Maryland
STATE DEPARTMENT OF EDUCATION

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

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 1st of each year.

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

Instructions

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

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

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

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

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

Guiding Principles and Logic Model

OVERVIEW

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

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

LOGIC MODEL

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

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

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

LOGIC MODEL CHART

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

INTERPRETATION

3. **IF** we intentionally and strategically allocate Perkins funding in the planning process, **THEN** we can develop a CLNA leading to a comprehensive report that identifies gaps in the CTE programs, ultimately enhancing the quality and inclusivity of CTE programs and preparing the workforce better for Maryland's labor market demands.

4. **IF** we utilize LMI data, **THEN** we can better align CTE programs with current labor market demands, leading to adjustments in the CTE curriculum, improving the alignment of CTE tracks with workforce demands, and resulting in higher employment rates for CTE program graduates.

5. **IF** we employ interview and focus groups effectively, **THEN** we can gather valuable feedback from stakeholders, establishing an immediate feedback loop, strengthening collaboration, and enhancing stakeholder trust and investment in CTE programs.

6. **IF** we leverage our expertise in CTE programming, **THEN** we can design a structured Local Application process for Perkins V funding, streamlining the application process, increasing the number of successful grant applications, and optimizing the use of grant funds for improved student outcomes.

7. **IF** we nurture and maintain stakeholder relationships, **THEN** we can engage more deeply and regularly for feedback, fostering a sense of community ownership, strengthening community ties, and creating CTE programs that resonate more deeply with community needs.

8. **IF** we stay updated on federal and state education guidelines, **THEN** we can ensure consistent alignment of CTE programs with these guidelines, leading to immediate course corrections when needed, sustained alignment, and thereby securing sustained funding and support for CTE programs.

PROGRAM DESIGN

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

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

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

STUDENT ENGAGEMENT

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

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

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

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

PROGRAM DELIVERY

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

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

SIZE
At least two, state-approved CTE POSs are offered in recognized clusters: • This may be an impossible "ask" for a district of our size unless apprenticeship is considered within each cluster. Currently, the EANR, Engineering/Manufacturing, and Transportation Technologies maintain single POSs due to the size of the district and the ability to offer additional programs to students.
Each POS consists of a coordinated, non-duplicative sequence of academic and technical coursework comprising at least 3 credits. • Met
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. • Data in this area currently includes some years contained within the COVID-19 pandemic. As educational delivery has returned to pre-COVID levels, numbers that had previously dipped below 10 have increased or are increasing. No programs fall below 10 concentrators for four years. • Current "closely watched" programs are the Teacher Academy of Maryland program (still over 10, but below 15), Graphic Communications (which has low enrollment for SY23-24 and 24-25), Business Administrative Services and Accounting (which may fall into a 4th year of low enrollment within SY24-25; however, in both of these pathways, students often dually complete the Business Administration pathway and then are not subsequently counted in BAS or Acctg despite also completing those pathways), and the Home Improvement program (which has been restructured to include the Carpentry coursework and we believe will increase the numbers in this program).
Each POS has the required number of staff, availability of equipment, and student access to facilities. • Met

SCOPE
Curricula are aligned to state-approved industry standards that allow students to earn recognized credentials, certifications, licenses, college credit, or degrees • All programs offer the opportunity to earn college credit, advanced standing at post-secondary institutions or employment, and/or industry recognized credentials.
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. • Met. And these are regularly reviewed in PAC meetings.
Curricula allow students to learn and demonstrate academic, technical, and employability skills • Met
Curricula include differentiated supports and modifications to meet the needs of diverse learners • Met; however, this is an area of continuing development as we continue to expand awareness of how to adapt CTE programs especially for students with disabilities and MLL's. Collaborative work with the Special Education and ESOL departments have facilitated great gains in this area in the last two years.
Each CTE student has a written career and academic plan in place that includes the: • required courses to complete a POS and graduate; • required assessments to earn a certification, license, credential, or degree; • required academic assessments to graduate; and • a timeline to take courses, assessments, and complete career-based learning experiences. This work is in development as part of the implementation of career advising program via Blueprint. Career plans need to be created/updated to include the specific information regarding credentials/certifications/degrees as well as timelines for career-based learning experiences. This work is targeted for completion by end of SY24-25.
All students, regardless of race, color, national origin, sex, or disability, have equitable access to high-quality CTE programs as required by Code of Maryland Regulation 13A.04.02.04 • CCPS implements open enrollment for ALL programs and minimizes "prerequisite/required" coursework to the greatest extent possible. We do not use placement or achievement tests, grades, disciplinary records, attendance, interviews, or essays in any student enrollment decisions. In programs at the Career & Technology program, a lottery is used for oversubscribed programs with no student receiving advanced standing over any other in that process.

SCOPE
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 programs adhere to these requirements.
All CTE POS adhere to CTE Development Standards, which are required by Code of Maryland Regulations 13A.04.02.03 • Met
All programs meet the definitions for high-skill, high-wage, in-demand occupations • The CRD program is the single program which does not currently meet these requirements due to the fact that it does not align to any single industry or profession nor does it regularly offer an opportunity for specific certification. An overhaul of this program is planned for SY24-25.

QUALITY
The site achieves or consistently makes progress towards local targets established for state and federal core indicators of performance • We meet or exceed all core indicators.
POS are delivered by teachers who meet state requirements to teach content at the secondary level • All teachers are highly qualified in their CTE subject area administration.
CTE POS are delivered by teachers who earned a minimum of effective on their teacher evaluation as defined by Code of Maryland Regulation 13A.07.09 within three years • Met
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). • Met
All students, including students in special populations, are offered the opportunity to: • Participate in at least one career-based learning experience (e.g., work-based learning, internship, apprenticeship, etc.), • Earn college credit and/or industry credentials, and • Participate in CTSOs. Met: with expanded opportunities for CTSO participation and credentialling planned for FY25.

QUALITY
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 • Met
Local and state annual data-reporting requirements are met, and reviews conducted of all annual Program Quality Index reports to inform improvement • The state opportunities dashboard/database is utilized to review for PQI.
Human resources are included in the recruitment process to ensure a diverse CTE teacher and faculty member candidate pool • Met
Metrics are used to ensure that CTE teacher and faculty member recruitment strategies are successful • All positions are filled with highly qualified teachers.
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 • The top contributing factor to CTE teacher turnover is teacher retirement. This is typically due to teachers beginning teaching as a second career and therefore, their time in teaching is more limited/shorter than other career teachers. The second factor is comprehensive high school administrators moving/shifting teachers to meet various demands/needs within staffing constraints within schools (e.g. shifting a computer science teacher to a math course). There is no other unusual turnover in CTE teachers across the district.

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	Carrie Akins
Organization	Calvert County Public Schools
Title	Director/Career & Technical Education
Email	akinsc@calvertnet.k12.md.us

STAKEHOLDER TEAM MEMBERS

When Selecting Stakeholders, consider:

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

Stakeholder Team Responsibilities

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

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

Stakeholder Team Roster

SECONDARY

Role	Name	Title	Affiliation
Administration (e.g., principal, assistant principal)	Travis Mister	Assistant Principal	Career & Technology Academy
	Anthony Barrone	Principal	Patuxent High School
	Danielle Swann	Principal	Plum Point Middle School
	Rick Weber	Principal Mentor	CCPS
Professional career or academic counselor	Molly Wannamaker	Supervisor of School Counselors	CCPS
	Megan Crowley	School Counselor	Patuxent High School
	Tricia Korsan	School Counselor	Mill Creek Middle School
	Nikki Phillips	Career Advisor Coordinator	CCPS
Teachers	Kristen Craft	PLTW Biomedical Teacher	CCPS
	Shane Wines	Computer Science Teacher	CCPS
	Danielle Klem	English Teacher	CCPS
	Joe Sutton	Math Content Specialist	CCPS
Instructional Support and Paraprofessionals (Psychologists, Social Workers, etc.)	Sarah Jones	Instructional Assistant	CCPS
	Wanda Pett	Instructional Assistant	CCPS
	Glenn Casciero	SpEd Work-based Learning Coordinator	CCPS
	Adam Keesee	SpEd Secondary Transition Specialist	CCPS

POSTSECONDARY

Role	Name	Title	Affiliation
Administration (e.g., dean, division chair)	Ellen Flowers-Fields	VP Continuing Education & Workforce Development	College of Southern Maryland

	Michael Langton	Director of Center for Trades & Energy	College of Southern Maryland
	Mark Metcalf	Career and Technical Education, Manager	College of Southern Maryland
Faculty	Dawn Lister	Professor for Criminal Justice	College of Southern Maryland
	Stacie Bailey	Department Chair/Professor for Business	College of Southern Maryland

WORKFORCE

Role	Name	Title	Affiliation
Local Workforce Development board member	Ruthie Davis	Director	TCCSMD/SoMD
	Cindy Raunner	President/Chair	Southern Maryland Workforce Dev. Board (SMECO)
*Regional Economic Development organization member	Kathy MacAdams	Business Retention Specialist	Calvert County
	Dawn Tucker	Chairperson	Calvert County Minority Business Alliance
	Gail Tucker	Co-Chairperson	Calvert County Minority Business Alliance
Local business & industry representative	Gwynn Novak	CEO	NoThyme to Cook
	Tom Gifford	Business Agent	UA Local 602 Steamfitters
	Jason Bone	Work Force Development Site Lead	Constellation Energy Calvert Cliffs Nuclear Plant
	Roy White	CEO	Fixed Right & Guaranteed HVAC

OTHER

Role	Name	Title	Affiliation
Parent or caretaker	Robyn Truslow	Parent/Interactive Media Student	CCPS
Student	Nathan Hawley	Student/SkillsUSA Chapter President	Academy of Health Professions Program
Representative of Special Populations	Adam Keesee	Transition Specialist, Special Education	CCPS
Out-of-School youth / unhoused youth /	Daryl Rice	Youth Program Manager	TCCSMD

corrections			

* 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 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.*

Program	Alignment to current statewide industries (enter ✓)			Number of CTE participants 2022-23	Percent of all CTE Participants 2022-23
Example	HS	HW	ID	1432	100%
Academy of Health Professions (CNA) [CIP 510050]	X		X	64	4%
Academy of Health Professions (CCMA) [CIP 510053]	X		x	48	3%
Academy of Health Professions (Physical Rehabilitation) [CIP 510054]	X			16	1$
Accounting & Finance [CIP 520354]	X	X	X	52	3.5%
Apprenticeship Maryland [CIP 860500]	X	X	X	<10	>1%
Automotive Technology Maintenance and Light Repair [CIP 470645]	X	X	X	29	2%
Biomedical Science (PLTW) [CIP 51150]	X	X	X	156	11%
Business Administrative Services [CIP 520451]	X	X	X	14	>1%
Business Management [CIP 520251]	X	X	X	126	9%

Career Research and Development [CIP 860000]				32	2%
Careers in Cosmetology [CIP 120450]	X		x	14	>1%
Computer and Information Sciences [CIP 110190]	X	X	X	116	8%
Construction Maintenance Professions – HVAC [CIP 475200	X	X	X	22	1.5%
Construction Trades Professions – Carpentry [CIP 475200]	X		X	>10	>1%
Construction Trades Professions – Electrical [CIP 465300]	X	X	X	22	1.5%
Criminal Justice, Law and Society [CIP 430190]	X	X	X	208	14.5%
Culinary Arts (ACF) [CIP 120550]	x		X	19	1%
Curriculum for Agricultural Science Education [CIP 010050]	x	x	X	15	1%
Fire Emergency Medical Training/HS Cadet (MFRI) [CIP 430250]	X		X	21	1.5%
Graphic Communications [CIP 100350]	X			12	>1%
Interactive Media Production [CIP 100150]	X	X	X	22	1.5%
IT Networking Academy (CISCO) [CIP 110955]	X	X	X	36	2.5%
Local Construction Maintenance – Building Property Maint [CIP 460401]	X	X	X	14	1%
Local Construction Maintenance – Welding [CIP 480508]	X	X	x	21	1.5%

Navy Junior Reserve Officers Training Corps (NJROTC) [CIP 280410]	x			164	11%
Pre-Engineering (PLTW) [CIP 155000]	X	X	X	130	9%
Teacher Academy of Maryland [CIP 130150]	X	X	X	48	3%

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
Local Construction Maintenance – Building Property Maint [CIP 460401]	Deleting	We won't actually be fully deleting this, but, rather, merging it with Carpentry [CIP 475200]. There is a lack of student interest in stand-alone carpentry program however, the skills are still desired by many students: merging carpentry with the BPM pathway allows us to add supplemental instruction with Carpentry to increase its value (perceived and actual) to students and thus grow the number of completers. Offering a combination of skills that includes Carpentry (following NCCER for Carpentry), Masonry, basic residential wiring and plumbing not only creates a valuable overall pathway/program, but, also creates a valuable opportunity to create a program which could lead into many different apprenticeship programs after one year of the program.
CIP 860000 (Career Res. & Dev.)	Deleting	In the coming year, we would like to begin the process of phasing this pathway out OR deeply revising its curriculum. This pathway is least likely to lead to HS/HW/ID careers in its current format. Our hope is to move the students who would/would have enrolled in this program to apprenticeships. However, for that to become a viable option, we will need the support of DOL to help create more apprenticeships: especially ones that are conscientious to/receptive of students with disabilities. In addition, much work must be done to ensure there are pathway options available for the students who are right now choosing CRD as their graduation pathway. The phasing out of CRD is likely to take at least two years to begin the process in order to make sure all required alternatives are put into place for students.

Early Childhood Development (CDA)	Adding	This is a long-range consideration for addition as Blueprint requirements add PK-3 for the district; however, soonest implementation would by FY26.

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	While stakeholders contribute their own information, we do not currently systematically review economic or workforce data as a whole.
Processes are in place to identify and expand high school level registered apprenticeship opportunities.	x		
Processes are in place to update or phase out CTE POS that do not align with HS/HW/ID industries	x		
A majority of our students are concentrating in POS aligned to HS/HW/ID industries	x		
Processes are in place to recruit business and industry stakeholders to participate on Program Advisory Committees	x		

ACTIVITY A.3: REFLECTION

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

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

   The Career Research & Development program helps students gain important employability skills that prepare them for future or additional training/career preparation. This program is ideal for students who, as high school seniors, are still "exploring" career interests and desires. While the program does not align to any one specific profession or area, we believe that giving students tools to begin gainful employment alongside robust access to resources (such as working with Tri-County Council of Southern Maryland) helps ensure students have the tools to take "next steps" after high school ends even if they are not quite ready *as* high school ends. While many students in CRD do in fact pursue fields that are HS/HW/ID, because it is geared to a variety of fields, the entirety of the program may not align to HS/HW/ID. However, we will be exploring the options for phasing out the CRD program in order to shift toward apprenticeship or other pathway options for students.

2. What are the top five priorities you will address in the coming year to update or phase out misaligned CTE programs and/or expand student participation in CTE programming aligned with HW/HS/ID careers?

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

   1. Alignment of/Inclusion of Industry Recognized Credentials:
      a. Add IRCs to programs that do not currently regularly certify students, working in consultation with LAC/PAC groups. These targets include within Business Management, Accounting, Engineering, Biomedical Science, Agriculture, and Criminal Justice.
      b. Review currently offered IRCs to ensure continued alignment and relevance.
   2. Enhanced Outreach and Awareness Campaigns:
      a. School Presentations and Workshops: Conduct presentations and workshops in middle and high schools to inform students and parents about the benefits and opportunities provided by CTE programs. Career advisors will assist with this work.
      b. Middle School CTE visits: 8th grade students have regularly visited programs at CTA; in the coming year, via career advisors, apply equal focus on the 10 programs available in each of the 4 comprehensive high schools so students have awareness that "CTE" is more than just the programs at CTA.
      c. Targeted Communication: Use social media, school websites, newsletters, and local media to highlight success stories and the value of CTE education. Work with Calvert Broadcasting to explore formal productions/short commercials.
   3. Integration with Core Academic Curriculum:
      a. Interdisciplinary Projects via Project Based learning: Develop projects that integrate core academic subjects with CTE skills, demonstrating the practical

application of academic knowledge. Work with district curriculum support specialists for this work.

   b. CTE-infused Classes: Introduce CTE concepts and relevant career exploration in middle school classes, such as math or science, to spark interest and show relevance. Career advisors will work and plan with middle school teachers.

4. Strong Industry Partnerships/Increased Apprenticeships:
   a. Work with department of labor to grow opportunities for high school level apprenticeships, especially in fields that are in local demand for which we do not currently have programs. Targets are areas such as dental assisting, collision repair, and early childhood.
   b. Internships and Shadowing (pre-CTE): Collaborate with local businesses and industries to offer internships and shadowing in grades 7-10, providing students with real-world experience and a clear pathway to employment.
   c. Explore feasibility of "Everyone Shadows" program activity in conjunction with career advisors. The goal would be for all students (perhaps in a particular grade) to complete at least one meaningful job shadowing activity to inform future possibilities/plans. This would be work with the career advisors.
5. Flexible and Inclusive Program Design:
   a. Explore additional varied schedule options: Building on pilot programs offered in FY23 and FY24 for Business and Apprenticeship, continue to explore opportunities to offer CTE courses during different times of the day, including after-school and summer programs, to accommodate students with different schedules and commitments.
   b. Dual Enrollment Opportunities: Continue work with College of Southern Maryland which may enhance opportunities for varied schedules and allow students to earn college credits while still in high school.

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:

1. **Data Suppression:** Prior to sharing this table with your stakeholder team, you will need to suppress numbers and percentages in cell that do not include the minimum number of students required to protect student confidentiality. Maryland state policy is to suppress data for cells or percentages that are based on fewer than 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).

2. **2023 Statewide Graduate Data:** Currently, MSDE does not disaggregate four-year cohort participation in CTE. However, we have identified this area as a growth opportunity in data collection and reporting.

Student Group	2023 Graduates Statewide				2023 Graduates in Your District			
	Number	Percent	Percent participating in CTE	Percent of participants who achieved concentrator status	Number	Percent	Percent participating in CTE	Percent of participants who achieved concentrator status
All 2023 Graduates (4-year cohort)	58,206	85.81%			1150	96.6%	74%	53%
Gender								
Male	28,576	82.60%			563	48.9%	38%	29%
Female	29,581	89.16%			584	50.7%	36%	23%
Race-ethnicity								
American Indian	140	85.89%			S	>1%	0%	0%
Asian	4,559	96.16%			23	.02%	2%	1%
Black	18,648	84.68%			149	12.9%	10%	7%
Hispanic	10,446	71.37%			89	7.7%	6%	4%
Multi-race	2,485	89.36%			97	8.4%	7%	4%
White	21,838	93.38%			784	68%	49%	36%
Special Populations								
Economically disadvantaged	17,049	80.83%			238	20.7%	15%	10%
Multi-lingual learners	3,140	55.78%			S	>1%	1%	1%
Individuals with disabilities	4,697	69.47%			188	16.3%	13%	10%
Nontraditional fields	-	-			-	-	-	-
Single parents	-	-			-	-	--	--
Out of workforce	-	-			-	-	--	--
Unhoused Individuals	833	62.03%			S	>1%	1%	0%
Youth in foster care	66	40.24%			S	>1%	0%	0%
Youth with parent in military	1,028	95.10%			--	--	--	--
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		And, this is an area of special growth as we continue to incorporate new opportunities such as our ELL family night, opportunities for SWD to explore programs and receive information.
Our district has processes in place to recruit students traditionally underrepresented in CTE to improve diversity in CTE POS	x		
Processes are in place to ensure that students traditionally underrepresented in CTE have options to enroll in CTE POS	x		
Processes are in place to ensure that students traditionally underrepresented in CTE persist in CTE POS once enrolled	x		Our persistence rate for ML students is 100%. This is an area where we are exceeding expectations.
Processes are in place to ensure that all eligible students have equitable access to career-based learning experiences	x		
Career guidance and advisement services are provided to student prior to enrolling in a CTE POS	x		
All students have access to career planning and support services to help them successfully transition to advanced education and/or the workforce	x		

ACTIVITY B.3: REFLECTION

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

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

Female students are underrepresented in participation in the Construction and Development and Transportation Technologies clusters. Male students are underrepresented in the CSHT, EANR, and HBS clusters. Additionally, white students are underrepresented in CSHT (15%) and black student are underrepresented in EANR (12%). Students with disabilities are overrepresented in the TT (11%) and AMC (16%) clusters and Economically disadvantaged students are overrepresented in CSHT (12%) and underrepresented in EANR (11%). When looking across to concentrator status (persistence), gaps that exist in gender, SWD, and ED disproportionality stay relatively the same into persistence. However, there are wider gaps in the construction and transportation cluster programs when looking at comparisons by race.

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. Enhanced Outreach and Awareness Campaigns:
   a. School Presentations and Workshops: Conduct presentations and workshops in middle and high schools to inform students and parents about the benefits and opportunities provided by CTE programs. Career advisors will assist with this work.
   b. Middle School CTE visits: 8th grade students have regularly visited programs at CTA; in the coming year, via career advisors, apply equal focus on the 10 programs available in each of the 4 comprehensive high schools so students have awareness that "CTE" is more than just the programs at CTA.
   c. Targeted Communication: Use social media, school websites, newsletters, and local media to highlight success stories and the value of CTE education. Work with Calvert Broadcasting to explore formal productions/short commercials.
2. Flexible and Inclusive Program Design:
   a. Explore additional varied schedule options: Student scheduling often becomes a barrier to student persistence as students seek to be both college AND career ready while meeting all graduation requirements. Building on pilot programs offered in FY23 and FY24 for Business and Apprenticeship, continue to explore opportunities to offer CTE courses during different times of the day, including after-school and summer programs, to accommodate students with different schedules and commitments.
   b. Dual Enrollment Opportunities: Continue work with College of Southern Maryland which may enhance opportunities for varied schedules and allow students to earn college credits while still in high school.
   c. Expand Early College: Expand the new early college program to include opportunity (schedule) for students to complete the EC program AND complete CTE pathways already established/started within the school system, especially those at CTA.

3. Overall Supportive Services and Resources:
    a. Career Counseling: Provide robust career counseling services to help students identify their interests and align them with appropriate CTE pathways.
    b. Special Education Transition Planning: Continue working with staff in department of Special Education to integrate specific CTE planning at earlier stages of transition planning so that bridges can be built to support or build up student strengths prior to enrollment in post-CCR CTE pathways.
    c. Mentorship Programs: Establish mentorship programs where students can receive guidance and support from professionals and CTE program alumni.

4. Support for Struggling Students to support persistence and success:
    a. Add additional supports for students in both CTE program courses as well as academic courses (as students falling behind on credits can be a barrier to program completion) via tutoring/support services. This may include utilizing student mentors and supports such as a student tutoring program.
    b. Support hours of tutoring for CTE teachers specific to tutoring related to certification attainment.

5. Student Affinity and Mentorship Groups:
    a. Develop student affinity/mentorship groups with community support so that students have the opportunity to connect with other individuals who identify as they do who are already successful in the fields connected to the programs. Work via current connections with organizations such as NSBE and NAWIC in addition to working with SoMD WDB to identify additional potential mentors.
    b. Work with school-based equity groups and career advisors to incorporate conversations regarding equity/representation/inclusion as it relates to careers and supporting students career identity awareness.

ACTIVITY B.4: CAREER CLUSTER PARTICIPATION AND PERSISTENCE

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

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

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

CAREER CLUSTER KEY:

AMC: Arts, Media, and Communication

BMF: Business Management and Finance

CD: Construction and Development

CRD: Career Research and Development

CSHT: Consumer Services, Hospitality, and Tourism

EANR: Environmental, Agricultural, and Natural Resources

HB: Health and Biosciences

HRS: Human Resource Services

IT: Information Technology

MET: Manufacturing, Engineering, and Technology

TT: Transportation Technologies

CRD: (Career Research and Development & Apprenticeship MD)

Race/Ethnicity Key:

AI: American Indian/Alaskan Native

A: Asian

H: Hispanic

B: Black/African American

W: White

PI: Hawaiian/Pacific Islander

M: Multi-Racial

Special Populations Key:

SWD: Students with Disabilities

ED: Economically Disadvantaged

NT: Non-Traditional

SP: Single Parents

OOW: Out of Workforce

MLL: Multilingual Learners

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

FY: Foster Youth

AD: Active Duty

MT: Migrant

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

Cluster	Enrollment Number	Number of Concentrators	Number of Graduates	Gender		Race/Ethnicity							Special Populations								
				M	F	AL	A	H	B	W	PI	M	SWD	ED	NT	SP	OOW	EL	MV	FY	AD
AMC	22	19	19	13	9	<10	<10	<10	<10	15	<10	<10	10	<10	<10	<10	<10	<10	<10	<10	<10
BMF	192	100	192	118	74	<10	<10	16	34	121	<10	18	22	41	<10	<10	<10	<10	<10	<10	<10
CD	60	56	59	58	<10	<10	<10	<10	<10	44	<10	<10	17	16	<10	<10	<10	<10	<10	<10	<10
CRD	204	164	196	136	68	<10	<10	15	26	136	<10	17	43	51	<10	<10	<10	<10	<10	<10	<10
CSHT	36	33	36	13	23	<10	<10	<10	<10	20	<10	<10	<10	13	<10	<10	<10	<10	<10	<10	<10
EANR	15	10	15	<10	<10	<10	<10	<10	<10	12	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
HB	284	167	284	38	182	<10	<10	13	32	147	<10	20	31	47	<10	<10	<10	<10	<10	<10	<10
HRS	277	181	277	118	159	<10	<10	14	27	211	<10	23	38	60	<10	<10	<10	<10	<10	<10	<10
IT	152	110	152	97	53	<10	<10	13	19	98	<10	15	29	20	<10	<10	<10	<10	<10	<10	<10
MET	130	96	130	82	48	<10	<10	14	<10	90	<10	11	<10	17	<10	<10	<10	<10	<10	<10	<10
TT	29	25	29	28	<10	<10	<10	<10	<10	18	<10	<10	10	11	<10	<10	<10	<10	<10	<10	<10
WBL	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Total	1401																				

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

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

Cluster	**Enrollment %**	**Concentrators %**	**Graduates %**	**Gender**		**Race/Ethnicity**							**Special Populations**								
				M	F	AL	A	H	B	W	PI	M	SWD	ED	NT	SP	OOW	EL	HL	FY	AD
AMC	2	86	86	59	41	>1	>1	>1	>1	68	>1	>1	45	0	>1	>1	>1	>1	>1	>1	>1
BMF	14	52	100	61	39	>1	>1	8	18	63	>1	9	11	21	>1	>1	>1	>1	>1	>1	>1
CD	4	93	98	97	3	>1	>1	>1	>1	73	>1	>1	28	27	>1	>1	>1	>1	>1	>1	>1
CRD	15	80	96	67	33	>1	>1	7	13	67	>1	8	21	25	>1	>1	>1	>1	>1	>1	>1
CSHT	3	92	100	36	64	>1	>1	>1	>1	56	>1	>1	>1	36	>1	>1	>1	>1	>1	>1	>1
EANR	1	67	100	31	69	>1	>1	>1	>1	80	>1	>1	0	>1	>1	>1	>1	>1	>1	>1	>1
HB	20	59	100	13	64	>1	>1	5	11	52	>1	7	11	17	>1	>1	>1	>1	>1	>1	>1
HRS	20	65	100	43	57	>1	>1	5	10	76	>1	8	14	22	>1	>1	>1	>1	>1	>1	>1
IT	11	72	100	64	35	>1	>1	9	13	64	>1	10	19	13	>1	>1	>1	>1	>1	>1	>1
MET	9	74	100	63	37	>1	>1	11	>1	69	>1	8	0	13	>1	>1	>1	>1	>1	>1	>1
TT	2	86	100	99	1	>1	>1	>1	>1	18	>1	>1	10	11	>1	>1	>1	>1	>1	>1	>1

WBL	>1%	>1%	100	100	0	>1	>1	>1	>1	100	>1	>1	0	0	>1	>1	>1	>1	>1	>1	>1

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

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

   Female students are underrepresented in participation in the Construction and Development and Transportation Technologies clusters. Male students are underrepresented in the CSHT, EANR, and HBS clusters. Additionally, white students are underrepresented in CSHT (15%) and black student are underrepresented in EANR (12%). Students with disabilities are overrepresented in the TT (11%) and AMC (16%) clusters and Economically disadvantaged students are overrepresented in CSHT (12%) and underrepresented in EANR (11%). Students with disabilities are underenrolled in all but one program (CRD) that is offered at the comprehensive high schools.

   Overall the most concerning gap is the one that exists in the Career Research and Development program. In this program, at the concentrator level, males are overrepresented by 24%, black students are overrepresented by 10% (and white students are underrepresented by 14%), and (most concerning) students with disabilities are overrepresented by 32% and economically disadvantaged students are overrepresented by 36%. This is most concerning since CRD is the single program that does not directly meet criteria for HS, HW, ID. Students in this program, while they are learning employability skills and are working while seniors in jobs, they are not working in apprentice-able positions nor earning IRCs. Students are often enrolled into CRD as seniors when attempts at all other pathways have not proved successful. This may be students who have needed additional credits for graduation (in the case of SWDs, support courses sometimes take extra class periods/credits that would otherwise be available for other coursework or CTE programs) or it may be students who pursued the first year of a program at CTA and either changed their mind regarding career plans OR did not earn credits in those courses. The CRD program is unique in that it is the only program that is able to be completed in a single school year, hence, a greater number of students who, by necessity to graduate, are enrolled in the program as seniors.

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

   When looking across to concentrator status (persistence), gaps that exist in gender, SWD, and ED disproportionality stay relatively the same into persistence. However, there are wider gaps in the construction and transportation cluster programs when looking at comparisons by race. Overall, factors seem to be related to:

   1. Students are taking a first or even second CTE course as exploration and then deciding on a different path/career goal.
   2. Students have very tight schedule constraints: if students fall behind on credits, it is often difficult to complete a CTE program, especially if it involves travel to the shared-time center (CTA). The district has few (if any) "creative scheduling" options outside of summer school and a few online offerings. For example, we do not offer an evening high school program that might help some of these students.

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?
   a. Overall, programs that are held at the shared-time center have stronger persistence rates than do those in the home high schools. This may be due to several factors. The CTA has a focus on CTE programs: students who choose programs at CTA attend with the knowledge that they are enrolled in a CTE program, have aspirations to earn certification/enter employment, and the culture of the building supports CTE completion. On the contrary, programs in the comprehensive high schools sometimes are reported as being "electives" as described by parents, teachers, and counselors vs. full "CTE programs." This approach

may increase the mobility of students away from one CTE program in the home school and/or decrease the likelihood of a student not seeing it necessary or beneficial to complete a "full pathway." Conversely, there is more commitment required from students to attend programs at CTA; thus, they are more likely to commit to both years of the programs' courses vs. at the comprehensive high schools, it is easier for students to try a variety of courses "a la carte."

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. Student Affinity and Mentorship Groups:
    a. Develop student affinity/mentorship groups with community support so that students have the opportunity to connect with other individuals who identify as they do who are already successful in the fields connected to the programs. Work via current connections with organizations such as NSBE and NAWIC in addition to working with SoMD WDB to identify additional potential mentors.
    b. Work with school-based equity groups and career advisors to incorporate conversations regarding equity/representation/inclusion as it relates to careers and supporting students career identity awareness.
2. Overhaul of the Career Research and Development Program:
    a. Work with career advisors to identify viable pathway options for ALL students entering 9th grade so that students have options that do not include the CRD program.
    b. Form a district focus group/committee to develop a plan to eliminate under enrollment of SWD and ED students in the 9 comprehensive HS programs. This includes identifying root causes and creating systematic plans to address those root causes.
    c. Overhaul the curriculum and implementation of the current CRD program with an aim to shift more students toward apprenticeship vs. CRD work-based learning experiences.
3. Implement Project-based learning experiences into existing CTE programs:
    a. Work with district staff to expand PBL in CTE programs to enhance/create relevance and allow students more latitude for expression and exploration

WITHIN CTE programs so that they do not feel forced to leave programs for exploration.

4. Increase Professional Development for non-CTE staff (Institutional Norms):
    a. Increase PD opportunities for non-CTE staff to enhance greater systemic awareness of CTE programs, opportunities, and requirements. This may include book studies, opportunities to "shadow a student" in CTE programs, and cross-curricular activities.
    b. Continue work of embedding the RIASEC language used in career counseling across ALL CCPS disciplines and classrooms, grades 6-12, so that all staff are talking to/mentoring students regarding programs in the same way. The ultimate goal is to eliminate stereotyping or negative perception of "some" CTE programs vs. others.
5. Teacher preparation:
    a. Ensure all CTE teachers are trained in current best practices in both education as well as up-to-date on current industry trends.
    b. Engage LAC/PAC members to support additional experiences for CTE teachers, including encouragement of "externship-like" events or activities.
    c. Expand the number of CTE teachers participating in supplemental, targeted CTE-related PD experiences.

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[1]

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

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

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

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

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

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

DISTRICT PERFORMANCE BY STUDENT GROUP

	Federal Accountability Indicator 2023 Graduates								
	1S1	2S1	2S2	2S3	3S1*	4S1	5S1	5S4a	5S4b
State Performance Target	**89.97%**	**52.3%**	**48.00%**	**0.00%**	**76.50%**	**28.72%**	**78.41%**	**78.41%**	**0.00%**
District Performance	**98.5%**	**81%**	**39%**	**	##	**27%**	**73.4%**	**28.7%**	**>1%**
Gender									
Males	54%	!	48%	**	##	33%	45%	49%	100%
Females	45.8%	!	52%	**	##	67%	49%	50%	0%

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

Race-ethnicity									
American Indian	2%	!	1%	**	##	>1%	>1%	>1%	S
Asian	3%	!	6%	**	##	3%	2%	>1%	S
Black	12%	!	10%	**	##	12%	11%	12%	S
Hispanic	3%	!	4%	**	##	>1%	5%	6%	S
Multi-race	12%	!	10%	**	##	16%	7%	6%	S
White	68%	!	80%	**	##	78%	74%	73%	S

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									
Economically disadvantaged	19%	!	8%	**	##	16%	16%	20%	0%
Multilingual learners	4%	!	3%	**	##	5%	3.6%	3%	0%
Individuals with disabilities	26%	!	12%	**	##	20%	25%	15%	0%
Nontraditional fields	--	--	--	--	--	--	--	--	--
Single parents	--	--	--	--	--	--	--	--	--

Out of workforce	--	--	--	--	--	--	--	--	--
Students served under the McKinney-Vento Act (Unhoused)	>1%	!	0%	**	##	>1%	>1%	>1%	0%
Youth in foster care	--	--	--	--	--	--	--	--	--
Youth with a parent in active military	--	--	--	--	--	--	--	--	--
Migrant students	0%	!	0%	**	##	0%	0%	0%	0%

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

ACTIVITY C.1: ASSESSING PROGRAM PERFORMANCE

	List
Looking at *overall performance*, on which indicators are you substantially underperforming* the district performance target?	5S4a, 2S2
Looking at *overall performance*, on which indicators are you substantially exceeding the district performance target?	1S1, 2S1

* 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.

##NOTE: Data for 3S1 was unavailable as we do not have access to the external information required in order to extrapolate this information.

****NOTE: Data for Science Testing (2S3) was recorded based on graduation requirement, not based on actual pass rates; information was not able to be extrapolated.**

!NOTE: For 2S1, ELA Testing, (2S1), because students were merely required to SIT for the ELA MCAP to meet graduation requirements, this is all that is recorded in the Class of 2023 HSDC. However, based on information from other sources, we know that overall ELA performance is 81% proficient.

ACTIVITY C.2: DETERMINING ROOT CAUSES

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

    a. In 2S1 (Math Testing): Students can meet the graduation requirements in ways that do not require them to pass the test. Thus, many students sit once for the test and after that, simply do not give any effort to passing. With MSDE requirements for CCR changing to consider GPA/grades in math classes, this number is likely to get far worse.

    b. In 524a (IRCs): Currently, only approximately half of our CTE students are in programs which offer IRCs for students. Previously, many programs relied on our ability to "count" college credits in 5S4 and are enrolled in CTE programs with the intention of moving on to college. In the coming year, we will implement new IRCs in Engineering, expanded efforts in TAM (although, the number of concentrators in TAM is low), and we will explore opportunities in Biomedical Science and Computer Science. However, our largest program, Criminal Justice, still does not have a viable IRC, leaving a large portion of our overall concentrators unable to meet requirements in this area. What we DO know is that of all students who are in programs where IRCs are offered, our students are extremely successful. This year, we have an 88% success rate on attempts on IRC exams. These pass rates also show no gaps or disproportionalities when looked at by subgroup. Our students with disabilities, all races, economically disadvantaged students, and MLs are all equally as successful in passing IRCs. So, the "issue" in these numbers is realistically a mechanical one that discounts the importance of college credit as a meaningful way to measure success in some CTE pathways (such as Criminal Justice).

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?

    a. We are certain this is the case. While aggregate numbers do not show the same disproportionalities, we see some that are concerning:

        i. Students with disabilities are underrepresented by up to 23% in STEM-related programs offered at the four comprehensive high schools. These are PLTW Biomedical and Engineering and Computer Science.

        ii. While non-traditional enrollment "evens out" to meet state goals, when looking by programs of study, we see a definite lack of participation of non-traditional students across trades-related fields such as Welding, Carpentry, HVAC, and Electrical Construction. Even when reviewing whole application numbers (since we use a lottery system and since these programs are nearly always over-enrolled), the number of non-traditional students even attempting to enroll can be extremely low, even zero in some cases. We have plans to begin to hopefully address some of this through the work of career advisors now in place in all middle schools. We are hoping we are able to help students begin to see options across ALL field, regardless of gender, through the work of the career avisors.

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?

    a. "Boots on the ground" and "Grass roots" approaches can often be very practical for us. In our case, working to build up awareness across the many educators and individuals who work with our students regularly in helping them appropriately and positively bring awareness to students of opportunities in CTE has yielded positive results and we plan to continue these efforts. For example, in the past year, we worked to train all Special Education case managers and supervisors in order to bring awareness to the needs of students in CTE programs. This helped improve our persistence rates for SWDs in programs. In the coming year, by working with our career advising program, we will be working to train every middle and high school staff member in a common framework language for discussing careers which then also provides us a platform from which to discuss how CTE programs can help students.

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. Focus on improving student participation for SWDs:
    a. Work with career advisors to identify viable pathway options for ALL students entering 9th grade so that students have options that do not include the CRD program.
    b. Form a district focus group/committee to develop a plan to eliminate under enrollment of SWD and ED students in the 9 comprehensive HS programs. This includes identifying root causes and creating systematic plans to address those root causes.
    c. Overhaul the curriculum and implementation of the current CRD program with an aim to shift more students toward apprenticeship vs. CRD work-based learning experiences.
    d. Work to identify areas of need for CTE teachers so that they better/best understand how to support SWDs in their programs, in particular, those programs which are seen as "too hard" for SWDs (which both underestimates the ability to provide scaffolded supports to students and also assumes every SWD struggles academically or cognitively).
2. Implement Project-based learning experiences into existing CTE programs:
    a. Work with district staff to expand PBL in CTE programs to enhance/create relevance and allow students more latitude for expression and exploration WITHIN CTE programs so that they do not feel forced to leave programs for exploration.
    b. Hire a PBL coordinator who will work to incorporate PBL strategies across a variety of classes, including math, ELA, and Science courses students take prior to CTE courses to improve outcomes across ALL of these courses. Research shows a clear benefit in PBL on student academic achievement: we plan to leverage this to improve math, ELA, Science, and CTE outcomes alike.
3. Increase Professional Development for non-CTE staff (Institutional Norms):
    a. Increase PD opportunities for non-CTE staff to enhance greater systemic awareness of CTE programs, opportunities, and requirements. This may include book studies, opportunities to "shadow a student" in CTE programs, and cross-curricular activities.
    b. Continue work of embedding the RIASEC language used in career counseling across ALL CCPS disciplines and classrooms, grades 6-12, so that all staff are talking to/mentoring students regarding programs in the same way. The ultimate goal is to eliminate stereotyping or negative perception of "some" CTE programs vs. others.
4. Teacher preparation:
    a. Ensure all CTE teachers are trained in current best practices in both education as well as up-to-date on current industry trends.
    b. Engage LAC/PAC members to support additional experiences for CTE teachers, including encouragement of "externship-like" events or activities.

c. Expand the number of CTE teachers participating in supplemental, targeted CTE-related PD experiences.

5. Expand IRCs:
    a. Work to identify appropriate IRCs and implement these into existing pathways/programs. This will include working with industry partners and education staff alike.
    b. Work to review existing curricula and make modifications as necessary to provide appropriate training toward student attainment of IRCs. This may include the addition or elimination of particular coursework within existing pathways.

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.

METHODOLOGY:

Percentage of 2022-2023 staff	Headcount of staff teaching in the cluster area within the demographic divided by Headcount of All staff teaching in the cluster area
Percentage of students participating in CTE programming 2022-23	Headcount of All students taking courses in the cluster area within the demographic divided by the headcount of All students taking courses in the cluster area
5-year staff turnover rate (Percentage of staff who did not return for years 2018-19 thru 2022-23)	Headcount of All staff with the requested classification within the demographic in buildings which offer the cluster area who were employed in SY2019 but had left before SY2023 divided by the Headcount All staff with the requested classification in buildings which offer the cluster area who were employed in SY2019

Arts, Media, and Communication [AMC]					
		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)		
Staff Demographic	Percentage of 2022-2023 staff		Teachers	Support Staff / Paraprofessionals	Guidance Counselors
Gender					
Male	50.00%	57.14%	25.00%	100.00%	0.00%
Female	50.00%	42.86%	50.00%	75.00%	0.00%
Race - Ethnicity					
American Indian	0.00%	0.00%	0.00%	0.00%	0.00%
Asian	0.00%	1.79%	0.00%	0.00%	0.00%
Black	0.00%	17.86%	50.00%	100.00%	0.00%
Hispanic	0.00%	5.36%	100.00%	0.00%	0.00%
Multi-race	0.00%	14.29%	0.00%	0.00%	0.00%
White	100.00%	60.71%	31.58%	75.00%	0.00%
Credential					
Properly Licensed	100.00%	0.00%	33.33%	0.00%	0.00%
Granted Temporary Waiver	0.00%	0.00%	100.00%	100.00%	0.00%

Business Management and Finance [BMF]					
			5-year staff turnover rate (Percentage of staff who did not return for years 2018-19 thru 2022-23)		
Staff Demographic	Percentage of 2022-2023 staff	Percentage of students participating in CTE programming 2022-23	Teachers	Support Staff / Paraprofessionals	Guidance Counselors
Gender					
Male	33.33%	60.97%	32.46%	62.50%	0.00%
Female	66.67%	39.03%	31.07%	52.63%	21.43%
Race - Ethnicity					
American Indian	0.00%	0.28%	0.00%	0.00%	0.00%
Asian	0.00%	1.71%	0.00%	100.00%	0.00%
Black	11.11%	15.95%	35.71%	100.00%	0.00%
Hispanic	0.00%	6.84%	50.00%	0.00%	0.00%
Multi-race	0.00%	7.69%	0.00%	0.00%	0.00%
White	88.89%	67.52%	31.33%	48.72%	21.43%
Credential					
Properly Licensed	100.00%	0.00%	23.78%	25.00%	18.75%
Granted Temporary Waiver	0.00%	0.00%	97.06%	57.14%	0.00%

Construction and Development [CD]					
			5-year staff turnover rate (Percentage of staff who did not return for years 2018-19 thru 2022-23)		
Staff Demographic	Percentage of 2022-2023 staff	Percentage of students participating in CTE programming 2022-23	Teachers	Support Staff / Paraprofessionals	Guidance Counselors
Gender					
Male	60.00%	94.00%	25.00%	100.00%	0.00%
Female	40.00%	6.00%	50.00%	75.00%	0.00%
Race - Ethnicity					
American Indian	0.00%	0.67%	0.00%	0.00%	0.00%
Asian	0.00%	0.67%	0.00%	0.00%	0.00%
Black	20.00%	9.33%	50.00%	100.00%	0.00%
Hispanic	0.00%	6.67%	100.00%	0.00%	0.00%
Multi-race	0.00%	8.67%	0.00%	0.00%	0.00%
White	80.00%	74.00%	31.58%	75.00%	0.00%
Credential					
Properly Licensed	100.00%	0.00%	33.33%	0.00%	0.00%
Granted Temporary Waiver	0.00%	0.00%	100.00%	100.00%	0.00%

Career Research and Development [CRD]					
			5-year staff turnover rate (Percentage of staff who did not return for years 2018-19 thru 2022-23)		
Staff Demographic	Percentage of 2022-2023 staff	Percentage of students participating in CTE programming 2022-23	Teachers	Support Staff / Paraprofessionals	Guidance Counselors
Gender					
Male	50.00%	66.09%	32.46%	62.50%	0.00%
Female	50.00%	33.91%	31.07%	52.63%	21.43%
Race - Ethnicity					
American Indian	0.00%	0.65%	0.00%	0.00%	0.00%
Asian	0.00%	2.81%	0.00%	100.00%	0.00%
Black	12.50%	13.82%	35.71%	100.00%	0.00%
Hispanic	0.00%	10.15%	50.00%	0.00%	0.00%
Multi-race	0.00%	8.21%	0.00%	0.00%	0.00%
White	87.50%	63.93%	31.33%	48.72%	21.43%
Credential					
Properly Licensed	100.00%	0.00%	23.78%	25.00%	18.75%
Granted Temporary Waiver	0.00%	0.00%	97.06%	57.14%	0.00%

Consumer Services, Hospitality, and Tourism [CSHT]					
			5-year staff turnover rate (Percentage of staff who did not return for years 2018-19 thru 2022-23)		
Staff Demographic	Percentage of 2022-2023 staff	Percentage of students participating in CTE programming 2022-23	Teachers	Support Staff / Paraprofessionals	Guidance Counselors
Gender					
Male	25.00%	25.81%	25.00%	100.00%	0.00%
Female	75.00%	74.19%	50.00%	75.00%	0.00%
Race - Ethnicity					
American Indian	0.00%	0.00%	0.00%	0.00%	0.00%
Asian	0.00%	1.08%	0.00%	0.00%	0.00%
Black	0.00%	30.11%	50.00%	100.00%	0.00%
Hispanic	0.00%	8.60%	100.00%	0.00%	0.00%
Multi-race	0.00%	8.60%	0.00%	0.00%	0.00%
White	100.00%	51.61%	31.58%	75.00%	0.00%
Credential					
Properly Licensed	75.00%	0.00%	33.33%	0.00%	0.00%
Granted Temporary Waiver	25.00%	0.00%	100.00%	100.00%	0.00%

Environmental, Agricultural, and Natural Resources [EANR]					
		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)		
Staff Demographic	Percentage of 2022-2023 staff		Teachers	Support Staff / Paraprofessionals	Guidance Counselors
Gender					
Male	100.00%	28.95%	32.46%	62.50%	0.00%
Female	0.00%	71.05%	31.07%	52.63%	21.43%
Race - Ethnicity					
American Indian	0.00%	0.00%	0.00%	0.00%	0.00%
Asian	0.00%	0.00%	0.00%	100.00%	0.00%
Black	0.00%	2.63%	35.71%	100.00%	0.00%
Hispanic	0.00%	7.89%	50.00%	0.00%	0.00%
Multi-race	0.00%	0.00%	0.00%	0.00%	0.00%
White	100.00%	89.47%	31.33%	48.72%	21.43%
Credential					
Properly Licensed	100.00%	0.00%	23.78%	25.00%	18.75%
Granted Temporary Waiver	0.00%	0.00%	97.06%	57.14%	0.00%

Health and Biosciences [HB]					
		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)		
Staff Demographic	Percentage of 2022-2023 staff		Teachers	Support Staff / Paraprofessionals	Guidance Counselors
Gender					
Male	7.14%	15.82%	32.46%	62.50%	0.00%
Female	92.86%	84.18%	31.07%	52.63%	21.43%
Race - Ethnicity					
American Indian	0.00%	0.00%	0.00%	0.00%	0.00%
Asian	0.00%	3.23%	0.00%	100.00%	0.00%
Black	7.14%	14.80%	35.71%	100.00%	0.00%
Hispanic	0.00%	5.10%	50.00%	0.00%	0.00%
Multi-race	7.14%	6.97%	0.00%	0.00%	0.00%
White	85.71%	69.73%	31.33%	48.72%	21.43%
Credential					
Properly Licensed	100.00%	0.00%	23.78%	25.00%	18.75%
Granted Temporary Waiver	0.00%	0.00%	97.06%	57.14%	0.00%

Human Resource Services [HRS]					
			5-year staff turnover rate (Percentage of staff who did not return for years 2018-19 thru 2022-23)		
Staff Demographic	Percentage of 2022-2023 staff	Percentage of students participating in CTE programming 2022-	Teachers	Support Staff / Paraprofessionals	Guidance Counselors
Gender					
Male	61.54%	38.63%	32.46%	62.50%	0.00%
Female	38.46%	61.37%	31.07%	52.63%	21.43%
Race - Ethnicity					
American Indian	0.00%	0.37%	0.00%	0.00%	0.00%
Asian	0.00%	1.85%	0.00%	100.00%	0.00%
Black	7.69%	10.54%	35.71%	100.00%	0.00%
Hispanic	0.00%	6.10%	50.00%	0.00%	0.00%
Multi-race	0.00%	7.76%	0.00%	0.00%	0.00%
White	92.31%	73.38%	31.33%	48.72%	21.43%
Credential					
Properly Licensed	100.00%	0.00%	23.78%	25.00%	18.75%
Granted Temporary Waiver	0.00%	0.00%	97.06%	57.14%	0.00%

Information Technology [ITS]					
			5-year staff turnover rate (Percentage of staff who did not return for years 2018-19 thru 2022-23)		
Staff Demographic	Percentage of 2022-2023 staff	Percentage of students participating in CTE programming 2022-23	Teachers	Support Staff / Paraprofessionals	Guidance Counselors
Gender					
Male	83.33%	68.55%	32.46%	62.50%	0.00%
Female	16.67%	31.13%	31.07%	52.63%	21.43%
Race - Ethnicity					
American Indian	0.00%	0.63%	0.00%	0.00%	0.00%
Asian	0.00%	4.72%	0.00%	100.00%	0.00%
Black	0.00%	11.01%	35.71%	100.00%	0.00%
Hispanic	0.00%	9.75%	50.00%	0.00%	0.00%
Multi-race	0.00%	10.06%	0.00%	0.00%	0.00%
White	100.00%	63.84%	31.33%	48.72%	21.43%
Credential					
Properly Licensed	100.00%	0.00%	23.78%	25.00%	18.75%
Granted Temporary Waiver	0.00%	0.00%	97.06%	57.14%	0.00%

Manufacturing, Engineering, and Technology [MET]					
		Percentage of students	5-year staff turnover rate (Percentage of staff who did not return for years 2018-19 thru 2022-23)		
Staff Demographic	Percentage of 2022-2023 staff	participating in CTE programming 2022-	Teachers	Support Staff / Paraprofessionals	Guidance Counselors
Gender					
Male	85.71%	75.70%	32.46%	62.50%	0.00%
Female	14.29%	24.30%	31.07%	52.63%	21.43%
Race - Ethnicity					
American Indian	0.00%	0.40%	0.00%	0.00%	0.00%
Asian	0.00%	3.19%	0.00%	100.00%	0.00%
Black	0.00%	7.57%	35.71%	100.00%	0.00%
Hispanic	0.00%	7.57%	50.00%	0.00%	0.00%
Multi-race	0.00%	7.57%	0.00%	0.00%	0.00%
White	100.00%	73.31%	31.33%	48.72%	21.43%
Credential					
Properly Licensed	100.00%	0.00%	23.78%	25.00%	18.75%
Granted Temporary Waiver	0.00%	0.00%	97.06%	57.14%	0.00%

Transportation Technologies [TT]					
		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)		
Staff Demographic	Percentage of 2022-2023 staff		Teachers	Support Staff / Paraprofessionals	Guidance Counselors
Gender					
Male	100.00%	93.44%	25.00%	100.00%	0.00%
Female	0.00%	6.56%	50.00%	75.00%	0.00%
Race - Ethnicity					
American Indian	0.00%	1.64%	0.00%	0.00%	0.00%
Asian	0.00%	0.00%	0.00%	0.00%	0.00%
Black	0.00%	9.84%	50.00%	100.00%	0.00%
Hispanic	0.00%	14.75%	100.00%	0.00%	0.00%
Multi-race	0.00%	11.48%	0.00%	0.00%	0.00%
White	100.00%	62.30%	31.58%	75.00%	0.00%
Credential					
Properly Licensed	100.00%	0.00%	33.33%	0.00%	0.00%
Granted Temporary Waiver	0.00%	0.00%	100.00%	100.00%	0.00%

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		
Staff are aware of the requirements to maintain endorsement.	x		
Staff have equal access to content-specific professional development opportunities across industries.	x		
Data are collected on the effectiveness of professional development to ensure it meets the needs of educators.		x	Enhanced data collection following staff participation in PD activities should be explored and implemented. Most reporting now is anecdotal.

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?

   No; however, it does reflect the overall demographic characteristics of the teaching workforce in the county. In terms of industry, generally speaking, the teaching workforce also reflects the greater workforce of the county within those industries. We will continue to explore strategies for how to engage individuals who are diverse to their industries/fields and encourage them to become aware of teaching opportunities.

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

   For SY23-24, three CTE teachers were hired with provisional certifications. Aside from these 3 teachers, all CTE teachers for SY23-24 are highly qualified for the CTE programs they are teaching; the 3 provisional teachers are hired with years of work experience in their fields. In the coming school year (beginning SY24-25), the new career ladder offered via Blueprint offers the elimination of a "provisional scale" for CTE teachers and provides 100% credit for "years of industry experience" when placing these teachers on scale. This will result in a *substantial* pay increase; the pay differential between industry and education has been a known barrier and this will be addressed in a meaningful and powerful way in the coming school year. With additional changes via MSDE for teacher licensure, more industry-specific training (possibly including work required toward recertification in industry) will "count" toward teacher licensure making it more appealing for CTE teachers where it isn't already required.

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

   CCPS works closely with PAC members to offer multiple opportunities for teachers to explore and refresh on industry-specific skills. The school provides teacher workshop days (when schools are closed to students) as available times for teachers do visit industry partners and participate in activities at those sites. All program teachers have at least two opportunities to do so throughout the school year and more than 70% of teachers do so. With increased opportunities to earn MSDE "credit" for such activities with changes to MSDE licensure, we expect these numbers to increase. In addition, each year, a percentage of Perkins funding is specifically set aside to provide for teachers to attend industry-specific training and conferences.

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

   Some PD is only available at great distance or expense (such as larger conferences). In the coming school year, it is possible that NO staff will be permitted to travel outside of the regional area for conferences due to a shift in district policies: this will be of great detriment to teachers. Additionally, CTE teachers in a district of our size are often "the only" teacher in their subject area, making it difficult to find partners for collaboration. When other districts' schedules align, this is sometimes able to be arranged.

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

   NOTATION: Many of our CTE clusters may only have one to three teachers within them; therefore, looking at teacher retention information only within a cluster is relatively uninformative for a district our size due to the low sample size (ex: one teacher's retirement makes it look like a 50% turnover rate in AMC). Instead, the CLNA team chose to focus primarily on information related to OVERALL district numbers.

   1. Targeted Professional Development with Collaborative Follow-Up:

      a. Implement procedures to allow teachers who have engaged in PD activities to collaborate and share what is learned following those activities with other teachers, even if across content areas.

      b. Work with other districts to facilitate opportunities for teacher collaboration, including opportunities to visit each other's classrooms.

      c. Provide access to conferences, industry professional development, and other trainings by enhanced funding via Perkins.

   2. Project-Based Learning Implementation:

      a. Implement a cohort of teachers trained in PBL to provide opportunities for enhanced teaching, rigor, and student engagement.

      b. Provide instruction coaching and support for teachers implementing PBL. This will be provided by the addition of a PBL coordinator/facilitator who will work specifically with our CTE teachers to incorporate PBL "best practices" strategies into instruction and thus improve teacher efficacy.

   3. Supporting New Teachers:

      a. Work to institutionalize the working mechanisms of teacher support specific to CTE by creating a "CTE teacher onboarding" document or guidebook.

      b. Ensure veteran teachers new to CTE have the opportunity to receive mentorship from veteran CTE educators.

   4. National Board Certification Cohort:

      a. Work with district Blueprint coordination teams to create and support a CTE-specific cohort for National Board Certification utilizing the district's current 5 NBC teachers as mentors to teachers seeking NBC.

   5. Recognition – recognizing the achievement of teachers and programs:

      a. Ensure teachers are nominated for available awards to increase the visibility of their work specific to CTE. This includes via ACTE/MCTA, ISTE, and other organizations.

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

Next Steps

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

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

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

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

CONNECTING GOALS TO AN ANNUAL BUDGET FOR PERKINS FUNDING

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

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

ENSURING ALIGNMENT WITH PERKINS REQUIREMENTS

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

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

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

Root Cause	Strategy	Sample Activities	Resource	Description
The district maintains programs that have been historically offered but are no longer aligned to Maryland's labor market needs	Sunset programs that are no longer preparing students for high-skill, high-wage in-demand careers	• Analyze program enrollments, standards, postsecondary pathways, and employers to assess whether sunsetting is warranted. • Develop strategy and timeline for sunsetting a program and internal and external communication plans to share information. • Explore alternative educational options for students currently enrolled that will allow them to transition to other programs. • Consult with the union and educators to arrange transition options, which may include reassignment or retraining. • Review state regulations and district policies to identify barriers to sunsetting programs	How to sunset an educational program	This blog post describes considerations in sunsetting and educational programming, including warning signs of need, considerations before moving forward, and concrete steps to take when a decision to discontinue is made.
	Introduce new programs that are aligned to Maryland or regional employment projections	Review Maryland state and/or regional economic and workforce projections to assess current and future workforce needs	Maryland Occupational Projections 2020-2030	The State of Maryland publishes occupational projections that indicate changes in employment. Use this interactive website to identify careers anticipated to grow in the coming years.
		Recruit industry partners in high-wage, high skill, in-demand fields to offer guidance on new program design and adoption	Cheat Sheet: Opportunities for Employer Involvement in CTE	Use this factsheet developed by Advance CTE and ACTE to identify

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

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

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

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

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

PROBLEM: STUDENTS ARE NOT PARTICIPATING IN CTE PROGRAMMING.

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

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

				participated in such an event to honor its students.
Students are not provided career guidance that supports them in choosing CTE as an educational pathway.	Educate high school guidance counselors on the benefits that CTE offers and the advanced education and employment options that students may follow.	Develop and conduct professional development for school counselors aimed at increasing awareness and benefits of CTE programs.	School Counselor Playbook: Unlocking Career Success	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.	ACTE High Quality CTE: Student Career Development	ACTE offers webinars, online courses, toolkits, and more designed to support counselors and college/career navigators as they offer guidance to students.

PROBLEM: STUDENTS ARE NOT PERSISTING IN CTE PROGRAMS.

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

			Recruiting Special Populations into CTE: Toolkit	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. 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
		Explore why students from some racial-ethnic groups face obstacles in CTE programming and take steps to address them.	A Guide to Discussing Racial Equity	Review this guidebook to learn how to hold discussions around racial equity to identify.
		Conduct a curricular review to identify and remove unintentional gender bias.	Assessing the Enrollment and Retention of Nontraditional Learners	The Wisconsin Technical College System has developed a tool that educators can use to assess the adoption of promising practices to increasing enrollments and retention of nontraditional learners based on their gender.
Students do not understand the personal and economic benefits of completing advanced	Offer students mentors and real-world workplace experiences to inform their career decisions.	Pair students with mentors who can offer them one-on-one	Partnering Students with Industry Mentors	Parkways School District (MO) connects students with industry mentors who provide guidance, connections, expertise, and

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

Appendix C: Sample Strategies for Component C: Program Performance

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

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

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

PROBLEM: STUDENTS ARE NOT EARNING INDUSTRY-RECOGNIZED CREDENTIALS.

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

prevent them from pursuing an industry-recognized credential.	credential and take steps to resolve them.	of an industry-recognized credential. Develop strategies to identify students who may face challenges in paying for exams and find ways of offsetting costs. Work with exam providers, employers, and community organizations to provide fee waivers or scholarships for certification exams, materials, and training courses. Work with credentialing vendors to expand testing sites and administer exams in convenient and accessible locations.	Credential Currency: Promoting Credentials of Value Aligning State CTE Programs with Industry Needs and Priorities	strengthen the award of industry-recognized credentials in POS. This report offers strategies to expand student obtainment. While focused on the state level, some recommendations may be adapted for district/college use. 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.

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

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

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

PROBLEM: IT'S DIFFICULT TO RECRUIT CTE EDUCATORS.

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

		professionals to become teachers. Engage with local industry to pair experienced workers with current to support their development and ability to teach in new fields. Explore the multiple pathways to becoming a CTE teacher in Maryland. Develop alternative pathways to certification for individuals with industry experience who lack teaching credentials.		The Maryland Division of Career and College Readiness has created this guidance document that summarizes teacher certification options for each CTE program of study offered in the state.

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

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

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

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

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

		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