



Career and Technical Education: Comprehensive Local Needs Assessment

A Systemic Review Guidebook for Secondary Schools
Version 3.0

Office of College and Career Pathways

2024 - 2026

MARYLAND STATE DEPARTMENT OF EDUCATION

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DOCUMENT HISTORY

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

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

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

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

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

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

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

Instructions

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

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

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

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

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

Guiding Principles and Logic Model

OVERVIEW

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

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

LOGIC MODEL

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

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

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

LOGIC MODEL CHART

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

INTERPRETATION

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

PROGRAM DESIGN

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

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

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

STUDENT ENGAGEMENT

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

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

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

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

PROGRAM DELIVERY

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

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

SIZE
At least two, state-approved CTE POSs are offered in recognized clusters.
Each POS consists of a coordinated, non-duplicative sequence of academic and technical coursework comprising at least 3 credits.
Each CTE concentrator-level course (typically the 3rd in a program) has a minimum of 10 concentrators over a 4-year period. If not, evidence must be offered of continued progress toward meeting this requirement.
Each POS has the required number of staff, availability of equipment, and student access to facilities.

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

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

QUALITY
All students, including students in special populations, are offered the opportunity to: <ul style="list-style-type: none">• Participate in at least one career-based learning experience (e.g., work-based learning, internship, apprenticeship, etc.),• Earn college credit and/or industry credentials, 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	Cortney U. Monar
Organization	Somerset County Public Schools / Somerset County Technical High School
Title	Supervisor of CTE / Principal SCTHS
Email	cmonar@somerset.k12.md.us

STAKEHOLDER TEAM MEMBERS

When Selecting Stakeholders, consider:

- Recruit individuals who are knowledgeable about CTE at your site and influential in the field.
- Ensure that members understand the time commitment and can attend all scheduled meetings.
- Perkins V requires *more than one representative for each group* (with an exception for the coordinators and data analyst). Members may not represent more than two stakeholder groups.
- If you are unable to recruit a member to 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)	Tony Bevilacqua	Principal	Washington Academy & High School
	David Arnold	Principal	Crisfield Academy & High School
	Vestina Davis	Vice Principal	Crisfield Academy & High School
	Sharon Richards	Vice Principal	Washington Academy & High School
Professional career or academic counselor	Leighanne Presley	Career Coach	Somerset County Public Schools
	Kim Bozman	Guidance Counselor	Washington Academy & High School
	Faith Daum	Guidance Counselor	Crisfield Academy & High School
	Janice Cottman	Guidance Counselor	Washington Academy & High School
Teachers	Tina Taylor	Biomedical Sciences	Somerset County Technical High School
	Paula Fisher	Academy of Health Professionals	Somerset County Technical High School
	John Ward	Automotive	Somerset County Technical High School
	Joe Webster	Carpentry	Somerset County Technical High School
Instructional Support and Paraprofessionals (Psychologists, Social Workers, etc.)	Paula Bissett	Job Coach	Somerset County Technical High School
	Roy Windsor	Job Coach	Somerset County Technical High School
	Susan Fierro	Administrative Associate/ Bookkeeper	Somerset County Technical High School
	Susan James	Life Skills Class	Somerset County Technical High School

POSTSECONDARY

Role	Name	Title	Affiliation
Administration (e.g., dean, division chair)	Paul Silberquit	Dean of Occupational & Emerging Technologies	Wor-Wic Community College

	Adel Karara	Professor, Pharmaceutical Sciences	University of Maryland Eastern Shore
	Ruth Baker	Dean, CEWD	Wor-Wic Community College
	Dr. Casey	President	Wor-Wic Community College
Faculty	John Moses	Criminal Justice, Chair	Wor-Wic Community College
	Patricia Riley	Chair, Education Department	Wor-Wic Community College

WORKFORCE

Role	Name	Title	Affiliation
Local Workforce Development board member	Leslie Porter-Cabell	Workforce Director	Lower Shore Workforce Alliance
	Bob Henricks	Deputy Director- Business Services & Grants	Lower Shore Workforce Alliance
	Thomas Saito-Sherris	Career Coach Liaison	Lower Shore Workforce Alliance
	Malina Johnson	Grant Specialist	Lower Shore Workforce Alliance
*Regional Economic Development organization member	Danny Thompson	Executive Director	Somerset County Economic Development Commission
	Greg Padgham	Executive Director	Tri-County Council for the Lower Eastern shore of Maryland
	LeeAnn Linton	Administrative Associate	Somerset County Economic Development
	Claudia Nelson	Director	Somerset County Department of Social Services
Local business & industry representative	Lori Lee	Workforce Development Manager	Tidal Health Inc.
	Ambere Eskridge	Human Resources Staffing Coordinator	Delaware Elevators
	Lauren Martin	CPA	Seaside Plumbing, Inc.
	Frank Willing	President	Paul Davis Restoration

OTHER

Role	Name	Title	Affiliation
Parent or caretaker	Dawn Lankford	Parent	WAHS/ SCTHS/ DIS
	Michael Drake	Parent	WAHS/SCTHS/SIS
Student	Julie Perdue	Student- WAHS/ Culinary POS	Washington Academy & High

			School
Representative of Special Populations	Brandy Brady	Supervisor of Special Education	Somerset County Public Schools
Out-of-School youth / unhoused youth/corrections	Tracey Cottman	Supervisor of Student Services	Somerset County Public Schools

* Not required under Perkins V but recommended to include.

Component A: Labor Market Alignment

OVERVIEW

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

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

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

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

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

ACTIVITY A.1: TAKING STOCK

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

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

Program	Alignment to current statewide industries (enter ✓)			Number of CTE participants 2022-23	Percent of all CTE Participants 2022-23
Example	HS	HW	ID	###	100%
Interactive Media Production	✓	✓	✓	22	7%
Business Management/Marketing	✓	✓	✓	15	5%
Carpentry	✓	✓		26	9%
HVAC	✓		✓	26	9%
PLTW Pre-Engineering	✓	✓	✓	17	6%
Culinary Arts	✓		✓	28	9%
Horticultural Services: Certified Professional Horticulturist (CPH)	✓	✓	✓	15	5%
Academy of Health Professions (CNA)	✓		✓	22	7%
Biomedical Sciences- PLTW	✓	✓	✓	50	17%

Teacher Academy of Maryland	✓	✓	✓	15	5%
Homeland Security & Emergency Prep: Criminal Justice	✓	✓	✓	25	8%
IT Networking Academy	✓	✓	✓	13	4%
Automotive	✓	✓	✓	13	4%
Medium-Heavy Truck (Diesel)	✓		✓	15	5%

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
Welding	Adding for the 2023-24 School year	The program will be added and available for students in the 23-24 school year. We held a welding summer camp for the previous two summers and surveyed students. This is a much-needed program. When the school was built, it was designed with the intent of a welding class. We had most of the equipment to start the class.
Apprenticeship of Maryland Program (AMP)	Adding for the 2023-24 school year	We will be adding AMP in the 2023-24 school year. We were one of the last counties in the state to apply for the AMP POS. This program will take time to get students enrolled since we must first get local businesses to become approved apprentice employers through Maryland Labor.
Career Research and Development	Adding for the 2024-25 school year	We hope to add CRD as a new POS in the 2024-25 school year, to grab those students that are not interested in one of the programs of study that we do offer at Somerset County Technical High School. CRD will also support the AMP program and prepare students for real-world work experiences. This program will also support the Maryland Blueprint goal of having students earn industry-recognized credentials and apprenticeship experiences.

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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	✓		
Processes are in place to identify and expand high school level registered apprenticeship opportunities.		✓	During the 2022-23 school year we did not have AMP. We applied for it at the end of the year and will implement it in the 23-24 school. Some barriers for SCPS is lack of local businesses, student transportation, and student scheduling around graduating requirements.
Processes are in place to update or phase out CTE POS that do not align with HS/HW/ID industries	✓		
A majority of our students are concentrating in POS aligned to HS/HW/ID industries	✓		
Processes are in place to recruit business and industry stakeholders to participate on Program Advisory Committees	✓		

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)?

The rationale for offering programming that may not fully align with the criteria of high-wage, high-skill, and in-demand fields is multifaceted:

Diverse Interests: Not all individuals are solely motivated by high wages or pursuing the most in-demand fields. Many people have diverse interests and passions that may not fall within these parameters. Offering programming that caters to a variety of interests ensures inclusivity and allows individuals to explore their passions.

Personal Fulfillment: Some individuals prioritize personal fulfillment and satisfaction over monetary gain. They may be drawn to fields that align with their interests and values, even if those fields do not offer the highest wages or are in high demand.

Long-Term Growth: While certain fields may currently be in high demand or offer high wages, the landscape of industries is constantly evolving. By offering programming in a diverse range of fields, individuals are equipped with skills that may become increasingly valuable in the future as industries change and new opportunities emerge.

Holistic Development: Learning programming skills can benefit individuals beyond just securing high-paying jobs. It can foster critical thinking, problem-solving abilities, creativity, and adaptability, which are valuable in various aspects of life and work, regardless of the specific field

Addressing Market Gaps: There may be niche areas or emerging fields where there is potential for growth and innovation, even if they are not currently high-wage or high-demand. By offering programming in these areas, we can help bridge gaps in the market and support the development of new industries.

Overall, the decision to offer programming that may not fully align with high-wage, high-skill, and in-demand criteria is driven by a commitment to catering to diverse interests, promoting personal fulfillment, fostering long-term growth, supporting holistic development, and addressing emerging market opportunities.

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.

In the coming year, the top five priorities to update or phase out misaligned CTE programs and expand student participation in CTE programming aligned with high-wage, high-skill, and in-demand (HW/HS/ID) careers could include:

1. **Program Assessment and Alignment:** Conduct a comprehensive assessment of existing CTE programs to evaluate their alignment with HW/HS/ID careers. Identify programs that are misaligned or outdated and prioritize phasing them out or updating them to better align with current industry needs and trends.
2. **Industry Partnerships and Advisory Boards:** Strengthen partnerships with local industries and establish advisory boards comprised of industry professionals. Engage these stakeholders in the process of identifying emerging

trends, skill requirements, and in-demand careers. Use their insights to inform the development of new CTE programs and the revision of existing ones.

3. **Curriculum Development and Enhancement:** Develop new CTE programs or enhance existing ones to align more closely with HW/HS/ID careers. This may involve updating curriculum content, integrating emerging technologies, incorporating industry-recognized certifications, and providing hands-on experiences such as internships or apprenticeships to ensure students are equipped with the necessary skills and knowledge for success in high-demand fields.
4. **Student Outreach and Engagement:** Increase awareness among students about the value and opportunities available through CTE programs aligned with HW/HS/ID careers. Implement targeted outreach efforts, such as career fairs, guest speaker events, and informational sessions, to highlight the benefits of pursuing pathways that lead to high-wage, high-skill careers. Additionally, provide guidance and support services to help students navigate their options and make informed decisions about their educational and career pathways.
5. **Equity and Access:** Address barriers to participation in CTE programming, particularly among underrepresented populations. Ensure that CTE programs are accessible to all students, regardless of background or circumstances, and implement strategies to promote diversity and inclusion within these programs. This may involve providing financial assistance, offering flexible scheduling options, and actively recruiting students from diverse backgrounds to participate in CTE pathways aligned with HW/HS/ID careers.

By prioritizing these areas, we can effectively update or phase out misaligned CTE programs while expanding student participation in programs that align with high-wage, high-skill, and in-demand careers, ultimately preparing students for success in the workforce.

Component B: Student Participation and Persistence

OVERVIEW

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

ACTIVITY B.1: TAKING STOCK

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

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

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

Notes:

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

Student Group	2023 Graduates Statewide				2023 Graduates in Your District			
	Number	Percent	Percent participating in CTE	Percent of participants who achieved concentrator status	Number	Percent	Percent participating in CTE	Percent of participants who achieved concentrator status
All 2023 Graduates (4-year cohort)	58,206	85.81%		85.76%	136/183	73.77%	84.55%	82.35%
Gender								
Male	28,576	82.60%			63	64.95%	84.13%	84.13%
Female	29,581	89.16%			73	84.88%	84.93%	80.82%
Race-ethnicity								
American Indian	140	85.89%			-	-	-	-
Asian	4,559	96.16%			1	100%	100%	100%
Black	18,648	84.68%			49	71.21%	79.59%	79.59%
Hispanic	10,446	71.37%			17	72%	76.47%	76.47%
Multi-race	2,485	89.36%			8	80%	100%	87.5%
White	21,838	93.38%			61	75.31%	88.52%	85.25 %
Special Populations								
Economically disadvantaged	17,049	80.83%			86	69.67%	86.05%	82.56%
Multi-lingual learners	3,140	55.78%			8	72.72%	100%	100%
Individuals with disabilities	4,697	69.47%			21	58.33%	85.71%	85.71%
Nontraditional fields	-	-			-	-	-	-
Single parents	-	-			-	-	-	-
Out of workforce	-	-			-	-	-	-
Unhoused Individuals	833	62.03%			2	40%	100%	100%
Youth in foster care	66	40.24%			-	-	-	-
Youth with parent in military	1,028	95.10%			1	100%	0%	0%
Migrant students	-	-			-	-	-	-

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	✓		
Our district has processes in place to recruit students traditionally underrepresented in CTE to improve diversity in CTE POS	✓		
Processes are in place to ensure that students traditionally underrepresented in CTE have options to <u>enroll</u> in CTE POS	✓		
Processes are in place to ensure that students traditionally underrepresented in CTE <u>persist</u> in CTE POS once enrolled	✓		
Processes are in place to ensure that all eligible students have equitable access to career-based learning experiences	✓		
Career guidance and advisement services are provided to students prior to enrolling in a CTE POS	✓		This area will strengthen with the addition of a career coach.
All students have access to career planning and support services to help them successfully transition to advanced education and/or the workforce	✓		During the 22-23 school year the guidance counselors and CTE instructors provided this support. Moving into the 23-24 school year and beyond the career coach will also be providing this support to all students in grades 6-12.

ACTIVITY B.3: REFLECTION

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

- 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?

After reviewing the data in Activity B2, there do not appear to be any district student groups with major gaps in CTE participation or persistence rates. When looking at the race-ethnicity data it appears that 76.4% of Hispanic students participate in CTE compared to 79.59% of African Americans, 88.5% of Whites, 100% of Multi-Race, and 100% of Asians. The Hispanic, African American, and Asian concentrator rates matched their participation rates, which tells use when students in these student groups participate they persevere and continue in their selected POS. When comparing the concentrator rates and participation rates of the Multi-race and White students there was a slight decrease (multi-race decreased by 12.5% and whites decreased by 3.27%). The decrease for both of these subgroups is by one or two students.

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.

To expand student participation in Career and Technical Education (CTE) programming and reduce participation or persistence gaps, especially among gender, race-ethnicity, or special population groups, here are the top five priorities that could be considered:

1. **Targeted Recruitment and Outreach:** Implement targeted recruitment strategies focusing on underrepresented gender, race-ethnicity, and special populations in CTE programs. This could involve outreach initiatives in communities and schools where these groups are prevalent, using role models and success stories from similar backgrounds to inspire and engage potential students.
2. **Inclusive Curriculum and Training Materials:** Develop and adapt CTE curricula and training materials to be culturally responsive and inclusive, ensuring they reflect the diversity of students and the modern workforce. This includes updating examples, case studies, and projects to be relevant to a diverse student body and to promote equity in learning opportunities.
3. **Support Services and Mentorship Programs:** Establish support services tailored to the needs of diverse student groups, such as tutoring, career counseling, and mentorship programs with professionals who share similar backgrounds. These programs can help students navigate the challenges of CTE programs and encourage persistence and completion.
4. **Partnerships with Industry and Community Organizations:** Forge partnerships with local businesses, industry leaders, and community organizations to provide internships, apprenticeships, and job-shadowing opportunities specifically designed to include and support underrepresented groups. These partnerships can also help in tailoring the CTE programs to meet the actual needs of the local job market, making the programs more attractive and relevant.
5. **Data-Driven Strategies and Continuous Improvement:** Regularly collect and analyze data on student enrollment, performance, and outcomes by gender, race-ethnicity, and other relevant demographics to identify gaps and areas for improvement. Use this data to refine strategies, measure the effectiveness of initiatives, and ensure resources are allocated effectively to support equity in CTE programming.

These priorities aim to expand participation in CTE programs and ensure that all students, regardless of their background, have equal opportunities to succeed and thrive in their chosen careers.

ACTIVITY B.4: CAREER CLUSTER PARTICIPATION AND PERSISTENCE

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

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

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

CAREER CLUSTER KEY:

AMC: Arts, Media, and Communication

BMF: Business Management and Finance

CD: Construction and Development

CRD: Career Research and Development

CSHT: Consumer Services, Hospitality, and Tourism

EANR: Environmental, Agricultural, and Natural Resources

HB: Health and Biosciences

HRS: Human Resource Services

IT: Information Technology

MET: Manufacturing, Engineering, and Technology

TT: Transportation Technologies

CRD: (Career Research and Development & Apprenticeship MD)

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

[illegible]

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

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

Cluster	Enrollment %	Concentrators %	Graduates %	Gender		Race/Ethnicity							Special Populations								
				M	F	AL	A	H	B	W	PI	M	SWD	ED	NT	SP	OO W	EL	HL	FY	AD
AMC	7%	95%	23%	59%	41%	0%	0%	14%	36%	45%	0%	5%	18%	73%	41%	0%	-	9%	0%	0%	5%
BMF	5%	100%	53%	13%	87%	0%	0%	20%	60%	13%	0%	7%	0%	87%	47%	0%	-	0%	0%	0%	0%
CD	17%	90%	31%	81%	19%	0%	0%	15%	31%	52%	0%	2%	12%	71%	19%	0%	-	4%	0%	0%	0%
CRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CSHT	9%	96%	43%	43%	57%	0%	4%	11%	46%	36%	0%	4%	4%	75%	57%	4%	-	4%	0%	4%	0%
EANR	5%	53%	13%	40%	60%	0%	0%	13%	53%	27%	0%	7%	13%	80%	60%	0%	-	0%	0%	0%	0%
HB	24%	99%	49%	13%	88%	0%	3%	8%	44%	40%	1%	3%	4%	67%	14%	0%	-	4%	0%	0%	1%
HRS	13%	98%	23%	13%	88%	0%	0%	15%	55%	25%	0%	5%	13%	65%	55%	0%	-	3%	0%	0%	3%
IT	4%	85%	69%	85%	15%	0%	0%	15%	15%	62%	0%	8%	23%	69%	15%	0%	-	0%	0%	0%	0%
MET	6%	94%	47%	100%	0%	0%	6%	6%	12%	65%	0%	12%	0%	35%	0%	0%	-	12%	0%	0%	0%
TT	9%	96%	33%	75%	25%	0%	0%	4%	18%	68%	0%	11%	11%	61%	25%	0%	-	0%	0%	0%	0%
WBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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?

The three clusters that appear that students in Somerset are not participating as rates equivalent to other clusters are:

- BMF (Business) – The previous instructor was out for an extended period of time, for a two years period. There was an instructor change for the 2023-24 school year.
- EANR (Horticulture) – Students do not have a full understanding of horticulture and the area we serve is less horticultural and more agricultural. If the program was geared more towards Agriculture since we reside in a heavily agricultural environment more students may participate.
- IT (Networking/Cybersecurity) - We have seen a decrease in student interest in computer networking since COVID. One factor that may be contributing to this lack of interest is the amount of time students using computers for instruction since the adoption of a one-to-one device program. Another factor contributing to the decrease is students are using platforms like YouTube to research how to build computers on their own. If the IT Network numbers continue to decrease, we may look into transitioning to Computer Science.

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

After reviewing the data tables, it appears that the only program that is not persisting is EANR for our Horticulture program. Students do not have a full understanding of horticulture and the area we serve is less horticultural and more agricultural. If the program was geared more towards Agriculture since we reside in a heavily agricultural environment more students may participate. .

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?

The data shows that most students persist in the program of study they have chosen. The data indicates the programs show a 85%-100% concentrator rate in the programs. The only outlier is EANR (Horticulture) with a 53% concentrator rate.

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.]*

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.

To expand student participation in Career and Technical Education (CTE) programs and address participation and/or persistence gaps, especially among gender, race-ethnicity, or special population groups, here are the top five priorities:

Targeted Recruitment and Awareness Campaigns: Implement targeted marketing strategies to raise awareness and interest in the lower-performing clusters (BMF, EANR, IT) among underrepresented groups. These campaigns will use social media, school presentations, and community outreach to highlight the career opportunities in these fields, focusing on success stories from similar demographic groups.

Enhanced Support Services Including Student Ambassadors and Peer Mentoring:: Offer additional academic and career counseling services tailored to the needs of underrepresented groups. This could include creating support groups, providing tutors, and assigning career advisors that focus on the challenges faced by these students, aiming to increase their enrollment and retention in the CTE programs. Establish a student ambassador program or peer mentoring for underrepresented groups within CTE programs. Senior students or alumni who have successfully completed the program can mentor new students, helping them navigate the academic and social aspects of CTE studies.

Curriculum Integration and Contextual Learning Opportunities: Integrate more real-life context and hands-on learning experiences in the curriculum of the lowest performing clusters. For example, incorporating current market trends in the business courses, sustainable practices in horticulture, and emerging technologies in IT networking and cybersecurity can make the learning more appealing and relevant.

Evaluation and Continuous Improvement using Data-Driven Strategies Establish a robust system of feedback and continuous improvement that allows for regular assessment of the effectiveness of the interventions. This system should include feedback from students, teachers, and industry partners, with a focus on identifying and addressing any new or persisting gaps in participation and outcomes. Use data analytics to identify trends and barriers affecting student enrollment and success. Regularly track the progress of initiatives aimed at reducing gaps and adjust strategies based on what is proven effective, ensuring resources are optimally allocated.

Professional Development for Educators: Invest in professional development for CTE instructors that focuses on cultural competency, inclusive teaching practices, and strategies for engaging diverse learners. Well-trained educators are crucial for adapting teaching methods that cater to the varied learning styles and needs of students from different backgrounds.

These priorities align with the Maryland Blueprint's CTE performance goal, which emphasizes not only broadening participation in CTE programs but also ensuring equity in educational outcomes. By focusing on these areas, the initiative aims to foster an inclusive environment where all students, regardless of their background, have the opportunity to succeed in CTE.

Component C: Program Performance

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

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

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

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

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

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

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

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

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

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

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

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

DISTRICT PERFORMANCE BY STUDENT GROUP

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

	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%	37%	14%	0%	76%	30%	84%	87%	0%
Gender									
Males	98%	32%	14%	0	63%	4%	95%	92%	-
Females	100%	41%	13%	0	88%	64%	72%	83%	-
Race-ethnicity									
American Indian	-	-	-	-	-	-	-	-	-
Asian	100%	0%	100)	-	-	0%	-	100%	-
Black	100%	29%	9%	0	82%	32%	77%	79%	-
Hispanic	100%	23%	9%	-	-	42%	100%	100%	-
Multi-race	100%	43%	17%	0%	-	38%	100%	86%	-
White	98%	46%	17&	0	73%	26%	83%	90%	-

SPECIAL POPULATIONS

	Federal Accountability Indicator 2023 Graduates								
	1S1	2S1	2S2	2S3	3S1*	4S1	5S1	5S4a	5S4b
State Performance Target	89.97%	52.3%	48.00%	0.00%	76.50%	28.72%	78.41%	78.41%	0.00%
District Performance	99%	37%	14%	0%	76%	30%	84%	87%	0%
Economically disadvantaged	100%	32%	7%	0%	72%	31%	84%	84%	-
Multilingual learners	100%	0%	0%	0%	-	33%	100%	100%	-
Individuals with disabilities	100%	9%	0%	0%	63%	14%	56%	64%	-
Nontraditional fields	100%	26%	20%	-	87%	100%	59%	72%	-
Single parents	100%	50%	0%	-	-	67%	100%	100%	-
Out of workforce	-	-	-	-	-	-	-	-	-
Students served under the McKinney-Vento Act (Unhoused)	100%	50%	0%	-	-	100%	0%	50%	-
Youth in foster care	-	-	-	-	-	-	-	-	-
Youth with a parent in active military	-	-	-	-	-	100%	-	-	-
Migrant students	-	-	-	-	-	--	-	-	-

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

ACTIVITY C.1: ASSESSING PROGRAM PERFORMANCE

	List
Looking at <i>overall performance</i> , on which indicators are you <u>substantially underperforming</u> * the district performance target?	<p>2S1: Academic proficiency in reading/language arts: The percentage of CTE concentrators achieving proficiency on the Districtwide high school reading/language arts assessment.</p> <p>2S2: Academic proficiency in mathematics: The percentage of CTE concentrators achieving proficiency on the Districtwide high school mathematics assessment.</p>
Looking at <i>overall performance</i> , on which indicators are you <u>substantially exceeding</u> the district performance target?	<p>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.</p> <p>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.</p> <p>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.</p>

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

ACTIVITY C.2: DETERMINING ROOT CAUSES

1. For each indicator for which you are substantially underperforming the district performance target, identify the key factors that might affect student performance, including any disparities or gaps in performance by program. Ideally, these factors should be the primary drivers of the results that you see.

To address the underperformance in the academic proficiency indicators 2S1 and 2S2 for CTE concentrators, it's essential to analyze the key factors that might be influencing student performance in reading/language arts and mathematics. Here are the potential drivers for each indicator:

2S1: Academic Proficiency in Reading/Language Arts Target: 52.3%, Achieved: 37%

Socioeconomic Factors: Students from lower socioeconomic backgrounds may face multiple challenges, including limited access to educational materials at home, fewer opportunities for academic enrichment outside of school, and higher levels of stress and responsibility outside

Literacy Foundations: Weak foundational skills in reading from earlier educational stages can impact students' ability to perform in high school assessments. This includes vocabulary acquisition, reading comprehension, and critical analysis skills.

Engagement with Material: CTE students might be less engaged with traditional reading/language arts curricula if they do not see a direct connection between these skills and their vocational interests or career goals. Tailoring content to link more directly with CTE pathways could increase engagement and proficiency.

Integration of Literacy in CTE Curriculum: The CTE curriculum may not adequately integrate reading and language arts components, which are crucial for ensuring that students develop strong literacy skills alongside technical skills. Instruction that is more interactive and applied, integrating career-related content, might improve outcomes.

Assessment Alignment and Preparation: The assessments might not be well-aligned with the content taught in CTE courses, or students may not be adequately prepared for the format and rigor of district-wide assessments.

2S2: Academic Proficiency in Mathematics Target: 48%, Achieved: 14%

Mathematics Relevance: Similar to reading/language arts, if CTE students do not perceive the relevance of high-level mathematics to their career goals, their motivation to achieve proficiency might be lower. Integrating mathematical concepts with practical applications in CTE subjects can enhance relevance and interest. Enhancing the application of math in practical, career-focused contexts could increase understanding and interest.

Curricular Alignment and Instructional Strategies: The alignment of the mathematics curriculum with the needs and abilities of CTE concentrators is crucial. There may be a misalignment between the math taught in traditional classrooms and the skills needed in CTE contexts. Additionally, instructional strategies may not cater to the diverse learning styles of CTE students.

Teacher Expertise: The availability and consistency of highly qualified mathematics teachers are lacking in the county. Qualified mathematics teachers who can adapt their teaching strategies to the unique needs of CTE students can significantly influence student outcomes. CTE teachers may require more professional development to integrate effective math teaching strategies into their lessons, or there may be a need for more collaboration between math and CTE educators.

Support Services: Adequate support services such as tutoring, after-school programs, and summer bridge programs that help reinforce mathematical concepts are essential, particularly for students who need additional help.

Assessment Alignment and Preparation: The assessments might not be well-aligned with the content taught in CTE courses, or students may not be adequately prepared for the format and rigor of district-wide assessments.

For both indicators, addressing these key factors involves strategic changes in curriculum development, instructional strategies, and resource allocation. Continuous monitoring and adapting based on student needs and feedback will also be critical in closing the performance gaps in these areas.

2. 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?

Given the context where overall student performance is below state targets in reading and math, and considering the unique structure of our CTE program, here's a strategic approach to address these challenges effectively,

Program-Specific Performance Analysis: - Disaggregate academic performance data by specific CTE programs to identify variations in reading and math scores among students who begin CTE in the 10th vs. the 11th grade. Analyze state assessment scores of CTE students starting in the 10th grade compared to those starting in the 11th grade. Identify any CTE programs where students perform notably better or worse in reading and math to understand the influence of program content on academic skills.

Integration of Academic Skills in CTE: Collaboratively develop strategies to integrate foundational reading and math skills into CTE curricula, even though CTE teachers do not directly teach these subjects.

Targeted Support for Late Starters: Address the potential learning gap for students who start CTE in the 11th grade.

Professional Development for CTE Teachers: Equip CTE teachers with tools to support the development of reading and math skills within their instructional practices. Provide professional development workshops focused on strategies for integrating academic skills into technical teaching. Share resources and techniques for embedding literacy and numeracy in practical and relevant ways within CTE subjects.

Enhanced Monitoring and Evaluation: Continuously assess the impact of these integrated strategies on student performance in state assessments. Use formative assessments throughout the CTE program to monitor progress in reading and math skills. Adjust teaching strategies based on assessment data and feedback from students and teachers.

Engagement and Motivation Strategies: Improve student engagement with and perception of the importance of state assessments.

This approach leverages the structure of your CTE programs to reinforce reading and math skills, addressing specific needs based on when students begin CTE. It also emphasizes collaboration between CTE and academic faculty to create a more integrated educational experience that supports academic achievement in state assessments.

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

In light of resource constraints, efficiently and effectively enhancing CTE programs requires a strategic approach that considers several factors such as the size of program enrollments, the number of industry-recognized credentials earned, and the availability of apprenticeship experiences. Here are targeted strategies to consider:

Focus on High-Impact Programs: Identify and prioritize programs that have the highest enrollment and/or those that lead to industry-recognized credentials. These programs likely provide the greatest return on investment in terms of student outcomes and employment readiness. Focus resources on improving these programs first to maximize impact.

Streamline Credential and Apprenticeship Pathways: For programs linked to industry-recognized credentials and apprenticeships, streamline the pathway for students to achieve these outcomes. This may involve enhancing curriculum alignment with certification requirements, increasing industry engagement, and facilitating smoother transitions into apprenticeships. These efforts ensure that even with limited resources, students obtain valuable credentials and real-world experience.

Leverage Partnerships for Resource Expansion: Form or strengthen partnerships with local businesses, industry groups, and higher education institutions. These partners can provide not only financial support or equipment but also expertise and mentorship. For example, local businesses might offer guest lectures, equipment donations, or site visits, which enrich the learning experience without significant financial outlay from the school.

Adopt Blended and Project-Based Learning: Utilize blended learning models that combine online resources with traditional classroom methods to extend learning opportunities and reduce costs. Incorporate project-based learning, which can be particularly effective in CTE settings, to engage students in real-world problems that align with industry standards and require minimal resources.

Utilize Data to Drive Decisions: Make informed decisions based on data analysis of program performance, student outcomes, and resource allocation. This approach helps identify which programs benefit most from additional resources and which can be adjusted with minimal impact. Data-driven insights can also highlight where small investments in resources could lead to significant improvements in credential attainment or apprenticeship placement.

Optimize Resource Sharing Across Programs:

Implement resource-sharing strategies across different CTE programs to maximize utility and minimize costs. Shared facilities, equipment, and even instructional staff can help small or emerging programs benefit from the infrastructure of larger, more established programs.

Enhance Professional Development Efficiently: Focus on targeted professional development that equips educators to better integrate industry standards into their teaching and to facilitate credentialing and apprenticeships. This could include shared training sessions across districts or virtual training modules that are less resource-intensive than traditional formats.

By focusing on these strategies, we can address resource limitations while still making meaningful improvements to our CTE programs, ensuring that students gain the skills and credentials needed to succeed in the workforce.

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

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

Given the underperformance in the academic proficiency indicators for reading/language arts (2S1) and mathematics (2S2) among CTE concentrators, along with the challenge that students may not value these exams due to their perceived lack of impact on graduation status, here are the top five priorities that can help improve student outcomes, while addressing the needs of gender, race-ethnicity, or special population groups:

Integration of Academic Skills with Career Relevance: Clearly demonstrate the relevance of strong literacy and numeracy skills in achieving career success within CTE pathways.

Cultural and Contextual Relevance in Teaching: Enhance engagement by making learning culturally and contextually relevant, particularly for underrepresented and special population groups.

Incentivization of Academic Achievement: Create incentives for students to perform well in district-wide assessments, even though they do not impact graduation status.

Targeted Support Programs: Address gaps in performance by providing targeted support where needed, especially focusing on special population groups who are underperforming.

Professional Development on Engagement Strategies: Equip teachers with effective research-based learning strategies to engage students who might not see the importance of district-wide assessments.

By addressing these priorities, the approach focuses not only on improving literacy and numeracy skills but also on changing students' perceptions about the value of these skills, making them more relevant and directly connected to their career aspirations and cultural contexts. This multifaceted strategy can help boost student engagement and performance on the academic proficiency indicators.

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.

AMC: Arts, Media, Communication					
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- position was removed in 2020
Gender					
Male	100% (1)	59%	0%	0%	0%
Female	0%	41%	0%	0%	100%
Race-ethnicity					
American Indian	0%	0%	0%	0%	0%
Asian	0%	0%	0%	0%	0%
Black	0%	36%	0%	0%	0%
Hispanic	0%	14%	0%	0%	0%
Multi-race	0%	5%	0%	0%	0%
White	100%	45%	0%	0%	100%
Credential					
Properly Licensed	100%	N/A	0%	0%	100%
Granted Temporary Waiver	0%	N/A	0%	0%	0%

BMF: Business Management and Finance

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- position was removed in 2020
Gender					
Male	0%	13%	0%	0%	0%
Female	100%	87%	100%	0%	100%
Race-ethnicity					
American Indian	0%	0%	0%	0%	0%
Asian	0%	0%	0%	0%	0%
Black	0%	60%	0%	0%	0%
Hispanic	0%	20%	0%	0%	0%
Multi-race	0%	7%	0%	0%	0%
White	100%	13%	100%	0%	100%
Credential					
Properly Licensed	100%	N/A	100	0%	100%
Granted Temporary Waiver	0%	N/A	0%	0%	0%

CD: Construction and Development

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)
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		participating in CTE programming 2022-23	Teachers	Support staff/paraprofessionals	Professional School Counselors-position was removed in 2020
Gender					
Male	100% (2)	81%	50% (1)	0%	0%
Female	0%	19%	0%	0%	100%
Race-ethnicity					
American Indian	0%	0%	0%	0%	0%
Asian	0%	0%	0%	0%	0%
Black	0%	31%	0%	0%	0%
Hispanic	0%	15%	0%	0%	0%
Multi-race	0%	2%	0%	0%	0%
White	100% (2)	52%	50% (1)	0%	100%
Credential					
Properly Licensed	100%	N/A	50% (1)	0%	100%
Granted Temporary Waiver	0%	N/A	0%	0%	0%

CSHT: Consumer Services, Hospitality, and Tourism

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)
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		participating in CTE programming 2022-23	Teachers	Support staff/paraprofessionals	Professional School Counselors-position was removed in 2020
Gender					
Male	100% (1)	43%	100% (1)	0%	0%
Female	0%	57%	0%	0%	100%
Race-ethnicity					
American Indian	0%	0%	0%	0%	0%
Asian	0%	4%	0%	0%	0%
Black	0%	46%	0%	0%	0%
Hispanic	0%	11%	0%	0%	0%
Multi-race	0%	4%	0%	0%	0%
White	100% (1)	36%	100% (1)	0%	100%
Credential					
Properly Licensed	100%	N/A	100% (1)	0%	100%
Granted Temporary Waiver	0%	N/A	0%	0%	0%

EANR: Environmental, Agricultural, and Natural Resource

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)
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		participating in CTE programming 2022-23	Teachers	Support staff/paraprofessionals	Professional School Counselors- position was removed in 2020
Gender					
Male	0%	40%	0%	0%	0%
Female	100% (1)	60%	0%	0%	100%
Race-ethnicity					
American Indian	0%	0%	0%	0%	0%
Asian	0%	0%	0%	0%	0%
Black	0%	53%	0%	0%	0%
Hispanic	0%	13%	0%	0%	0%
Multi-race	0%	7%	0%	0%	0%
White	100%	27%	0%	0%	100%
Credential					
Properly Licensed	100%	N/A	0%	0%	100%
Granted Temporary Waiver	0%	N/A	0%	0%	0%

HB: Health and Biosciences					
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- position was

					removed in 2020
Gender					
Male	0%	13%	0%	0%	0%
Female	100% (3)	88%	0%	0%	100%
Race-ethnicity					
American Indian	0%	0%	0%	0%	0%
Asian	0%	3%	0%	0%	0%
Black	0%	44%	0%	0%	0%
Hispanic	0%	8%	0%	0%	0%
Multi-race	0%	3%	0%	0%	0%
White	100% (3)	40%	0%	0%	100%
Credential					
Properly Licensed	100% (3)	N/A	0%	0%	100%
Granted Temporary Waiver	0%	N/A	0%	0%	0%

HRS: Human Resources Services					
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-position was

					removed in 2020
Gender					
Male	50% (1)	13%	0%	0%	0%
Female	50% (1)	88%	0%	0%	100%
Race-ethnicity					
American Indian	0%	0%	0%	0%	0%
Asian	0%	0%	0%	0%	0%
Black	50% (1)	55%	0%	0%	0%
Hispanic	0%	15%	0%	0%	0%
Multi-race	0%	5%	0%	0%	0%
White	50% (1)	25%	0%	0%	100%
Credential					
Properly Licensed	100%	N/A	0%	0%	100%
Granted Temporary Waiver	0%	N/A	0%	0%	0%

IT: Information Technology					
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-position was

					removed in 2020
Gender					
Male	100% (1)	85%	0%	0%	0%
Female	0%	13%	0%	0%	100%
Race-ethnicity					
American Indian	0%	0%	0%	0%	0%
Asian	0%	0%	0%	0%	0%
Black	0%	15%	0%	0%	0%
Hispanic	0%	15%	0%	0%	0%
Multi-race	0%	8%	0%	0%	0%
White	100% (1)	62%	0%	0%	100%
Credential					
Properly Licensed	100% (1)	N/A	0%	0%	100%
Granted Temporary Waiver	0%	N/A	0%	0%	0%

MET: Manufacturing, Engineering, and Technology					
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-position was

					removed in 2020
Gender					
Male	100% (1)	100%	0%	0%	0%
Female	0%	0%	0%	0%	100%
Race-ethnicity					
American Indian	0%	0%	0%	0%	0%
Asian	0%	6%	0%	0%	0%
Black	0%	12%	0%	0%	0%
Hispanic	0%	6%	0%	0%	0%
Multi-race	0%	12%	0%	0%	0%
White	100% (1)	65%	0%	0%	100%
Credential					
Properly Licensed	100% (1)	N/A	0%	0%	100%
Granted Temporary Waiver	0%	N/A	0%	0%	0%

TT: Transportation Technologies					
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-position was

					removed in 2020
Gender					
Male	100% (2)	75%	50% (1)	0%	0%
Female	0%	25%	0%	0%	100%
Race-ethnicity					
American Indian	0%	0%	0%	0%	0%
Asian	0%	0%	0%	0%	0%
Black	0%	18%	0%	0%	0%
Hispanic	0%	4%	0%	0%	0%
Multi-race	0%	11%	0%	0%	0%
White	100% (2)	68%	50% (1)	0%	100%
Credential					
Properly Licensed	100% (2)	N/A	50%	0%	100%
Granted Temporary Waiver	0%	N/A	0%	0%	0%

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.	✓		
Staff are aware of the requirements to maintain endorsement.	✓		
Staff have equal access to content-specific professional development opportunities across industries.	✓		
Data are collected on the effectiveness of professional development to ensure it meets the needs of educators.	✓		

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?

Our staff demographic characteristics do not reflect the students that we serve.

67% of staff are male and 33% are female

93% of staff are white and 7% are African American

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

All instructors last year (2022-23) were adequately credentialed. For the 2023-24 school year, the welding instructor (new program) is in the process of working towards getting his teaching certification, however, he holds welding certifications and has 45 years of welding experience. We also had a long-term sub in for HVAC due to a last-minute resignation and difficulties securing a new HVAC instructor.

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

We offer professional development opportunities as they arise, ensuring that they are relevant and substantive. These opportunities include workshops, seminars, industry certifications, and advanced training programs designed to keep staff updated with the latest industry trends and educational practices.

All staff members have equal awareness of available professional development opportunities. We ensure this by regularly communicating through various channels such as emails, staff meetings, and an internal professional development portal. This transparency guarantees that every staff member is informed about upcoming opportunities.

We utilize Perkins funding to support professional development activities. This funding helps cover costs related to training, certifications, and other professional development expenses, making these opportunities accessible to all staff members without financial barriers.

We recognize the importance of maintaining industry credentials and endorsements. Our professional development programs are specifically designed to help staff meet the requirements for renewing and maintaining their credentials. We collaborate with industry partners to provide the necessary training and resources.

We are committed to ensuring that all staff members have equal opportunities to participate in professional development. We have established a fair and transparent process for selecting participants for limited-capacity events, ensuring that everyone has an equal chance to enhance their professional skills.

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

Several barriers can affect the offering and participation in content-specific professional development opportunities. These barriers include:

Funding Limitations: While we use Perkins funding to support professional development, the funds may not always be sufficient to cover all desired opportunities. Limited budgets can restrict the number and scope of professional development programs available. The board of education is also limiting the amount of travel that is involved in meetings and conferences due to financial constraints.

Time Constraints: Instructors often have demanding schedules with teaching responsibilities, grading, and other administrative duties. Finding time for professional development can be challenging, especially during the school year.

Access to Quality Programs: High-quality, content-specific professional development opportunities may not always be readily available, especially in specialized fields. Geographic location can also be a barrier if the best opportunities are not accessible locally or require significant travel.

Awareness and Communication: Despite efforts to ensure equal awareness, there are still communication gaps. Not all staff may receive timely information about professional development opportunities, or they may not fully understand the benefits and relevance of these programs to their roles.

Balancing Professional Development with Other Responsibilities: Staff members may struggle to balance professional development with their personal lives and other professional commitments. This balancing act can deter participation, even when opportunities are available and funded.

Relevance and Alignment: Ensuring that professional development opportunities are directly relevant to instructors' specific content areas and career goals can be challenging. Generic professional development programs may not meet the specific needs of CTE instructors.

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

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

Recruiting, developing, and retaining CTE instructors requires a multifaceted approach. Our top five priorities to address in the coming year:

Competitive Compensation Packages: Address the pay gap between CTE instructors and private sector salaries. Implement competitive compensation that takes into consideration their years of experience in the field.

Professional Development and Training: Enhance the professional skills and knowledge of CTE instructors. Provide ongoing professional development opportunities, including workshops, certifications, and advanced degree programs. Facilitate access to industry-specific training to ensure instructors stay current with technological advancements and industry standards.

Industry Partnerships and Collaboration: Foster strong partnerships between educational institutions and industry. Establish collaborations with local businesses and industries to create internship and externship opportunities for instructors. This will allow them to gain real-world experience and bring updated industry practices back into the classroom.

Work-Life Balance and Support: Improve the overall job satisfaction and retention of CTE instructors. Implement practices that promote work-life balance, such as flexible scheduling, mental health resources, and supportive workplace culture. Establish mentorship programs where experienced instructors can support new hires.

Recruitment and Marketing Strategies: Attract qualified candidates to the field of CTE education. Develop targeted recruitment campaigns highlighting the benefits and rewards of a career in CTE education. Use various platforms, including social media, job fairs, and partnerships with teacher preparation programs, to reach potential candidates. Emphasize the impact CTE instructors have on students' futures and the broader community.

By addressing these priorities, we can create a more attractive and supportive environment for CTE instructors, ultimately leading to better recruitment, development, and retention outcomes.

Next Steps

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

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

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

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

CONNECTING GOALS TO AN ANNUAL BUDGET FOR PERKINS FUNDING

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

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

ENSURING ALIGNMENT WITH PERKINS REQUIREMENTS

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

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

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

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

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

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

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

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

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

PROBLEM: STUDENTS ARE NOT PARTICIPATING IN CTE PROGRAMMING.

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

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

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

PROBLEM: STUDENTS ARE NOT PERSISTING IN CTE PROGRAMS.

Root Cause	Strategy	Sample Activities	Resource	Description
Historically underrepresented students or those with special needs do not feel welcome in CTE programs.	Remove obstacles to success for students who may need additional supports to persist.	Implement evidence-based strategies to support special population students in succeeding in CTE programming.	<u>Maximizing Access & Success for Special Population Students</u> <u>Strategies for Special Population Success</u>	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.

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

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

Appendix C: Sample Strategies for Component C: Program Performance

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

Root Cause	Strategy	Sample Activities	Resource	Description
Students are not provided with academic content as part of their CTE coursework	Integrate academic content into CTE programming offered at all levels.	Review current efforts to integrate academic and CTE instruction and take steps to address ineffective practices.	CTE and Academic Integration Self-Assessment Rubric ACTE Integration of Academics and CTE Section Math-in-CTE	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>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>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>
		Use results from academic assessments to target educational remediation so that high school students enter college ready to learn.	Rigorous K-12 Assessments Help Reduce Remediation	This brief from offers examples of how higher states are 11 th grade test results as a college readiness signal and as a means

				of targeting services for at-risk youth
Students face financial or geographical barriers that prevent them from pursuing an industry-recognized credential.	Identify obstacles to students earning an industry recognized credential and take steps to resolve them.	<p>Use Maryland's Perkins V basic grant to fund student attainment of an industry-recognized credential.</p> <p>Develop strategies to identify students who may face challenges in paying for exams and find ways of offsetting costs.</p> <p>Work with exam providers, employers, and community organizations to provide fee waivers or scholarships for certification exams, materials, and training courses.</p> <p>Work with credentialing vendors to expand testing sites and administer exams in convenient and accessible locations.</p>	<p>Maryland CTE Perkins Reserve Grant Information Guide</p> <p>Credential Currency: Promoting Credentials of Value</p> <p>Aligning State CTE Programs with Industry Needs and Priorities</p>	<p>Maryland offers a competitive grant program that includes options for using funding to strengthen the award of industry-recognized credentials in POS.</p> <p>This report offers strategies to expand student obtainment. While focused on the state level, some recommendations may be adapted for district/college use.</p> <p>ExcelinEd produced this toolkit to support states in aligning CTE programs with industry needs and priorities. While intended for state policymakers, some recommendations may be adapted for use at the district/college level.</p>

PROBLEM: STUDENTS ARE NOT EARNING INDUSTRY-RECOGNIZED CREDENTIALS.

Root Cause	Strategy	Sample Activities	Resource	Description
Students face financial or geographical barriers that	Identify obstacles to students earning an industry recognized	Use Maryland's Perkins V basic grant to fund student attainment	Maryland CTE Perkins Reserve Grant Information Guide	Maryland offers a competitive grant program that includes options for using funding to

prevent them from pursuing an industry-recognized credential.	credential and take steps to resolve them.	<p>of an industry-recognized credential.</p> <p>Develop strategies to identify students who may face challenges in paying for exams and find ways of offsetting costs.</p> <p>Work with exam providers, employers, and community organizations to provide fee waivers or scholarships for certification exams, materials, and training courses.</p> <p>Work with credentialing vendors to expand testing sites and administer exams in convenient and accessible locations.</p>	<p>Credential Currency: Promoting Credentials of Value</p> <p>Aligning State CTE Programs with Industry Needs and Priorities</p>	<p>strengthen the award of industry-recognized credentials in POS.</p> <p>This report offers strategies to expand student obtainment. While focused on the state level, some recommendations may be adapted for district/college use.</p> <p>ExcelinEd produced this toolkit to support states in aligning CTE programs with industry needs and priorities. While intended for state policymakers, some recommendations may be adapted for use at the district/college level.</p>
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PROBLEM: CTE CONCENTRATORS ARE NOT TRANSITIONING INTO ADVANCED TRAINING OR EMPLOYMENT FOLLOWING GRADUATION.

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

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

PROBLEM: IT'S DIFFICULT TO RECRUIT CTE EDUCATORS.

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

		<p>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>		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.

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

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

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

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

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

		workplaces and offering mentoring and professional learning communities.		profession overall. Use it to find options that might apply to the CTE workforce.
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Appendix E: Additional Resources

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

Advance CTE

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

Website: [Advance CTE](#)

American Institutes for Research (AIR) - Educator Quality:

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

Website: [AIR Educator Quality](#)

Association for Career and Technical Education (ACTE):

ACTE provides resources and research related to CTE.

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

CTE Research Network

Federally funded website focused on strengthening CTE research.

Website: [CTE Research Network](#)

Learning Policy Institute (LPI):

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

Website: [Learning Policy Institute](#)

National Center for Education Statistics (NCES)

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

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

National Comprehensive Center for Teacher Quality (TQ Center):

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

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

RAND Corporation - Education Research:

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

Website: [RAND Education](#)

Regional Education Laboratories (RELs):

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

Website: [Regional Education Laboratories](#)

What Works Clearinghouse (WWC):

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

Website: [What Works Clearinghouse](#)