



# Career and Technical Education: Comprehensive Local Needs Assessment

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A Systemic Review Guidebook for Secondary Schools  
Version 3.0

Office of College and Career Pathways

2024 - 2026

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## Document Control Information

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### 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
3.0	April 2024	Modified the data tables in Activities B.1 and B.4.

## Purpose

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**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 1<sup>st</sup> of each year.

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

## Instructions

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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

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### 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**

	<b>Strategies</b>	<b>Outputs</b>	<b>Short-Term Outcomes</b>	<b>Long-Term Outcomes</b>	<b>Impacts</b>
<b>Tangible:</b> 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
<b>Tangible:</b> 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
<b>Tangible:</b> 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
<b>Intangible:</b> 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
<b>Intangible:</b> 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



	Strategies	Outputs	Short-Term Outcomes	Long-Term Outcomes	Impacts
<b>Intangible:</b> 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.
Each POS consists of a coordinated, non-duplicative sequence of academic and technical coursework comprising at least 3 credits.
Each CTE concentrator-level course (typically the 3rd in a program) has a minimum of 10 concentrators over a 4-year period. If not, evidence must be offered of continued progress toward meeting this requirement.
Each POS has the required number of staff, availability of equipment, and student access to facilities.

SCOPE
Curricula are aligned to state-approved industry standards that allow students to earn recognized credentials, certifications, licenses, college credit, or degrees
Curricula offer a progression from secondary to postsecondary education and/or employment (including attainment of an industry-recognized credential or apprenticeship), and from community college to bachelor’s degree programs
Curricula allow students to learn and demonstrate academic, technical, and employability skills
Curricula include differentiated supports and modifications to meet the needs of diverse learners
Each CTE student has a written career and academic plan in place that includes the: <ul style="list-style-type: none"> <li>• required courses to complete a POS and graduate;</li> <li>• required assessments to earn a certification, license, credential, or degree;</li> <li>• required academic assessments to graduate; and</li> <li>• a timeline to take courses, assessments, and complete career-based learning experiences.</li> </ul>
All students, regardless of race, color, national origin, sex, or disability, have equitable access to high-quality CTE programs as required by <a href="#">Code of Maryland Regulation 13A.04.02.04</a>
Approved POSs are guided by Local Advisory Councils and Program Advisory Committees according to the CTE Local Advisory Council and Program Advisory Committee Policies and Procedures (COMAR EA Title 21. Sec.101)
All CTE POS adhere to CTE Development Standards, which are required by <a href="#">Code of Maryland Regulations 13A.04.02.03</a>
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 <a href="#">Code of Maryland Regulation 13A.07.09</a> within three years

**QUALITY**

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:

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

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

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

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

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

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

## Assembling a Stakeholder Team

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

### STAKEHOLDER TEAM COORDINATOR

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

Name	Brian Phillips
Organization	Worcester County Public Schools
Title	Coordinator of CTE
Email	<a href="mailto:bcphillips@worcesterk12.org">bcphillips@worcesterk12.org</a>

### STAKEHOLDER TEAM MEMBERS

When Selecting Stakeholders, consider:

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

### Stakeholder Team Responsibilities

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

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

## Stakeholder Team Roster

### SECONDARY

Role	Name	Title	Affiliation
Administration (e.g., principal, assistant principal)	Tom Sites	Principal, Stephen Decatur High School	Worcester County Public Schools
	Tom Zimmer	Principal, Worcester Technical High School	Worcester County Public Schools
	Leland Green	Principal, Snow Hill High School	Worcester County Public Schools
	Jenifer Rayne	Principal, Pocomoke High School	Worcester County Public Schools
Professional career or academic counselor	Josh Horsman	Career Coach	Worcester County Public Schools
	Erica Hensley	CTE School Counselor	Worcester County Public Schools
	Valerie Riley	School Counselor	Worcester County Public Schools
Teachers	Diane Carey	Early Childhood & TAM Teacher	Worcester County Public Schools
	Rick Stephens	Welding Teacher	Worcester County Public Schools
Instructional Support and Paraprofessionals (Psychologists, Social Workers, etc.)	Courtney Kief	Special Education Case Manager	Worcester County Public Schools
	Julie McAllister	Special Education Resource	Worcester County Public Schools
	Barbara Phillips	Educational Assistant	Worcester County Public Schools

**POSTSECONDARY**

Role	Name	Title	Affiliation
Administration (e.g., dean, division chair)	Paul Silberquit	Dean for Occupations and Emerging Technologies	Wor-Wic Community College
	Dr. Michael Scott	Dean of Science and Technology	Salisbury University
	Joe Roche	Department Head Applied Technologies	Wor-Wic Community College
Faculty	Dr. Brian Cook	Adjunct Education Professor	Salisbury University
	Dr. Louise Anderson	Associate Music Professor	Salisbury University
			Wor-Wic Community College




**WORKFORCE**

Role	Name	Title	Affiliation
Local Workforce Development board member	Katharine Campbell	LWSA Board Member	Local Workforce Development Board
	Alicia Dennis	Apprenticeship Navigator	Local Workforce Development Board
	Leslie Porter-Cabell	Workforce Director	Tri-County Council
*Regional Economic Development organization member	Nancy Schwendeman	Workforce Development Specialist	Maryland's Coast: Office of Tourism & Economic Development
Local business & industry representative	Ryan Whittington	EMS & Bomb Technician	Ocean City Fire Department
	Caitlin Evans	Owner	Dockside Restaurant
	Wyatt Harrison	Owner	PLAK That Signs
	Lauren Martin	Owner	Seaside Plumbing

**OTHER**

Role	Name	Title	Affiliation
Parent or caretaker	Jennifer Sills	Parent of CTE student	Worcester County
Student	James Sills	Culinary Student	Worcester County
Representative of Special Populations	Bess Cropper	Coordinator of Special Education	Worcester County Public Schools
Out-of-School youth / unhoused youth / corrections	Nicole Selby	Coordinator of Student Services	Worcester County Public Schools

\* Not required under Perkins V but recommended to include. 

## Component A: Labor Market Alignment

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### 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

Program	Alignment to current statewide industries (enter ✓)			Number of CTE participants 2022-23	Percent of all CTE Participants 2022-23
	HS	HW	ID		
Example				440	100%
Apprenticeship Maryland Program/860500	X			0	0%
Interactive Media Production/100150	X	X	X	21	5%
Business Management/520251	X	X	X	72	16%
Accounting and Finance/520354	X	X	X	3	1%
Marketing/521451	X	X	X	7	2%
Construction Trades -Masonry/465100	X	X	X	4	1%
Construction Main. – Welding/475300			X	11	3%
Construction Design and Management/151350	X	X	X	6	2%
Construction Trades – Carpentry/465200	X	X		22	5%

Construction Trades – Electrical/465300	X	X	X	10	2%
Construction Trades – HVAC/475200	X	X	X	31	7%
Cosmetology/120450	X		X	17	4%
Culinary Arts: Baking and Pastry/120555		X	X	2	>1%
Culinary Arts: ACF/120550		X	X	23	5%
Hospitality and Tourism Management/520954	X	X	X	1	>1%
Agricultural Science: CASE/010050	X	X	X	22	5%
Academy of Health Professionals-CNA/510050	X		X	14	3%
PLTW Biomedical Science/511150	X	X	X	36	8%
Teacher Acad. Of MD (TAM)/130150	X	X	X	6	1%
Fire Science: MFRI/430250	X		X	1	>1%
Criminal Justice Law and Society/430190	X	X	X	18	4%
Homeland Security – Homeland Security Science/430350	X	X	X	4	1%
Homeland Security – Criminal Justice/430351	X	X	X	3	1%
PLTW Computer Science/110255	X	X	X	24	5%

PLTW Pre-engineering/155000	X	X	X	30	7%
Automotive Technician (NATEF)/470645	X	X	X	12	3%
Career Research and Development/860000				0	0%
Navy Junior Reserve Officers Training – NJROTC/280410	X			48	11%
Marine Junior Reserve Officers Training – MJROTC/280420	X			91	21%

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
Digital Music and Video Production/TBD	Adding	Received Innovation Grant to implement a new program of study. This program will expand CTE offerings to include an arts focused program. It appeals to students not interested in current programs.

## 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		CTE PACs meet twice a year – in the fall and spring – to discuss changes and updates to each POS. The local workforce board is invited and has also attended the meetings. The LAC for the lower shore also meets twice per year to discuss regional labor needs.
Processes are in place to identify and expand high school level registered apprenticeship opportunities.	X		An annual apprenticeship event (breakfast or luncheon) is held for local businesses to encourage them to participate in Youth Apprenticeship. Career coaches and our local workforce development board and working tirelessly in the community to recruit new employers to STA and YA, and we have increased the number by over 1000% in the past year.
Processes are in place to update or phase out CTE POS that do not align with HS/HW/ID industries	X		POS are reviewed annually for HS/HW/ID criteria. Enrollment is also a consideration. Programs with low student enrollment and completion are also evaluated to determine the feasibility of program continuation. Recruitment options are also developed to increase enrollment in those programs.
A majority of our students are concentrating in POS aligned to HS/HW/ID industries	X		CRD is the only POS that does not meet the HS/HW/ID criteria., and this only due to the fact that CRD students tend to not finish because they transfer into another CTE program.
Processes are in place to recruit business and industry stakeholders to participate on Program Advisory Committees	X		POS teachers reach out to business and industry stakeholders in the area to participate in PACs. PAC members and potential PAC members are invited to the annual Apprenticeship Event.

### 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)?

Only one program is not fully aligned with HW, HS, or ID: Career Research and Development (CRD). This program of study enables WCPS to offer career research to students who do not yet know what career pathway they would like to study while also giving them the chance to familiarize themselves with WTHS and the other programs of study offered. Many students begin in CRD but decide to pursue another POS after they become familiar with the offerings at WTHS. For those who continue in CRD, it culminates in valuable work-based learning. In the future, we will continue to add value to this program by offering Youth Apprenticeships and IRCs aligned to occupations within CRD. Demand for this class remains steady and enrollment is above 10 students currently. Lastly, this program is cost effective and does not burden the school with expensive equipment or materials of instruction, making it another intelligent choice for CTE programming.

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?

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

1. Increase enrollment in programs with low enrollment, such as Baking and Pastry ; Digital Music and Video Production; and Hospitality and Tourism through outreach, marketing, and career coaching efforts
2. Add Youth Apprenticeship employers and Industry Recognized Credentials aligned with Blueprint to create added value to CTE programs
3. Expand current industry-standard equipment in CTE programs, which enables more space in these programs and better prepares students to be successful in YAs/STAs and with IRCs.
4. Expand staff knowledge base through valuable professional learning opportunities for administrative and instructional staff.
5. Expand non-traditional student participation in CTE POS through targeted marketing efforts

## Component B: Student Participation and Persistence

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### OVERVIEW

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

### ACTIVITY B.1: TAKING STOCK

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

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

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

Notes:

1. **Data Suppression:** Prior to sharing this table with your stakeholder team, you will need to suppress numbers and percentages in cell that do not include the minimum number of students required to protect student confidentiality. Maryland state policy is to suppress data for cells or percentages that are based on fewer than 35 students. Please consult your district policies to determine which data cells should be suppressed and how this information should be communicated (e.g., by entering 'LOW N' or '<35 students' in effected cells).
2. **2023 Statewide Graduate Data:** Currently, MSDE does not disaggregate four-year cohort participation in CTE. However, we have identified this area as a growth opportunity in data collection and reporting.



Student Group	2023 Graduates Statewide				2023 Graduates in Your District			
	Number	Percent	Percent participating in CTE	Percent of participants who achieved concentrator status	Number	Percent	Percent participating in CTE	Percent of participants who achieved concentrator status
All 2023 Graduates (4-year cohort)	58,206	85.81%			533	99%	83%(440)	82% (359)
<b>Gender</b>								
Male	28,576	82.60%			285	53%	56%	60%
Female	29,581	89.16%			248	47%	44%	40%
<b>Race-ethnicity</b>								
American Indian	140	85.89%			0	0%	0%	0%
Asian	4,559	96.16%			7	1%	1%	1%
Black	18,648	84.68%			88	17%	17%	17%
Hispanic	10,446	71.37%			36	7%	5%	6%
Multi-race	2,485	89.36%			30	6%	5%	6%
White	21,838	93.38%			407	73%	72%	75%
<b>Special Populations</b>								
Economically disadvantaged	17,049	80.83%			244	46%	45%	45%
Multi-lingual learners	3,140	55.78%			8	2%	<1%	<1%
Individuals with disabilities	4,697	69.47%			39	7%	7%	8%
Nontraditional fields	-	-			39	7%	18%	25%
Single parents	-	-			N/A	N/A	N/A	N/A
Out of workforce	-	-			N/A	N/A	N/A	N/A
Unhoused Individuals	833	62.03%			11	2%	2%	2%
Youth in foster care	66	40.24%			1	<1%	<1%	0%
Youth with parent in military	1,028	95.10%			8	2%	2%	2%

Migrant students	-	-			0	0%	0%	0%
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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		As one can see in the data above, all students have access to all CTE programming. We are fortunate to have a wealth of resources that enable us to provide this access to all students, hence the on-track concentrator and participant data across all races/ethnicities. WTHS has two special educators on staff to provide the support needed to meet success in CTE POS.
Our district has processes in place to recruit students traditionally underrepresented in CTE to improve diversity in CTE POS	X		Our CTE teachers recruit students during the scheduling process each year at comprehensive high schools. Every student can consult with a career coach to learn about their career interests and what programs could help them achieve career goals. We have female teachers in male-dominated fields (Computer Science & Pre-engineering) who are committed to recruitment for our programs and campaign for females in STEM directly with students.
Processes are in place to ensure that students traditionally underrepresented in CTE have options to <u>enroll</u> in CTE POS		X	Each year, the CTE Director and the school administration review CTE CLNA data. The guidance counselors utilize enrollment trends to inform scheduling and target underrepresented populations to consider non-traditional POS. Examples include the challenges we face in SY 2023/24 with Black, SWD, and ED students underrepresented in our programs. Yet, we understand that our data overall shows that our CTE programs accurately represent the demographics of our district.
Processes are in place to ensure that students traditionally underrepresented in CTE <u>persist</u> in CTE POS once enrolled		X	Worcester supports all students in a variety of ways in our programming. Teachers, coaches, administrators, and counselors work diligently and quickly to address the needs of all our students. This year, we intend to implement more targeted support for our underrepresented groups in CTE. Every other week, the CTE director and/or

			school staff will review data of underrepresented students and have counselors meet one on one with students. These conversations will support these students in the participation phase with the intent of providing needed resources to ensure students feel empowered to continue in the CTE program.
Processes are in place to ensure that all eligible students have equitable access to career-based learning experiences	X		As students continue to need work-based learning experiences and cannot provide their own transportation, the district continues to pursue resources to provide equitable access. So far, we have partnered with businesses for students to be transported by the mentor of the business and we have offered in-house work-based learning experiences for students in need. WCPS has also become an approved provider of Youth Apprenticeship with four positions approved by the council. These experiences enable us to employ our own Youth Apprentices and offer equitable access to work-based learning.
Career guidance and advisement services are provided to student prior to enrolling in a CTE POS	X		Beginning with the 2023/24 school year, WCPS began a robust Career Counseling model district wide, consisting of personalized career coaching in grades 6 –12.
All students have access to career planning and support services to help them successfully transition to advanced education and/or the workforce	X		Beginning in grade 6 and every year thereafter, students work with Career Coaches across the district to explore careers and pick pathways for the rest of their secondary education and beyond. Schoolinks has been purchased for all students in the district and will be utilized to seamlessly track this work for all students.

### 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?

Most student groups persisted as expected through our programs. Our persistence data poses one challenge: in 2023, 81 students did not continue to become concentrators (18%). Our females are underrepresented in our CTE programs overall and do not persist at the same rates as our males. Only 40% of our females who participated ended up concentrating.

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.]*

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

1. Disaggregate data to determine why females do not persist to concentrator status.
2. Determine why Black students do not participate in POS with more advanced academic requirements (ex. PLTW).
3. Develop marketing strategies to encourage non-traditional participants, especially males in female dominated programs.
4. Develop strategies for career coaches to market CTE POS
5. Develop comprehensive marketing plan for academic classroom teachers and administrators to highlight the benefits of CTE

#### **ACTIVITY B.4: CAREER CLUSTER PARTICIPATION AND PERSISTENCE**

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

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

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

**CAREER CLUSTER KEY:**

AMC: Arts, Media, and Communication

BMF: Business Management and Finance

CD: Construction and Development

CRD: Career Research and Development

CSHT: Consumer Services, Hospitality, and Tourism

EANR: Environmental, Agricultural, and Natural Resources

HB: Health and Biosciences

HRS: Human Resource Services

IT: Information Technology

MET: Manufacturing, Engineering, and Technology

TT: Transportation Technologies

CRD: (Career Research and Development & Apprenticeship MD)

**Race/Ethnicity Key:**

AI: American Indian/Alaskan Native

A: Asian

H: Hispanic

B: Black/African American

W: White

PI: Hawaiian/Pacific Islander

M: Multi-Racial

**Special Populations Key:**

SWD: Students with Disabilities

ED: Economically Disadvantaged

NT: Non-Traditional

SP: Single Parents

OOW: Out of Workforce

MLL: Multilingual Learners

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

FY: Foster Youth

AD: Active Duty

MT: Migrant

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

Cluster	Enrollment Number	Number of Concentrators	Number of Graduates	Gender		Race/Ethnicity							Special Populations								
				M	F	AL	A	H	B	W	PI	M	SWD	ED	NT	SP	OOW	EL	MV	FY	AD
AMC	47	18	15	8	7	0	0	1	1	11	0	2	2	6	NA	NA	NA	0	0	0	0
BMF	275	40	32	18	14	0	1	0	1	27	0	3	1	11	14	NA	NA	0	1	0	0
CD	119	195	89	84	5	0	1	5	25	59	0	4	10	44	5	NA	NA	1	2	0	2
CRD	20	2	1	1	0	0	0	0	0	0	0	1	0	1	NA	NA	NA	0	0	0	0
CSHT	103	68	47	14	33	0	0	4	11	28	0	8	6	30	16	NA	NA	1	2	0	0
EANR	44	20	16	4	12	0	0	0	0	15	0	1	0	4	12	NA	NA	0	0	0	0
HB	144	68	39	10	29	0	1	4	11	27	0	0	0	17	3	NA	NA	0	0	0	1
HRS	246	89	57	27	30	0	1	3	7	45	0	4	3	30	33	NA	NA	1	2	0	2
IT	54	30	23	20	3	0	1	2	1	21	0	0	2	7	3	NA	NA	0	0	0	1
MET	83	43	22	16	6	0	0	0	1	21	0	0	0	1	6	NA	NA	0	0	0	0
TT	24	18	10	9	1	0	0	1	2	8	0	0	2	4	1	NA	NA	0	0	0	1
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	0	0	0	0
<b>Total</b>	1159																				

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

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

Cluster	Enrollment %	Concentrators %	Graduates %	Gender		Race/Ethnicity						Special Populations										
				M	F	AL	A	H	B	W	PI	M	SW D	ED	NT	SP	OOW	EL	HL	FY	AD	
	1159	591	349																			
AMC	4.05%	3.05%	4.03%	53%	47%	0%	0%	1%	1%	73%	0%	1%	13%	40%	NA	NA	NA	0%	0%	0%	0%	
BMF	23.73%	6.77%	9.17%	56%	44%	0%	3%	0%	3%	84%	0%	9%	3%	34%	44%	NA	NA	0%	3%	0%	0%	
CD	10.27%	32.99%	25.50%	94%	6%	0%	1%	6%	28%	66%	0%	4%	11%	49%	6%	NA	NA	1%	2%	0%	2%	
CRD	0.08%	0.33%	2.90%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	NA	NA	NA	0%	0%	0%	0%	
CSHT	8.89%	11.51%	13.19%	30%	70%	0%	0%	9%	24%	61%	0%	17%	13%	65%	35%	NA	NA	2%	4%	0%	0%	
EANR	3.80%	8.46%	4.58%	25%	75%	0%	0%	0%	6%	94%	0%	0%	0%	25%	75%	NA	NA	0%	0%	0%	0%	
HB	12.42%	11.51%	11.17%	26%	74%	0%	3%	10%	28%	69%	0%	0%	0%	44%	8%	NA	NA	0%	0%	0%	3%	
HRS	21.23%	15.06%	16.33%	47%	53%	0%	2%	5%	12%	79%	0%	7%	5%	53%	39%	NA	NA	2%	4%	0%	4%	
IT	4.66%	5.07%	6.59%	87%	13%	0%	4%	9%	4%	91%	0%	0%	9%	30%	13%	NA	NA	0%	0%	0%	4%	

MET	7.16%	7.28%	6.30%	73%	27%	0%	0%	0%	9%	95%	0%	0%	0%	9%	27%	NA	NA	0%	0%	0%	0%
TT	2.07%	3.05%	2.87%	90%	10%	0%	0%	10%	20%	80%	0%	0%	20%	40%	10%	NA	NA	0%	0%	0%	10%
WBL	0.00%	0.00%	0.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	NA	NA	NA	0%	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?

Economically disadvantaged students (district, 45%) do not participate at expected rates in IT (30%), MET (9%), BMF (34%) and EANR (25%) despite the fact that socioeconomic status is the great predictor of academic success. These careers in Worcester County are not often represented in the homes of these students, so students are less familiar with these programs and connections to these fields. Students with disabilities (district, 7%) are not participating in MET, HB, and EANR (0%), presumably because counselors and special education case managers are not exposing students to or enrolling them in these programs. Black students are overrepresented in HB (28%), CSHT (24%), and CD (28%). These programs are familiar programs to our Black students as their families are often employed in these job sectors in Worcester County. Black students are underrepresented in AMC (1%), BMF (3%), IT (4%), EANR (6%), and MET (9%). These careers in Worcester County are not often represented in the homes of these students, so students are less familiar with these programs and connections to these fields.

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

Students in BMF, CD, HB, HRS, MET, AND TT have difficulty persisting, while Worcester overall does not have an issue with persistence (17% participate and concentrate). The advanced academic programs, at times, prove to be more rigorous than the students expected. The CD cluster poses more physical challenges than students expected, working around dirty and strenuous conditions. Since the BMF programs and the JROTC programs in HRS are housed in the home high schools, many students take these courses as electives and don't reach concentrator status. Overall, our programs are used for career exploration and students may decide to pursue another pathway which affects this data.

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 answers to questions 1 and 2 regarding participation and persistence. The following programs are overperforming and deferring underclassmen to future years: BioMed, HVAC, Carpentry, Welding, and Criminal Justice. The following programs are underperforming and trying new marketing strategies to increase program exposure: Masonry, CDM, CRD, and Hospitality.

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- *Meet with guidance counselors to discuss the data and improve participation of targeted subgroups (ED, SWD, and Black students).*

- 2- *Meet with program teachers, school counselors, and students to improve participation in programs that are not at capacity.*
- 3- *Create a targeted marketing campaign, specifically for nontraditional student enrollment, for programs that are less familiar to our students.*
- 4- *Work with teachers to develop strategies to improve persistence in programs for which this an issue.*
- 5- *Provide professional learning experiences for teachers to network, improve their pedagogy and knowledge of industry trends.*

**NOTES:**

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

## Component C: Program Performance

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

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

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

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

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

**3S1: Post-program placement:** The percentage of CTE concentrators who are in postsecondary education or advanced training, military service, a national community service program, or employed in the second quarter after exiting from secondary education<sup>1</sup>

**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

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<sup>1</sup> 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).

performance level and was less than 90% of the target. Districts failing to achieve the state performance level are expected to develop a program improvement plan to bring them into compliance.

### DISTRICT PERFORMANCE BY STUDENT GROUP

	Federal Accountability Indicator 2023 Graduates								
	1S1	2S1	2S2	2S3	3S1*	4S1	5S1	5S4a	5S4b
State Performance Target	89.97%	52.3%	48.00%	0.00%	76.50%	28.72%	78.41%	78.41%	0.00%
District Performance	99%	50%	33%	63%	76%	18%	92%	95%	0%
Gender									
Males	99%	49%	37%	80%	71%	1%	92%	94%	0%
Females	99%	53%	28%	33%	84%	64%	93%	96%	0%
Race-ethnicity									
American Indian	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Asian	100%	80%	40%	*	*	25%	100%	100%	0%
Black	98%	22%	9%	100%	61%	17%	93%	94%	0%
Hispanic	100%	35%	18%	0%	*	27%	86%	89%	0%
Multi-race	100%	38%	0%	0%	76%	20%	94%	95%	0%
White	99%	59%	42%	80%	82%	18%	93%	95%	0%

**SPECIAL POPULATIONS**

	Federal Accountability Indicator 2023 Graduates								
	1S1	2S1	2S2	2S3	3S1*	4S1	5S1	5S4a	5S4b
<b>State Performance Target</b>	<b>89.97%</b>	<b>52.3%</b>	<b>48.00%</b>	<b>0.00%</b>	<b>76.50%</b>	<b>28.72%</b>	<b>78.41%</b>	<b>78.41%</b>	<b>0.00%</b>
District Performance	99%	50%	33%	63%	76%	18%	92%	95%	0%
Economically disadvantaged	99%	37%	16%	60%	65%	17%	92%	94%	0%
Multilingual learners	100%	0%	0%	0%	0%	50%	100%	100%	0%
Individuals with disabilities	89%	4%	0%	0%	76%	18%	90%	91%	0%
Nontraditional fields	98%	52%	29%	50%	83%	100%	100%	100%	0%
Single parents	100%	0%	0%	0%	0%	100%	0%	100%	0%
Out of workforce	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Students served under the McKinney-Vento Act (Unhoused)	100%	57%	17%	100%	0%	29%	60%	67%	0%
Youth in foster care	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Youth with a parent in active military	100%	67%	43%	100%	0%	0%	100%	100%	0%
Migrant students	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\* Data for the 3S1 indicator reflects 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?	2S2, 4S1
Looking at <i>overall performance</i> , on which indicators are you <u>substantially exceeding</u> the district performance target?	1S1, 5S1, 5S4

\* 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

- 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.

Worcester underperformed in 2S2 and 4S1. 2S2 is normally not an issue for Worcester, but since students were not in school due to COVID four years ago when they normally would have assessed, their scores were significantly lower. Students who sat for the assessment did not need to pass it in order in to graduate which negatively affected this number. As students assess in the future, this number will surpass the state's performance as in years prior to COVID. Regarding 4S1, female-dominated programs are the most challenging, presumably due to the discomfort for males in these fields. Students often lack a genuine interest in a field or industry that is nontraditional. Lastly, males can also see the female-dominated programs as lower wage or fewer opportunities for advancement and entrepreneurship.

- 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?

Performance on 4S1 is certainly program specific with our female-dominated programs being the biggest challenge. Female students are much more likely to enter our male-dominated fields.

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

Encouraging males to enter female-dominated programs comes down to marketing and mentoring. Marketing these programs to males so that they are aware of the opportunities and advancement pathways in these career fields. Developing a mentoring program with mentors of the nontraditional gender will increase familiarity with these career fields and the opportunities they pose for students.

17. 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.]
- a. Recruiting and Community Involvement: Implement targeted outreach efforts to underrepresented genders, highlighting the benefits and opportunities available in career technology education programs. This could involve partnering with community organizations, hosting informational sessions, and creating promotional materials that feature diverse role models in the field.
  - b. Mentorship and Role Models: Establish mentorship programs where students can connect with professionals from underrepresented genders who have succeeded in career technology fields. Seeing successful role models can inspire students and provide them with guidance and support as they pursue their own paths.
  - c. Create Inclusive Environments: Foster inclusive and welcoming environments within career technology education programs by addressing biases and stereotypes. Train educators and staff to recognize and challenge implicit biases and implement policies and practices that promote diversity and inclusion.
  - d. Increased Work-based Learning Opportunities with Employers of the Nontraditional Gender: Provide hands-on experiences and opportunities for students to explore career technology fields through workshops, internships, Apprenticeships, and other experiential learning opportunities. These experiences can help demystify technical subjects and build confidence in students who may not have had prior exposure to these fields.
  - e. Tailored Support Services: Provide tailored support services to address the unique needs and challenges faced by underrepresented genders in career technology education programs. This could include academic support, mentorship, networking opportunities, and access to resources such as childcare or transportation assistance to ensure equitable participation.

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

## Component D: Recruiting, Developing, and Retraining CTE Educators

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

### ACTIVITY D.1: REVIEW DATA ON CURRENT STAFF

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

NAME OF CAREER CLUSTER OR CTE POS: All Clusters					
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	Professional School Counselors
<b>Gender</b>					
Male				20% (2)	0%
Female				80% (8)	100% (2)
<b>Race-ethnicity</b>					
American Indian				0%	0%
Asian				0%	0%
Black				10%	0%
Hispanic				0%	0%
Multi-race				0%	0%
White				90%	100%
<b>Credential</b>					
Properly Licensed				100%	100%
Granted Temporary Waiver				0%	0%

\*Principal, Asst. Principal; CTE Coordinator; CTE Facilitator, Bookkeeper; Admin Assistants, School Nurse, Special Education Teachers



NAME OF CAREER CLUSTER OR CTE POS: AMC					
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	Professional School Counselors
<b>Gender</b>					
Male	100%	66%	0%	See First Chart	See First Chart
Female	0%	34%	0%	See First Chart	See First Chart
<b>Race-ethnicity</b>					
American Indian		2%	0%	See First Chart	See First Chart
Asian		2%	0%	See First Chart	See First Chart
Black		4%	0%	See First Chart	See First Chart
Hispanic		9%	0%	See First Chart	See First Chart
Multi-race		9%	0%	See First Chart	See First Chart
White	100%	74%	100%	See First Chart	See First Chart
<b>Credential</b>					
Properly Licensed	100%	N/A	100%	See First Chart	See First Chart
Granted Temporary Waiver	0%	N/A	0%	See First Chart	See First Chart

NAME OF CAREER CLUSTER OR CTE POS: BMF					
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	Professional School Counselors
<b>Gender</b>					
Male	100%	68%	0%	See First Chart	See First Chart
Female	0%	32%	0%	See First Chart	See First Chart
<b>Race-ethnicity</b>					
American Indian	0%	0%	0%	See First Chart	See First Chart
Asian	0%	1%	0%	See First Chart	See First Chart
Black	0%	17%	0%	See First Chart	See First Chart
Hispanic	0%	5%	0%	See First Chart	See First Chart
Multi-race	0%	6%	0%	See First Chart	See First Chart
White	100%	71%	100%	See First Chart	See First Chart
<b>Credential</b>					
Properly Licensed	100%	N/A	100%	See First Chart	See First Chart
Granted Temporary Waiver	0%	N/A	0%	See First Chart	See First Chart

NAME OF CAREER CLUSTER OR CTE POS: CD			
Staff demographic	Percentage of 2022-23 staff	Percentage of students	5-year staff turnover rate (Percentage of staff who did not return for years 2018-19 thru 2022-23)

		participating in CTE programming 2022-23	Teachers	Support staff/ paraprofessionals	Professional School Counselors
<b>Gender</b>					
Male	100% (5)	92%	20% (1 Retired)	See First Chart	See First Chart
Female	0%	8%	0%	See First Chart	See First Chart
<b>Race-ethnicity</b>					
American Indian	0%	0%	0%	See First Chart	See First Chart
Asian	0%	2%	0%	See First Chart	See First Chart
Black	20%	15%	0%	See First Chart	See First Chart
Hispanic	0%	7%	0%	See First Chart	See First Chart
Multi-race	0%	4%	0%	See First Chart	See First Chart
White	80%	72%	100%	See First Chart	See First Chart
<b>Credential</b>					
Properly Licensed	100%	N/A	100%	See First Chart	See First Chart
Granted Temporary Waiver	0%	N/A	0%	See First Chart	See First Chart

NAME OF CAREER CLUSTER OR CTE POS: CRD					
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	Professional School Counselors
<b>Gender</b>					

Male	0%	85%	N/A	See First Chart	See First Chart
Female	100% (1)	15%	N/A	See First Chart	See First Chart
<b>Race-ethnicity</b>					
American Indian	0%	0%	N/A	See First Chart	See First Chart
Asian	0%	10%	N/A	See First Chart	See First Chart
Black	0%	5%	N/A	See First Chart	See First Chart
Hispanic	0%	10%	N/A	See First Chart	See First Chart
Multi-race	0%	5%	N/A	See First Chart	See First Chart
White	100%	80%	N/A	See First Chart	See First Chart
<b>Credential</b>					
Properly Licensed	100%	N/A	N/A	See First Chart	See First Chart
Granted Temporary Waiver	0%	N/A	N/A	See First Chart	See First Chart

NAME OF CAREER CLUSTER OR CTE POS: CSHT					
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	Professional School Counselors
<b>Gender</b>					
Male	25% (1)	23%	0%	See First Chart	See First Chart

Female	75% (3)	77%	0%	See First Chart	See First Chart
<b>Race-ethnicity</b>					
American Indian	0%	0%	0%	See First Chart	See First Chart
Asian	0%	0%	0%	See First Chart	See First Chart
Black	25%	20%	0%	See First Chart	See First Chart
Hispanic	0%	12%	0%	See First Chart	See First Chart
Multi-race	0%	15%	0%	See First Chart	See First Chart
White	75%	53%	0%	See First Chart	See First Chart
<b>Credential</b>					
Properly Licensed	100%	N/A	0%	See First Chart	See First Chart
Granted Temporary Waiver	0%	N/A	0%	See First Chart	See First Chart

NAME OF CAREER CLUSTER OR CTE POS: EANR					
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	Professional School Counselors
<b>Gender</b>					
Male	0%	30%	0%	See First Chart	See First Chart
Female	100% (1)	70%	0%	See First Chart	See First Chart

<b>Race-ethnicity</b>					
American Indian	0%	0%	0%	See First Chart	See First Chart
Asian	0%	0%	0%	See First Chart	See First Chart
Black	0%	2%	0%	See First Chart	See First Chart
Hispanic	0%	5%	0%	See First Chart	See First Chart
Multi-race	0%	7%	0%	See First Chart	See First Chart
White	100%	86%	0%	See First Chart	See First Chart
<b>Credential</b>					
Properly Licensed	100%	N/A	0%	See First Chart	See First Chart
Granted Temporary Waiver	0%	N/A	0%	See First Chart	See First Chart

<b>NAME OF CAREER CLUSTER OR CTE POS: HB</b>					
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	Professional School Counselors
<b>Gender</b>					
Male	66%	22%	0%	See First Chart	See First Chart
Female	33%	78%	0%	See First Chart	See First Chart
<b>Race-ethnicity</b>					

American Indian	0%	0%	0%	See First Chart	See First Chart
Asian	0%	2%	0%	See First Chart	See First Chart
Black	0%	19%	0%	See First Chart	See First Chart
Hispanic	0%	8%	0%	See First Chart	See First Chart
Multi-race	0%	3%	0%	See First Chart	See First Chart
White	100%	67%	0%	See First Chart	See First Chart
<b>Credential</b>					
Properly Licensed	100%	N/A	0%	See First Chart	See First Chart
Granted Temporary Waiver	0%	N/A	0%	See First Chart	See First Chart

NAME OF CAREER CLUSTER OR CTE POS: HRS					
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	Professional School Counselors
<b>Gender</b>					
Male	90%	54%	50% (1)	See First Chart	See First Chart
Female	10%	46%	50% (1)	See First Chart	See First Chart
<b>Race-ethnicity</b>					
American Indian	0%	0%	0%	See First Chart	See First Chart

Asian	0%	0%	0%	See First Chart	See First Chart
Black	20%	17%	50%	See First Chart	See First Chart
Hispanic	10%	8%	0%	See First Chart	See First Chart
Multi-race	0%	9%	0%	See First Chart	See First Chart
White	80%	66%	50%	See First Chart	See First Chart
<b>Credential</b>					
Properly Licensed	100%	N/A	100%	See First Chart	See First Chart
Granted Temporary Waiver	0%	N/A	0%	See First Chart	See First Chart

NAME OF CAREER CLUSTER OR CTE POS: IT					
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	Professional School Counselors
<b>Gender</b>					
Male	0%	94%	0%	See First Chart	See First Chart
Female	100% (2)	6%	0%	See First Chart	See First Chart
<b>Race-ethnicity</b>					
American Indian	0%	0%	0%	See First Chart	See First Chart
Asian	50%	2%	0%	See First Chart	See First Chart



Black	0%	4%	0%	See First Chart	See First Chart
Hispanic	0%	9%	0%	See First Chart	See First Chart
Multi-race	0%	4%	0%	See First Chart	See First Chart
White	50%	81%	0%	See First Chart	See First Chart
<b>Credential</b>					
Properly Licensed	100%	N/A	0%	See First Chart	See First Chart
Granted Temporary Waiver	0%	N/A	0%	See First Chart	See First Chart

NAME OF CAREER CLUSTER OR CTE POS: MET					
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	Professional School Counselors
<b>Gender</b>					
Male	0%	76%	0%	See First Chart	See First Chart
Female	100%	24%	0%	See First Chart	See First Chart
<b>Race-ethnicity</b>					
American Indian	0%	0%	0%	See First Chart	See First Chart
Asian	0%	5%	0%	See First Chart	See First Chart
Black	0%	5%	0%	See First Chart	See First Chart

Hispanic	0%	4%	0%	See First Chart	See First Chart
Multi-race	0%	6%	0%	See First Chart	See First Chart
White	100%	81%	0%	See First Chart	See First Chart
<b>Credential</b>					
Properly Licensed	100%	N/A	0%	See First Chart	See First Chart
Granted Temporary Waiver	0%	N/A	0%	See First Chart	See First Chart

NAME OF CAREER CLUSTER OR CTE POS: TT					
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	Professional School Counselors
<b>Gender</b>					
Male	100%	92%	0%	See First Chart	See First Chart
Female	0%	8%	0%	See First Chart	See First Chart
<b>Race-ethnicity</b>					
American Indian	0%	0%	0%	See First Chart	See First Chart
Asian	0%	0%	0%	See First Chart	See First Chart
Black	0%	13%	0%	See First Chart	See First Chart
Hispanic	0%	8%	0%	See First Chart	See First Chart

Multi-race	0%	0%	0%	See First Chart	See First Chart
White	100%	79%	0%	See First Chart	See First Chart
<b>Credential</b>					
Properly Licensed	100%	100%	0%	See First Chart	See First Chart
Granted Temporary Waiver	0%	0%	0%	See First Chart	See First Chart

### ACTIVITY D.2: ASSESS EDUCATOR SUPPORT OPPORTUNITIES

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

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

	Strength	Area for Improvement	Explanation
Staff acquire content-specific professional development required to maintain licensure.	X		All staff hold current licenses.
Staff are aware of the requirements to maintain endorsement.	X		WCPS human resources department notify staff one year prior to certificate renewal and provide them with a list of needed courses/credits to renew certification.
Staff have equal access to content-specific professional development opportunities across industries.	X		Staff are given the opportunity to attend all MSDE provided professional learning for CTE content. They also attend national conferences and industry-led professional learning.

<p>Data is collected on the effectiveness of professional development to ensure it meets the needs of educators.</p>	<p>X</p>		<p>Evaluations are conducted following each opportunity.</p>
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### ACTIVITY D.3: REFLECTION

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

1. Does your staff demographic characteristics reflect the students they serve across programs of study? [0/1]

No, it does not. Female teachers represent 39% (11/28) of CTE staff. However, 44% of CTE participants are female. Black teachers represent 7% of the teaching staff (2/28), however 17% of CTE participants are black. One staff person is Asian, (3.5%) while 1% of CTE participants are Asian. White teachers represent 87% (25/28) while 72% of CTE participants are white. No staff are American Indian, multi-race, or Hispanic. [0/1]

12. Are instructors adequately credentialed, including licenses, certifications, or endorsements for the courses they are 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?

Yes.

13. 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?

Annually, if available. The CTE coordinator forwards content-specific invitations to all CTE as they become available. Teachers also seek out professional learning opportunities through conferences or vendors. Currently, all staff have earned the necessary industry credentials and endorsements to maintain their industry credentials. [0/1]

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

As a rural district, teachers often must travel quite a distance to attend professional development. This often incurs significant travel, lodging, and time costs. Often, there is not a viable alternative for professional learning for CTE staff.

15. 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. Although WCPS has an exceptionally low staff turnover, many staff are of retirement age. Recruitment strategies will need to be created to attract new staff to fill the vacancies.

2. Work with human resources to place CTE staff on a higher salary scale.

3. Provide intensive support for new CTE staff to develop their pedagogical skills.
4. Seek viable training opportunities for new and veteran CTE staff.
5. Work with staff to create equitable schedules and class sizes.

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

## Next Steps

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

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

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

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

### **CONNECTING GOALS TO AN ANNUAL BUDGET FOR PERKINS FUNDING**

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

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

### **ENSURING ALIGNMENT WITH PERKINS REQUIREMENTS**

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

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

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

Root Cause	Strategy	Sample Activities	Resource	Description
<b>The district maintains programs that have been historically offered but are no longer aligned to Maryland's labor market needs</b>	Sunset programs that are no longer preparing students for high-skill, high-wage in-demand careers	<ul style="list-style-type: none"> <li>Analyze program enrollments, standards, postsecondary pathways, and employers to assess whether sunsetting is warranted.</li> <li>Develop strategy and timeline for sunsetting a program and internal and external communication plans to share information.</li> <li>Explore alternative educational options for students currently enrolled that will allow them to transition to other programs.</li> <li>Consult with the union and educators to arrange transition options, which may include reassignment or retraining.</li> <li>Review state regulations and district policies to identify barriers to sunsetting programs</li> </ul>	<a href="#">How to sunset an educational program</a>	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	Review Maryland state and/or regional economic and workforce projections to assess current and future workforce needs	<a href="#">Maryland Occupational Projections 2020-2030</a>	The State of Maryland publishes occupational projections that indicate changes in employment. Use this interactive website to identify



Root Cause	Strategy	Sample Activities	Resource	Description
	employment projections			careers anticipated to grow in the coming years.
		Recruit industry partners in high-wage, high skill, in-demand fields to offer guidance on new program design and adoption	<a href="#">Cheat Sheet: Opportunities for Employer Involvement in CTE</a>	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	<a href="#">Maryland CTE Teacher Certification</a>	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	<a href="#">Georgia Alignment Toolkit</a>	Georgia has compiled a toolkit to help schools align programs to best serve students and local business. Includes a report and worksheets.
<b>The cost of introducing new programs is prohibitive</b>	Identify new funding sources	Use Maryland’s Perkins reserve grants to fund new programs.	<a href="#">Maryland Grant Information Guide: Perkins Reserve Grant FY 2024</a>	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	<a href="#">IES Research Programs</a> <a href="#">Maryland Foundation Grants</a>	The federal government periodically offers funding to support research into CTE programs. Review the IES

Root Cause	Strategy	Sample Activities	Resource	Description
		grant competitions), and philanthropic organizations		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.	<a href="#">Employer Engagement in CTE</a>	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
<b>Instructional resources are outdated and do not prepare students to enter or retain employment in high-wage, high-skill, and/or in-demand fields</b>	Update program standards, curriculum, assessments, certifications, and links to postsecondary programs	Review related program offerings in high-performing Maryland districts.	<a href="#">Maryland CTE Performance Dashboard</a>	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	<a href="#">Strategies for Developing Employer Partnerships</a> <a href="#">Michigan Program Advisory Toolkit</a>	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	<a href="#">Texas CTE Administrative Code</a>	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	<a href="#">Increasing Access to Industry Experts in High Schools</a> <a href="http://wbltoolkit.cte.nyc/workplace-tour/">http://wbltoolkit.cte.nyc/workplace-tour/</a>	This report by Advance CTE profiles state strategies to recruit industry experts. Consult it to gain insights on promising strategies

				that might be adapted for district or college use.
		Consult with local business to offer workplace tours or externships for instructors	<a href="#">Teacher Externship Industry Partner Planning Guide</a> <a href="http://wbltoolkit.cte.nyc/workplace-tour/">http://wbltoolkit.cte.nyc/workplace-tour/</a>	South Dakota has developed this resource to support educators and employers in developing externship opportunities

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

**PROBLEM: STUDENTS ARE NOT PARTICIPATING IN CTE PROGRAMMING.**

Root Cause	Strategy	Sample Activities	Resource	Description
<b>Students lack awareness of CTE programming and the benefits of program participation</b>	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.	<a href="#">Middle School CTE design options and resources</a>	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 <sup>th</sup> grade students to introduce them to school CTE offerings.	<a href="#">Freshman Cruise</a>	Roseburg Public Schools (OR) takes all 9 <sup>th</sup> 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	<a href="#">Career Fair Options</a>	Gainesville High School (AL) offers students a career fair experience to

		help students learn about CTE offerings.		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 school.	<a href="#">CTE Options at my School</a>	Fairfax County Public Schools (VA) hosts a webpage that helps students learn about CTE programs offered in their school replete with videos and detailed program descriptions.
<b>Families and educators do not appreciate CTE's benefit and discourage youth from enrolling</b>	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	<a href="#">CTE Vision Toolkit</a> <a href="#">CTE Marketing Best Practices &amp; Campaigns</a>	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	<a href="#">CTE Letter of Intent Signing Day: College</a>	Linn Benton Community College (OR) publicly recognizes high school seniors who sign letters of

		<p>to enter a postsecondary institution to continue their studies or take a job with a community employer</p>	<p><a href="#"><u>CTE Signing Day: Employment</u></a></p>	<p>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.</p>
<p><b>Students are not provided career guidance that supports them in choosing CTE as an educational pathway.</b></p>	<p>Educate high school guidance counselors on the benefits that CTE offers and the advanced education and employment options that students may follow.</p>	<p>Develop and conduct professional development for school counselors aimed at increasing awareness and benefits of CTE programs.</p>	<p><a href="#"><u>School Counselor Playbook: Unlocking Career Success</u></a></p>	<p>Unlocking Career Success offers this playbook that includes practical tools, resources, and information to assist counselors in discussing college and career pathways with students.</p>
		<p>Design tools and resources for counselors to use in their career exploration activities with students that highlight CTE offerings.</p>	<p><a href="#"><u>ACTE High Quality CTE: Student Career Development</u></a></p>	<p>ACTE offers webinars, online courses, toolkits, and more designed to support counselors and college/career navigators as they offer guidance to students.</p>

**PROBLEM: STUDENTS ARE NOT PERSISTING IN CTE PROGRAMS.**

Root Cause	Strategy	Sample Activities	Resource	Description
<p><b>Historically underrepresented students or those with special needs do not feel welcome in CTE programs.</b></p>	<p>Remove obstacles to success for students who may need additional supports to persist.</p>	<p>Implement evidence-based strategies to support special population students in succeeding in CTE programming.</p>	<p><a href="#">Maximizing Access &amp; Success for Special Population Students</a></p> <p><a href="#">Strategies for Special Population Success</a></p> <p><a href="#">Recruiting Special Populations into CTE: Toolkit</a></p>	<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>



		<p>Explore why students from some racial-ethnic groups face obstacles in CTE programming and take steps to address them.</p>	<p><a href="#"><u>A Guide to Discussing Racial Equity</u></a></p>	<p>Review this guidebook to learn how to hold discussions around racial equity to identify.</p>
		<p>Conduct a curricular review to identify and remove unintentional gender bias.</p>	<p><a href="#"><u>Assessing the Enrollment and Retention of Nontraditional Learners</u></a></p>	<p>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.</p>
<p><b>Students do not understand the personal and economic benefits of completing advanced coursework and entering the field.</b></p>	<p>Offer students mentors and real-world workplace experiences to inform their career decisions.</p>	<p>Pair students with mentors who can offer them one-on-one guidance to encourage them to pursue a career.</p>	<p><a href="#"><u>Partnering Students with Industry Mentors</u></a></p>	<p>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.</p>
		<p>Place students in authentic work-based learning (WBL) experiences, including internships and</p>	<p><a href="#"><u>Work-based Learning Toolkit</u></a></p>	<p>The U.S. Department of Education created this resource to support state and local program administrators in learning</p>

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		apprenticeships, to help them learn about the benefits from obtaining advanced skills.		about WBL, engaging employers, measuring outcomes, and scaling effective practices.
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## Appendix C: Sample Strategies for Component C: Program Performance

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

Root Cause	Strategy	Sample Activities	Resource	Description
<p><b>Students are not provided with academic content as part of their CTE coursework</b></p>	<p>Integrate academic content into CTE programming offered at all levels.</p>	<p>Review current efforts to integrate academic and CTE instruction and take steps to address ineffective practices.</p> <p>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><a href="#">CTE and Academic Integration Self-Assessment Rubric</a></p> <p><a href="#">ACTE Integration of Academics and CTE Section</a></p> <p><a href="#">Math-in-CTE</a></p>	<p>New York has developed a four-level rubric that educators can use to assess the status of district/college integration of academic skills in CTE programming.</p> <p>ACTE hosts a virtual collaboration to share ideas and effective practices. Visit the Resource Section to download tools to fuel your integration efforts.</p> <p>The Southern Regional Education Board has developed curricular tools that enhance the teaching of math that is already embedded in CTE programs.</p>

		<p>Use results from academic assessments to target educational remediation so that high school students enter college ready to learn.</p>	<p><a href="#"><u>Rigorous K-12 Assessments Help Reduce Remediation</u></a></p>	<p>This brief from offers examples of how higher states are 11<sup>th</sup> grade test results as a college readiness signal and as a means of targeting services for at-risk youth</p>
<p><b>Students face financial or geographical barriers that prevent them from pursuing an industry-recognized credential.</b></p>	<p>Identify obstacles to students earning an industry recognized credential and take steps to resolve them.</p>	<p>Use Maryland's Perkins V basic grant to fund student attainment of an industry-recognized credential.</p> <p>Develop strategies to identify students who may face challenges in paying for exams and find ways of offsetting costs.</p> <p>Work with exam providers, employers, and community organizations to provide fee waivers or scholarships for certification exams, materials, and training courses.</p> <p>Work with credentialing vendors to expand testing sites and administer</p>	<p><a href="#"><u>Maryland CTE Perkins Reserve Grant Information Guide</u></a></p> <p><a href="#"><u>Credential Currency: Promoting Credentials of Value</u></a></p> <p><a href="#"><u>Aligning State CTE Programs with Industry Needs and Priorities</u></a></p>	<p>Maryland offers a competitive grant program that includes options for using funding to strengthen the award of industry-recognized credentials in POS.</p> <p>This report offers strategies to expand student obtainment. While focused on the state level, some recommendations may be adapted for district/college use.</p> <p>ExcelinEd produced this toolkit to support states in aligning CTE programs with industry needs and priorities. While intended for state policymakers, some recommendations</p>

		exams in convenient and accessible locations.		may be adapted for use at the district/college level.
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**PROBLEM: STUDENTS ARE NOT EARNING INDUSTRY-RECOGNIZED CREDENTIALS.**

Root Cause	Strategy	Sample Activities	Resource	Description
<b>Students face financial or geographical barriers that prevent them from pursuing an industry-recognized credential.</b>	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</p>	<p><a href="#">Maryland CTE Perkins Reserve Grant Information Guide</a></p> <p><a href="#">Credential Currency: Promoting Credentials of Value</a></p> <p><a href="#">Aligning State CTE Programs with Industry Needs and Priorities</a></p>	<p>Maryland offers a competitive grant program that includes options for using funding to strengthen the award of industry-recognized credentials in POS.</p> <p>This report offers strategies to expand student obtainment. While focused on the state level, some recommendations may be adapted for district/college use.</p> <p>ExcelinEd produced this toolkit to support states in aligning CTE programs with industry needs and priorities. While intended for state policymakers, some recommendations</p>

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

Root Cause	Strategy	Sample Activities	Resource	Description
<b>Students do not understand the steps needed to pursue a career.</b>	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.	<a href="#">Maryland's Work-based Learning Continuum</a>	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

**PROBLEM: IT'S DIFFICULT TO RECRUIT CTE EDUCATORS.**

Root Cause	Strategy	Sample Activities	Resource	Description
<p><b>Salaries in the private sectors are higher than for educators in the same field, making it difficult to attract educators.</b></p>	<p>Develop a range of teacher recruitment strategies that motivate individuals to pursue a CTE instructional career.</p>	<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>	<p><a href="#">36 CTE Teacher Recruitment Strategies</a></p>	<p>The Oklahoma Department of Career and Technology Education developed this list of CTE teacher recruitment strategies compiled from expert resources.</p>

<p><b>The pool of CTE educators is small, making it difficult to hire new instructors.</b></p>	<p>Identify non-traditional pathways for teachers to earn the necessary credentials to become a CTE educator.</p>	<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 pathways to becoming a CTE teacher in Maryland.</p> <p>Develop alternative pathways to certification for individuals with industry experience who lack teaching credentials.</p>	<p><a href="#"><u>Teach CTE Recruitment Toolkit</u></a></p> <p><a href="#"><u>Becoming a CTE Teacher in Maryland</u></a></p>	<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>



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

Root Cause	Strategy	Sample Activities	Resource	Description
<p>Individuals transitioning from industry may lack the pedagogical skills to succeed in the classroom.</p>	<p>Offer targeted professional development to support new CTE instructors in strengthening their teaching skills.</p>	<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>	<p><a href="#">CTE TEACH Mentor Programs</a></p>	<p>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.</p>
<p>CTE educators are unable to offer academic credit to students taking CTE coursework.</p>	<p>Create policy and practices to support CTE educators in offering academic credits.</p>	<p>Pair academic and CTE educators to design courses that allow students to earn academic and technical credit simultaneously.</p>	<p><a href="#">Credit Quandaries: How CTE Instructors can Teach Academic Credit</a></p>	<p>This document from the Center on Great Teachers &amp; 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.</p>

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

Root Cause	Strategy	Sample Activities	Resource	Description
<p><b>Educators who are nontraditional for their field are not recruited and those who begin are not offered supports to persist in the occupation.</b></p>	<p>Undertake targeted efforts to recruit individuals who are nontraditional for their field.</p>	<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><a href="#">State and Local Strategies for Diversifying the CTE Educator Workforce</a></p> <p><a href="#">Diversifying the Teaching Profession: How to Recruit and Retain Teachers of Color</a></p>	<p>This document identifies issues and offers solutions for diversifying the secondary CTE educator workforce. Includes suggested activities to both promote recruitment and retention of teachers.</p> <p>The Learning Policy Institute created this resource to support diversifying the teaching profession overall. Use it to find options that might apply to the CTE workforce.</p>

## Appendix E: Additional Resources

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

### **Advance CTE**

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

Website: [Advance CTE](#)

### **American Institutes for Research (AIR) - Educator Quality:**

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

Website: [AIR Educator Quality](#)

### **Association for Career and Technical Education (ACTE):**

ACTE provides resources and research related to CTE.

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

### **CTE Research Network**

Federally funded website focused on strengthening CTE research.

Website: [CTE Research Network](#)

### **Learning Policy Institute (LPI):**

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

Website: [Learning Policy Institute](#)

**National Center for Education Statistics (NCES)**

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

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

**National Comprehensive Center for Teacher Quality (TQ Center):**

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

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

**RAND Corporation - Education Research:**

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

Website: [RAND Education](#)

**Regional Education Laboratories (RELs):**

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

Website: [Regional Education Laboratories](#)

**What Works Clearinghouse (WWC):**

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

Website: [What Works Clearinghouse](#)