional associations or colleges and universities that are certifying and credentialing candidates to strategically recruit potential candidates that reflect our student population.
5. Partner with institutions to certify teachers who are not currently identified as “adequately credentialed”, “granted temporary waiver” or relevant industry recognized credential; specifically with UMES, Coppin State and Morgan State University.

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.

XX: City Schools Strategies for Component A: Labor Market Alignment

Root Cause	Strategy	Sample Activities	Resources	Description
WBL: Students do not persist to “completer” standing because they lose interest in the program. They lose interest in the program because there are limited opportunities to obtain necessary clinical experience/ hours.	BCCC Summer Boost Certification Program	<ul style="list-style-type: none"> Identifying pathways and recruiting students Designing program with CTE instructors, CTE managers, and BCCC faculty City Schools summer process and management Student YouthWorks application sessions CTE Instructor summer stipend 	WBL CTE BCCC Students CTE Instructors Program course costs and BCCC – offer IRC as part of for dual enrollment, college credit and original HS credit	<ul style="list-style-type: none"> Identifying pathways and recruiting students Designing program with CTE instructors, CTE managers, and BCCC faculty City Schools summer process and management Student YouthWorks application sessions CTE Instructor
	Scaling Clinical Hour Partners	<ul style="list-style-type: none"> ● Inventory and landscape on current clinical hour partners by pathway Documentation on requirements and scheduling for clinical hours by pathway Targeting and recruiting clinical hour partners Clinical hour agreements for clinical hour programs and pathways 	WBL CTE CTE Instructors Employers BCCC	Inventory and landscape on current clinical hour partners by pathway <ul style="list-style-type: none"> Documentation on requirements and scheduling for clinical hours by pathway Targeting and recruiting clinical hour partners Clinical hour agreements for clinical hour programs and pathways
	[]	<ul style="list-style-type: none"> [] 		

City Schools Strategies for Component B: Student Participation and Persistence 9/24/2025

Root Cause	Strategy	Sample Activities	Resources	Description
WBL: Students do not persist to “completer” standing because they lose interest in the program. They lose interest in the program because there are limited opportunities to engage with industry professionals such as job shadow programs, internships outside of the classroom environment, or summer work opportunities.	Creating district level job shadow program for students in CTE pathways	<ul style="list-style-type: none"> W BL leads to create BCPSS specific curriculum that helps ensure students are prepared to participate in the job shadow program that are executed by career coaches (note: draft plan) W BL leads with CTE managers discuss with school principals and teachers about the opportunity to ensure interest in and capacity to absorb / execute job shadow programs. W BL work with system partners to curate partnerships for job shadow program 	W BL leads Career Coaches (MOED) Transportation Employers Job Shadow curriculum	<ul style="list-style-type: none"> W BL leads to create BCPSS specific curriculum that helps ensure students are prepared to participate in the job shadow program that are executed by career coaches (note: draft plan) W BL leads with CTE managers discuss with school principals and teachers about the opportunity to ensure interest in and capacity to absorb / execute job shadow programs. W BL work with system partners to curate partnerships for job shadow program
	WBL and CTE to expand CTSO in City Schools (start in SY24-25)	<ul style="list-style-type: none"> WBL specialist to gather baseline data of current CTSO programs at City Schools CTSO Set Up <ul style="list-style-type: none"> CTSO lead / advisor Job Description CTSO purpose / goals Communication Strategy 	Process and system to manage program (communications, marketing and recruitment plan) Lead designated CTSO for each school (stipend) Cost of membership and activities, supplies, etc. CTE Managers WBL Leads Transportation / activity costs (bucket)	<ul style="list-style-type: none"> WBL specialist to gather baseline data of current CTSO programs at City Schools CTSO Set Up <ul style="list-style-type: none"> CTSO lead / advisor Job Description CTSO purpose / goals Communication Strategy

	Apprenticeships (in SY24-25)		<p>AMP Coordinators stipend (Perkins cost)</p> <p>Apprenticeship and Internship Specialists (2 roles)</p> <p>WBL Leads</p> <p>Career Coaches</p> <p>3rd party training providers (Perkins cost)</p> <p>Industry certification (Perkins cost)</p> <p>Transportation</p> <p>Employers</p> <p>Uniforms and Safety Gear (includes steel toe boots) – Perkins cost</p> <p>CCR Platform to manage program</p>	<p>Employer engagement and cultivation (Year Round)</p> <p>Curating apprenticeship opportunities by pathway</p> <p>Recruitment activities to connect students to apprenticeship opportunities</p> <p>Apprenticeship company tours and job shadows</p> <p>Resume workshops</p> <p>Interview workshops</p>
	Curated summer YouthWorks and Company Internship programs and connections		<p>WBL leads</p> <p>Career Coaches (MOED)</p> <p>Instructor summer teacher role(s)</p> <p>Marketing materials</p> <p>Employers</p> <p>Internship course platform/materials (Perkins Cost)</p> <p>CCR Platform to manage program</p> <p>Internship Fair</p> <p>Transportation</p>	<p>Employer engagement and cultivation (Year Round)</p> <p>Curating summer internship opportunities by pathway</p> <p>Recruitment activities to connect students to summer internship opportunity</p> <p>YouthWorks application workshops (January- March)</p> <p>Resume workshops</p> <p>Interview workshops</p>
	Virtual library		CTE Instructors	PAC to Employment (by pathway,

	and/or in-person Guest speakers		WBL leads Career Coaches (MOED) CCR Platform Seamless (Perkins cost) Employers	rotating schools) Secure platform for virtual library of guest speakers System/process for school-based staff to be aware of the guest speaker opportunities and options to connect to their classrooms for both in-person and/or virtual guest speakers Employer engagement and cultivation (Year Round)
	Industry-sponsored project pilot for the next 3 years (start in SY24-25)		CTE Instructors WBL leads Career Coaches (MOED) Employers Capstone turn-key product (Perkins cost) Transportation	To built into CTE Capstone (CTE/WBL course)?? Employer engagement and cultivation (Year Round) WBL, CTE Instructor and Partner meetings to develop "project" and rubric, and schedule
	School-based enterprise guidance (starting in SY25-26)		CTE Instructors WBL leads Career Coaches (MOED) Cost of enterprise	WBL, CTE Instructor and CTE Manager meetings to develop "enterprise" and rubric, and schedule

2024 - 2026

Root Cause	Strategy	Sample Activities	Resources	Description
Scheduling Students do not persist to “completer” standing because they struggle to complete course requirements. They are unable to complete their course requirements because students are transferred to classes needed for graduation. Students are transferred to classes needed for graduation because: <ul style="list-style-type: none"> Schools prioritize high school graduation requirements. Counselors (or those who are responsible for course placement) are unaware of the course requirements for program completion. <i>Identified by: Culinary; Hospitality, Transportation Technologies; Business, Management and Finance; Dental; PLTW Engineering; Pharm</i>	Training / PD for Counselors	<ul style="list-style-type: none"> Provide three trainings to counselors according to the school calendar to support their ability to guide students as well as appropriately roster 	<ul style="list-style-type: none"> CTE Managers WBL Leads Professional development time Printing costs Design and marketing costs 	<p>The three trainings are:</p> <p>(1) beginning of year - value of CTE programming;</p> <p>(2) 2nd quarter - program availability to support with choice process; and</p> <p>(3) 3rd quarter - CTE course scheduling and implications for student success.</p>
	Training / PD for Career Coaches	<ul style="list-style-type: none"> Provide three trainings to career according to the school calendar to support their ability to guide students during their 1:1 and small group discussions. 	<ul style="list-style-type: none"> CTE Managers WBL Leads Professional development time Printing costs Design and marketing costs 	<p>The three trainings are:</p> <p>(1) beginning of year - value of CTE programming;</p> <p>(2) 2nd quarter - program availability to support with choice process and internship selection; and</p> <p>(3) 3rd quarter - CTE course scheduling and implications for student success and summer work opportunities</p>

City Schools Strategies for Component C: Program Performance

Root Cause	Strategy	Sample Activities	Resources	Description
Curriculum: Students do not persist to “completer” standing because they lose	Develop arc of learning on curriculum implementation	<ul style="list-style-type: none"> CTE managers will create an arc of learning across the full year to support the implementation of the CTE curriculum. This includes, but is not limited to: (1) developing (or supporting 	CTE Managers PD Stipends for teachers	<ul style="list-style-type: none"> CTE managers will create an arc of learning across the full year to support the implementation of the CTE curriculum. This includes,

<p>interest in the program. They lose interest in the program because teachers are unable to effectively engage students. They are unable to effectively engage students because they are unable to translate the curriculum into relevant activities for students.... because teachers do not have a full set of curriculum resources (e.g., scope and sequence, lesson plans, etc.) against which to modify / adjust.</p>		<p>teachers to develop) a scope and sequence for a subset of pathways; (2) developing lessons plans; (3) provide training on how to deliver the lesson plans (e.g., instructional strategies) and (4) and assess student progress against curriculum.</p>		<p>but is not limited to: (1) developing (or supporting teachers to develop) a scope and sequence for a subset of pathways; (2) developing lessons plans; (3) provide training on how to deliver the lesson plans (e.g., instructional strategies) and (4) and assess student progress against curriculum.</p>
	<p>Develop partnerships and identify opportunities for continued learning</p>	<ul style="list-style-type: none"> • CTE managers will identify and secure relevant partnerships • CTE managers will support teachers' efforts to engage in opportunities that advances their ability to implement the curriculum, e.g., pedagogy. • CTE managers will work with T&L to ensure consistency and access in support between core content teachers and CTE teachers. 	<p>CTE managers</p> <p>Conference Registration / PD trainings for teachers</p>	<ul style="list-style-type: none"> • CTE managers will identify and secure relevant partnerships • CTE managers will support teachers' efforts to engage in opportunities that advances their ability to implement the curriculum, e.g., pedagogy. • CTE managers will work with T&L to ensure consistency and access in support between core content teachers and CTE teachers.
	<p>Provide teachers access to programs / activities / learning to obtain updated and additional certification(s)</p>	<ul style="list-style-type: none"> • CTE managers will identify and secure relevant partnerships and opportunities for additional certifications. 	<p>CTE managers</p> <p>District provided 50% reimbursement for certificates</p>	<p>CTE managers will identify opportunities for teachers to obtain additional certification</p> <p>CTE managers will share with teachers about district reimbursement for certification.</p>

Root Cause	Strategy	Sample Activities	Resources	Description
<p>Materials & Equipment. Students do not persist to "completer" standing because they struggle to complete course requirements. They are</p>	<p>Engage with PACs and teachers to ensure that equipment and</p>	<ul style="list-style-type: none"> • W BL & CTE Leads meet with teachers and PAC to ensure equipment 	<p>School needs assessments</p>	<ul style="list-style-type: none"> • W BL & CTE Leads meet with teachers and PAC to ensure equipment

<p>unable to complete their course requirements because they:</p> <ul style="list-style-type: none"> Do not have access to the most updated equipment (e.g., cosmetology labs are outdated, insufficient IT labs / computer is outdated) Consumables are inaccessible / cannot be purchased on Perkins funds Required certification is inaccessible, e.g., timing for request for exams, and/or requirements of certification (e.g., drivers ed) 	<p>materials are updated (esp. for pathways in refresh category)</p>	<ul style="list-style-type: none"> W BL & CTE leads List of essential equipment for each pathway CTE Leads W alking space with facility to ensure that there is the necessary infrastructure 	<p>Inventory report</p>	<ul style="list-style-type: none"> W BL & CTE leads List of essential equipment for each pathway CTE Leads W alking space with facility to ensure that there is the necessary infrastructure
	<p>CTE leads provide clear guidance and monitor schools on purchase of consumable goods.</p>	<ul style="list-style-type: none"> WBL & CTE leads to share guidance with their teachers and pathways on materials and equipment purchase CTE leads will monitor program purchases from procurement through to delivery. CTE leads will check-in with teachers at the beginning of the school year to ensure that they have sufficient resources for the year 	<p>CTE leads Procurement tracking tool and process (we already have this)</p>	<p>Note: The District requires schools include funding in their school level budget to purchase consumables that are not eligible for Perkins.</p>
	<p>Remove technical and process barriers to certification</p>	<ul style="list-style-type: none"> CTE coordinator to work with CTE leads to determine on-line assessments requirements and work with IT to ensure that there are no firewalls that would prevent students from accessing the assessment. CTE leads to work with schools to determine testing schedule and student access to computers 	<ul style="list-style-type: none"> CTE leads CTE coordinator Payments for assessments 	

XX: City Schools Strategies for Component D: Recruiting, Developing, and Retaining CTE Educators

2024-2026

Root Cause	Strategy	Sample Activities	Resources	Description
Early career CTE instructors are leaving within 5 years due to a lack of support in schools and from district office.	Develop early career CTE teacher cohorts that meet at least quarterly.	<ul style="list-style-type: none"> Targeted PD for early career teachers. New CTE teacher learning walks Pairing new CTE teachers with veteran CTE and non-CTE teachers Information observations and follow-up supports 	Arc of Learning (previously mentioned) Learning Walk Rubric (sample - https://www.tes.com/teaching-resource/learning-walk-template-11910761)	Complete redesign of new CTE teacher support programming to cohort model that involves learning walks, observations, mentoring, and need based PD.
	Development of a new CTE teacher handbook with resources and contact information.	<ul style="list-style-type: none"> Development of a new CTE teacher guidebook. Teacher focus groups 	Model - https://www.acteonline.org/wp-content/uploads/2019/03/MI-New-CTE-Teacher-Technical-Tool-Kit-2017-598158-7.pdf Professional Development Office	Central office staff will work with existing CTE teachers to develop a new CTE teacher handbook with sample lessons, assessment and classroom management best practices, curriculum links, points of contact, etc.
		<ul style="list-style-type: none"> New Educator Summer Institute (NESI) 	Professional Development Office	Participate in NESI to provide new CTE teachers foundational knowledge of the district and CTE dept.

Root Cause	Strategy	Sample Activities	Resources	Description
Teacher positions remain vacant throughout the school year thus impacting students'	Better alignment with Human Capital on recruitment and hiring processes	<ul style="list-style-type: none"> Audit of job postings and descriptions. Virtual information sessions for job postings - targeted for industry professionals 	CTE and HC staff	

ability to complete programs of study		<ul style="list-style-type: none"> Media campaign to advertise CTE teaching opportunities 		
	Grow your own model and create new pipelines strategy.	<ul style="list-style-type: none"> Research and develop CTE teacher pipeline using existing teacher population (example Math to PLTW Engineering; Bio / Science to PLTW Bio Med; etc) 	Human Capital Dept Teach for America alumni	
		<ul style="list-style-type: none"> Research opportunities for new skill development of existing teaching staff (CTE Teacher Apprenticeship) 	Training providers Community Colleges	
		Work closely with UMES to develop on-ramps for CTE teacher certification and WBL endorsements through information sessions and cohort support model	UMES	UMES offers CTE certifications and WBL endorsement classes. UMES will offer PD and information sessions to CTE teachers as well as non-CTE teachers on program admission guidelines and and timelines.
	Partnerships and co-teaching model	<ul style="list-style-type: none"> Explore and develop co-teaching model to ensure qualified instructors for hard to fill CTE teacher vacancies. 	Training providers Community Colleges	Explore and develop model for shared instructors across schools, training providers (ABC Baltimore), and Community Colleges

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	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.

	projections	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
Instructional resources are outdated and do not prepare students to enter or retain employment in high-wage, high-skill, and/or in-demand fields	Update program standards, curriculum, assessments, certifications, and links to postsecondary programs	Review related program offerings in high-performing Maryland districts	Maryland CTE Performance Dashboard	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.
		Create and use employer advisory boards to inform necessary updates	Strategies for Developing Employer Partnerships Michigan Program Advisory Toolkit	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.
		Review program resources in other states to identify potential instructional design resources	Texas CTE Administrative Code	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.
	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

Comprehensive Local Needs Assessment: Secondary Schools

				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

2024 - 2026

PROBLEM: STUDENTS ARE NOT PARTICIPATING IN CTE PROGRAMMING.

Root Cause	Strategy	Sample Activities	Resource	Description
Students lack awareness of CTE programming and the benefits of program participation	Implement awareness campaigns to inform students about program offerings and benefits	Offer career exploration activities in the middle grades to expose students to career options and the benefits that participation in CTE offers.	Middle School CTE design options and resources	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.
		Schedule informational sessions for entering 9 th grade students to introduce them to school CTE offerings.	Freshman Cruise	Roseburg Public Schools (OR) takes all 9 th grade students on a 'cruise' of CTE offerings to allow students to meet teachers and learn about CTE studies that are available.
		Schedule career fairs and informational events to help students learn about CTE offerings.	Career Fair Options	Gainesville High School (AL) offers students a career fair experience to introduce them to CTE options. See the video to learn about their approach
		Create online assets that support students in identifying the CTE opportunities at their	CTE Options at my School	Fairfax County Public Schools (VA) hosts a webpage that helps students learn about CTE

		school.		programs offered in their school replete with videos and detailed program descriptions.
Families and educators do not appreciate CTE's benefit and discourage youth from enrolling	Improving messaging to families, community groups, and educators to help them understand the benefits CTE confers	Undertake a comprehensive marketing campaign to educate families about CTE	CTE VisionToolkit CTE Marketing Best Practices & Campaigns	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. Washington State has developed this playbook detailing strategies and providing resources to promote CTE programs to students, parents, and educators.
		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	CTE Letter of Intent Signing Day: College CTE Signing Day: Employment	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) 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	Develop and conduct professional development for school counselors aimed at increasing awareness and benefits of	School Counselor Playbook: Unlocking Career Success	Unlocking Career Success offers this playbook that includes practical tools, resources, and information to assist counselors in

	that students may follow.	CTE programs.		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.	ACTE High Quality CTE: Student Career Development	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.	Maximizing Access & Success for Special Population Students Strategies for Special Population Success Recruiting Special Populations into CTE: Toolkit	<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 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.	A Guide to Discussing Racial Equity	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.	Assessing the Enrollment and Retention of Nontraditional Learners	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.	Partnering Students with Industry Mentors	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 2024 - 2026

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

Root Cause	Strategy	Sample Activities	Resource	Description
Students are not provided with academic content as part of their CTE coursework	Integrate academic content into CTE programming offered at all levels.	Review current efforts to integrate academic and CTE instruction and take steps to address ineffective practices.	CTE and Academic Integration Self Assessment Rubric ACTE Integration of Academics and CTE Section Math-in- CTE	<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>This brief from offers examples of how higher states are 11th grade test results as a college readiness sign and as a means of targeting services for at-risk youth</p>
Students face financial or geographical barriers that prevent them from pursuing an industry-recognized credential.	Identify obstacles to students earning an industry recognized credential and take steps to resolve them.	<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</p>	Maryland CTE Perkins Reserve Grant Information Guide Credential Currency: Promoting Credentials of Value	Maryland offers a competitive grant program that includes options for using funding to strengthen the award of industry-recognized credentials in POS.

		<p>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>Aligning State CTE Programs with Industry Needs and Priorities</p>	<p>This report offers strategies to expand student obtainment. While focused at 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>
--	--	--	---	--

PROBLEM: STUDENTS ARE NOT EARNING INDUSTRY-RECOGNIZED CREDENTIALS.

Root Cause	Strategy	Sample Activities	Resource	Description
Students face financial or geographical barriers that prevent them from pursuing an industry-recognized credential.	Identify obstacles to students earning an industry recognized credential and take steps to resolve them.	<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</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 at 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</p>

		accessible locations.		may be adapted for use at the district/college level.
--	--	-----------------------	--	---

PROBLEM: CTE CONCENTRATORS ARE NOT TRANSITIONING INTO ADVANCED TRAINING OR EMPLOYMENT FOLLOWING GRADUATION.

Root Cause	Strategy	Sample Activities	Resource	Description
Students do not understand the steps needed to pursue a career.	Offer workplace experiences and access to career planning tools to help students plan for labor market entry.	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.	Maryland's Work-based Learning Continuum	This resource describes the research, common practices to support students in learning about work, and tools to help in career seeking and advancement.

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

2021-2026

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.	<p>Launch a targeted CTE teacher recruitment campaign to motivate educators and industry professionals to become teachers.</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</p>	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 created this guidance document that summarizes teacher certification options for each CTE program of study offered in the state.</p>

		<p>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>		

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 connect with colleagues, share best practices, and collaborate on innovative teaching strategies.</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.
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 mentoring and professional learning communities.</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 offer 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 options that might apply to the CTE workforce.</p>

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. 2024-2026

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 education 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](#)