

INTRODUCTION

MARYLAND CAREER AND TECHNOLOGY EDUCATION STATE PLAN 2008 – 2012

INTRODUCTION

Governor's Priorities for Workforce Creation

Workforce creation is one of three priorities Governor Martin O'Malley has established for Maryland. This priority includes making Maryland's workforce the most competitive in the world. Maryland's employers report chronic worker shortages in skilled trades, technology and health care fields. Governor O'Malley's actions for preparing a skilled workforce include:

- Ensuring alignment with the education system to meet workforce demand by creating the P-20 Leadership Council;
- Investing additional resources in public education, school construction and renovation;
- Increasing funding for community colleges;
- Providing career technical training in all high schools;
- Developing job skills in prisons and re-entry work programs through a partnership among the Maryland Department of Labor, Licensing and Regulation, the Department of Public Safety and Correctional Services and the Independent Electrical Contractors Association to launch an electrical contractor construction training program at the Jessup Women's Correctional Facility;
- Aligning the mission of postsecondary institutions to the realities of the new economy as Maryland stands at the center of a new biotechnology belt and at the heart of the security diamond;
- Harnessing the potential of the entire workforce, including those under-educated, with disabilities and without a high-school diploma through the Employed Individuals with Disabilities Program;
- Creating a construction worker pre-apprenticeship training program at the Victor Cullen Center;
- Working with more than 180 companies looking to locate or expand in Maryland through the Department of Business and Economic Development;
- Forming the Base Realignment and Closure (BRAC) subcabinet to develop a BRAC action plan to fully utilize the opportunity of the thousands of jobs that are coming to Maryland; and
- Creating a Workforce Creation Sub-cabinet to identify potential synergies and increase collaboration among State agencies;

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Maryland’s Education Reform Efforts

Ahead of national public education reform in the 1990s, Maryland intensified education reform efforts in the K – 12 arena which included focusing classroom instruction on improving student achievement, increasing accountability and preparing students for secondary education and careers. Postsecondary education responded to the changing economic demographics and workforce requirements as it revamped its workforce education programs with the Maryland Higher Education Commission’s view that Maryland has a duty to ensure that all its citizens have access to quality postsecondary education. All students in Maryland, at both the secondary and postsecondary levels are participating and completing programs of study that prepare them for a global economy.

A Brief History of Education Reform in Maryland – Secondary

Innovative Reports

In 1989, the landmark report by the Governor's Commission on School Performance placed a compelling emphasis on systemic school reform and education restructuring. In August of 1989, the report from the Commission on Vocational-Technical Education was issued titled, “*Fulfilling the Promise: A New Education Model for Maryland’s Changing Workplace.*” In tandem with the Governor’s report, the Commission’s recommendations set forth an agenda to evolve vocational education into the new and improved career and technology education (CTE). The report called for a better alignment of academic and technical education, a more systemic approach to career development, accelerated responsiveness to the needs of employers, and integration of CTE into the state’s system of workforce development.

Maryland Student Performance Assessment Program

Implementation of the Commission’s recommendations began through the development of the Maryland Student Performance Assessment Program (MSPAP). Beginning in 1992, annual tests in mathematics and reading were administered to students in grades 3, 5, 8 and 10, and development of the Maryland High School assessments began. With the advent of the federal No Child Left Behind Act (NCLB), the Maryland School Assessments replaced the MSPAP.

School Reform in Maryland and No Child Left Behind

Maryland has focused its efforts on ensuring that all students, regardless of their background receive a quality education. Because of the stronger accountability measures called for under NCLB, Maryland has set high academic achievement standards and annual goals to ensure that all students reach proficiency levels in reading and mathematics by school year 2013-14.

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Visionary Panel for Better Schools

In 2001 the State Superintendent of schools convened the Visionary Panel for Better Schools, comprised of parents, teachers, administrators, college professors, policy makers and national education experts, to review Maryland's school reform efforts and make recommendations for improvements. The recommendations in the 2002 report became the foundation for Achievement Matters Most, the Maryland State Department of Education's (MSDE) strategic plan that sets goals in the areas of student achievement, curriculum and instruction, quality teachers, safe schools, and family involvement. The Plan's measures include the requirements of NCLB.

Maryland School Assessment

The Maryland School Assessments (MSA) are tests of reading and math achievement that meet the testing requirements of NCLB. Students in grades 3 through 8 take the tests annually. Students with disabilities who do not participate in the MSA instead participate in the Alternate Maryland School Assessment which assesses student's attainment of their instructional level reading and mathematics mastery objectives that are aligned with grade level standards. The MSA tests measure basic as well as higher level skills. Science will be added to the assessment requirement in 2008.

Maryland High School Assessments

The Maryland High School Assessments (HSA) are end-of-course tests—one each in English, algebra/data analysis, government, and biology. In 2004 the State Board of Education added the requirement that students beginning with the graduating class of 2009 must pass the end of course High School Assessments in order to receive a Maryland High School Diploma. Students must pass all four HSAs or earn a combined score which equals at least the minimum of the four passing scores. Students with disabilities may take a modified HSA. A Bridge Plan is in place for those few students who need other options to add to their scores to pass. In addition to the four core subject areas, students also acquire a fifth set of learning goals called the *Skills for Success*. The *Skills for Success* include five goals: learning to learn, problems solving, critical thinking, communication skills, technology, and interpersonal skills. In 2007, the State Board of Education reaffirmed its commitment to require all students in the incoming class of 2005 and beyond to pass the Algebra/Data Analysis and English II assessments in order to receive a Maryland high school diploma.

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Bridge to Excellence Act

In 2002, Maryland made a renewed commitment to educational reform when the Maryland General Assembly passed *The Bridge to Excellence in Public Schools Act* to ensure adequacy and equity in Maryland's public schools. The Act increases funding to public schools, directs more funding to students with special educational needs, and gives school systems greater flexibility in how funds are spent. In exchange for these funds, each school system developed a plan to improve achievement for all of its students. Annual updates must demonstrate that school systems are meeting expectations for increased student, school, and system performance by describing progress towards goals and targets and adjustments to strategies where progress is not sufficient.

Maryland Voluntary State Curriculum

Maryland has also developed a Voluntary State Curriculum (VSC) that aligns the Maryland Content Standards and the Maryland Assessment Program. The VSC defines what students should know and be able to do by the end of each grade, pre-K through 8, in four content areas: reading/English language arts, mathematics, science, and social studies.

Career and Technology Education (CTE) programs are aligned to these initiatives and provide students with opportunities to develop outcomes specified in Maryland's *Skills for Success*. CTE programs of study also specify college preparatory academic courses as either pre-or co-requisites. In addition, through curriculum integration and blended instruction, CTE classrooms provide students with opportunities to apply and extend academics.

Maryland Plan for Technology in Education

The Maryland Educational Technology Plan for the New Millennium 2007-2012 (Appendix A) is Maryland's blueprint for the effective utilization of technologies in schools statewide. The Plan continues to be guided by a core vision of current technology resources available to all students and educators, using technology to differentiate instruction and provide accessible resources to all students, as well as rich, digital content available in a variety of formats.

To achieve this vision, attention must be given to providing educators with high-quality professional development that includes continued time and effort to learn, maintain and improve their technology skills and give them the ability to use those skills in their professional work.

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Policies and Procedures for the Development of CTE Programs

In the year 2000, a workgroup consisting of state and local stakeholders developed a new mission and set of guiding principles for the development of CTE programs in Maryland. These guiding principles are the common understandings and agreements among the stakeholders that serve as the foundation of MSDE's *Policies and Procedures for the Development and Continuous Improvement of Career and Technology Education Programs* (Appendix B). The Policies and Procedures are updated annually and guide the development and/or amendment of CTE programs at both local and state levels.

Mission of CTE Programs

Career and Technology Education programs are developed and implemented to increase the academic, career, and technical skills of students in order to prepare them for careers and further education.

Core principles guide the development of state-approved CTE programs. The *Policies and Procedures for the Development and Continuous Improvement of Career and Technology Education Programs* contain the core principles listed below and identify the critical processes, relationships, and results that must be a part of any CTE instructional program.

Core Principles:

- CTE programs are developed in conjunction with all relevant stakeholder groups.
- CTE programs are organized under broad career clusters, based on all aspects of an industry, designed to help students make informed decisions regarding career pathways.
- Economic market demands, both current and projected, constitute the criteria for identifying value-added opportunities.
- CTE programs are developed in response to an identified opportunity to add value to students' overall educational programs.
- CTE programs are based on the most appropriate, reliable and valid technical standards available.
- CTE programs provide multiple options for students as they prepare for entry into careers and further education, including higher education, entry into the workforce, and apprenticeship.
- CTE programs are measured against student attainment of rigorous academic, employability and technical skills, and student success in further education and employment.
- Outcome data for CTE programs are reported and utilized.

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Career Clusters and the Career Development Framework

In 2003 Maryland published *Maryland Career Clusters: Restructuring Learning for Student Achievement in a Technologically Advanced, Global Society* (Appendix C). It provides a framework for organizing instructional programs within ten broad career clusters. The Career Cluster strategy provides students with multiple career pathways leading to employment and further education, rather than training in specific job-related skills. Developed by cluster teams, including over 350 business and industry partners in Maryland, each cluster describes the full range of careers from those requiring an associate's degree or less, a bachelor's degree and those with more than a bachelor's degree. This publication is updated as needed.

To facilitate the development of new programs and the continuous improvement of existing programs, Maryland has identified 48 CTE Programs of Study that will support student preparation for entry and further study in the career pathways of Maryland's Career Clusters. These state-developed CTE Programs of Study not only meet the requirements for program approval, but also include curriculum and professional development resources that ensure high quality and allow for consistent implementation throughout all of Maryland's local school systems. These programs have been partner-developed (i.e.-Pre-Engineering – Project Lead The Way) or developed through a statewide collaboration process following the state policies and procedures (i.e. Teacher Academy of Maryland). The following key elements are a part of all Maryland CTE Programs of Study:

- Standards-based curriculum aligned to industry/technical skill standards, academic standards, and skills for success;
- Value-added options for students through industry certification, advanced standing, college credit earned while in high school, and apprenticeship;
- Work-based learning opportunities for students directly related to the CTE program of study;
- Oversight and quality assurance through program certification and/or industry advisory groups;
- Teacher professional development for initiation of the program as well as on-going upgrades; and
- Program sustainability plan to cover implementation costs and ongoing costs to keep pace with quality and industry requirements.

A list of state-approved CTE Programs of Study is included in the document *Maryland Career Cluster Frameworks: CTE Pathway Program Development and Implementation* in Appendix D.

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Career Development Framework

In 2006 Maryland developed a new K-Postsecondary/Adult Career Development Framework through the State Career Development Council. The Framework provides a sequence of experiences - awareness, exploration, and preparation - to inform students' future educational and career decisions. Students select a career cluster and develop a program sequence. The framework is standards-based and aligned with the format and levels of cognitive demand of the Voluntary State Curriculum (VSC).

The *Maryland Career Development Framework* (Appendix E) identifies six content standards for student engagement in the processes of career development: self-awareness; career awareness; career exploration; career preparation; job-seeking and advancement; and career satisfaction and transition. The standards break-out into indicators and objectives and build knowledge and skills across grade spans: Pre-K-Grade 2; Grades 3-5; Grades 6-8; Grades 9-12; and Postsecondary/Adult. Decision-making is embedded within each standard as an indicator. This systematic instructional approach incorporates Maryland Career Clusters and CTE programs of study. It ensures that students from grades pre-kindergarten to five will engage in instruction that leads to self awareness, career awareness, career exploration, and some initial steps in career preparation. It also ensures that students in grades six through twelve will continue to explore previous concepts while adding job seeking and advancement, and career satisfaction and transition skills to their knowledge base. In addition students in grades eight through twelve will develop and update an individual career plan as called for in the Code of Maryland Regulations (COMAR). The plan will include the CTE program of study they will follow through postsecondary education, certification and assessment results, and earned college credit. The career development standards are scheduled for inclusion in the Code of Maryland Regulations (COMAR) in the 2008 calendar year.

Background: Education Reform in Maryland – Postsecondary

Maryland's Community Colleges

Maryland's 16 open-admissions community colleges are an integral part of the Maryland public higher education structure. At community colleges statewide, 95% of the career program graduates have either found employment or are continuing their education a year after earning their degree or certificate. Maryland community colleges boast one of the highest pass rates in the nation on the standard nursing licensure examination. Forty to fifty percent of teachers begin their postsecondary education in a community college. Community colleges play a significant role in workforce development. The future workforce will need to prepare for college due to the need for the postsecondary education and training required of high-skill, high- wage jobs in today's society. Maryland's community colleges have taken on the challenge of workforce development through career training, retraining and transfer education. Community colleges provide economic strength and stability to their regions, being located in 16 of the State's 24 subdivisions.

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In 1988, the University System of Maryland (USM) developed The Articulation System (ARTSYS), a web-enabled system of articulation. This unique and innovative system provides students and advisors at participating colleges and universities (both public and independent) with the ability to search for course equivalencies, majors and recommend transfer programs. ARTSYS permits students to match their transcripts against the program requirements for an instantaneous assessment of status upon transfer. In order to expand access to ARTSYS, the USM made it available on the internet in 1993.

For a number of years, the Maryland education community focused on removing barriers to a seamless educational experience for Maryland's citizens, regardless of where they enter the educational system. The goal has been to facilitate a smooth progression from public schools and private career schools to undergraduate collegiate study to graduate schools and beyond.

In 1990, the Maryland Higher Education Commission (MHEC) created the Student Transfer Advisory Committee to continuously review the State's transfer policies and to make recommendations on their effectiveness. Working in conjunction with the University System of Maryland's Office of Articulation and the segments of postsecondary education, the Student Transfer Advisory Committee has been instrumental in the adoption of a number of policies regarding transfer.

In 1993, the Intersegmental Chief Academic Officers, representing the academic leadership of all the public and private colleges and universities in the State, was convened. As a result of continued dialogue, statewide general education requirements were adopted by MHEC and apply to all public postsecondary institutions. This common set of general education requirements for all public community colleges, four-year colleges, and universities provides the basis for a State law requiring the transferability of general education credits among public institutions.

In 1993, the University System of Maryland also convened the first statewide discipline-based groups to discuss issues in transfer in specific disciplines. These statewide discipline-based faculty groups conduct an ongoing review of the lower-division general education requirements for academic programs where appropriate. The goal is that all students planning to transfer and having selected a major will have reliable, accurate, and current information available to them concerning graduation requirements and the transfer of credits in their chosen program.

Each Maryland public two- and four-year college and university has a designated transfer coordinator. The transfer coordinator is the person students, faculty, and administrators consult regarding interpretation of transfer policies. The name and phone number of the transfer coordinator at each campus is listed in the *Student Guide to Transfer* which is published by MHEC and available on the MHEC website, www.mhec.state.md.us.

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Student Outcomes and Achievement Report

In collaboration with MSDE and local school systems, MHEC has pursued several initiatives that support improved student performance at the elementary, secondary and postsecondary levels. In 1990, the Commission established the Student Outcomes and Achievement Report (SOAR). SOAR provides feedback to high schools on the performance of high school graduates in their first year of college.

Statewide Skills Assessment for Community Colleges

In 1993, the Maryland Community College Council of Instructional Deans adopted uniform standards for assessment and placement in college level courses among community colleges. Standardizing assessment and placement is an important factor in postsecondary collaboration. There is agreement to use one of three standardized assessment instruments. In addition, it was agreed that a writing sample may be administered for the placement of students as long as there are agreed upon standards of scoring. Further, standardized cut-off scores have been determined for each test and if they are adjusted, that is done by consensus.

Making Postsecondary Education More Accessible

Maryland implemented the Educational Excellence Awards (EEA) program in 1996 as the State's major financial aid program for students with financial need. As of 2007, the program has been renamed the Howard P. Rawlings Educational Excellence Awards. The **Guaranteed Access Grant** and the **Educational Assistance Grant** are part of the EEA program.

The Guaranteed Access Grant pays for most of the college expenses for Maryland students from very low income families. One of the minimum qualifiers for this grant is a 2.5 grade point average upon graduation from high school. Other factors relate to family income, Maryland residency, type of program of study pursued in high school, date of entry into the postsecondary institution, type of program in which a student is enrolled, age, and a requirement that satisfactory academic progress be made each year a student has the grant.

The Educational Assistance Grant (EAG) is available for students from families with low to middle incomes who demonstrate financial need. Requirements include Maryland residency and enrollment at a two-year or four-year Maryland college or university as a full-time, degree seeking, undergraduate student. Applicants are ranked by Expected Family Contribution (EFC). The EFC is based on information reported on the Free Application for Federal Student Aid (FAFSA). Students with the lowest EFC are awarded first.

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Workforce Shortage Student Assistance Grant Program is a new grant program encompassing the following programs: Child Care Provider Scholarship; Developmental Disabilities, Mental Health, Child Welfare, and Juvenile Justice Workforce Tuition Assistance Program; Distinguished Scholar Teacher Education; Sharon Christa McAuliffe Memorial Teacher Education Scholarship; State Nursing Scholarship and Living Expenses Grant; Physical and Occupational Therapists and Assistants Grant; and the William Donald Schaefer Scholarship.

Eligible majors and employment fields are determined biennially by an Advisory Council which addresses statewide and regional workforce needs. Due to workforce needs, employment fields may be limited to certain occupational areas within a field. Award amounts are set at the statutory minimum and are based on the type of institution and the student's enrollment status. Students receiving assistance under this grant are obligated to fulfill a service agreement following graduation in their new employment field.

Other state grants include the Charles W. Riley Fire and Emergency Medical Services Tuition Reimbursement Program for active career or volunteer firefighter, ambulance or rescue squad members. There is also the Janet L. Hoffman Loan Assistance Repayment Program (LARP) which provides assistance in repaying eligible student loans for Maryland residents who provide public service in Maryland State or local government or nonprofit agencies to low income or underserved residents. Eligible fields of employment include lawyers, nurses, nurse faculty, social workers, physical and occupational therapist, speech pathologists, physician assistant and teachers. The State has more than doubled its need-based financial aid over the past five years, and expanding need-based aid programs remains a priority. Information and applications for all of Maryland's financial aid assistance programs, grants and scholarships can be found at Maryland Higher Education Commission's (MHEC) web site: www.mhec.state.md.us.

In 1997, the Maryland General Assembly created the College Savings Plans of Maryland. This independent State agency provides families with an affordable, convenient way to pay in advance for the cost of college and reduce future reliance on debt.

Additional steps were taken to increase access to postsecondary education in areas throughout Maryland. These include: the construction of eight regional higher education centers which provide a shared facility in a region not otherwise served by a four-year institution where postsecondary courses and programs are offered and the expanded use of telecommunications for distance education in community colleges, including a nine-site network of community colleges in the greater Baltimore region.

Two- and four-year institutions are also working to expand "two-plus-two" options that allow a two-year degree to transfer without loss of credits into a four-year degree program. Maryland's public and private institutions have developed an outcomes-based Associate of Arts in Teaching (AAT) degree, which is a fully articulated two-plus-two program- that is, the degree transfers in its entirety rather than on a course-by-course

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basis. Work is beginning on an Associate of Science in Engineering that would follow the same model.

Utilizing Technology for Educational Delivery

Maryland's community colleges continue to be on the cutting edge of instructional technology and include technology skills as an integral part of their educational delivery. Maryland Online Learning (MOL) is a consortium of 20 Maryland colleges and universities that offer certificate and degree programs in a principally online format.

Launched in fall 1999 with 12 charter member institutions, MOL extends access to collegiate degree programs especially to residents of Maryland whose work or family commitments prevent them from attending classes on a campus. MOL brings powerful online higher education resources to the citizens and employers of Maryland and the world.

Membership in MOL is open to all Maryland higher education institutions, public and private, that are licensed by MHEC, and accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools.

Increased Accountability for Postsecondary Education

Measuring Up 2006 consists of the national report card for higher education and fifty state report cards. Its purpose is to provide the public and policymakers with information to assess and improve postsecondary education in each state. *Measuring Up 2006* is the fourth in a series of biennial report cards.

The report card grades states in six performance categories: Preparation, Participation, Affordability, Completion, Benefits, and Learning. Maryland received an A- or better in three of the five categories (only two other states received an A- or better in three categories and only one state received an A in four). Maryland is also one of nine states to receive a "Plus" in Learning.

Preparation: How adequately does each state prepare students for education and training beyond high school?

Maryland has shown improvement in preparing students to succeed in college. This year Maryland earns an A- in preparation.

Participation: Do state residents have sufficient opportunities to enroll in education and training beyond high school?

Maryland continues its strong performance in enrolling students in higher education. This year Maryland earns an A in participation.

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Benefits: What benefits does the state receive from having a highly educated population?

Maryland has realized substantial gains in the benefits received from having a more highly educated population. This year Maryland earns an A in benefits..

Learning: What is known about student learning as a result of education and training beyond high school?

Maryland is among nine states that receive a “Plus” in Learning because data were sufficient to compare at least two of the three Learning categories (Literacy Levels of the State’s Residents, Graduates Ready for Advanced Practice and Performance of College Graduates).

The 1988 Higher Education Reorganization Act established a process for institutions of higher education to demonstrate their performance accountability. This process requires the governing boards of these institutions to submit their performance accountability reports to MHEC, which reviews and presents them with recommendations to the Governor and the General Assembly. In 1996, the Commission approved a new method for implementing the law, which includes a series of key indicators that respond to concerns often expressed by public officials and citizens.

Bachelor of Technical/Professional Studies Approved

The Bachelor’s of Technical or Professional Studies Degree is an articulated program for students who have completed an Associate of Applied Sciences (A.A.S.) degree and are seeking new opportunities to earn the baccalaureate degree. This program is a 2+2 degree program providing expanded access to a four-year degree in a specialized institutionally-designed area of study. The program is offered by one or more community colleges and one or more senior institutions that have degree-granting authority in the State of Maryland.

The senior institution accepts a minimum of 60 credits for the A.A.S. degree earned at the community college. Programmatic and degree requirements are designed to complement the A.A.S. specialty, and competencies are agreed upon by participating two-and-four year institutions. An internship/field placement is required. Convenient course delivery is made available. The Bachelor’s of Technical or Professional Studies supports institutions in responding with specialized degree programs and operating competitively with out-of-state institutions.

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Background: Education Reform in Maryland – Secondary and Postsecondary

Maryland Partnership for Teaching and Learning/PreK -16 and the Governor’s P-20 Leadership Council of Maryland

In 2007, Maryland’s Governor issued an Executive Order creating the Governor’s P-20 Leadership Council of Maryland, a partnership among State government, educators, and the business community. The Council is charged with recommending ways for the State to better prepare Maryland students for the jobs of the 21st century, while enhancing the State’s economic competitiveness by creating a workforce with a 21st century skill-set. The P-20 Council replaces a preK-16 Council previously established in Maryland. The new Council subsumes the goals of the preK-16 Partnership, while adding more explicit attention to workforce creation. It has 17 focus areas including the pre-existing partnership’s goals of improving teacher quality and retention, increasing high school graduation rates, and creating pathways for all students to obtain college degrees. Until the fall of 2007, the Maryland Partnership for Teaching and Learning, PreK-16 was an alliance of the Maryland State Department of Education, the Maryland Higher Education Commission, and the University System of Maryland. The new partnership adds the Departments of Labor, Licensing and Regulation and Business and Economic Development, as well as the Governor or his designee as chair. The PreK-16 Partnership was supported by a Leadership Council consisting of corporate, civic, and public and private education leaders who advise, counsel, reinforce, communicate, and support an agenda to improve student achievement; the new Leadership Council is similarly composed, with slightly more business representation and an expanded executive committee. To facilitate the direction of the Leadership Council, a PreK-16 Workgroup, comprised of members of the above-described constituencies, meets regularly to share cross-institutional information, seek solutions to articulation issues, and collaborate on promising practices that improve student achievement. The P-20 Council will also be served by the workgroup.

Maryland’s PreK – 16 Partnership has been recognized nationally for its voluntary, inclusive organizational structure and was one of the first such partnerships in the nation. The newly established P-20 Leadership Council of Maryland will build upon the successes of the preK-16 Council. Its members are appointed, but the spirit of collaboration still guides its activities and planning.

Achievement Highlights of the Maryland PreK-16 Partnership:

In 2006, the PreK-16 Leadership Council established the English Composition Task Force. This task force was charged with making recommendations to assist in the alignment of the teaching of English composition so that students who exit high school are prepared for the rigor of the first credit-bearing composition course in college.

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A comprehensive report and specific action plan for implementing the recommendations of the task force was issued in June 2007.

- The Ad Hoc Committee on Special Education for the PreK-16 Workgroup was established to develop strategies for enhancing the preparation of special educators to ensure they meet "highly qualified teacher" requirements of the NCLB Act and the Individuals with Disabilities Education Act (IDEA). Additionally, the committee addressed the preparation of general education teachers who collaborate with special educators and provide access to curriculum and instruction for students with disabilities in general education settings. The final report was presented to the PreK-16 Leadership Council in September 2006. An action plan with prioritized recommendations, a timeline, and assigned responsibilities was brought back to the Leadership Council in December 2006.
- Report of the K-16 Workgroup (2004) (Response to No Child Left Behind). In 2002, the PreK-16 Leadership Council directed the Workgroup to address critical issues facing the PreK-16 Partnership as a result of the passage of the No Child Left Behind Act. The workgroup divided its work into three major committees: Highly Qualified Teacher Committee, Highly Qualified Administrator Committee, and Standards and Curriculum Alignment Committee. The report is a result of two years work by many representatives from every segment
- Associate of Arts in Teaching (AAT), 2004. In 2002, the Maryland Partnership for Teaching and Learning PreK-16 Leadership Council established a Secondary Education Oversight Council and charged the Council with developing a new two-year Associate of Arts in Teaching (AAT) degree. Building on the Elementary Education AAT, the Oversight Council met regularly from November 2002 through May 2004 to develop new AAT community college degrees that would transfer seamlessly to the four-year colleges and universities in Maryland. The formal charge to the disciplinary committees and the agreed-upon outcomes for the five degree programs have become a model that has been disseminated around the country. These programs are the final outcomes for the five disciplines: chemistry, mathematics, physics, Spanish, and elementary education (now transitioning to elementary/special education).
- Development of Professional Development Schools Implementation Manual (2002). A PreK-16 committee composed of Deans of Teacher Education and school district Superintendents developed this manual in response to the U.S. Title II Accountability and National Council for Accreditation of Teacher Education (NCATE) reporting processes. It links schools of education with high-need schools by providing guidelines on how to establish reciprocal relationships with high-need schools and teacher preparation programs.

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- Miles to Go and The Road Taken (1999). The USM, in collaboration with the Southern Education Foundation (SEF), prepared a state report, Miles to Go Maryland. This report detailed, for the first time, the status of African-American students in public higher education in Maryland. The results of that report led to subsequent action agenda. That action agenda became the strategic plan for the Governor's Task Force to Study College Readiness for Disadvantaged and Capable Students.

In December 2006, The Partnership completed the report of the Task Force on the Education of Maryland's African-American Males. The report makes 18 recommendations, including recommendations regarding teacher preparation, academic rigor, student placement, family and community support, and financial aid. The recommendations will help guide the partner agencies in taking actions to address educational needs.

References used in preparing the Introduction Section were obtained from the following:

2004 Maryland Plan for Postsecondary Education, MHEC, 2004

Measuring Up, 2006, The National Center for Public Policy and Higher Education

Maryland State Department of Education- <http://www.marylandpublicschools.org>

Maryland Higher Education Commission- <http://www.mhec.state.md.us>

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Maryland's Career and Technology Education State Plan for 2008 – 2012 is guided by its Vision, Mission, and Core Principles. The Vision, to be the premier provider of career focused educational solutions in Maryland, forms the basis for CTE Priority Initiatives. During the next five years, Maryland will implement the requirements of Perkins IV while engaged as a collaborative partner in Maryland's workforce development system.

The Maryland Career and Technology Education State Plan for 2008 – 2012 emphasizes program improvement through Career Clusters and CTE Programs of Study; a systemic career development framework; integrated academic and technical proficiencies; industry recognized credentials, including apprenticeships; and secondary and postsecondary program articulation. Secondary and postsecondary partnerships and industry partnerships combine to add value to students' education by ensuring that CTE programs include earning postsecondary education credits, as well as licenses and certificates required by industry. Ongoing professional development sponsored by Maryland, industry partners, local school systems, community colleges, and four-year institutions of higher education, support the CTE learning community at both the secondary and postsecondary levels. The development of the Maryland Career and Technology Education State Plan for 2008 – 2012 has been guided by the need to address the CTE challenges of accelerating student achievement, eliminating achievement gaps and creating value for all system stakeholders.

While allowing flexibility at the local level to implement Perkins IV, the Maryland Career and Technology Education State Plan for 2008 – 2012 identifies the established Core Indicators of Performance at the State level and connects them to the local level. Local Perkins IV Plans are designed to integrate with other education reform efforts currently underway in local school systems and postsecondary institutions.

VISION FOR CAREER AND TECHNOLOGY EDUCATION

Vision

To be the premier provider of career focused educational solutions in Maryland.

Mission

To build state and local capacity for continuous improvement of career focused programs as a critical component of the pre-K to 20 educational system.

The State Role

To provide the state level leadership necessary to implement such a CTE system, the Division of Career Technology and Adult Learning (DCTAL) of the Maryland State Department of Education (MSDE) has redefined its role as established in the following priority initiatives.

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CTE Priority Initiatives:

- **Improved Program Quality**
Provide products and services necessary for development and revision of CTE programs in alignment with system Core Principles. Collect, analyze and report performance data to make program quality more transparent.
- **Integration with Comprehensive School Reform Efforts**
Promote the use of research-based practices, whole school reform models with a career focus as the key to rigorous, relevant secondary education.
- **Career Development Model**
Ensure that appropriate career development activities are provided pre-K through 20 to prepare Maryland students for life-long career learning.
- **Career Cluster Development**
Provide industry validated representations of Maryland's economic sectors along with associated skill sets and available certifications.
- **Blended Instruction**
Expand the use of Maryland's integrated approach which blends standards based academic and technical skills with skills for success.

CTE Challenges:

- **Accelerating Student Achievement**
 - Establishing CTE as a provider of relevant context critical to increased student achievement through high quality applied learning activities.
- **Eliminating Achievement Gaps**
 - Identifying and closing gaps in key performance areas, both within CTE participant groups and between CTE participants and all students.
- **Creating Value for all System Stakeholders**
 - Anticipating and responding to the changing needs of Maryland economic and workforce development partners.
 - Providing parents and students with information necessary to make informed decisions.
 - Ensuring funding sources of substantial return on their investments through accountability for results.

**PLANNING, COORDINATION
AND COLLABORATION PRIOR TO
STATE PLAN SUBMISSION**

MARYLAND CAREER AND TECHNOLOGY EDUCATION STATE PLAN 2008 - 2012

SECTION I. PLANNING, COORDINATION AND COLLABORATION PRIOR TO STATE PLAN SUBMISSION

I. A. 1 – 2. Public Hearings and Summary

Two public hearings were held in February. The first was held on Monday, February 11, 2008 from 4:00 to 7:00 p.m. at Frederick Community College, Conference Center, Room E 123, located at 7932 Opossumtown Pike, Frederick, Maryland 21702. The second was held on Wednesday, February 20, 2008 4:00 to 7:00 p.m. at Prince George's Community College, High Technology Center, Room 133, located at 301 Largo Road, Largo, Maryland 20774. The notice of public hearings was published in the *Maryland Register* and on the Maryland State Department of Education's website. Maryland's Draft State Plan was shared with the Governor's Work Force Investment Board (GWIB) and posted to the Maryland State Department of Education's (MSDE's) website. In addition, a copy of the public hearing notification, along with information on how to register to testify was sent to all 320 members of the State Perkins Plan workgroup, all of Maryland's 24 local school systems' local directors of career and technology education, and all of Maryland's 16 community colleges' Perkins Plan coordinators. Copies of the public hearing notifications appear in Appendix F. Testimony and staff response from the public hearings are also included in Appendix F.

I. A. 3. Plan Development

Maryland built upon the comprehensive planning process used for the development of *The Maryland Career and Technology Education Transition Year State Plan for 2007 – 2008*. The individuals included in the development of the transition year plan, along with additional names of interested individuals, participated in the development and review of this plan. The individuals were recommended from: local directors of career and technology education within Maryland's local school systems; community college Perkins Plan coordinators; representatives from the Governor's Workforce Investment Board (GWIB); representatives from Maryland's ten Career Clusters; private citizens; parents; several affinity groups in education, special education, and non-public schools. In addition, letters of invitation to participate in the State workgroup were sent to the individuals and entities required in the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV). Recommendations for workgroup participants were also made by people who responded to the letters of invitation to be part of the State workgroup.

The process involved over 320 individuals including: parents; teachers; local businesses; labor organizations; representatives from apprenticeship programs; content supervisors; principals; community college Perkins Plan coordinators; local school system directors of career and technology education; special populations instructors; guidance counselors; career counselors; and tech prep coordinators. In addition, representatives of career and technology education professional associations, community college presidents, local school system superintendents, the Maryland Higher Education Commission, the Maryland Department of Labor, Licensing and Regulation, the Maryland Department of Business and Economic Development; the Maryland State Department of Education, and the University System of Maryland participated in the State Plan process. Each of Maryland's ten career clusters had industry representation through the Governor's Work Force Investment Board, who also represented the Governor.

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Input was also solicited from the following organizations/associations. A listing of members of the State Workgroup, delineated by subgroup, appears in Appendix G.

AFL/CIO – Metropolitan Baltimore Council	Maryland Association of Colleges for Teacher Education
Career and Technology Education Program Faculty at the Postsecondary Level through the Community College Perkins Plan Coordinators	Maryland Association of Community Colleges
Charter Schools	Maryland Association of Family and Consumer Sciences
Council of Educational Administrative and Supervisory Organizations of Maryland	Maryland Chamber of Commerce
Eastern Shore of Maryland Education Consortium	Maryland Association of Pupil Personnel
Fund for Educational Excellence	Maryland Association of Secondary School Principals
Governor’s Work Force Investment Board	Maryland Association of Student Councils
Greater Baltimore Committee	Maryland Association of School Personnel Administrators
Internal Revenue Service	Maryland Association of Teacher Educators
Large and Small Employers and Businesses identified through Maryland’s Career Clusters	Maryland Business Education Association
Legal Aid Bureau	Maryland Business Round Table
Local Program Advisory Committee Members through the Local Directors of Career and Technology Education	Maryland Chamber of Commerce
Maryland Agriculture Teachers Association	Maryland Council of Community College Presidents
Maryland Agriculture Education Foundation	Maryland Department of Business and Economic Development
Maryland Association for Supervision and Curriculum	Maryland Department of Disabilities
Maryland Association of Boards of Education	Maryland Department of Labor, Licensing and Regulation
	Maryland Emergency Management Agency
	Maryland Higher Education Committee

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Maryland Parent Teacher Association	Technology Education Association of Maryland
Maryland Public Television	U.S. Hispanic Youth Entrepreneur Education
Maryland Retired Teachers Association	Each of Maryland's Ten Career Clusters:
Maryland Science Center	<i>Arts, Media and Communication</i>
Maryland State Department of Education – Division of Rehabilitative Services Maryland State Police	<i>Business Management and Finance</i>
Maryland State Teachers Association	<i>Construction and Development</i>
Maryland Student Service Alliance	<i>Consumer Service, Hospitality and Tourism</i>
National Aquarium in Baltimore	<i>Environmental, Agricultural and Natural Resources</i>
National Automotive Technicians Education Foundation (NATEF)	<i>Health and Biosciences</i>
National Ready Mix Concrete Association	<i>Human Resource Services</i>
Printing and Graphics Association – Mid Atlantic	<i>Information Technology</i>
Public School Superintendents Association of Maryland	<i>Manufacturing, Engineering Technology</i>
Student Organization Advisors through the Career and Technology Student Organizations	<i>Transportation Technologies</i>

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I.A. 4. Activities and Procedures

The following time line describes the process and action steps used to prepare this plan:

- Building upon the approved *Maryland Career and Technology Education Transition Year State Plan for 2007 – 2008*, Maryland organized three subgroups which worked on identified needs across the state. These subgroups focused on success for CTE students who are members of special populations; enhancement of Maryland’s monitoring process; and the development of a local plan. The Special Populations subgroup met initially on September 28, 2007, and November 19, 2007. The group focused on developing strategies, strengthening collaboration, and providing support for members of special populations to meet or exceed the state levels of performance in CTE programs. Resource/activity lists were developed for use at the local level and are contained in Appendix H. The Monitoring subgroup met initially on October 12, 2007 and November 5, 2007 to review the current monitoring plan and develop additional monitoring guidance based on Perkins IV. A self-assessment checklist was developed as part of the monitoring process and can be found in Appendix I for secondary and Appendix J for postsecondary. The Local Plan subgroup met initially on October 5, 2007 and November 26, 2007 to provide input for the development of a Local Plan based upon new requirements in Perkins IV. Subsequently, all groups met additionally as the need arose and also conducted several conference calls to be sure that all input was captured. The local plan is appended to this State Plan. See Appendix K for the secondary plan and Appendix L for the postsecondary plan.
- A draft of *The Maryland Career and Technology Education State Plan 2008 – 2012* was posted to the Maryland State Department of Education’s website on February 7, 2008, however the Local Plan, Self-Assessment, as well as other components affecting local recipients, were posted on January 23, 2008. Notification was sent to all State Plan participants to alert them that the State Plan was available for review. Information regarding the public hearings in February was also included as well as contact information where comments could be sent, faxed or e-mailed.
- On January 24, 2008, a meeting was convened for local plan recipients. The purpose of this meeting was to provide an opportunity to share key decisions regarding the State Plan that had impact on local recipients. Specifically, the Local Plan was shared, the monitoring process, and the products from the Special Populations Workgroup. All local recipients were represented at this meeting. Comments were sought at the meeting and participants were encouraged to read the documents and provide comments through February 20, 2008.
- January 31, 2008, a statewide meeting was held for all State Plan participants. The agenda covered the following topics: overview of CTE in Maryland; the Maryland State Plan for Career and Technology Education 2008 – 2012; Perkins IV performance goals for Maryland; and a feedback session. Opportunities for small group discussion and feedback were provided. Again, participants were asked to provide any additional comments through February 20, 2008.

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I.A. 5. How funds will be allotted

- Maryland will continue to combine Perkins Basic Grant (Title I) and Tech Prep (Title II) funds for the five year state plan. One local application will be required in which local recipients will address continuous improvement activities consistent with Perkins IV and Tech Prep.
- Five percent of Tech Prep funds will be retained at the state level for administrative purposes. The remaining 95% will be combined with the Basic Grant (Title I, 85% minus 5% reserve). No portion of Tech Prep funds will be included in the reserve fund.
- Maryland will reserve 5% of the 85% required by law to be distributed to local recipients from the Basic Grant (Title I). The reserve fund will be targeted competitively to: rural areas as defined by the Maryland Office of Planning and in accordance with Section 112(c); areas with high numbers of career and technical education students, and areas with high percentages of career and technical education completers. See Appendix M for the Request for Proposals (RFP).
- Secondary recipients shall receive an allocation as follows: *Thirty percent* shall be allocated to such local educational agencies in proportion to the number of individuals aged 5 through 17, inclusive, who reside in the school district served by such local educational agency for the preceding fiscal year compared to the total number of such individuals who reside in the school districts served by all local educational agencies in the State for such preceding fiscal year, as determined on the basis of the most recent satisfactory –(A) data provided to the Secretary by the Bureau of the Census for the purpose of determining eligibility under title I of the Elementary and Secondary Education Act of 1965; or (B) student membership data collected by the National Center for Education Statistics through the Common Core of Data survey system. *Seventy percent* shall be allocated to such local educational agencies in proportion to the number of individuals aged 5 through 17, inclusive who reside in the school district served by such local educational agency and are from families below the poverty level for the preceding fiscal year, as determined on the basis of the most recent satisfactory data used under section 1124(c)(1)(A) of the Elementary and Secondary education Act of 1965, compared to the total number of such individuals who reside in the school districts served by all the local educational agencies in the State for such preceding fiscal year.
- Postsecondary recipients, or consortium of eligible institutions, shall receive funding allocation based upon the formula of the number of audited unduplicated Federal Pell Grant recipients and recipients of assistance from the Bureau of Indian Affairs enrolled in programs meeting the requirements of section 135 offered by the postsecondary institution or consortium of eligible institutions in the preceding fiscal year to the sum of the number of such audited unduplicated Federal Pell Grant recipients and recipients of assistance from the Bureau of Indian Affairs enrolled in such programs within the State for such year.

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- No local school system shall receive an allocation of formula funds unless the amount to such local school system is greater than \$15,000; local school systems may enter into a consortium with other local school systems for purposes of meeting the minimum allocation, any amounts that are not allocated by this reason shall be redistributed to local school systems that meet the requirements in accordance with the provisions outlined in the Perkins IV Act as referenced on Section 131.
- Maryland will provide a waiver to secondary local school systems not meeting the \$15,000 minimum amount if the secondary local school system is located in a rural, sparsely populated area as defined by the Maryland Office of Planning and in accordance with Section 131(c)(2)(A)(i).
- No postsecondary institution or consortium of eligible institutions shall receive an allocation of formula funds in an amount that is less than \$50,000, funds awarded to consortia must follow the provisions explained in Section 132(a)(3) of the Perkins IV Act; any amounts that are not distributed by this reason shall be redistributed to postsecondary institutions or consortium of eligible institutions in accordance with the provisions outlined in the Perkins IV Act as referenced in Section 132(c)(2).
- Maryland will provide a waiver to postsecondary institutions not meeting the \$50,000 minimum amount if the postsecondary institution is located in a rural, sparsely populated area as defined by the Maryland Office of Planning and in accordance with Section 132(a)(4).
- The allocation between secondary and postsecondary recipients will continue to be 65% to secondary and 35% to postsecondary during the life of Maryland's State Plan.
- The rationale for the allocation between secondary and postsecondary recipients is based upon a careful analysis of data, including data trends for enrollment and completion rates for the past five years; the change in the method of allocating Tech Prep funds, from a competitive process to a formula distribution allowance; and historical data. Given the expectations required under Perkins IV and sanctions for not meeting the eight Core Indicators at the secondary level and the six Core Indicators at the postsecondary level, the 65/35 allocation is appropriate. Enrollment and completion remain steady over the past several years. Sixty six percent of enrollment is at the secondary level and 34% is at the postsecondary level.
- Five percent of the Basic Grant (Title I) will be used for administrative purposes. Maryland will match, dollar for dollar the amount of money allocated to Administration under the Basic Grant (Title I).
- Ten percent of the Basic Grant (Title I) will be used for state leadership which includes not more than one percent to serve individuals in State institutions and \$60,000 for services that prepare individuals for non-traditional fields.

SECTION II

**PROGRAM
ADMINISTRATION**

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SECTION II PROGRAM ADMINISTRATION

A.1 Five-Year plan

Maryland's Career and Technology Education (CTE) State Plan 2008 – 2012 addresses the following criteria.

A.2 (a) Career and Technology Education Programs of Study

Maryland identified ten career clusters and 48 state CTE Programs of Study to guide career development activities, more effectively integrate academic and technical proficiencies, and provide a framework to link secondary and postsecondary program development. The career cluster framework was developed in consultation with representatives of business, industry, government, labor, and higher education. The clusters support and complement Maryland's economic and workforce development strategies and include:

- ❑ Arts, Media and Communication
- ❑ Business Management and Finance
- ❑ Construction and Development
- ❑ Consumer Service, Hospitality, and Tourism
- ❑ Environmental, Agriculture, and Natural Resources
- ❑ Health and Biosciences
- ❑ Human Resource Services
- ❑ Information Technology
- ❑ Manufacturing, Engineering, and Technology
- ❑ Transportation Technologies

To further improve career and technology education programs, each career cluster pathway program consists of a planned, sequential program of study linking academic and technical courses from secondary to postsecondary education and apprenticeships.

A.2 (a) i. Secondary and Postsecondary Education Elements

Program development at both state and local levels is guided by the *Policies and Procedures for the Development and Continuous Improvement of Career and Technology Education Programs* (Updated annually). See Appendix B. The document outlines the requirements for state approved CTE/Tech Prep Programs at the secondary level. With rare exception, CTE pathways are designated as Tech Prep programs to provide students with a seamless transition from high school to employment and postsecondary education. CTE pathways include a planned sequential program of studies combining academic and technical courses beginning in high school and continuing for two or more years of postsecondary education or apprenticeship. Exceptions include Careers in Cosmetology and Diversified Occupations.

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There are 16 community colleges in Maryland, and every postsecondary CTE degree and certificate program must be approved by the Maryland Higher Education Commission (MHEC). A community college can then request that the approved program be added to the approved list of certificate/degree programs eligible for use of federal funds through the Maryland State Department of Education (MSDE), Division of Career Technology and Adult Learning (DCTAL). In order to receive MHEC program approval, community colleges must complete a comprehensive proposal that focuses on ten areas including:

- A sound rationale and need for the program including labor market demand;
- A description of the program of study leading to the proposed degree along with a course listing;
- A list of the faculty, support resources available in the library and information on the impact of facilities and equipment;
- The intention to seek national accreditation for the degree/certificate whenever possible as well as the intention to seek state licensure and/or certification;
- The establishment of cooperative agreements with other institutions and organizations that work with the proposed program as well as evidence of the development of articulation agreements with four-year institutions. In order to foster articulation with K-12, community colleges should also identify parallel curricula in secondary schools and promote dual enrollment; and
- The identification of specific actions and strategies which will be utilized in the recruitment and retention of other-race students.

A.2 (a) ii. Coherent and rigorous content, aligned with challenging academic standards, in a coordinated, non-duplicative progression of courses aligning the learning levels

The *Policies and Procedures* require that secondary local school systems (LSS) work with industry program advisory committees to develop CTE programs. When the LSS submits the program for approval, both academic and technical course sequences are reviewed and approved by MSDE/DCTAL Cluster Teams in cooperation with a Program Review Panel. The panel consists of external stakeholders who offer input and advice to the Assistant State Superintendent of Career Technology and Adult Learning in determining program approval. CTE students are expected to meet state-established academic standards based on Maryland's high school core learning goals and voluntary state curriculum. CTE students also are expected to acquire the prerequisite skills for entry into postsecondary education as evidenced by reducing the number of students needing remediation, increasing the number of CTE students meeting Maryland's rigorous course indicators, and increasing the percentage of students meeting University System of Maryland (USM) admissions requirements. The percentage of students meeting USM's admission requirements increased from 14 percent in 1992 to 51 percent in 2007 as the rigor of CTE/Tech Prep Programs has increased to better prepare students to pursue postsecondary education, apprenticeship, and employment.

At the postsecondary level, MHEC consults with content experts to review curriculum in order to ensure that the new Maryland CTE Programs of Study include rigorous content which is aligned with challenging academic standards. Maryland's community colleges partner with local school

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systems to form CTE consortiums. The consortia collaborate on programs in order to establish seamless transitions from high school to community college as well as provide articulation agreements and marketing plans for communicating articulation information to students and parents. All secondary and postsecondary programs must consist of aligned, coordinated, and non-duplicative courses. Statewide articulation is available in several career clusters i.e. Transportation – Auto Technology and Human Resource Services – Teacher Academy of Maryland. New programs pursue statewide articulation whenever possible.

A.2 (a) iii. Secondary and postsecondary alignment

The policies established for CTE program approval include the opportunity to add value to students' overall educational programs. Value-added opportunities include earning credit through dual enrollment, articulated credit, transcribed credit, and apprenticeship. CTE/Tech Prep programs are designed to provide students with a variety of options for earning credit toward postsecondary education, including advanced placement courses and credit by examination.

A.2 (a) iv. Industry recognized credential or certificate or degree

In addition, the *Policies and Procedures* require that CTE/Tech Prep Programs of Study lead to industry-recognized credentials by offering students opportunities to add value to their education by earning licenses and certificates required by business, industry, and labor organizations where available and appropriate. The policies also outline the information that local CTE/Tech Prep programs must include, such as the sequence of academic and technical courses, to receive approval and enable students to enter an apprenticeship program, earn an associate or baccalaureate degree.

Maryland is working to align postsecondary community college programs with baccalaureate programs. An example of this is the Associate of Arts in Teaching (A.A.T.). Community college students completing the A.A.T. begin upper level coursework at the baccalaureate institution. Pre-engineering is another area being explored for such alignment.

A.2 (b) Develop and implement career and technical programs of study

The *Policies and Procedures* include the process for program approval and implementation. Currently, MSDE/DCTAL Cluster Teams develop Maryland CTE Programs of Study at the state level in cooperation with representatives of business, industry, secondary and postsecondary education. Once CTE/Tech Prep Programs are approved, Maryland offers technical assistance and incentive grants from federal leadership funds to guide local program implementation.

A.2 (c) Development and implementing articulation

An important component of every CTE/Tech Prep program is the value-added for students through advanced placement in postsecondary education or credentials valued by employers. MSDE/DCTAL Cluster Teams collaborate with secondary and postsecondary educators to

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develop statewide and local articulation agreements. Examples include the Teacher Academy of Maryland and the Pre-engineering program through Project Lead The Way. The *Policies and Procedures* define the process for the development and implementation of articulated CTE Programs of Study.

In order for students to meet performance goals, high quality professional development that supports the CTE learning community at both the secondary and postsecondary levels is integral. Maryland requires that local school systems align professional development with the Maryland Teacher Professional Development Standards (MPDS), which are used to ensure that professional development is outcome-based and informs instructional practice leading to increased student achievement.

The MPDS address three areas: context, content and process. The context standards refer to the environment in which professional development takes place which include: professional learning communities, strong leadership, adequate resources and clear expectations. The content standards include: strategies that improve content knowledge and quality teaching; are research-based; include collaboration; address diverse learning needs; promote student learning environments; and involve families in the learning process. Lastly, the process for effective professional development is data-driven, includes evaluation and assessment, reflects best practices in workplace learning, and includes an in-depth understanding of how and why adults learn.

A.2 (d) Information about career and technical programs of study

Maryland's Career Development Resources

Maryland has created a demand driven labor market system through its industry sector initiative. This initiative is aligned with the State's Career Cluster and Career Development Frameworks and CTE Programs of Study. The full range of career opportunities are identified in the Frameworks including those with an Associate's Degree or less, a Bachelor's Degree and more than a Bachelor's Degree. The resources are available to students and parents in print and electronic format on the marylandpublicschools.org website. Workforce and occupational information is provided through 24 One Stop Centers and the Maryland Workforce Exchange, an internet Labor Market Information system (LMI).

The Maryland State Department of Education has also created Counseling and Advisory materials for students in grades seven through 12. Teachers, administrators and counselors receive professional development and coaching to implement the resources through a systemic approach that involves every student. The Maryland Business Roundtable for Education has established an interactive multimedia website for secondary students called "Be What I Want To Be" <http://bewhاتيwanttobe.com/>.

A focus of the Maryland Counseling and Advisory resources is the development of a student's career plan; students using decision-making processes to plan, set and achieve goals; and their participation in scheduled career and school-based activities, counseling and postsecondary

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planning sessions. Students develop and continually update their career plan as stipulated in the Code of Maryland Regulations (COMAR) 13A.04.10.01. The career plan guides program and postsecondary degree completion in a CTE pathway program. As previously mentioned, a CTE program of study is designed to help students earn advanced college credit and technical skill attainment through apprenticeship and industry-recognized certifications/licensures.

A.2 (e) *Develop, improve, and expand access to appropriate technology in career and technology education programs*

Maryland has updated its plan for technology in education, *The Maryland Educational Technology Plan for the New Millennium: 2007 – 2012*. See Appendix A

A. 2(f) *Criteria to approve eligible recipients for funds*

- Local recipients need to meet all components with the ‘acceptable’ column of the rubric contained in the Local CTE Plan for Program Improvement which serves as the local Perkins application. Appendix K (secondary plan) and Appendix L (postsecondary plan) contain this information.

A.2 (f) i. *Continuous improvement in academic achievement*

The local plan describes how recipients plan to eliminate the gap between their performance and state-established levels of performance. Strategies to increase the number and/or percentage of students achieving rigorous levels for academic, technical and related workplace skill proficiencies are incorporated into the local plan. Increased academic standards linked with NCLB measures have been established as a high school graduation requirement beginning with the class of 2009. Although most CTE students will have passed the required English II and Math High School Assessments before starting a CTE program, achievement on these exams will be the criteria used to determine success on core indicators of performance 1S1 and 1S2. The annual percentage and increase of CTE concentrators/completers who receive their high school diploma, 4S1, is also significant, as the student will have to be successful in meeting the challenging academics that are part of their program. Students in CTE also have the opportunity to meet USM requirements and become “dual completers;” this is not part of the Perkins core indicators but it is part of each school systems’ accountability report. In 1992, 14 percent of CTE completers were USM ready; in 2007, 51 percent of the same group were dual completers. This criterion is another means of determining academic achievement. Local school systems will also begin reporting their use of Accuplacer and PSAT exams to determine high school students’ college readiness in academics. Based on results, students will be provided with targeted support to reduce the need for remediation when they reach college. Baseline data is being collected to determine remediation needs.

A. 2 (f) ii. *Continuous improvement of technical skill attainment*

Many of Maryland’s CTE programs of study, which have been developed in conjunction with local school systems, postsecondary partners and local business and industry, have licenses and

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certifications as part of the value added component. Students who take and pass the appropriate industry certification exam can earn recognition or a professional designation. The percentage of students who successfully pass the exam is the criteria that will be used to measure technical skill attainment. Annual improvement is required to satisfy core indicator 2S1. Local school systems are encouraged to adopt CTE/Tech Prep Programs of Study through technical assistance, professional development and program implementation grants. As school systems increase the adoption of Maryland CTE Programs of Study, additional opportunities are available to students to earn industry certification.

A.2 (f) iii Current and emerging occupations

Maryland's program development process was previously described which includes ten career clusters that complement Maryland's economic and workforce system. CTE/Tech Prep state approved programs are developed in collaboration with local school systems, postsecondary partners, business and industry and are targeted toward current and emerging opportunities. As new programs are approved, they are added to the CTE/Tech Prep approved list of programs. Maryland's unique workforce and economic diversity allow for individual local school systems and postsecondary institutions to develop CTE/Tech Prep programs to meet local industry sector and workforce needs.

The *Policies and Procedures* describe how programs are developed and approved in Maryland. They are all based within ten Career Clusters that complement Maryland's economic and workforce development system. Because all of the 48 state-approved Maryland CTE Programs of Study were developed in collaboration with business and industry, they are targeted toward current or emerging occupational opportunities. Programs are added when there is an economic need. If the local school system is successfully implementing the state approved programs, or is moving toward adding these programs through modifications or development to current program offerings, they will be working with business and industry in their area or a statewide Program Advisory Committee to provide opportunities for their students that address local needs. If programs are not successful and students are not achieving, then it is the local/recipients responsibility to target that program for improvement activities.

A.2 (g) Preparing career and technical education students to graduate from secondary school

Maryland's *Policies and Procedures* require local school systems and community colleges to provide course sequences for all approved CTE/Tech Prep Programs of Study. The secondary sequence must show evidence of alignment to Maryland's high school graduation requirements. Through differentiated instruction, support services, and other interventions, special populations are provided with the assistance needed to graduate. Completing a Maryland approved CTE/Tech Prep Program of Study is one of three options for high school graduation. To earn a high school diploma in Maryland, students must meet specific requirements such as attendance, passing specific academic courses, passing the High School Assessment (HSA) exams, HSA ALT or the Bridge Plan and also select one of three paths, one of which is completing a Maryland approved CTE/Tech Prep State-approved Program of Study.

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A.2 (h) Preparation for postsecondary education or entry into high skill, high wage, or high-demand occupations in current or emerging occupations

Occupational and Employment Information

Maryland's CTE model offers instructional programs within 10 broad career clusters described in the publication *Maryland Career Clusters: Restructuring Learning for Student Achievement in a Technologically Advanced, Global Society* (Appendix C). In partnership with statewide industry advisory groups, Maryland identified each career cluster by the core business functions of the industry. The core business functions were translated into career pathways. The career pathways describe the end-to-end business processes of the industry. CTE pathway programs afford students with multiple career pathways leading to employment and focused secondary and postsecondary education. Specific process steps and criteria to develop and adopt state-approved pathway programs are outlined in the *Policies and Procedures* document.

Through the Governor's Workforce Investment Board's Industry Sector Initiatives and the Maryland Department of Labor, Licensing and Regulation, high demand career pathways and occupations are identified for Maryland. The high demand occupations and careers are based on mutually agreed upon criteria including amount of wages, education/skill level required for entry into the job market and the need for workers in that specified field.

Maryland Career Development Content Standards

The *Maryland Career Development Framework* (Appendix E) identifies six content standards for student engagement in the processes of career development: self-awareness; career awareness; career exploration; career preparation; job-seeking and advancement; and career satisfaction and transition. The standards break-out into indicators and objectives and build knowledge and skills across grade spans: PreK-Grade 2; Grades 3-5; Grades 6-8; Grades 9-12; and Postsecondary/Adult. Decision-making is embedded within each standard as an indicator. This systematic instructional approach aligns with that of the Voluntary State Curriculum for the academic content areas and incorporates Maryland Career Clusters and Maryland CTE Programs of Study. It ensures that students from grades pre-kindergarten to five will engage in instruction that leads to self awareness, career awareness, career exploration, and some initial steps in career preparation. It also ensures that students in grades seven through twelve will continue to explore previous concepts while adding job seeking and advancement and career satisfaction and transition. In addition students in grades eight through twelve will develop and update an individual career plan as called for in the Code of Maryland Regulations (COMAR). The plan will include the CTE Pathway program sequence they will follow through postsecondary education, certification and assessment results and earned college credit.

Instructional products were developed to implement the Career Development Framework using a systemic approach across education levels:

- **Grades Seven Through 12** – Counseling/Advisory Resources are grade-specific materials that are structured around four components: Counseling, School-Based

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Activities, Career-Based Activities and Postsecondary Planning. Implementation is a shared responsibility by administrators, teachers, counselors and other staff.

- **Postsecondary/Adult:** The following five toolkits focus on the skill-building needs of postsecondary education customers and include use of related interactive, online tools:
 - Toolkit One – Helping Clients to Assess and Improve their Own Work Readiness
 - Toolkit Two – Helping Clients to Identify a Career Path
 - Toolkit Three – Helping Clients to Get the Job
 - Toolkit Four – Helping Clients to Keep the Job and Advance
 - Toolkit Five – Helping Clients Transition to Higher Education

Counseling and advisement will be integrated into the overall fabric of the school through a continued professional development series. Maryland will provide professional development for school staff, postsecondary faculty, and parents on a regular basis. Each school system received a Career Cluster booklet which includes nontraditional career options as well as the full range of career opportunities at all education levels. To anchor development in school improvement and school reform, and to ensure a systemic approach, it is recommended that the career development plan be incorporated into the school improvement plan.

Maryland will provide the state leadership and technical assistance to local schools systems and community colleges on the implementation of Maryland's Career Development Framework and resources. An annual plan of work will detail products, services and activities to be provided.

In addition, parent involvement is a necessary component in helping students learn about career choices and making decisions about the career path that they will pursue. "The Maryland Parent Advisory Council's vision for parent involvement in Maryland states that parents, families, educators, and community member's work together as real partners, hold themselves mutually accountable, and have the knowledge, skills and confidence to succeed at improving the achievement of all students. To achieve this vision one of the primary principles is that parents, principals, families, educators and communities are mutually accountable for improving student achievement."

A.2 (i) i. Use of funds for improvement or development of CTE courses at the secondary level

Local recipient plans are reviewed and approved only when they meet the criteria for a local plan and emphasize improvement of CTE programs. Upgrades to instruction through updated materials of instruction and industry-specific equipment, sustained professional development, career guidance, support services for members of special populations, linkages to postsecondary studies, industry certification of a program and student technical skill attainment are improvements to CTE programs.

Reserve funds are provided for local recipients to align, consolidate, or expand CTE Programs of Study across the learning levels consistent with Maryland's Career Cluster Framework; implement Maryland's K to adult career development framework using a systemic approach across the learning levels, grades seven to adulthood; and provide comprehensive, professional

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development in support of the above two items. CTE/Tech Prep Programs of Study include the courses required for graduation, including those where end of program assessments are administered. For those courses, local school systems are expected to measure students' academic performance using the same assessments required under the No Child Left Behind (NCLB) Act and to use the results to inform local planning for improved student achievement.

State-level funds are used to develop, implement, improve and evaluate CTE Programs of Study through the state Advisory Committee (the Governor's Workforce Investment Board as described in A.6 of this section) and the state Program Advisory Committees for each Career Cluster (as described in A.6 of this section). A.6 delineates the roles of these committees.

A.2 (i) ii Postsecondary level – relevant and challenging

Previously Tech Prep competitive grants have been used to develop new CTE/Tech Prep Programs of Study at the postsecondary level that are relevant and challenging. Most new CTE program development has occurred in response to industry needs. Some examples included pre-engineering and the Teacher Academy of Maryland. Maryland will target reserve funds for this purpose.

A.2. (i) iii Lead to employment in high-skill, high-wage, or high-demand occupations

Reserve funds are provided through a competitive process to assist secondary and postsecondary educators in the development of CTE /Tech Prep Programs of Study that lead to employment in high-skill, high-wage, or high-demand occupations. The state's workforce and economic development needs are assessed through Maryland's career cluster frameworks and the industry cluster initiative led by the Governor's Workforce Investment Board (GWIB).

A.2 (j) Communicating best practices

Maryland has chosen to combine the Basic Grant (Title I) and Tech Prep (Title II) funds. Thus, best practices will be communicated through a consistent delivery of professional development to support CTE/Tech Prep Programs of Study. The Maryland Professional Development Standards will be used to facilitate this process.

A.2 (k) Using funds to link academic and technical education at the secondary and postsecondary levels

Passing the high school assessments identified under the NCLB Act is a requirement for the class of 2009 and beyond. Through a competitive process, reserve funds are available to assist local school systems and community colleges in the integration of academic and CTE to better prepare students for employment and further education. Colleges may also apply for reserve funds, through the competitive process, to administer the Accuplacer or Compass examinations and to inform students about their readiness for college-level work or their need for remediation. Another example is the integration of academic content standards in programs, such as Project Lead The Way's Pre-Engineering program which is benchmarked to national standards in

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English, mathematics, science, and social studies. Maryland's Reserve Fund will be used for these initiatives.

A.2 (l) *Integration of coherent and rigorous content aligned with challenging academic standards*

The CTE/Tech Prep Programs of Study are designed to include a logical sequence of academic and technical courses as required by Maryland's *Policies and Procedures*. Program development is guided at the state level by Program Advisory Committees from business, industry, government, and education to ensure alignment with academic and technical standards. Where appropriate and available, industry-recognized credentials or advanced placement college credit may be awarded by examination. Maryland's cluster teams constantly review data to determine the quality of programs, implement upgrades, and ensure continuous improvement.

A.3 Comprehensive Professional Development

A. 3 (a) *Integration of coherent and rigorous academic content standards and career and technical education curricula*

In Maryland, comprehensive professional development is guided by Maryland's Teacher Professional Development Standards and is intended to direct efforts to improve professional development for all teachers. These standards call on teachers, principals and other school leaders, district leaders and staff, the Maryland State Department of Education, institutions of higher education, and cultural institutions and organizations across the state to work together to ensure that professional development is of the highest quality, ongoing and readily accessible to all teachers. These standards also acknowledge that teacher professional development encompasses a wide variety of learning activities.

Maryland uses a collaborative approach in providing professional development to teachers in Maryland CTE Programs of study. The process starts after a design team comprised of business as well as postsecondary and secondary educators has identified the courses and technical and academic content of each course. The design team also identifies relevant industry certifications. After the course content is determined, a common syllabus is developed for each course. Common course syllabi are comprised of a sequence of integrated projects that align to the content and standards of each course. Professional development is provided to teachers on the delivery of instruction on the common course syllabi. This helps to ensure consistent statewide implementation of the both the academic and technical content.

A. 3 (b) *Increase teachers meeting certification and licensing requirements*

In 2006, Maryland increased the certification requirements of trades and industry teachers to include passing the Praxis I exam in conjunction with meeting the academic and/or technical skills criteria. Through comprehensive professional development on the Maryland CTE Programs of Study, participating CTE teachers are provided opportunities to receive inservice and/or college credit that goes toward their continued certification. They are also provided

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opportunities to acquire and/or update their credentials to align to the most current industry standards.

A. 3 (c) High quality, sustained, intensive, and focused on instruction

Maryland uses professional learning communities (PLC) to ensure that professional development is high quality, sustained, intensive, and focused on instruction, as well as increases the academic knowledge and understanding of industry standards. In a PLC, teachers work with industry and postsecondary partners to evaluate student work and instructional methodologies. Through the use of common course syllabi, teachers compare the quality of the student work on the common projects that were taught. This comparison opens up a dialogue among teachers to see how they can raise the level of their instruction in order for students to achieve at higher levels and meet industry standards. With input from industry and postsecondary partners, teachers are also able to improve the quality of the projects that make up the common course syllabi. This approach creates an effort-based model of instruction (one that relies on the effort that the student puts forth) as opposed to the traditional ability-based model.

Another quality of professional development in Maryland comes through the many state level partnerships with industry that have been developed. These partnerships help to ensure that CTE teachers are provided with relevant professional development that aligns to the economic and workforce development needs that the program represents. The professional development that is provided to CTE teachers is coordinated and delivered with these partners. Maryland works with the American Hotel and Lodging Educational Institute, Maryland Hospitality and Education Foundation, the Printing and Graphics Association Mid-Atlantic, National Automotive Technicians Education Foundation, Cisco, Oracle, and the National Center for Construction Education and Research.

A.3 (d) Encourages applied learning

A key aspect of the CTE Programs of Study is a consistent curriculum that integrates students' academic and technical subject matter through hands-on, problem-based instruction. Additionally, professional development is provided to teachers and work-based learning (WBL) coordinators on using VTECS Connect software to develop customized WBL agreements that correlate the classroom experience to students' WBL experience.

A.3 (e) Provides knowledge and skills to work with special populations

During the transition year, Maryland convened a workgroup to look at strategies for ensuring success for CTE students who are members of special populations. The outcomes of the workgroup focused on strengthening collaboration with guidance, special educators, transition coordinators and other individuals who work closely with members of special populations, to share best practices, and create joint professional development opportunities. The workgroup will continue to meet annually. In addition, Maryland has two Memoranda of Understanding to ensure success for members of special populations. These can be found in Appendices N and O.

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One involves other Divisions within the Maryland State Department of Education and the other is among several state agencies.

A.3 (f) *Integration with professional development carried out under Title II of ESEA and Title II of HEA*

Students participating in career and technology education (CTE) meet the same academic requirements as all other students, and they must take and pass the high school assessments. To ensure that professional development aligns with Title II of the Elementary and Secondary Education Act as well as the Higher Education Act, CTE staff participate on the following steering committees/councils: Professional Development Advisory Council, K- 16 Steering Committee and the Middle School Steering Committee. This ensures that:

- Academic and CTE teachers are provided professional development on the Voluntary State Curricula (VSC) for mathematics, English, social studies and science;
- Professional development is customized to the needs of CTE teachers on the VSC;
- External providers of professional development to CTE teachers are knowledgeable of both the academic and technical standards that should be incorporated into the professional development; and
- Student data are analyzed based on the outcomes of their performance.

A.4 (a) *Improve recruitment and retention of CTE teachers, faculty and career guidance and academic counselors, including underrepresented individuals in the teaching profession*

Partnering with the Division of Certification and Accreditation, Maryland has adopted procedures that help with recruitment and retention of CTE teachers. Examples of this include online teacher certification programs as well as the ability to access certification records via the internet.

When Maryland CTE Programs of Study are developed, teachers are identified locally. Professional development is provided through summer training institutes and year-long professional development with representatives from business and postsecondary education to help retain teachers. Teachers from underrepresented groups are recruited locally to reflect the demographics of the student population. Maryland has some targeted recruitment programs outside of the state, such as the Philippines.

Career guidance and academic counselors participate in professional development provided by MSDE/DCTAL. Ongoing professional development enables counselors to understand CTE offerings and help with the recruitment and retention of students. Maryland's career development resources for grades seven through twelve enable counselors to work with teachers to develop career advisories.

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A.4 (b) Transition to teaching from business and industry

Maryland's Resident Teacher Certification Program offers local school systems the option of growing their own pool of teachers. Local school systems select potential teacher candidates from among individuals with baccalaureate degrees or higher; however, the degree areas are not necessarily in education. The candidates are employed and coached while taking local coursework as part of the process to becoming fully certified.

Through an agreement between the Division of Career Technology and Adult Learning and the Division of Certification and Accreditation at the Maryland State Department of Education, individuals who hold baccalaureate degrees in engineering and other technical areas, are eligible to teach in Maryland public schools as long as they complete the required professional education courses. Examples of programs where these individuals might become teachers are: Pre-Engineering (Project Lead The Way), and computer and information technology.

A.5 Efforts to be made to improve the transition of subbaccalaureate career and technical education students into baccalaureate degree programs

An important feature of Maryland's CTE programs of study is the establishment of statewide articulation agreements with its two- and four-year postsecondary institutions. Currently, Maryland has 27 statewide programs of study, with statewide articulation agreements, either in place or currently under development for the following programs: Pre-Engineering: Project Lead The Way (PLTW); Homeland Security & Emergency Preparedness; Food and Beverage Program: ProStart; American Culinary Federation; Lodging Management Program, Teacher Academy of Maryland and Automotive Technology. National programs, such as the Lodging Management Program, are recognized by industry and have both secondary and postsecondary components. Maryland has adopted these as a CTE program of study facilitating the establishment of articulation agreements with postsecondary counterparts.

In addition, the Associate of Arts in Teaching, earned at the community college, articulates into Maryland's baccalaureate degree teacher education programs, providing community college learners to immediately enroll in upper division courses required by the degree. Other areas, such as engineering, are being developed.

Apprenticeship opportunities also exist for programs in the Construction and Development Career Cluster. Apprenticeship is a value added option for students in the construction trades and the construction maintenance CTE programs of study.

A.6 Description of actively involving parents, academic and career and technical education teachers, administrators, faculty, career guidance and academic counselors, local business and labor organizations in the planning, development, implementation, and evaluation of CTE programs

The state Advisory Committee for CTE in Maryland is the Governor's Workforce Investment Board (GWIB). The GWIB develops and continuously improves the state workforce system,

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including creating linkages to assure coordination and collaboration among partner agencies. Its mission is to guide the entire Maryland workforce development system. GWIB is a business-led group of 45 members, a majority of whom represent the private business community. Other members include Cabinet Secretaries, college presidents, the State Superintendent of Schools, elected officials, non-profits and the Governor.

GWIB has identified industry sectors and initiatives to attract and retain future workforce participants in areas of high skill, high demand, high wage, and critical shortage areas. State staff work closely with GWIB on workforce development issues by serving as participants on these industry sector workgroups. GWIB has addressed the aerospace, health care, retail, transportation logistics, and education industry sectors by convening key stakeholders to identify and address workforce, workplace and policy issues. Summits and symposia have been held with state and national experts addressing the identified issues and the monograph produced after each summit/symposium documents not only the issues but action plans as well. Working with GWIB keeps state staff on the leading edge of Maryland's workforce initiatives and identified needs and helps to direct the work in statewide development of new CTE Programs of Study.

In addition, the GWIB recently convened a Workforce Summit where panels of experts spoke to the need for career and technical education, opportunities for apprenticeship and recruitment efforts for populations that business and industry have not traditionally recruited, such as pre-release individuals and limited English proficient. State staff also serve on the GWIB's recently developed committee on the Emerging Workforce.

Local recipients are required to have Local Advisory Committees (LAC). The role and composition of the LAC is similar to that of the statewide Advisory Committee, GWIB.

Maryland has partnered with key stakeholders to develop CTE programs of study at the state level. Each of Maryland's ten Career Clusters has a statewide Program Advisory Committee (PAC) which consists of individuals representing parents, academic and career faculty, administrators, guidance, business and industry, labor organizations and other state economic and workforce agencies. These individuals cover all aspects of the industry.

At the local level a specific PAC, consisting of the same stakeholders identified above, provides the required input for planning, developing, implementing and evaluating CTE programs. The local counterpart for economic and workforce development are included in these Program Advisory Committees as well as parents, faculty, business and industry, and labor.

A CTE Program Review Panel, consisting of economic and workforce representatives, higher education, local recipients, parents, labor and industry, reviews each newly developed local secondary CTE program of study that is submitted for state approval. State developed CTE programs of study that local school systems choose to adopt undergo similar review by the Career Cluster Team prior to recommending state approval. This provides stakeholder input on program development, implementation and evaluation to ensure that CTE programs are relevant to economic and workforce needs in Maryland and provide "value added" opportunities for Maryland students.

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Maryland's *Policies and Procedures for the Development and Continues Improvement of Career and Technology Education Programs (Appendix B)* documents this process for secondary programs.

The process for the development and approval of postsecondary CTE programs of study has the required Advisory Committee and must also follow the approval process of the Maryland Higher Education Commission (MHEC), the governing body in Maryland for postsecondary programs. Once a postsecondary program is approved by MHEC it is submitted to MSDE if the community college wants the program added to the approved list of certificate/degree programs eligible for use of federal funds through the Maryland State Department of Education (MSDE), Division of Career Technology and Adult Learning (DCTAL).

Some local school systems and community colleges have convened joint advisory committees (both local and program and those that span the learning levels) to ensure that seamless transition between the learning levels and capture the postsecondary advanced standing, articulated or transcribed credit.

A.7 (a) Improve academic and technical skills of students participating in CTE programs

A.7 (a) i Core academic subjects

Maryland CTE Programs of Study include a coherent set of academic, employability and technical skills, based on national and state standards that provide students moving directly to employment and further education with a value-added competitive advantage. The academic skills are based on Maryland's Voluntary State Curriculum (VSC). The VSC for mathematics and English align to the High School Assessment exams under NCLB. All CTE programs are state-approved and include academic content that aligns to state and NCLB requirements.

A.7 (a) ii Career and technical education subjects

CTE teachers and faculty are required to understand the core areas that underpin the career field, including all aspects of the industry. Additionally, the *High Schools That Work (HSTW)* initiative has provided Maryland with a vehicle for school reform in CTE programs. As a member of this network, Maryland has provided schools with the opportunity to become a HSTW site. One of the key practices of this network is a means to leverage resources necessary for increasing the academic proficiencies of students enrolled in CTE programs. The data provided to the schools that are members of the network allow educators and administrators to see gaps in the rigor of academic areas while promoting the technical skills needed in the workplace. Another strategy that has helped Maryland schools is the development of common course syllabi. This tool assists teachers in aligning the written curriculum with the taught and graded curriculum so that proficiency with the standards is achieved.

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A.7 (b) Strong experience and understanding of all aspects of an industry

Maryland CTE Programs of Study are designed around ten broad career clusters, based on all aspects of an industry, designed to help students make informed decisions regarding career pathways. Broad career clusters share a common core of knowledge and skills that provide students with an understanding of all aspects of the industry that they are planning to enter. For each cluster, these include planning, management, finances, technical and production skills, underlying principles of technology, labor issues, and health and safety. Learning and instruction are supported by appropriate career development activities aligned with the Maryland Career Development Framework to help inform students' decisions and prepare them for lifelong learning.

A.7 (c) CTE students are taught to the same challenging academic proficiencies as all other students

Maryland's graduation requirements for both CTE and non-CTE students are the same. Additionally, CTE students must also meet the No Child Left Behind requirements and pass the state assessments in Algebra/Data Analysis and English II. In Maryland, 51% of all CTE completers also meet the entrance requirements for the University System of Maryland. This is up from 14% in 1993. *The Policies and Procedures for the Development and Continuous Improvement of Career and Technology Education Programs* clearly outline that the academic expectations of CTE students are the same as students in non-CTE programs.

A. 8 Providing technical assistance

Technical assistance to local recipients of CTE funds is provided by the staff of the three CTE branches within the Division of Career Technology and Adult Learning at the Maryland State Department of Education. The MSDE is the recipient of the Perkins funds. An organizational chart for MSDE appears in Appendix P. The Division of Career Technology and Adult Learning administers CTE programs. This Division falls under the purview of the Office of the Deputy Superintendent for Instruction and Academic Acceleration.

The CTE Student and Assessment Services, Instruction, and Systems Branches deliver services to implement and assess the CTE programs within the local school systems and community colleges. Staff from all three branches provide technical assistance as members of the ten Career Cluster Teams. An organizational chart for DCTAL can be found in Appendix Q.

The CTE Instructional Branch is responsible for providing: leadership; coordination; technical expertise; program development; and program improvement activities to local programs of CTE. This includes all 24 local school systems, 16 community colleges and other agencies and groups in the occupational program areas. The instructional areas of technology education, technical preparation, curriculum development, and the integration of academic education with career and technology education responsibilities fall within this branch.

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The CTE Student and Assessment Services Branch is responsible for developing systems of assessment and accountability for career and technology education programs. In addition they are responsible for providing leadership, coordination, and technical assistance for the CTE student organizations, CTE equity and special populations services, work-based learning products and services, and CTE student organizational assessment and credentialing.

The CTE Systems Branch is responsible for managing all CTE grants including: the Local CTE Plan for Program Improvement; Reserve Funds; Leadership Grants; and state general fund revenues. The branch is comprised of four regional coordinators who provide technical assistance to the primary contact for each of the 24 local school systems and 16 community colleges in Maryland within an assigned region of the State. Additionally the branch has responsibilities for federal and state legislation; fiscal procedures; inventory control of equipment purchased with federal monies, career and technology education program approval, and assistance with program implementation.

The three CTE branches meet with the Local Directors of Career and Technology Education from each of Maryland's 24 local school systems at least four times a year to discuss local and State initiatives that impact career and technology education. These meetings are held to provide technical assistance to these individuals. In addition, other meetings are scheduled throughout the year such as the regional planning meetings which take place to assist local recipients with the Local CTE Plan for Program Improvement application and technical assistance to support the implementation of CTE/Tech Prep Programs of Study.

Maryland convenes joint meetings of local school system directors of career and technology education and community college Perkins contacts as needed basis to provide technical assistance and discuss items of mutual concern regarding CTE programs of study.

Local Plan

Please see Appendix K for the secondary local plan and Appendix L for the postsecondary plan.

The Local CTE Plan for Program Improvement plan describes how career and technology education programs will be improved in order to achieve State standards and local evaluation measures. The local plan indicates the type and quantity of programs based on the identified and/or anticipated need for a skilled and trained workforce in targeted business and industry sectors.

Maryland's Governance Structure for CTE

A. Maryland State Board of Education

The Maryland State Board of Education sets policy for the public school system and enacts by-laws and regulations that govern it. In order to graduate from a Maryland public high school a student must complete **one** of the following options. There are students who choose to complete more than one of the following options. A student must:

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- (1) meet the required credits, attendance, etc. according to COMAR 13.A.03.02 and follow a sequence of courses designated to **meet admission requirements** for the University System of Maryland. This includes two credits in Foreign Language and three in Mathematics. The Mathematics credits must include at least one in fundamental or advanced algebraic concepts and topics and one in fundamental or advanced geometric concepts or topics; **or**
- (2) complete the required credits, attendance, etc. according to the by-law and **select either** two credits of a foreign language or two credits in Advanced Technology Education; **or**
- (3) complete the required credits, attendance, etc. according to COMAR 13.A.03.02 and **complete a State approved career and technology education program**. The program includes a sequence of courses with a minimum of four credits that are obtained through school-based and work-based experiences. In addition, all aspects of the industry are explored, the Core Learning Goals are incorporated into the instruction, and technical skills, as well as the related academic and workplace skills, including the Skills for Success, are identified and included as an integral part of the program.

B. Maryland Higher Education Commission

The MHEC monitors degree and certificate occupational programs at Maryland colleges. Maryland has a three-part system of public higher education that consists of 16 community colleges, two four-year colleges and universities (Morgan State University and St. Mary's College), and 11 campuses of the University System of Maryland. Among the 26 independent postsecondary institutions, 22 are classified as four-year colleges and universities.

MHEC develops and updates an overall plan to coordinate growth and development of postsecondary education in Maryland. Programs at postsecondary institutions that articulate with high school occupational completion programs or provide career major options (the 2+2, 2+2+2, and 2+4 course sequence options) are submitted to the MSDE for approval.

C. Local Boards of Education

The local Boards of Education are the public authority legally responsible for educational matters that affect their LSSs. They are free to impose additional requirements at the local level however; all state requirements must be met.

A.9 CTE relates to the State's and region's occupational opportunities

Maryland identified ten career clusters and CTE Programs of Study to guide career development activities, more effectively integrate academic and technical proficiencies, and provide a framework to link secondary and postsecondary program development. The career cluster framework was developed in consultation with representatives of business, industry, government, labor, and higher education. The clusters support and complement Maryland's economic and workforce development strategies and include:

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- ❑ Arts, Media and Communication
- ❑ Business Management and Finance
- ❑ Construction and Development
- ❑ Consumer Service, Hospitality, and Tourism
- ❑ Environmental, Agriculture, and Natural Resources
- ❑ Health and Biosciences
- ❑ Human Resource Services
- ❑ Information Technology
- ❑ Manufacturing, Engineering, and Technology
- ❑ Transportation Technologies

To further improve career and technology education programs, consists of a planned, sequential program of study linking academic and technical courses from secondary to postsecondary education.

Maryland's state workforce development agency, the Governor's Workforce Investment Board (GWIB) coordinates the efforts of all state agencies and private sector entities on economic and workforce needs of the state. State agencies, such as the Department of Labor Licensing and Regulation, the Maryland Department of Business and Economic Development, and the recently appointed Base Realignment and Closure Subcabinet help to ensure that CTE programs align to the workforce and economic development needs of the state. State CTE staff actively participate on the GWIB's steering committees for their industry initiatives and other committees, as requested such as the Emerging Workforce Committee. The GWIB uses a cluster-based approach to workforce development that involve secondary, postsecondary and business/industry partners.

A.10 Describe the methods for the joint planning and coordination of programs with other Federal education programs

Maryland coordinates planning for workforce development through the GWIB. By collaborating at the State level with other agencies providing federal education programs, the way is modeled for the local level. Many of the local advisory committees are comprised of participants from local agencies that are a subset of the state agency, such as local workforce investment boards.

A.11 Procedures to ensure coordination and non-duplication of programs

The GWIB coordinates Maryland's state agencies responsible for providing federal education programs to ensure non-duplication. For example, there is statewide data collection and data sharing agreements among state agencies. GWIB and the state agencies collaborate on issues related to members of special populations, dropout recovery, disabled workers, pre-release and work-release incarcerated individuals, as some additional examples. Maryland has an extensive service delivery infrastructure of One-Stop career centers statewide. This One-Stop delivery system provides the necessary core, intensive and training services and refers individuals to the services of the partner agencies. In addition, there are a variety of cooperative initiatives among the partner agencies, Local Workforce Investment Boards, community colleges and employers.

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The GWIB has representation from its partner agencies serve on committees and initiatives to ensure non-duplication of programs. The Youth Ready by 21 and the Emerging Workforce Committee are two examples. As state earlier, the industry sector initiatives are another example.

The GWIB has the following vision and mission for Maryland:

Vision: A Maryland where every person maximizes his or her career potential and employers have access to the human resources they need to be successful.

Mission: To guide a nationally recognized workforce development system that is aligned with the economic and educational goals of the State of Maryland and that will result in a qualified workforce available to employers across the state.

**PROVISION OF SERVICES FOR
SPECIAL POPULATIONS**

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SECTION III PROVISION OF SERVICES FOR SPECIAL POPULATIONS

A.1. Program Strategies for Special Populations

a. Will be provided with equal access under the Law.

The term “special populations” includes individuals with disabilities; individuals from economically disadvantaged families, including foster children; individuals preparing for non-traditional fields; single parents, including single pregnant women; displaced homemakers; and individuals with limited English proficiency.

Maryland has demonstrated a long-standing commitment to equity and ensuring that members of special populations are provided equal access to programs. Each year the Maryland State Department of Education conducts a minimum of two local Office for Civil Rights (OCR) On-Site Reviews, as required by the United States Department of Education, OCR.

Two of the major purposes of the OCR On-Site Review is to ensure that colleges and local school districts are providing access to career and technology education programs in a non-discriminatory manner in compliance with the requirements of Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972 and Section 504 of the Vocational Rehabilitation Act of 1973.

The state will assist eligible recipients in setting forth a program of study aligned with industry standards, practices, and career development/assessment to improve career and technology education for special populations. Leadership, coordination, and expertise will be provided at the state level through career clusters, CTE programs of study, and sustained professional development to assist recipients in determining program effectiveness and student success. Data analysis will be used to identify successful programs and programs requiring change in order to assure equal access and success for special populations in quality career and technology education programs in the least restrictive and most integrated setting possible.

A Cooperative Intra-Agency Agreement among the Maryland State Department of Education’s instructional divisions outlines how the State Education Agency and the local school systems will work with partners to support successful transition for students with disabilities. This can be found in Appendix N. In addition, the state requires that each local school system and community college receiving funding under the Act, describe how it will comply with the intent of the law in increasing access and success of special populations in their local plan.

Maryland also has an Interagency Agreement among nine state agencies/entities to assure interagency coordination for students with disabilities. This agreement can be found in Appendix O.

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Maryland's local school systems and community colleges:

- Provide career information and related career development and advisement services in order to ensure the selection of appropriate career and technology education programs;
- Assess programs in terms of recruitment, retention, and success; and
- Design and implement a comprehensive system of supportive services/intervention techniques for special populations.

b. Special populations will not be discriminated against on the basis of their status as members of special populations.

Maryland will ensure that special populations will not be discriminated against by implementing the following:

- Develop, identify and replicate models of effective collaborative relationships among schools, parents and other stakeholders for the development, implementation and evaluation of career and technology education programs.
- Expand the professional development system, including in-service and pre-service components, to provide relevant and current competencies for educators.
- Develop a plan to market supportive services/intervention techniques available to students.
- Develop strategies for coordination and integration of academic and career competencies.
- Require local recipients to sign a Certificate of Compliance as part of the Local Career and Technology Education Plan which assures that members of special populations are not discriminated against.
- Require local recipients to detail activities for increasing the access and success of special populations as part of the local plan and outline how special populations are enabled to meet performance levels.
- Annually convene the Special Populations workgroup, which is composed of local school system CTE directors, local transition coordinators/special education personnel, state guidance staff, representatives from the Department of Rehabilitation, post secondary disability support services and MSDE staff, to assist with policy guidance in order to ensure success for special population students in CTE programs of study.

c. Special populations will be provided with programs designed to enable the special populations to meet or exceed State adjusted levels of performance, and will be prepared for further learning and for high-skill, high-wage, or high-demand occupations.

The Maryland Special Populations workgroup collaborates with other workforce development agencies to identify promising practices for ensuring success for special population students in CTE programs of study. Its work consisted of the creation of resource/activity lists for parents, students, guidance personnel, transition coordinators and local school system CTE directors, to identify opportunities for professional development, better prepare students, parents, school personnel, and other interested parties for CTE programs of study to ensure that special

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populations, especially students with disabilities, meet or exceed state levels of performance and to prepare them for further learning and for high skill, high wage, or high demand careers. In addition, the workgroup helped to foster better working relationships between transition coordinators and the local recipients of Perkins funds. This resulted in the State's Transition Coordinator attending all CTE statewide meetings with career and technology education local recipients and a staff member from CTE attending transition coordinators meetings. The workgroup completed its charge and agreed to meet annually to continue to maintain these relationships which are critical for students who are members of special populations.

A.2. Students in Alternative Programs

Maryland does not have a statewide definition of alternative education programs. Each local recipient addresses alternative education programs at the local level. Local recipients have a clear understanding of what constitutes a career and technology education program of study and through the work of the Special Populations workgroup, has tools available to assist students in accessing these programs.

A.3. Promotion of high-skill, high-wage, or high-demand occupations and non-traditional fields

Maryland has demonstrated a long-standing commitment to equity and ensuring that members of special populations are prepared for high-skill, high wage, or high-demand occupations and non-traditional fields. Local school systems and community colleges prepare all students, especially members of special populations by completing the following:

- Facilitate integration of academic standards into CTE programs of study through resource teachers/consultants who coordinate technical and academic staff development and in-service activities.
- Update and modify CTE curriculum necessary to articulate with CTE programs of study at community colleges (and achieve industry-recognized certifications and credentials) and with baccalaureate programs.
- Provide support for work-based learning experiences of special population students in order to help them achieve an industry-recognized certification if available and appropriate.
- Plan and implement programs of study, activities and facilities that will support and meet the needs of special population students in current and emerging career fields.
- Update equipment, software and instructional materials for CTE programs of study.
- Provide high quality and sustained professional development for teachers, counselors, administrators, faculty and other appropriate staff on subjects such as differentiating instruction and other relevant topics.
- Provide guidance and policy for staff to assist with the monitoring of special population students to ensure successful completion of high school CTE programs of study, the attainment of industry-recognized certifications and/or credentials, the transitioning to postsecondary education including the continuation to a baccalaureate program or career.

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- Provide guidance and counseling opportunities for supporting non-traditional training and employment.

A.4. Individuals in State Correctional Institutions

Funds to be used to serve individuals in State correctional institutions are administered through the Division of Career Technology and Adult Learning at the Maryland State Department of Education. These funds flow from Career and Technology Education to the Director of the Correctional Education Program. The Coordinator of Occupational Education for Correctional Education ultimately directs the use of these funds for the intended purpose and in keeping with the intent of the law.

Occupational programs are located in ten State adult correctional institutions and one external facility. Sixteen different disciplines are included in the 37 programs that are offered. Individuals in State correctional institutions will be served under Perkins IV by utilizing the funds allowable under Perkins IV for correctional institutions to:

- provide occupational education services such as job placement services, career counseling and workshops on employer expectations, to offenders completing sentences and preparing for release;
- implement traditional and nontraditional occupational programs for male and female offenders;
- upgrade equipment within occupational programs serving offenders in institutionally based occupational programs;
- align curricula with industry skill standards such as MOS certification, ASE, NCCER, PrintEd, C-Tech and HVAC national certifications
- provide transitional services for offenders before and after release and to facilitate follow-up of offenders who have received training;
- provide life skills and employability training for selected adult correctional institutions (institutions will be selected on the basis of the number of offenders who are ready for release, facility capability to conduct training, etc.); and
- provide various sustained professional development and in-service training opportunities for faculty and staff directly involved in the provision of occupational instruction, related academic instruction and transitional services to state prison inmates.

A.5. Local application assurances to ensure equitable access and participation in programs

In the Local CTE Plan for Program Improvement, local recipients are required to describe the strategies they propose to implement to ensure equitable access to, and participation in, their federally-assisted CTE programs for students, teachers, and other program beneficiaries with special needs. See the strategy worksheets B-4 in both the secondary and postsecondary Local CTE Plan for Program Improvement.

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Members of special populations are provided with equal access as described in the Local CTE Plan for Program Improvement submitted by secondary and postsecondary local recipients. Specifically, local recipients must describe the strategies they propose to implement to ensure equitable access to and participation in their federally-assisted CTE programs of study for students, teachers, and other program beneficiaries with special needs as contained in Section 427(b) of the General Education Provisions Act as amended. Mid-year and annual progress reports, as well as monitoring will document the effectiveness of the planned strategies.

Through data analysis, benchmarking targets, and statewide results, leadership, coordination, and technical assistance will be provided to local recipients to improve the equitable access and participation in CTE programs of study. Maryland local recipients will address equitable access concerns by:

- Providing all CTE students information, career guidance, academic advising and instructional support to assist them in a seamless progression through a CTE program of study and postsecondary education and employment in high- wage, high- skill or high-demand careers.
- Designing and implementing a comprehensive system of supportive services/interventions in order to provide barrier-free access to and participation in all CTE programs of study for all special populations.
- Expanding sustained professional development including in-service and pre-service components, to provide relevant and current competencies for educators.

**ACCOUNTABILITY AND
EVALUATION**

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IV. ACCOUNTABILITY AND EVALUATION

A.1. Procedures employed to include input from eligible recipients in establishing performance measures

The procedures employed to include input from eligible recipients in establishing the performance measures for each of the core indicators of performance consisted of a series of meetings. A State workgroup was established to develop the State Plan. A subgroup of this State workgroup was formed on Accountability consisting of a wide range of representatives from all eligible recipients, (business, postsecondary and secondary education, governmental agencies, professional organizations, etc). This subgroup met four times over a four-month period. See Appendix G for a list of the State workgroup participants and the Accountability subgroup members. This subgroup developed recommendations for the definitions and approaches for each of the performance measures. These measures were reviewed by a variety of groups including: directors of career and technology education (CTE) for each local school system; tech-prep coordinators; instructional deans from each community college; and all State workgroup participants. All participants were made aware that additional indicators of performance, with corresponding measures and levels of performance, could also be developed if needed.

A.2. Procedures employed to include input from eligible recipients in establishing performance levels

The procedures employed to include input from eligible recipients in establishing the State adjusted level of performance for each of the core indicators of performance consisted of a series of meetings. A State workgroup was established to develop the State Plan. A subgroup of this State workgroup was formed on Accountability consisting of a wide range of representatives from all eligible recipients, (business, postsecondary and secondary education, governmental agencies, professional organizations, etc). This subgroup met four times over a four-month period. See Appendix G for a list of the State workgroup participants and the Accountability subgroup members. This subgroup developed recommendations for the performance measures as well as the levels of performance for each measure at the secondary and postsecondary level. The approach used to establish performance measures is consistent with the State accountability approach using a growth model. Each recipient is expected to demonstrate progress (growth) on each measure, relative to their previous performance. These measures and levels of performance were reviewed by a variety of groups including: directors of CTE for each local school system; tech-prep coordinators; instructional deans from each community college; and all State workgroup participants. All participants were made aware that additional indicators of performance, with corresponding measures and levels of performance, could also be developed if needed.

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A.3. Measurement definitions and ensuring data validity and reliability

Measurement approaches are based on the secondary and postsecondary concentrator definition with the exception of nontraditional participation (6S1 and 5P1). All measures and definitions are in alignment with the non-regulatory guidance provided by the U.S. Department of Education, Office of Vocational and Adult Education (OVAE) on October 3, 2007. The secondary academic measures for reading (1S1) and mathematics (1S2) and the measure for graduation (4S1) are valid and reliable as they are the State annual measurement objectives for the Elementary and Secondary Education Act (ESEA).

Three members of the State Accountability workgroup have participated in the Next Steps Workgroup and Technical Skills Committee to ensure alignment and the use of valid and reliable measures. Additionally, members of the workgroup include representatives from postsecondary institutional research and evaluation and secondary accountability staff.

Maryland has also established a State Technical Assessment workgroup to identify technical skill assessments. Currently, more than 30 CTE programs offer preparation for industry certification, the awarding of college credit or awarding credit for advanced standing in an apprenticeship program (for example, PrintEd, NATEF, ProStart and CompTIA Net+). Maryland's workgroup will identify strategies for increasing the coverage of programs and students reported in future program years.

The following are the measurement definitions for each of the core indicators of performance for CTE (CTE) students at the secondary and postsecondary levels. No additional indicators of performance were added.

Core Indicator of Performance 1S1: Academic Attainment – Reading/Language Arts

The percentage of CTE program concentrators who have met state standards on the reading/language arts High School Assessment (HSA)

Numerator: Number of CTE concentrators who have met the proficient or advanced level on the Statewide high school **reading/language arts** assessment administered by the State under Section 1111(b)(3) of the Elementary and Secondary Education Act (ESEA) based on the scores that were included in the State's computation of adequate yearly progress (AYP) and who, in the reporting year, left secondary education

Denominator: Number of CTE concentrators who took the ESEA assessment in reading/language arts whose scores were included in the State's computation of AYP and who, in the reporting year, left secondary education

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Core Indicator of Performance 1S2: Academic Attainment – Mathematics

The percentage of CTE program concentrators who have met state standards on the mathematics High School Assessment (HSA)

Numerator: Number of CTE concentrators who have met the proficient or advanced level on the Statewide high school **mathematics** assessment administered by the State under Section 1111(b)(3) of the Elementary and Secondary Education Act (ESEA) based on the scores that were included in the State's computation of adequate yearly progress (AYP) and who, in the reporting year, left secondary education

Denominator: Number of CTE concentrators who took the ESEA assessment in mathematics whose scores were included in the State's computation of AYP and who, in the reporting year, left secondary education

Core Indicator of Performance 2S1: Technical Skill Attainment

The percentage of CTE concentrators who have met state-recognized CTE standards in the program, including assessments aligned to industry standards, if available and appropriate

Numerator: Number of CTE concentrators who met state-recognized CTE standards, including assessments aligned to industry standards and who, in the reporting year, left secondary education

Denominator: Number of CTE concentrators who took an assessment aligned to state-recognized CTE standards and industry standards, and who, in the reporting year, left secondary education

Core Indicator of Performance 3S1: Secondary School Completion

The percentage of CTE program concentrators who have met state requirements for the attainment of a secondary school diploma, certificate of completion, or GED

Numerator: Number of CTE concentrators who receive a high school diploma, certificate of completion or GED

Denominator: Number of CTE concentrators who in the reporting year, have left secondary education

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Core Indicator of Performance 4S1: Student Graduation Rate

The percentage of CTE program concentrators who have met state requirements for attainment of a secondary school diploma or its equivalent, regardless of the year they left school

Numerator: Number of CTE concentrators who, in the reporting year, were included as graduated in the State's computation of its graduation rate as described in Section 1111(b)(2)(C)(vi) of the ESEA.

Denominator: Number of CTE concentrators who, in the reporting year, were included in the State's computation of its graduation rate as defined in the State's Consolidated Accountability Plan pursuant to Section 1111(b)(2)(C)(vi) of the ESEA.

Core Indicator of Performance 5S1: Secondary Placement

The percentage of CTE completers who were in postsecondary education, advanced training, employment or military service in the 2nd quarter after graduation

Numerator: Number of CTE completers in postsecondary education, apprenticeship, employment, or military service in the second quarter following graduation

Denominator: Number of CTE completers who have left secondary education in the reporting year

Core Indicator of Performance 6S1: Non-traditional Participation

Percentage of under-represented student enrollment in career and technology education programs that lead to non-traditional training and employment

Numerator: Number of under-represented CTE participants in non-traditional CTE programs during the reporting year

Denominator: Number of CTE participants in non-traditional CTE programs during the reporting year

Core Indicator of Performance 6S2: Non-traditional Completion

Percentage of under-represented student completion in career and technology education programs that lead to non-traditional training and employment

Numerator: Number of under-represented CTE concentrators who complete non-traditional CTE programs and who, in the reporting year, left secondary education

Denominator: Number of CTE concentrators who complete non-traditional CTE programs and who, in the reporting year, left secondary education

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Core Indicator of Performance 1P1: Technical Skill Attainment

The percentage of CTE concentrators who have met state-recognized CTE standards in the program, including assessments aligned to industry standards, if available and appropriate

Numerator: Number of CTE concentrators who met state-recognized CTE standards, including assessments aligned to industry standards and who, in the reporting year, left postsecondary education

Denominator: Number of CTE concentrators who took an assessment aligned to state-recognized CTE standards and industry standards, and who, in the reporting year, left postsecondary education

Core Indicator of Performance 2P1: Credential, Certificate or Degree

The percentage of CTE concentrators who receive an industry-recognized credential, certificate, or a degree

Numerator: Number of CTE concentrators who have received a degree, certificate, or industry credential in the reporting year

Denominator: Number of CTE concentrators who have left postsecondary education during the reporting year

Core Indicator of Performance 3P1: Student Retention or Transfer

Percentage of CTE concentrators who remain enrolled in their original institution or transfer to another 2-year institution or baccalaureate degree program

Numerator: Number of CTE concentrators who remained enrolled in postsecondary education based on fall term enrollments

Denominator: Number of CTE concentrators who are enrolled the fall term and did not complete a CTE program in the previous year

Core Indicator of Performance 4P1: Student Placement

The percentage of CTE concentrators who completed their CTE program who were employed, on active duty in the military, or placed in apprenticeship program at any point in the 2nd quarter following the program year in which they left postsecondary education

Numerator: Number of CTE completers who are employed, in the military, or in an apprenticeship program in the 2nd quarter following completion of the CTE program

Denominator: Number of CTE completers who left postsecondary education in the reporting year

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Core Indicator of Performance 5P1: Non-traditional Participation

Percentage of under-represented student enrollment in career and technology education programs that lead to non-traditional training and employment

Numerator: $\frac{\text{Number of under-represented CTE participants in non-traditional CTE programs during the reporting year}}{\text{Number of CTE participants in non-traditional CTE programs during the reporting year}}$

Denominator: $\frac{\text{Number of CTE participants in non-traditional CTE programs during the reporting year}}{\text{Number of CTE participants in non-traditional CTE programs during the reporting year}}$

Core Indicator of Performance 5P2: Non-traditional Completion

Percentage of under-represented student completion in career and technology education programs that lead to non-traditional training and employment

Numerator: $\frac{\text{Number of under-represented CTE concentrators who complete non-traditional CTE programs and who, in the reporting year, left postsecondary education}}{\text{Number of CTE concentrators who complete non-traditional CTE programs and who, in the reporting year, left postsecondary education}}$

Denominator: $\frac{\text{Number of CTE concentrators who complete non-traditional CTE programs and who, in the reporting year, left postsecondary education}}{\text{Number of CTE concentrators who complete non-traditional CTE programs and who, in the reporting year, left postsecondary education}}$

All eligible recipients have established a reconciliation process for all data submitted to the Maryland State Department of Education (MSDE) and the Maryland Higher Education Commission (MHEC). Data reported from local school systems and postsecondary institutions are examined to ensure completeness, accuracy, validity, and reliability. MSDE and MHEC work with local school systems and community colleges to design and implement systems and procedures to ensure that all data submitted to MSDE and/or MHEC are valid and reliable.

The local reconciliation process involves each local school system obtaining data from their schools, developing a system-wide report by school, and having each school verify that the data submitted to the local board of education is valid and reliable. The local director of CTE and the accountability coordinator for the LSS monitor this verification process. Principals of high schools and CTE centers may also be involved in the verification of this data. This data is then submitted to the state electronically through a secure server. The State reviews this data, resolves any discrepancies working with the LSS, and sends a draft report indicating that this is the data submitted and that they have ten working days to verify the report. Desk audits are performed randomly each year, and on-site reviews are conducted if the desk audit process uncovers inconsistencies.

A similar process is followed by the community colleges when they submit data to the MSDE and the MHEC. The community college instructional dean and the institutional research coordinator receive a draft report to confirm the data submitted is valid and reliable. Desk audits are performed randomly each year, and on-site reviews are conducted if the desk audit process uncovers inconsistencies.

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A.4. Alignment of State and Federal Data Collection and Reporting Processes

A statewide Performance Measures Workgroup had been formed by the Governor's Workforce Investment Board to examine the issue of data collection, common performance measures, and reporting processes. As an outcome of this group, a comprehensive state-wide "Report Card" is currently under development to evaluate the success of the state's workforce development system. Existing data systems will be utilized to collect and report data for the Workforce Investment Act, and the Carl D. Perkins Career and Technical Education Improvement Act of 2006. Existing data systems utilized by the MSDE, the Maryland Department of Labor, Licensing, and Regulation, and the MHEC will be used.

MSDE has developed a statewide longitudinal data system, which became operational in September 2007. CTE leadership and stakeholders have been engaged in the needs assessment phase and will continue working to align data collection and reporting requirements. The alignment of these systems was considered in development of the core indicators of performance. At the secondary level, all Perkins measures, with the exception of Technical Skill Attainment (2S1), are in alignment with state and federal accountability requirements included in the statewide longitudinal data system.

A.5. Adjusted performance levels and performance targets

Data will be reported for each of the core indicators of performance for all CTE program concentrators and completers at the secondary level, and all CTE concentrators and completers at the postsecondary level. State and local accountability systems allow for data to be disaggregated for each special population at the secondary and postsecondary level as specified in the Act. Each secondary school system and postsecondary institution will receive an annual local performance report and a State performance report for each of the Performance Measures for the Core Indicators of Performance. These reports include trend data, state comparison points, and performance targets for use in the analysis of CTE performance and annual planning.

The adjusted performance level for each measure, including those specified in the State's ESEA accountability workbook (1S1, 1S2, and 4S1) is based on the baseline performance of CTE students. The use of the Statewide AMO as the performance target for CTE students is inconsistent with the remaining measures of CTE student performance. Maryland's performance targets for CTE students ensure "adequate yearly progress" based on baseline measures for that population. Maryland will provide baseline data using the most recent year's achievement data or graduation rate under the ESEA, propose performance levels, and will reach agreement with the Department on "adjusted performance levels."

A.6. Locally adjusted levels of performance

Each local recipient will receive a report of their performance by measure. This report includes the state targets as well as locally adjusted performance targets given their own baseline data. Each recipient must provide an analysis of CTE student performance and target improvement efforts in their annual plan. A draft of the Locally Agreed Upon Performance (LAUP) will be distributed as part of the Perkins Application process. Each recipient will be allowed 30 days to

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verify the data and/or submit requests for adjustments or revisions to the local adjusted levels of performance.

The approach used to establish performance measures is consistent with the State accountability approach using a growth model. Each recipient is expected to demonstrate progress (growth) on each measure, relative to their previous performance. In all cases, the established performance levels will require the eligible recipient to continually make progress toward improving the performance of career and technical education students.

A.7. Revisions to the locally adjusted levels of performance

Requests for adjustments or revisions to the local adjusted levels of performance must be made to MSDE within 30 days of receipt of the annual Perkins Application. A review of the data collection and analysis used to establish the targets will be conducted in collaboration with the recipient. Extenuating circumstances affecting any particular measure (e.g. graduate rate) must be documented and submitted within the same time frame.

A.8. Reporting data to adequately measure the progress of students

Data will be reported for each of the Core Indicators of Performance for all CTE program participants, concentrators and completers at the secondary and postsecondary level. Maryland approved programs at the secondary level require a minimum of four Carnegie units in a prescribed CTE program, in addition to a structured scope and sequence of academic courses. CTE completers at the postsecondary level are those students who have completed a State-approved CTE degree program or certificate program as agreed upon and approved by the MHEC and MSDE.

Data will be reported for both secondary and postsecondary levels. State and local accountability systems are designed for data to be disaggregated for each special population at the secondary and postsecondary levels including:

- individuals with disabilities;
- individuals from economically disadvantaged families, including foster children;
- individuals preparing for non-traditional training and employment;
- single parents, including single pregnant women;
- displaced homemakers; and
- individuals with limited English proficiency.

Each secondary school system and postsecondary institution will receive an annual local performance report and a State performance report for each of the Performance Measures under the four Core Indicators of Performance. All eligible recipients will establish a reconciliation process for all data submitted to the MSDE and the MHEC. Data reported from local school systems and postsecondary institutions will be examined to ensure completeness, accuracy, validity, and reliability. MSDE and MHEC will work with local school systems and community colleges to design and implement systems and procedures to ensure that all data submitted to MSDE and/or MHEC is valid and reliable. In addition, Maryland's reporting system includes

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administrative record exchange with the Federal Employment Data Exchange System (FEDES) for regional employment information.

As part of the annual Perkins planning process, eligible recipients meet with state coordinators and accountability specialists to update technical guides and review data collection and reporting requirements. Professional development on the use of data-driven decision making is provided throughout the year and as requested. Specific technical assistance is provided upon request, including specialized reports by program area and/or school-level data.

A.9. Tech Prep Consortia

Maryland has combined Tech Prep with the Basic Grant. The local recipients are either local school systems or community colleges. The only consortia in Maryland are Tech Prep Consortia. No Tech Prep Consortia is a grant recipient. Local School Systems (LSS) and community colleges must meet the minimum level of performance for each of the performance indicators described in section 113 (b) as stated in the local plan.

A.10. Annual Evaluation and Non-Duplication

CTE programs will be annually evaluated using the Maryland School Performance Program, the Maryland High School Graduate Follow-up System, and the Student Outcome Achievement Report from the MHEC. Each of these systems collects data and information that will be used to assess how well Maryland and each of its eligible recipients are meeting the Core Indicators of Performance, the State's performance measures, and adjusted levels of performance.

Maryland is coordinating and cooperating with all workforce development partners in the collection of data, and utilizing all data systems to ensure non-duplication with existing federal programs. Maryland's Unified Plan was developed with all State agencies involved in workforce development under the Workforce Investment Act and other federal acts and programs. The MSDE, the MHEC, and the Department of Labor, Licensing and Regulation have data sharing agreements to facilitate this effort.

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SECTION V

TECH-PREP

**MARYLAND CAREER AND TECHNOLOGY EDUCATION STATE
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V. TECH PREP PROGRAMS

Maryland has chosen to combine Basic Grant and Tech Prep funds. This section does not need to be completed as Tech Prep is addressed under the Basic Grant.

FINANCIAL REQUIREMENTS

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VI. FINANCIAL REQUIREMENTS

VI. A 1 Allocation of Funds

Maryland will combine Perkins Basic Grant (Title I) and Tech Prep (Title II) funds. One local application will be required in which local recipients will address continuous improvement activities consistent with Perkins IV and Tech Prep.

Five percent of Tech Prep funds will be retained at the state level for administrative purposes. The remaining 95% will be combined with the Basic Grant (Title I, 85% minus 5% reserve) and allocated by formula to local recipients. No portion of Tech Prep funds will be included in the reserve fund.

Maryland will reserve 5% of the 85% required by law to be distributed to local recipients from the Basic Grant (Title I). The reserve fund will be targeted competitively to: rural areas as defined by the Maryland Office of Planning and in accordance with Section 112(c); areas with high numbers of career and technical education students, and areas with high percentages of career and technical education completers. See Appendix M for the Request for Proposals (RFP).

The competitive basis for awarding the Reserve Fund is delineated in the RFP referenced above. It spells out the priorities for fund use, target populations, eligible applicants, available funds, range of grants, estimated number of grants, estimated average grant amount, use of funds, as well as application procedures, matching requirements, and length of grants. In addition, the scoring rubric is included in the RFP so that potential applicants will know the criteria and point scale on which the application will be judged.

Secondary recipients shall receive an allocation as follows: *Thirty percent* shall be allocated to such local educational agencies in proportion to the number of individuals aged 5 through 17, inclusive, who reside in the school district served by such local educational agency for the preceding fiscal year compared to the total number of such individuals who reside in the school districts served by all local educational agencies in the State for such preceding fiscal year, as determined on the basis of the most recent satisfactory –(A) data provided to the Secretary by the Bureau of the Census for the purpose of determining eligibility under title I of the Elementary and Secondary Education Act of 1965; or (B) student membership data collected by the National Center for Education Statistics through the Common Core of Data survey system. *Seventy percent* shall be allocated to such local educational agencies in proportion to the number of individuals aged 5 through 17, inclusive who reside in the school district served by such local educational agency and are from families below the poverty level for the preceding fiscal year, as determined on the basis of the most recent satisfactory data used under section 1124(c)(1)(A) of the Elementary and Secondary education Act of 1965, compared to the total number of such individuals who reside in the school districts served by all the local educational agencies in the State for such preceding fiscal year.

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Postsecondary recipients, or consortium of eligible institutions, shall receive funding allocation based upon the formula of the number of audited Federal Pell Grant recipients and recipients of assistance from the Bureau of Indian Affairs enrolled in programs meeting the requirements of section 135 offered by the postsecondary institution or consortium of eligible institutions in the preceding fiscal year to the sum of the number of such audited Federal Pell Grant recipients and recipients of assistance from the Bureau of Indian Affairs enrolled in such programs within the State for such year.

No local school system shall receive an allocation of formula funds unless the amount to such local school system is greater than \$15,000; local school systems may enter into a consortium with other local school systems for purposes of meeting the minimum allocation, any amounts that are not allocated by this reason shall be redistributed to local school systems that meet the requirements in accordance with the provisions outlined in the Perkins IV Act as referenced in Section 131.

Maryland will provide a waiver to secondary local school systems not meeting the \$15,000 minimum amount if the secondary local school system is located in a rural, sparsely populated area as defined by the Maryland Office of Planning and in accordance with Section 131(c)(2)(A)(i).

No postsecondary institution or consortium of eligible institutions shall receive an allocation of formula funds unless the amount to such postsecondary institution or consortium of eligible institutions is \$50,000 or more; funds awarded to consortia must follow the provisions explained in Section 132(a)(3) of the Perkins IV Act; any amounts that are not distributed by this reason shall be redistributed to postsecondary institutions or consortium of eligible institutions in accordance with the provisions outlined in the Perkins IV Act as referenced in Section 132(c)(2).

Maryland will provide a waiver to postsecondary institutions not meeting the \$50,000 minimum amount if the postsecondary institution is located in a rural, sparsely populated area as defined by the Maryland Office of Planning and in accordance with Section 132 (a)(4).

The allocation between secondary and postsecondary recipients will be continue to be 65% to secondary and 35% to postsecondary for the life of this plan.

The rationale for the allocation between secondary and postsecondary recipients is based upon a careful analysis of data, including data trends for enrollment and completion rates for the past five years; the change in the method of allocating Tech Prep funds, from a competitive process to a formula distribution allowance; and historical data. Given the expectations required under Perkins IV and sanctions for not meeting the eight Core Indicators at the secondary level and the six Core Indicators at the postsecondary level, the 65/35 allocation is appropriate. Enrollment and completion remain steady over the past several years. Sixty six percent of enrollment is at the secondary level and 34% is at the postsecondary level.

Five percent of the Basic Grant (Title I) will be used for administrative purposes. Maryland will match, dollar for dollar the amount of money allocated to Administration under the Basic Grant (Title I).

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Ten percent of the Basic Grant (Title I) will be used for state leadership which includes not more than one percent to serve individuals in State institutions and \$60,000 for services that prepare individuals for non-traditional fields.

VI. A 2 – 5 Dollar Amounts for Secondary ,Postsecondary and Consortia Funding

Dollar amounts funded by formula to each local recipient are listed in Appendix R. These amounts are listed under each of Maryland's 16 consortia.

Maryland is unique in that its school systems are easily mapped out by counties and Baltimore City. Each county represents a separate school system and Baltimore City is its own school system. There is no rationale for forming consortia among secondary schools and eligible institutions as Tech Prep Consortia already exist among secondary schools and eligible institutions of higher education throughout all of Maryland's counties and Baltimore City. Maryland combined the Basic Grant and Tech Prep and only local school systems and community colleges are eligible grant recipients. Tech Prep Consortia will not be grant recipients under Perkins IV in Maryland.

VI. A 6 Adjusted Data for Allocations

Each year, Maryland receives updated census projections from the Maryland Office of Planning which are used to determine the factors for the formula for secondary recipients. This data is updated on an annual basis each March. Allocation figures are provided to local school systems in April.

Each of Maryland's 23 counties and Baltimore City (making 24 local entities) is a separate school system. Any changes in school district boundaries would necessitate a change in county and Baltimore City boundaries. If such change would occur prior to enrollment data being collected, the state would have a policy instituted to assure compliance with Maryland's funding policies set in state statute.

Charter schools, under Maryland law, are required to follow the local school system requirements with regards to funding. In Maryland, career and technology education (CTE) programs must be approved by the State in order to be eligible for Perkins funding. CTE programs are submitted for approval through the local school system. Charter school CTE programs would need to be submitted to the local school system and subsequently approved by the Maryland State Department of Education in order to be eligible to use Perkins funds. The state would not fund charter schools directly. Any funding that may go to charter schools would be through the local school system and must meet the requirements stated in the state statute. Maryland does not have any secondary schools funded by the Bureau of Indian Affairs. Maryland's Indian population is less than one percent and statistically insignificant as far as data are concerned. It is highly unlikely that such a school will ever exist in Maryland.

VI. A.7 Alternative Funding Formula

Maryland is not proposing any alternative allocation formula.

**EDGAR CERTIFICATIONS AND
OTHER ASSURANCES**

MARYLAND CAREER AND TECHNOLOGY EDUCATION STATE PLAN 2008 - 2012

VII. EDGAR CERTIFICATIONS AND OTHER ASSURANCES

VII. A EDGAR Certifications

VII. A (a – (d)) Eligible State Agency, Authority, Legal, and consistent with State Law

This plan is submitted by the Maryland State Department of Education (MSDE), the State agency that is eligible to submit this plan for federal funding under the Carl D. Perkins Career and Technical Education Improvement Act of 2006. MSDE is the State agency that has authority under State law to perform the functions of the State under this program. MSDE has the legal authority to carry out each provision of the plan. This plan has been reviewed by the Maryland Office of the Attorney General and all provisions of the plan are consistent with State law. The authority is given under the Annotated Code of Maryland (Annotated Code), Education Article, § 2-205 *Powers and Duties* and § 5-214 *Federal Funds*. The regulations relating to the statute appear in the Code of Maryland Regulations (COMAR) Title 13 A, *State Board of Education*, Subtitle 04, *Specific Subjects*, .03 *Federal Funds*.

VII. (e) – (f) State Officer and Authority to submit the Plan

The State Superintendent of Schools, Dr. Nancy S. Grasmick, has the authority under State law to receive, hold, and disburse Federal funds made available under the plan, as well as the authority to submit the plan. The authority is given under the Annotated Code, Education Article § 5-214 *Federal Funds*. The regulations relating to the statute appear in the Code of Maryland Regulations (COMAR) Title 13 A, *State Board of Education*, Subtitle 04, *Specific Subjects*, .03 *Federal Funds*. An organizational chart, located in Appendix P, gives a visual picture of this authority.

VII.(g) Adoption of Plan

At the March 25-26, 2008 meeting of the State Board of Education, the Maryland Career and Technology Education State Plan for 2008 – 2012 will be presented and the State Board of Education will be asked to approve it. A copy of the State Board Agenda and minutes will be included in Appendix S.

Once approved, the plan will be submitted to the Manager of the Clearinghouse and Plan Review Unit of the Maryland Office of Planning. A copy of the letter of submission will be included in Appendix S.

VII. A (h) State Operation and Administration of the Program

The Maryland Career and Technology Education State Plan 2008-2012 is the basis for State operation and administration of the Career and Technology Education Program in Maryland. The authority is given under the Annotated Code, Education Article, § 2-205 *Powers and Duties* and §5-214 *Federal Funds*. The regulations related to the statute appear in the Code of

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Maryland Regulations (COMAR) Title 13 A, *State Board of Education*, Subtitle 04, *Specific Subjects*, .03 *Federal Funds*.