



# 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

### **Carey M. Wright, Ed.D.**

Interim State Superintendent of Schools

### **Deann Collins, Ed.D.**

Deputy State Superintendent

Office of Teaching and Learning

### **Richard W. Kincaid**

Senior Executive Director

Office of College and Career Pathways

### **Wes Moore**

Governor

## MARYLAND STATE BOARD OF EDUCATION

### **Clarence C. Crawford**

President, Maryland State Board of Education

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

Shawn D. Bartley, Esq.

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

Susan J. Getty, Ed.D.

Dr. Monica Goldson

Nick Greer

Dr. Irma E. Johnson

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

Rachel L. McCusker

Samir Paul, Esq.

Holly C. Wilcox, Ph.D.

Abisola Ayoola (Student Member)

## Table of Contents

---

Document Control Information .....	3
Purpose .....	4
Instructions .....	5
Guiding Principles and Logic Model .....	6
Assembling a Stakeholder Team .....	13
Stakeholder Team Roster .....	14
Component A: Labor Market Alignment .....	17
Component B: Student Participation and Persistence .....	24
Component C: Program Performance .....	32
Component D: Recruiting, Developing, and Retraining CTE Educators .....	38
Next Steps .....	42
Appendix A: Sample Strategies for Component A: Labor Market Alignment .....	43
Appendix B: Sample Strategies for Component B: Student Participation and Persistence .....	47
Appendix C: Sample Strategies for Component C: Program Performance .....	52
Appendix D: Sample Strategies for Component D: Recruiting, Developing, and Retaining CTE Educators .....	56
Appendix E: Additional Resources .....	60

## Document Control Information

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

### DOCUMENT HISTORY

Document Version	Date	Summary of Change
1.0	February 2024	Initial Document
2.0	March 2024	Modified: Formatting for accessibility Added: State Level Performance Data Added: Appendices with Strategies and Resources to Consider
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 1<sup>st</sup> of each year.

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

## Instructions

---

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



## INTERPRETATION

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

## PROGRAM DESIGN

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

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

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

## STUDENT ENGAGEMENT

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

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

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

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

## PROGRAM DELIVERY

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

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

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

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

QUALITY
The site achieves or consistently makes progress towards local targets established for state and federal core indicators of performance
POS are delivered by teachers who meet state requirements to teach content at the secondary level
CTE POS are delivered by teachers who earned a minimum of effective on their teacher evaluation as defined by <a href="#">Code of Maryland Regulation 13A.07.09</a> within three years
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
<p>All students, including students in special populations, are offered the opportunity to:</p> <ul style="list-style-type: none"> <li>• Participate in at least one career-based learning experience (e.g., work-based learning, internship, apprenticeship, etc.),</li> <li>• Earn college credit and/or industry credentials, and</li> <li>• Participate in CTSOs.</li> </ul>
<p>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</p>
<p>Local and state annual data-reporting requirements are met, and reviews conducted of all annual Program Quality Index reports to inform improvement</p>
<p>Human resources are included in the recruitment process to ensure a diverse CTE teacher and faculty member candidate pool</p>
<p>Metrics are used to ensure that CTE teacher and faculty member recruitment strategies are successful</p>
<p>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</p>

## 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	Lindsey McCormick
Organization	Caroline County Public Schools
Title	Director of College and Career Readiness
Email	Mccormick.lindsey@ccpsstaff.org

### STAKEHOLDER TEAM MEMBERS

When Selecting Stakeholders, consider:

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

### Stakeholder Team Responsibilities

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

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

## Stakeholder Team Roster

### SECONDARY

Role	Name	Title	Affiliation
Administration (e.g., principal, assistant principal)	Courtney Handte	Principal, CCTC	CCPS
	Rebecca Wivell	Dean of Students	CCPS
	Eric Cook	Coordinator of Career Readiness	CCPS
Professional career or academic counselor	Brad Plutschak	School Counselor	CCTC
	Ann Ferkler	School Counselor	NCHS
	Virginia Belay	School Counselor	NCHS
	Jackie Holtzman	School Counselor	NCHS
	Tricia Bolduc	School Counselor	NCHS
	Cia North	School Counselor	CRHS
	Jennifer Reed	School Counselor	CRHS
	Derek Nepert	Middle School Career Coach	CCPS
	Robert Gowen	High School Career Coach	CCPS
Teachers	Robert Bates	Criminal Justice Teacher	CCTC
	Jodi Neal	CASE Teacher	CCTC
	Norma Schultz	Health professions Teacher	CCTC
	Kristi Hall/Christine Wright	Cosmetology Teachers	CCTC
	Dennis Hall	Construction/CADD Teacher	CCTC
	Keith Hale	Manufacturing Teacher	CCTC
	Kevin Cahall/Greg Butler	Automotive Teachers	CCTC
	Larry Ogden	Food and Beverage Management Teacher	CCTC

	Kelly Larkin/Chad Shelly	Biomedical Teachers	NCHS/CRHS
	Chrissie Yoxall/Mark Robuck	Computer Science Teachers	NCHS/CRHS
	Jenn Dvorak/Stephanie Verdery	Teacher Academy Teachers	NCHS/CRHS
	Kevin Webster/Dan Newberry	Engineering Teachers	NCHS/CRHS
Instructional Support and Paraprofessionals (Psychologists, Social Workers, etc.)	Cara Calloway	Mental Health Coordinator	CCPS
	Keri Thomas	Instructional Assistant	CCTC

**POSTSECONDARY**

Role	Name	Title	Affiliation
Administration (e.g., dean, division chair)	Dave Harper	VP for Workforce & Academic Programs	Chesapeake College
	Cynthia Harding	Executive Coordinator Workforce & Academic Programs	Chesapeake College
	Jason Mullen	Dean of Workforce	Chesapeake College
	Juliet Smith	Dean for Arts & Sciences	Chesapeake College
	Amber McGinnis	Executive Director, Chesapeake College Foundation	Chesapeake College
Faculty	Dr. Heather Westerfield	Professor	Nursing
	Dr. Lanka Elson	Professor	Computer Science
	Bridget Lowrie, Esq.	Assistant Professor	Criminal Justice
	David Timms	Simulation Director	Health Professions Chair



**WORKFORCE**

Role	Name	Title	Affiliation
Local Workforce Development board member	Dan Schneckenburger	Executive Director	USWIB
	Shirley Lake	Blueprint Coordinator/Career Navigator	USWIB
*Regional Economic Development organization member	Robert Zimberoff	Director of Economic Development and Tourism	Caroline County Economic Development
	Kendall Teague	Business Development Coordinator	Caroline County Economic Development
	Tracey Snyder	Executive Director	Caroline Chamber of Commerce
Local business & industry representative	Billy Shull	Manufacturing Representative	Hunter Engineering
	Jamie Hetrick Helwig	Owner	Hetrick Farms, FFA Alumni President
	Jessie Poole	Assistant Director	Arcadia Assisted Living

**OTHER**

Role	Name	Title	Affiliation
Parent or caretaker	Shannon Nash	Parent	CCTC
Student	Alana Nash	Student	CCTC/Construction
Representative of Special Populations	Erica McDonald	Supervisor of Special Education	CCPS
Out-of-School youth / unhoused youth / corrections	Nicole Fisher	Supervisor of Student Services	CCPS

\* 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%
Academy of Health Professions - CNA/GNA	Yes	No	Yes	22	9%
Advanced Manufacturing Professionals	Yes	Yes	No	11	4.50%
Automotive Technology	Yes	Yes	Yes	24	9.80%
Curriculum for Agriculture Science Education	Yes	Yes	Yes	16	6.50%
Careers in Cosmetology	Yes	No	Yes	22	9%
Homeland Security and Emergency Preparedness - Criminal Justice	Yes	Yes	Yes	22	9%
Drafting and Design	Yes	Yes	No	1	0.40%
Fire Science - MFRI	Yes	No	Yes	0	0%
Food and Beverage Management	Yes	Yes	Yes	22	9%

JROTC	Yes	No	No	5	2%
Local Construction Trades - Carpentry	Yes	Yes	No	15	6.10%
PLTW BioMedical Sciences	Yes	Yes	Yes	27	11%
PLTW Computer Science	Yes	Yes	Yes	15	6.10%
PLTW Engineering	Yes	Yes	Yes	16	6.50%
Teachers Academy of Maryland	Yes	Yes	Yes	24	9.80%
Youth Apprenticeship in Maryland Program	Yes	No	No	2	0.80%

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
N/A		

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

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

	Meets	Area for Improvement	Explanation
Our CTE stakeholders review workforce and economic data to assess current and anticipate future local employment needs in HS/HW/ID industries		X	Our partnership with Chesapeake College (CC) and the WIB has improved this year. We received the Economy Overview report from Lightcast for Caroline County from the WIB and CC has offered to help interpret the data and review reports. CCPS needs to share this data with a larger stakeholder group as it is a guiding data point for CTE programming. In addition, MSDE has stated they will be sending quarterly Labor Market data for CTE which will be reviewed quarterly by CCPS in collaboration with Chesapeake College and the WIB. In addition, data is reviewed at Program Advisory Council (PAC) meetings. In discussions with Chesapeake College, we would like to improve minutes that are taken at these meetings to capture discussions and additional data that will benefit student experiences.
Processes are in place to identify and expand high school level registered apprenticeship opportunities.		X	<p>CCPS is in collaboration with the Caroline County Labor Department Navigator. CCPS will mutually meet with current Youth Apprenticeship partners to see if they would be interested in shifting to STA. In addition, CCPS has presented to all 10<sup>th</sup> grade students information about Apprenticeship.</p> <p>In collaboration with Chesapeake college and the other 4 districts they serve, we plan to have district Career Coaches collaborate more closely with Chesapeake College CTE navigators, including high school visits and identifying specific students for recruitment.</p> <p>There are concerns that there are limited Registered Apprenticeship opportunities in this area.</p> <p>CCPS is awaiting "swim lanes" from MSDE as it relates to roles and responsibilities for STAs.</p>

			<p>Starting in the spring of 2023, a collaborative of the Upper Shore counties and Chesapeake College was started with the sole purpose of expanding partnerships. We have a purpose statement” To develop a collaborative, five-county team, across both youth and adult apprenticeship, tasked with growing the number of registered apprentices (youth &amp; adult), the quality of the apprenticeships as it relates to education best practices, improve and develop business partnerships, and aid in the transition of youth apprentices into adult.</p> <p>This group meets bi-monthly.</p> <p>In the future, the 5 districts and Chesapeake College discussed pursuing resources for Chesapeake College to create a Registered Apprenticeship Sponsor.</p>
Processes are in place to update or phase out CTE POS that do not align with HS/HW/ID industries	X		<p>CCPS is looking at a multiple year plan to shift local POS to state approved POS. In addition, CCPS will use the final approved IRC list to make programmatic adjustments if needed. No changes will be made for the 24-25 SY. Information has been shared with CCPS Superintendent and Assistant Superintendent as it relates to programs we do not envision having an IRC. Superintendent briefed the Board of Education that deep dives and decisions will need to be made as to the future of each CTE program. In addition, CCPS will use, once received, the CTE programming Framework to analyze what programming/course options we have for state approved programs.</p>
A majority of our students are concentrating in POS aligned to HS/HW/ID industries	X		<p>All of CCPS CTE programs align to HS/HS or ID industry.</p>
Processes are in place to recruit business and industry stakeholders to participate on Program Advisory Committees		X	<p>CCPS has business industry stakeholders involved in our classrooms and Program Advisory Committees. CCPS plans to improve our Work Based Learning Continuum. This will include more opportunities to collaborate with Business partners. CCPS has a PAC handbook as a resource for teachers in order to run efficient</p>

			<p>and effective PAC meetings. CCPS continuously reviews this handbook to update and revise as needed. This school year, CCPS PAC meetings were held at Chesapeake College with the other 4 counties served by them. Collaboratively we have discussed ways to have better industry representation &amp; alignment, ways to improve minutes from the meetings and ways to cultivate more business &amp; industry relationships for program support, funding and apprenticeships.</p> <p>In addition to PAC meetings, the 5 Upper Shore districts created a Local Advisory Council (LAC) that meets 2 times a year with Chesapeake College and The Workforce Investment Board. At our last meeting we discussed ways the WIB can help to build business and industry partnerships with the school systems.</p>
--	--	--	---

**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)?

Although all CCPS programs meet at least one criterion, Academy of Health Professions, Careers in Cosmetology, MFRI, and NJROTC do not meet High Wage. The career opportunities upon high school graduation are entry level positions in the field. These fields are in demand, therefore, teachers discuss with students' pathways to increase their skills and knowledge to move farther in the same field where it does become high wage. Many of CCPS CTE programs also have articulated or transcribed college credit. Therefore, CCPS students have the ability to continue their education in their field of study. With a 2- or 4-year degree in these fields, the wage increases.

Advanced Manufacturing, Drafting and Design, NJROTC, and Local Construction Trades/Carpentry are not In Demand. Lightcast data pulled by our Workforce Development Board and data pulled by Chesapeake College show that Manufacturing is the 4<sup>th</sup> top growing industry with 199 new jobs since 2018. In addition, Manufacturing and Construction are in the top 5 Industries with highest Gross Regional Product. Manufacturing (\$145 million), Construction (\$125 million). In addition, Construction and Manufacturing are 3<sup>rd</sup> and 4<sup>th</sup> largest industries in our region, surpassing the national Average. NJROTC may not show a need in our local labor market data, however students who are interested in the military receive valuable instruction towards a viable career.

There are students who graduate from a CCPS school that move upon graduation. CCPS offers programming that provides students access and exposure to a variety of career fields. We do ensure that the majority of our CTE programs align to local/regional need. CCPS will continue to use Lightcast data as well as other resources to analyze trends to make informed CTE programmatic decisions.

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.

No changes will be made for the 24-25 SY but CCPS is in the planning stages of a multi-year action plan to improve overall CTE programming in Caroline County Public Schools. The plan will consist of the following priorities:

- 1) Prioritizing alignment of POS to IRCs approved by the GWDB CTE Committee
- 2) Ensuring alignment between POS offered and local (Caroline County), regional (Eastern Shore), state (Maryland), and US region (Mid-Atlantic) current and future workforce needs
- 3) Updating local POS to state-approved POS

In order to finalize an action plan CCPS will

- 4) Develop strategies, checkpoints, timelines and responsibilities of stakeholders for sunseting a program(s) including internal and external communication plans.
- 5) Determine needs to either support existing teachers in updating their certifications in new fields, hire new CTE teachers with requisite skills, and explore other hiring options as needed.



## 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%			378	86.57 %	100%	64.5%
<b>Gender</b>								
Male	28,576	82.60%			904	49	47	51
Female	29,581	89.16%			940	51	53	49
<b>Race-ethnicity</b>								
American Indian	140	85.89%			2	0	0	0
Asian	4,559	96.16%			27	1	1	2
Black	18,648	84.68%			284	15	14	11
Hispanic	10,446	71.37%			351	19	18	13
Multi-race	2,485	89.36%			127	7	7	8
White	21,838	93.38%			1053	57	59	66
<b>Special Populations</b>								
Economically disadvantaged	17,049	80.83%			1178	64	62	53
Multi-lingual learners	3,140	55.78%			170	9	6	2
Individuals with disabilities	4,697	69.47%			152	8	6	4
Nontraditional fields	-	-			0	0	36	12
Single parents	-	-			0	0	0	1
Out of workforce	-	-			0	0	0	0
Unhoused Individuals	833	62.03%			37	2	2	1
Youth in foster care	66	40.24%			16	1	1	0
Youth with parent in military	1,028	95.10%			18	1	1	0
Migrant students	-	-			0	0	0	0

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

**ACTIVITY B.2: ASSESSING YOUR PROGRAM**

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

	Meets	Area for Improvement	Explanation
Our district ensures all students—irrespective of gender, race, or special population status—are provided unbiased, inclusive, and non-discriminatory information about CTE courses and POS	X		<p>All 8<sup>th</sup> grade students tour CCTC and our CTE programs. During these tours non-traditional and bilingual students are utilized as tour guides. Special education and ML teachers, including support staff are purposefully assigned to groups needed the additional support. Each year there is a CTE night for students of all ages, their families and community to highlight each program as well time for Questions and answers. CCPS utilizes our ML navigators as translators for the evening. Upon request, an ASL interpreter would be available. Each of our 5 elementary schools and 2 middle schools have a Career day where CTE students present information about their pathway using hands-on techniques to engage the young learners.</p> <p>CCPS works with the ML division to ensure materials are translated into Spanish and Haitian Creole (top 2 languages).</p>
Our district has processes in place to recruit students traditionally underrepresented in CTE to improve diversity in CTE POS		X	<p>Although CCPS has recruitment strategies, as stated above, CCPS could improve targeted recruitment for underrepresented students. We currently utilize social media posts and our quarterly CTE newsletter to highlight non-traditional students in CTE. In addition, we prioritize non-traditional, ethnically diverse and special population students when choosing students to go to career days and/or be used for tour guides.</p> <p>CCPS has purposefully created programs of study to help increase access through reducing barriers for students in special populations such as homeless, single parent and Economically Disadvantaged. For example, several of our programs include increased credit requirements to obtain the required clinical/lab/salon hours. Therefore, students do not need transportation or to utilize their off- school time to meet school requirements. Programs supply</p>

	Meets	Area for Improvement	Explanation
			necessary tools and equipment to limit any financial burden.
Processes are in place to ensure that students traditionally underrepresented in CTE have options to <u>enroll</u> in CTE POS		X	All students, regardless of gender, race, or special population status have the ability to request and enroll in CTE programs of study. CCPS has programs that have more student interest than capacity, therefore an over enrollment selection criteria is in place to choose students for overenrolled programs. CCPS plans to review and revise as needed the selection criteria during the 24-25 school year.
Processes are in place to ensure that students traditionally underrepresented in CTE <u>persist</u> in CTE POS once enrolled	X		<p>To ensure success for students and encourage persistence in programming, we work with ML and Special Education supervisors to intentionally assign Instructional assistants to classrooms with an area of need. Our ML Navigators are utilized for translation services and to connect with families. CCPS has school counselors and a mental health coordinator to service all students if a mental health or SEL need is present. In addition CCPS has worked to create an Integrated Tiered System of Support (ITSS). By adopting ITSS, CCPS aims to provide a unified and cohesive approach to supporting all students, including Multilingual Learners (MLL) and Students with Disabilities (SWDs).</p> <p>This integrated framework encompasses multiple tiers of support, each tailored to meet the diverse needs of students at various levels of academic and behavioral proficiency.</p> <p>CCPS utilizes a cohort model for most of our CTE programs. This allows students to complete ½ of their program one semester and complete the POS the following semester.</p>
Processes are in place to ensure that all eligible students have equitable access to career-based learning experiences		X	<p>During the 24-25 school year, CCPS plans to improve our work-based learning continuum. This will provide students opportunities for job shadowing all the way through STA. Through attendance at National, state and local conferences, district leads will learn best practices to utilize while enhancing our programming.</p> <p>However, current CCPS CTE programs provide diverse classroom career activities, guest</p>

	Meets	Area for Improvement	Explanation
			<p>speakers, career exploration lessons, and simulated work based learning. For example, our Food and Beverage Management students create Weekly dinners for retail sale, Cosmetology students offer hair, nail and skin services, Automotive services cars when needed and Construction builds sheds for retail.</p> <p>All CTE students are eligible to participate in CTSOs including Skills USA, FFA, and EdRising.</p>
Career guidance and advisement services are provided to student prior to enrolling in a CTE POS	X		<p>In addition to CCPS overall CTE recruiting, 6th - 12th grade career coaching started in the beginning of the 23 -24 school year. The Career Coaches use a tiered approach where they meet with all students (Tier 1) to provide information and have students take strength, value and interest surveys through Naviance to get a better understanding of self. Career Coaches then pull small groups (Tier 2) and individual students (Tier 3) based on the survey information to provide more focused career exploration opportunities. CCPS created a Career Coach referral form that was shared with staff in all secondary schools so that individual teachers/counselors can refer students for career coaching (artifact). The goal of career coaching is for students to understand the options and choose a post-CCR pathway to best meet their needs. In addition, CCPS school counselors meet with students in grade level groups, smaller class size groups and one on one to discuss students' 4-year plans and adjust them as needed.</p>
All students have access to career planning and support services to help them successfully transition to advanced education and/or the workforce		X	<p>The CCPS High School Career coach is available to meet with any high school student to discuss transition to advanced education and/or the workforce. Presentations have been done by colleges and/or business partners in various programs. In addition, Chesapeake College dual enrollment and skilled trades advisors work closely with our students to ensure a smooth transition. School counselors provide opportunities for students as well such as College application week and FAFSA assistance. CCPS has a Transition Specialist that works with special education case managers to ensure</p>

	Meets	Area for Improvement	Explanation
			<p>transition plans are up to date and include necessary transition information for applicable CTE programming.</p> <p>The 5 Upper Shore districts and Chesapeake College discussed ways to improve career coaching. This includes, creating an action plan with dated and measurable goals for specific items in our MOU. In addition, a Five County Calendar of events will be created and shared.</p>

### ACTIVITY B.3: REFLECTION

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

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

At the district level, our largest concerning gap is persistence of non-traditional field students (36% participation to 12% concentrator status a 24 % gap). In addition, our Black and Hispanic sub groups have a gap in Persistence to concentrator (Black 14% participation 11% concentrator) (Hispanic 18% participant 13% concentrator).

We dug into the data and see that participation data is pulled from the SCGT data report for all grade 9-12 students in a given year and the concentrator data is pulled from the HSDC collection file. The performance report combines HSDC, Graduation file, attendance file and testing data. We have a few data points (Male, Asian, Multi-Race, White) that shows higher concentrator rates than participation rates due to the data being collected for All students vs the graduating class of student data.

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

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

- 1) Provide professional development to School Counselors and career coaches regarding career guidance and advisement services provided to students prior to enrolling in a CTE POS
- 2) Review and update enrollment criteria to CTE POS, including over enrollment criteria.
- 3) Implement best practices to CTE POS recruitment and promotion through 8<sup>th</sup> Grade Tours and CTE Information Nights.
- 4) Look at recruiting efforts at the middle school level by exploring the potential for a Career Exploration class at the middle school level, highlighting CCPS CTE programs of study and by purposefully offering summer enrichment opportunities that are aligned to current POSs.
- 5) Analyze credit amounts for each program of study to see if there are scheduling opportunities to enhance CTE electives with our current staffing. This would ensure our CTE participant data does not include students who are taking a CTE as an elective credit.

**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	HB: Health and Biosciences
BMF: Business Management and Finance	HRS: Human Resource Services
CD: Construction and Development	IT: Information Technology
CRD: Career Research and Development	MET: Manufacturing, Engineering, and Technology
CSHT: Consumer Services, Hospitality, and Tourism	TT: Transportation Technologies
EANR: Environmental, Agricultural, and Natural Resources	CRD: (Career Research and Development & Apprenticeship MD)

**Race/Ethnicity Key:**

AI: American Indian/Alaskan Native	W: White
A: Asian	PI: Hawaiian/Pacific Islander
H: Hispanic	M: Multi-Racial
B: Black/African American	

**Special Populations Key:**

SWD: Students with Disabilities	FY: Foster Youth
ED: Economically Disadvantaged	AD: Active Duty
NT: Non-Traditional	MT: Migrant
SP: Single Parents	
OOW: Out of Workforce	
MLL: Multilingual Learners	
MV: Students served under the McKinney-Vento Act (Unhoused)	



**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									
	100	100	100	M	F	AL	A	H	B	W	PI	M	SWD	ED	NT	SP	OOW	EL	MV	FY	AD	
AMC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	0	0	0	0	
BMF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	0	0	0	0	
CD	1.5	5.9	6.1	88	12	0	0	24	8	60	0	8	4	88	12	0	na	12	4	0	0	
CRD	0.1	0.4	0.8	100	0	0	0	0	0	100	0	0	0	0	0	0	na	0	0	0	0	
CSHT	7.1	15.5	18	26.1	73.9	0	0	7.6	23	60	0	9.2	7.6	66	6.1	0	na	3	0	1.5	0	
EANR	3.7	6.2	6.5	27	73	0	0	0	3.8	88.4	0	7.6	19.2	61.5	0	3.8	na	0	0	0	0	
HB	10.7	19.4	20.4	16	84	0	3.7	11.1	13.5	67.9	0	3.7	0	34.5	1.2	0	na	0	0	0	0	
HRS	16.5	18.2	20.4	35.5	64.5	0	0	18.4	11.8	63.1	0	6.5	3.9	55.2	32.8	2.6	na	2.6	0	0	0	
IT	42.9	5.9	6.5	84	16	0	4	8	8	72	0	8	4	56	16	0	na	0	8	0	0	
MET	13.5	15.5	11.4	80	20	1.5	4.6	15.3	4.6	61.5	0	12.3	3	47.6	20	0	na	0	0	0	1.5	
TT	3.5	12.4	9.4	96.1	3.9	0	0	17.3	1.9	69.2	0	11.5	1.9	51.9	3.8	0	na	5.7	1.9	0	0	
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	0	0	0	0	

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

1. In which clusters does it appear that students in your district are not participating at rates equivalent to their representation in the population? What factors might be affecting their decisions?

CCPS had several clusters where our participation rates are not representative of our population. These data include the following disparities:

#### Gender

CD over male, CRD over male, CSHT over female, HB over female, MET over male, TT over male

#### Race/Ethnicity

CD over Hispanic,

CRD over white, under Hispanic and Black

EANR over white, under Hispanic and Black

#### Student Groups

CD over ED

CRD under SWD, Under ED, Under EL

CSHT over SWD

EANR over SWD, under EL

HB under SWD, ED and EL

HRS under SWD and EL

MET under SWD

TT over SWD

Although there are several factors that may influence this, one in particular is a small sample size. With 4 clusters each with less than 50 students, only a few students can make a significant change in the data. Our greatest gender disparity is in Clusters containing non-traditional designated programs. For Environmental, Agriculture, and Natural Resources, there is a race and ethnicity disparity (28% over enrollment for White, 17% under for Hispanic and 11% under for Black). For Students with Disabilities there was an over enrollment of 5% in Transportation technologies and Consumer Services Hospitality and Tourism and 17% in Environmental, Agriculture, and Natural Resources and under enrollment by 5% in Human Resource Services and manufacturing, Engineering and Technology and 8% in Health and Biosciences. In addition, there are programs of study with increased disparity as well. After analyzing the data and completing root cause analysis for our ML disparities, CCPS believes that this is a scheduling concern. ML students who may be in sheltered content courses do not have flexibility in their schedule at times CTE courses are offered. In addition, they may not have additional credit opportunities for CTE programming.

In addition, our current enrollment criteria has GPA as a criterion. This could cause students who would be highly successful in CTE programming not have proper access to this pathway.

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

CCPS had several clusters where our persistence rates are not representative of our population.

After analyzing data, CCPS believes that due to the state reports that data is pulled from (discussed earlier), we have students counted as participant who are not yet captured in concentrator data sets, even though they will eventually be completers. A few of our clusters have students that are taking classes that are not in a cohort model, meaning they can take single classes each semester. The data reports do not show concentrator status the same semester as participant. (Consumer Services, Hospitality and Tourism and Environmental (difference of 25 students), Agriculture, and Natural Resources (difference of 21 students) and Health and Biomedical Sciences (difference of 53 students).

Information Technology shows a difference of 512 students. This significant difference is that all high school students have the option to take Computer Science Essentials as their Tech Ed credit. Currently in our Student Information System, these students are also captured as participants even though they are only taking the 1 class with no anticipation of completing a CTE program.

CCPS has students who complete more than one program of study such as Biomedical and Allied Health Professions. The data captures them as participants for both but only captures one POS as a completer.

CCPS had a difference of 131 students within Human Resources Services (TAM/Criminal Justice). In both of these programs, students can be placed in these classes as electives and not as CTE students.

CCPS had a 104 student difference in Manufacturing, Engineering, and Technology. These students are not in a cohort model, as discussed above, that can skew our data.

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

CCPS took a deep dive into participation and persistence at the program/cluster level.

Although there are discrepancies, in summary from question 2, data is pulled from various reports, therefore participation vs persistence appears skewed. In addition, our course codes for classes that are taken for Tech Ed or elective credit do not differ from the same class being taken for a CTE pathway. Students needing an elective credit, do not have the intention of participating in CTE but our current data captures them as participants.

We believe there are true discrepancies in gender for non-trad programs including Cosmetology, Academy of Health Professions, Automotive Technology, Computer Science, Drafting & Design, Construction, Advanced Manufacturing, Engineering, and TAM. When meeting with our business partners in these fields, they do not understand the need for a non-trad status. At our latest PAC meeting, Automotive Technology business partners stated, they are not concerned with gender, they want employees who can do the job successfully.

In addition, special populations (SWD, ED and EL) show under representation in Academy of Health Professions (SWD/EL/ED), Automotive Technology (SWD/ED), BioMed (SWD/EL/ED), Cosmetology (EL), Computer Science (EL), CASE (EL), Food and Beverage (EL), Criminal Justice (SWD/EL), Advanced Manufacturing (ED/EL), NJROTC (SWD/EL/ED), Engineering (SWD/EL/ED), and TAM (EL). As it relates to programs with over representation, CCPS data shows the following programs are over: CASE (SWD), Computer Science (Homeless), Criminal Justice (Single Parent), Construction (ED), and Food and Beverage (ED). Scheduling could be a barrier for students with SWD as the programs that are over enrolled are courses that are not block scheduled. The programs that are block scheduled show under representation of SWD.

Ethnicity shows under representation in Automotive Technology (Black), BioMed (Hispanic), Computer Science (Hispanic), CASE (Hispanic/Black), Criminal Justice (White), Advanced Manufacturing (Hispanic/Black), NJROTC (Hispanic/Black), and Engineering (Black).

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.

- 1) Examine how scheduling impacts participation and persistence including how programs are scheduled, when they are scheduled, admission requirements and/or over enrollment selection criteria.
- 2) Revise the 5 year plan process including professional development for Secondary administration, counselors, career coaches and CTE teachers as well as the documents and processes themselves.
- 3) Expand WBL continuum to improve opportunities for engaging hands-on and work based learning experiences using national best practices through ACTE or Advanced CTE.
- 4) Examine recruiting efforts at the middle school level by exploring the potential for a Career Exploration class at the middle school level, highlighting CCPS CTE programs of study and by purposefully offering summer enrichment opportunities that are aligned to current POSs.
- 5) Reduce barriers to student progress by addressing CCPS staff beliefs and expectations, utilizing instructional best practices for CTE Staff PD and Tier 2 academic support through intentional placement in small groups through the use of common assessments.

## 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 education<sup>1</sup>

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

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

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

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

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

In the following table, use your District's heatmap to fill in your District's performance on the federal measures. On the heatmap, cells highlighted in green indicate your district met or exceeded the statewide performance level; yellow indicates your district performance did not meet the performance level but was within 90% of the target; and red indicates that your district did not meet the 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
--	---

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

	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%	45%	22%	24%	79%	17%	77%	69%	100%
Gender									
Males	0	-2	-3	6	-6	-12	0	2	0
Females	0	1	3	-9	8	16	0	-2	-
Race-ethnicity									
American Indian	-	-	-	-	-	-17	-	-	-
Asian	1	30	28	-	-	-17	-	-44	-
Black	1	-12	-14	1	6	4	-5	-8	-
Hispanic	-2	-23	-14	10	-13	1	-2	-8	-
Multi-race	1	2	9	-	-	-10	-10	0	-
White	0	6	5	1	3	1	3	4	0

**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%	45%	22%	24%	79%	17%	77%	69%	100%
Economically disadvantaged	-1	-10	-8	5	-5	0	0	-1	-
Multilingual learners	-15	-45	-22	-	-	-6	-10	-36	-
Individuals with disabilities	1	-45	-22	-24	-9	13	-47	-39	-
Nontraditional fields	-2	-7	14	-24	0	83	3	9	-
Single parents	1	-45	-	-	-	33	-	-	-
Out of workforce	-	-	-	-	-	-	-	-	-
Students served under the McKinney-Vento Act (Unhoused)	1	-45	28	76	-	8	-	31	-
Youth in foster care	-	-	-	-	-	83	-	-	-
Youth with a parent in active military	1	-45	-	-	-	-17	-	-69	-
Migrant students	-	-	-	-	-	-	-	-	-

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



**ACTIVITY C.1: ASSESSING PROGRAM PERFORMANCE**

	List
Looking at <i>overall performance</i> , on which indicators are you <u>substantially underperforming</u> * the district performance target?	2S1, 2S2, 4S1, 5S4a
Looking at <i>overall performance</i> , on which indicators are you <u>substantially exceeding</u> the district performance target?	1S1, 5S4b

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

**ACTIVITY C.2: DETERMINING ROOT CAUSES**

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

CCPS is underperforming on 2S1 – proficiency in ELA assessment (ELA 10) and 2S2 – proficiency in Math assessment (Algebra 1) in many of our CTE programs.

2S1- Program substantially over performing

Computer Science (PLTW), Biomedical Science (PLTW), Drafting and Design Technology, Navy Junior Reserve Officers Training Corps (NJROTC)

2S1- Programs substantially under performing

Early Childhood Education/Child Care, Local Construction Trades Academy, Curriculum for Agricultural Science Education (CASE), Manufacturing Engineering Technology (MSSC), Automotive Technology Maintenance and Light Repair- Plus (NATEF), Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement, Food and Beverage Management (Prostart), Academy of Health Professions - Certified Nursing Assistant, Careers in Cosmetology, Teacher Academy of Maryland

2S2- Program substantially over performing

Computer Science (PLTW), Biomedical Science (PLTW), Drafting and Design Technology

2S2- Programs s substantially under performing

Careers in Cosmetology, Manufacturing Engineering Technology (MSSC), Early Childhood Education/Child Care, Food and Beverage Management (Prostart), Apprenticeship Maryland Program, Automotive Technology Maintenance and Light Repair- Plus (NATEF), Local Construction Trades Academy, Curriculum for Agricultural Science Education (CASE), Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement, Academy of Health Professions - Certified Nursing Assistant, Navy Junior Reserve Officers Training Corps (NJROTC), Teacher Academy of Maryland, Pre-Engineering (PTLW)

The data for Algebra I and English 10 and is from the graduating class of 2023. These students were significantly impacted by school closures due to the COVID Pandemic. They would have taken Algebra I during the 19-20 or 20-21

school year. They would have taken English 10 during the 20-21 school year which was a virtual school year. Having lost instruction time and having virtual instruction greatly impacted students' ability to perform on state assessments. With that being said, CCPS has taken measures to close these achievement gaps. The CCPS math department has faced specific challenges in recovering from learning loss due to the Covid pandemic and returning to pre-pandemic learning. Algebra I data for High school is at a less than 5% proficiency level in 2022-2023. This has caused the district to analyze how we prepare students for Algebra I by utilizing a pre-Algebra course leading into an Algebra I course. Both English and Algebra I have included Tier 2 supports in the core instruction block.

CCPS is underperforming in the majority of programs for 4S1.

#### 4S1- Program substantially over performing

Criminal Justice (55.3%)

#### 4S1- Programs substantially under performing

Advanced Manufacturing (19%), Engineering (16.7%), Computer Science (16%), TAM (13.3%), Construction (12%), Cosmetology (10.3%), Academy of Health Professions (4.3% 1/23 students), and Automotive (3.8% 2/52 students)

CCPS target for 4S1 was 28.72%. The data above shows programs that were over and under- performing. In several of our programs the sample size was very low, therefore, 1 or 2 students can significantly change the percentage of success. The strategies CCPS has been using to use improve non-trad enrollment amongst programs has not been effective. By definition, non-trad programs have norms and biases attached to them. As a district, we aim to eliminate or greatly reduce these stigmas.

CCPS is significantly underperforming in 4 programs Biomedical, Engineering, Advanced Manufacturing, TAM

#### 5S4a- Program substantially over performing

Academy of Health Professions, Drafting and Design and Apprenticeship

#### 5S4- Programs substantially under performing

Biomedical, Engineering, Advanced Manufacturing, TAM

Programs that meet 5S4 requirements but not 5S1 were our lowest performing programs (Biomedical and Engineering). Students did not receive an Industry Recognized Credential for passing the end of course assessment and it was not factored into the student grade as a final exam. The staff and students did not believe in the value of the assessment and results show. Advanced Manufacturing shows an increase overtime. In 2021 attainment was 15.4% in 2022 attainment was 16.7% and in 2023 it improved to 50%. Although the program is still underperforming, we have significantly improved over the past 3 years. Trend data for TAM shows fluctuation between years (2021- 68.8%, 2022- 85.7%, 2023- 58.3%). There have been no significant changes in staff or curriculum, therefore, CCPS believes it was an anomaly year or COVID and school closure impact.

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?

Programmatic over and under-performance is identified in the response to the first question.

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)?

As it relates to 2S1 and 2S2, the CCPS CTE Supervisor and Coordinator will collaborate with the ELA and Math Supervisors on systemic strategies and interventions, best practices, and Professional Development opportunities for CTE teachers. In addition, we will work with school counselors to identify students CTE pathway choices earlier (8<sup>th</sup> grade), so that data for these students can be tracked and analyzed earlier than when they become a participant. CCPS will prioritize programmatic academic and instructional support in under-performing programs.

As it relates to 4S1, all 8<sup>th</sup> grade students tour CCTC and have exposure to CTE pathways offered. CCPS currently utilizes social media posts and our quarterly CTE newsletter to highlight non-traditional students in CTE. In addition, we prioritize non-traditional, ethnically diverse and special population students when choosing students to go to career days and/or be used for tour guides. CCPS plans to utilize career coaches to introduce non-trad career options to students at an earlier age in order to raise awareness of opportunities. We have spoken with business partners and discussed having non-trad guest speakers and attendance at career fairs. In addition, CCPS will educate students, school counselors, teachers, and parents about the importance of gender equity and the value of diversity in the workforce.

As it relates to 5S4, CCPS plans to offer professional development workshops and training sessions to help teachers understand the significance of student test scores in assessing learning outcomes and identifying areas for improvement. In addition, data-informed decision-making practices in the classroom will be emphasized. CCPS will be training all CTE teachers on an assessment platform (Performance Matters) in order to work towards common-assessments across the district as well as observational assessments to track data and student progress. If teachers have a better understanding of where their students are throughout the course, they should be able to adjust instruction accordingly to improve scores on end of course assessments and IRCs.

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

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

- 1) Work with ML and Special Education Supervisors to plan professional development around strategies to work with special populations.
- 2) 2S1/2S2 – ELA/Math- Collaborate with the ELA and Math Supervisors on systemic strategies and interventions, best practices, and Professional Development opportunities for CTE teachers.
- 3) 2S1/2S2 – ELA/Math- Collaborate with Middle and High School counselors on the importance of students identifying a Post-CCR pathway early, even if it may change.
- 4) 4S1 – Utilize career coaches to increase exposure and outreach to non traditional students
- 5) 5S4a – Develop high-quality curriculum with built-in common assessments, formative and summative assessments and reteaching/extension activities.

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

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

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

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

NAME OF CAREER CLUSTER OR CTE POS: <b>ALL CTE</b>					
Staff demographic	Percentage of 2022-23 staff	Percentage of students participating in CTE programming 2022-23	5-year staff turnover rate (Percentage of staff who did not return for years 2018-19 thru 2022-23)		
			Teachers	Support staff/ paraprofessionals	Professional School Counselors
<b>Gender</b>					
Male	39%	53%	27%	-	-
Female	61%	47%	50%	100%	-
<b>Race-ethnicity</b>					
American Indian	0%	0%	-	-	-
Asian	0%	1%	-	-	-
Black	14%	14%	-	100%	-
Hispanic	0%	18%	-	-	-
Multi-race	0%	7%	-	-	-
White	86%	59%	-	-	-
<b>Credential</b>					
Properly Licensed	89%	-	37%	-	-
Granted Temporary Waiver	11%	-	-	-	-

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

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

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

	Strength	Area for Improvement	Explanation
Staff acquire content-specific professional development required to maintain licensure.		x	Although staff acquire the necessary content for their certification, teachers should have more training on the curriculum they utilize. CCPS currently has 3 PLTW programs at the high school level which take considerable time and money for training. Once CTE frameworks are established and final IRCs are known, CCPS will review all programs to see if there are other POS within the same clusters that may be more budget and time friendly but also meet the needs of our students and community.
Staff are aware of the requirements to maintain endorsement.	X		CCPS HR department communicates often with teachers as it relates to certifications and maintaining licensing.
Staff have equal access to content-specific professional development opportunities across industries.		x	During the 24-25 school year, CTE leaders will guide CTE teachers to create a CTE POS Guidance Manual. This manual will include scope and sequence, assessments and other pertinent information to their Program of study. When new staff enter the district they will have equal access to content specific information.
Data are collected on the effectiveness of professional development to ensure it meets the needs of educators.		X	Surveys are collected at the end of each professional development opportunity. CCPS Supervisor of CTE completes informal and formal observations on CTE teachers using the CCPS Teacher Professional Growth standards. However, in order to know the effectiveness of professional development, walk throughs should occur within a short period of time following the PD. Immediate feedback should be given to staff.

**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?

CCPS has predominately white CTE teachers both male and female. We do not have non traditional gender teachers either.

5. 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?

Currently, 11% of our CTE staff is not fully credentialed. CTE teachers in our comprehensive high schools are fully certified as they were content teachers before CTE teachers. CTE teachers in our CCTC building come from industry, without education classes or certification. CCPS HR department works with individual teachers to create a plan for reaching full certification/licensure. CCPS reviewed the Career and Technical Educator Certification Area document in Appendix D and shared this resource with our HR department who had not seen it. This document will allow us to review certifications and see if we can increase our percentage of fully certified staff. In addition, when CCPS is recruiting new teachers, we can recruit alternative certificated contents. One drawback with this is that the teacher would not have the business perspective.

6. 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?

Prior to school starting each year, CCPS has 1 full day of content professional development with the Supervisor of CTE. Throughout the school year, there are 2 additional full days of content professional development with the CTE supervisor. In addition, there are multiple days of school based professional development. CTE teachers participate in two Program Advisory Committee meetings per year. During the 23-24 school year, the PAC meetings were held collaboratively with the other 4 Upper Shore districts, Chesapeake College, and the Workforce Investment Board. The PAC meetings serve as an opportunity to collaborate with other teachers in the same program of study while discussing, alignment to current industry and OSHA Standards, program size and program performance with business partners.

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

Individual program curricula require additional training. There are several barriers to these trainings. Many take place over the summer, when teachers are off and would prefer to recharge. Therefore, funds need to be available to pay teachers for their time and or travel/expenses for off-site trainings. PLTW training is very costly, yet teachers need the training in order to teach the course and have access to necessary materials.

8. 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.

- 1) Provide professional development to teachers on specific curricular needs.
- 2) Establish a comprehensive professional development program that addresses the specific needs of CTE instructors utilizing internal expertise as well as national, state and local opportunities.
- 3) Enhance recruitment for minority and non-trad teachers when vacancies exist.
- 4) Enhance support systems and mentorship for new CTE teachers.
- 5) Enable CTE teachers to guide students in making informed career decisions by linking RIASEC results to real-world career opportunities and technical education pathways.

## 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"> <li>Analyze program enrollments, standards, postsecondary pathways, and employers to assess whether sunseting is warranted.</li> <li>Develop strategy and timeline for sunseting a program and internal and external communication plans to share information.</li> <li>Explore alternative educational options for students currently enrolled that will allow them to transition to other programs.</li> <li>Consult with the union and educators to arrange transition options, which may include reassignment or retraining.</li> <li>Review state regulations and district policies to identify barriers to sunseting programs</li> </ul>	<a href="#">How to sunset an educational program</a>	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	<a href="#">Maryland Occupational Projections 2020-2030</a>	The State of Maryland publishes occupational projections that indicate changes in employment. Use this interactive website to identify careers anticipated to grow in the coming years.
		Recruit industry partners in high-wage, high skill, in-demand fields to offer guidance on new program design and adoption	<a href="#">Cheat Sheet: Opportunities for Employer Involvement in CTE</a>	Use this factsheet developed by Advance CTE and ACTE to identify

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

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

Root Cause	Strategy	Sample Activities	Resource	Description
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.	<a href="#">Maryland CTE Performance Dashboard</a>	Maryland has developed this interactive CTE dashboard that lists performance by cluster, program and student group. Use this resource to identify districts and colleges that are attaining high levels of performance.
		Create and use employer advisory boards to inform necessary updates	<a href="#">Strategies for Developing Employer Partnerships</a> <a href="#">Michigan Program Advisory Toolkit</a>	The CTE Technical Assistance Center of New York created a comprehensive website with resources to support educators in engaging with employers. Similarly, Michigan has created a toolkit with guidance and tools you may adapt for your own use.
		Review program resources in other states to identify potential instructional design resources	<a href="#">Texas CTE Administrative Code</a>	Texas has specified the knowledge and skills to be taught in CTE programs. Use this website to find examples of required skills by cluster, programs, and course.

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

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

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

Root Cause	Strategy	Sample Activities	Resource	Description
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.	<a href="#">Middle School CTE design options and resources</a>	ACTE has developed resources to support educators in expanding CTE options in the middle grades. Offerings include program design principles, a repository of state-level strategies, research studies, examples of ways to implement and improve programs, and podcasts and webinars.
		Schedule informational sessions for entering 9 <sup>th</sup> grade students to introduce them to school CTE offerings.	<a href="#">Freshman Cruise</a>	Roseburg Public Schools (OR) takes all 9 <sup>th</sup> grade students on a 'cruise' of CTE offerings to allow students to meet teachers and learn about CTE studies that are available.
		Schedule career fairs and informational events to help students learn about CTE offerings.	<a href="#">Career Fair Options</a>	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.	<a href="#">CTE Options at my School</a>	Fairfax County Public Schools (VA) hosts a webpage that helps students learn about CTE programs offered in their school replete with videos and detailed program descriptions.
<b>Families and educators do not appreciate CTE's benefit and discourage youth from enrolling</b>	Improving messaging to families, community groups, and educators to help them understand the benefits CTE confers	Undertake a comprehensive marketing campaign to educate families about CTE	<a href="#">CTE Vision Toolkit</a> <a href="#">CTE Marketing Best Practices &amp; Campaigns</a>	Advance CTE has created a 5-part series of issue briefs and posters detailing how CTE contributes to students' success and strengthens our nation's economy.  Washington State has developed this playbook detailing strategies and providing resources to promote CTE programs to students, parents, and educators.
		Host CTE Signing Days to celebrate and publicize CTE students who demonstrate their intent to enter a postsecondary institution to continue their studies or take a job with a community employer	<a href="#">CTE Letter of Intent Signing Day: College</a> <a href="#">CTE Signing Day: Employment</a>	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.
<b>Students are not provided career guidance that supports them in choosing CTE as an educational pathway.</b>	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.	<a href="#"><u>School Counselor Playbook: Unlocking Career Success</u></a>	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.	<a href="#"><u>ACTE High Quality CTE: Student Career Development</u></a>	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
<b>Historically underrepresented students or those with special needs do not feel welcome in CTE programs.</b>	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.	<a href="#"><u>Maximizing Access &amp; Success for Special Population Students</u></a> <a href="#"><u>Strategies for Special Population Success</u></a>	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.

			<a href="#"><u>Recruiting Special Populations into CTE: Toolkit</u></a>	<p>The National Alliance for Partnerships in Equity created this brief documenting the obstacles students with special needs face and tools CTE educators may apply to recruit and retain youth.</p> <p>The Ohio Department of Education has developed this toolkit to promote the recruitment of special population students into CTE programs. Use it to find ideas for using data and leveraging</p>
		Explore why students from some racial-ethnic groups face obstacles in CTE programming and take steps to address them.	<a href="#"><u>A Guide to Discussing Racial Equity</u></a>	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.	<a href="#"><u>Assessing the Enrollment and Retention of Nontraditional Learners</u></a>	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.
<b>Students do not understand the personal and economic benefits of completing advanced</b>	Offer students mentors and real-world workplace experiences to inform their career decisions.	Pair students with mentors who can offer them one-on-one	<a href="#"><u>Partnering Students with Industry Mentors</u></a>	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.	<a href="#">Work-based Learning Toolkit</a>	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.	<a href="#">CTE and Academic Integration Self-Assessment Rubric</a>  <a href="#">ACTE Integration of Academics and CTE Section</a>  <a href="#">Math-in-CTE</a>	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.	<a href="#">Rigorous K-12 Assessments Help Reduce Remediation</a>	This brief from offers examples of how higher states are 11 <sup>th</sup> grade test results as a college readiness signal and as a means

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

<b>prevent them from pursuing an industry-recognized credential.</b>	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><a href="#">Credential Currency: Promoting Credentials of Value</a></p> <p><a href="#">Aligning State CTE Programs with Industry Needs and Priorities</a></p>	<p>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: CTE CONCENTRATORS ARE NOT TRANSITIONING INTO ADVANCED TRAINING OR EMPLOYMENT FOLLOWING GRADUATION.**

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

--	--	--	--	--

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

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

Root Cause	Strategy	Sample Activities	Resource	Description
<b>Salaries in the private sectors are higher than for educators in the same field, making it difficult to attract educators.</b>	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>	<a href="#">36 CTE Teacher Recruitment Strategies</a>	The Oklahoma Department of Career and Technology Education developed this list of CTE teacher recruitment strategies compiled from expert resources.
<b>The pool of CTE educators is small, making it difficult to hire new instructors.</b>	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	<a href="#">Teach CTE Recruitment Toolkit</a>  <a href="#">Becoming a CTE Teacher in Maryland</a>	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.	<a href="#">CTE TEACH Mentor Programs</a>	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.	<a href="#">Credit Quandaries: How CTE Instructors can Teach Academic Credit</a>	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
<b>Educators who are nontraditional for their field are not recruited and those who begin are not offered supports to persist in the occupation.</b>	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><a href="#">State and Local Strategies for Diversifying the CTE Educator Workforce</a></p> <p><a href="#">Diversifying the Teaching Profession: How to Recruit and Retain Teachers of Color</a></p>	<p>This document identifies issues and offers solutions for diversifying the secondary CTE educator workforce. Includes suggested activities to both promote recruitment and retention of teachers.</p> <p>The Learning Policy Institute created this resource to support diversifying the teaching</p>



		workplaces and offering mentoring and professional learning communities.		profession overall. Use it to find options that might apply to the CTE workforce.
--	--	--	--	---

## 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](#)