Final Report of the Apprenticeship 2030 Commission

Annapolis, Maryland
March 2025

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Apprenticeship 2030 Commission

March 2025

The Honorable Wes Moore, Governor
The Honorable Bill Ferguson, President of the Senate
The Honorable Adrienne A. Jones, Speaker of the House

Dear Governor Moore, President Ferguson, and Speaker Jones:

The Apprenticeship 2030 Commission is pleased to submit this report and recommendations as required by Chapter 168 (Senate Bill 104) of 2023. The purpose of the commission was to examine and make recommendations to reduce skill shortages in high-demand occupations and provide affordable training for career pathways for young people by:

- expanding registered apprenticeships in industry sectors with skill shortages;
- growing the number of registered apprenticeships to at least 60,000 by 2030; and
- reaching the Blueprint for Maryland's Future goal for 45% of high school graduates completing the high school level of a registered apprenticeship or another industry-recognized credential.

We wish to thank the commission members, the commission staff, and the many individuals who briefed the commission at our meetings, participated in workgroups, attended site visits, and responded to the survey requests. This is the 2024 final report of the commission.

Sincerely,

Jacob Hsu
Chair

Apprenticeship 2030 Commission Membership

Chair
Jacob Hsu – Just Economy

Senators
Malcolm Augustine
Mary Beth Carozza
Arthur Ellis
Jim Rosapepe

Delegates
Marlon Amprey
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Eric Ebersole
Andrea Fletcher Harrison*
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Greg Akerman – Baltimore-D.C. Building Trades
Avonette Blanding – Maritime Applied Physics Corporation
Kenya Campbell – AFT Maryland
Brian Cavey – International Association of Heat and Frost Insulators and Allied Workers
Shuana Davis* – Governor's Workforce Development Board
Emily A. Dow – Maryland Higher Education Commission
Donna S. Edwards – Maryland State and DC AFL-CIO
Terry Forde* – Adventist HealthCare
Denise Gilmore* – AFSCME Maryland Council 3
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Patrick Moran* – AFSCME Maryland Council 3
Myra Norton – Johns Hopkins Technology Ventures
Rachael Parker* – Governor's Workforce Development Board
Erin Roth – Maryland Department of Labor
Sarah Sheppard – Maryland Department of Commerce
Tanya Terrell – Baltimore Gas & Electric

* Delegate Anderton, Mr. Forde, and Mr. Moran served on the commission in 2023. Delegate Harrison was appointed in 2024 in Delegate Anderton's position. Ms. Gilmore joined the commission in 2024 in Mr. Moran's position. Ms. Davis represented the Governor's Workforce Development Board in 2025 while Ms. Parker was on leave.

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Executive Summary

The Apprenticeship 2030 Commission was established by Chapter 168 of 2023 to examine and make recommendations to reduce skills shortages in high-demand occupations and provide affordable training for career pathways for young people by growing registered apprenticeships. The members of the committee met throughout 2023 and issued an interim report with 29 recommendations.[1]

Maryland recognizes the urgent need to adapt its workforce to the demands of the 21st-century economy. Rapid technological advancements, globalization, and shifting demographics require a bold and innovative approach to equipping citizens with the skills they need to thrive. Registered apprenticeships offer a proven and dynamic solution to this challenge.

Unlike other training programs, registered apprenticeships seamlessly blend structured on-the-job training with structured related instruction in the classroom. This model provides individuals with valuable experience, industry-recognized credentials, and progressively increasing wages as they advance their skills and knowledge. For employers, apprenticeships offer a direct pipeline of highly qualified talent, customized to meet their specific needs.

As evidenced in this commission's charge, Maryland is committed to leveraging the power of apprenticeships to create a more prosperous and equitable future. By investing in apprenticeships, Maryland will:

- **Empower individuals:** Provide a debt-free pathway to well-paying careers and lifelong learning, opening doors to opportunity for all.
- **Strengthen employers:** Cultivate a highly skilled workforce that meets industry demands and drives innovation.
- **Boost economic growth:** Ensure Maryland remains competitive in the global marketplace and attracts innovative industries.

Following the release of the interim report, commission members resumed meeting in May 2024, holding five public meetings and conducting work through six workgroups. Members met with employers, practitioners, and apprentices in site visits on the Eastern Shore and in Baltimore City, heard from international experts on a visit to England and Germany and via virtual meetings, and reviewed the results of a survey of employers and labor unions in Maryland.

This commission believes the State needs an evidence-based, long-term strategy to minimize the skills shortages that impact all industries and occupations and to provide economic opportunity for all Marylanders, regardless of background. This final report presents 23 recommendations of the commission to expand registered apprenticeships in Maryland and meet the State's goal of 60,000 registered apprenticeships in 2030, which is 2.3% of the current workforce. These recommendations are listed below, with more detail and

[1] These recommendations are available in Appendix B. Recommendations from Commission's Interim Report in January 2024, while the full report is available on the commission's webpage at https://dls.maryland.gov/policy-areas/apprenticeship-2030-commission.

rationale in the subsequent chapters and appendices.

Please note the recommendations in the report are supported by a majority of commission members. They do not necessarily represent the opinions of each individual member or the agency. Additionally, they do not necessarily represent the view of the organization(s) referenced in any given recommendation.[2]

Throughout this report, all recommendations about apprenticeships concern registered apprenticeships. The commission believes that registered apprenticeships provide a proven, structured work and learning experience with specific requirements as to the hours of on-the-job training and classroom learning as well as starting wages and progressive wage increases. Further, the commission believes that registered apprenticeships provide quality control for both workers and employers, ensuring that workers meet specific industry or occupational standards and, therefore, the credential and skills received via an apprenticeship carries across different employers.

This is Maryland's moment to seize the transformative power of apprenticeships and build a future where opportunity knows no bounds. By embracing this dynamic model, Maryland can create a system of shared prosperity, driven by investing in its greatest asset – its people.

[2] Chapters 4 through 7 include additional information about each recommendation, including the individuals who abstained or voted against including each recommendation at the final public meeting of the commission. Appendix L. Commission Member Statements shares statements from commission members made after the final public meeting of the commission.

List of Recommendations

Recommendation # 1 – Embrace the goal of increasing active registered apprenticeships to at least 2.3% of the State's labor force.

To promote long-term planning and resource allocation on major and smaller priorities, Maryland repeatedly sets numerical goals. Recent examples include many provisions of the Blueprint for Maryland's Future (Blueprint) and the goal "that at least 55% of Maryland's adults age 25 to 64 will hold at least an associate's degree by the year 2025."[3] While these goals are never met precisely, they clarify the scale of the effort required and promote accountability.

The commission's goal that 2.3% of Maryland's labor force are registered apprentices – equal to around 60,000 apprentices in the current economy, as noted in the commission's legislative charge – is comparable to rates achieved in England, Canada, and Australia, which have all scaled up their apprenticeship programs in recent years. It is well below the apprenticeship rates in Germany and Switzerland, as well as the current rate of apprenticeships in the construction industry in Maryland, where registered apprenticeships are well established. Under the Blueprint, the guiding document for the State's K-12 system, the State's goal is to maximize the percentage of high school graduates who complete the high school level of a registered apprenticeship (within the Blueprint's 45% goal for them to complete the high school level of a registered apprenticeship or another industry-recognized credential). The 2.3% goal would provide more than enough apprentice slots for high school students. To support the Blueprint goal for high school students, with the 2.3% goal, priority should be given to registered apprenticeships starting in high school.

Activating Demand for Apprenticeships from Employers

The most important constraint in expanding registered apprenticeships is the limited number of registered apprenticeship slots provided by employers. These recommendations will increase employer demand for registered apprenticeships.

Recommendation # 2 – Create a Maryland Office of Registered Apprenticeship Development with an advisory committee consisting of employers, union leadership, and legislators.

Today, many employers recruit already skilled employees from other employers and do not provide needed skills training. This results in skills shortages that constrain economic growth, limit the productivity of employers, and increase underemployment of working people. Registered apprenticeships can solve these problems, but concerted State leadership is needed to help thousands of employers change their talent acquisition model and attitudes toward training.

The State needs an entity to take ownership of Maryland reaching its apprenticeship goals. A well-resourced State office of professionals skilled in identifying and developing opportunities

[3] Md. Code, Educ. § 10-205. https://casetext.com/statute/code-of-maryland/article-education/division-iii-higher-education/title-10-definitions-and-maryland-charter-for-higher-education/subtitle-2-maryland-charter-for-higher-education/section-10-205-goals.

to scale up registered apprenticeships and persuading employers to change their recruitment models is needed, together with a high-level advisory committee of apprenticeship advocates as thought partners and force multipliers.

The Maryland Office of Registered Apprenticeship Development (MORAD), which would be located in the Maryland Department of Labor (MD Labor), and its advisory committee would focus on scaling registered apprenticeships across industries throughout the State. Major responsibilities would include the following: developing the strategy for reaching the registered apprenticeship goals; working with employers, trade associations, and unions to set up and expand registered apprenticeship programs; and rigorously and regularly evaluating the results and supporting policy initiatives.

Recommendation # 3 – Establish a major and continuing marketing campaign to increase understanding of registered apprenticeships among employers, unions, and others.

Today, support for registered apprenticeships is widespread, but understanding remains limited in industries outside of construction and among the general public. MORAD and its advisory committee should develop and oversee an appropriate marketing plan and seek State financial resources for it. This campaign should seek to increase the number of employers who are participating in registered apprenticeships, including apprenticeships for those in high school.

Recommendation # 4 – Scale the Pay Per Apprentice Model.

Since 2022, Maryland has had a small but successful Pay Per Apprentice Program – the Sponsor Apprenticeship Incentive Reimbursement Program. This funding reimburses registered apprenticeship sponsors for costs related to each apprentice in their program. These costs vary by occupation but generally include classroom instruction, recruitment of employers and apprentices, and the time of apprentices' on-the-job mentors.

Other states, including California, Iowa, and Pennsylvania, have similar and larger Pay Per Apprentice Programs. All major countries with developed apprenticeship systems spanning industries beyond construction use Pay Per Apprentice models and invest public funds into apprenticeships. Conceptually, Pay Per Apprentice is similar to pay per student funding for higher education, in both direct college subsidies and public scholarships.

Pay Per Apprenticeship funding is vital to scaling up registered apprenticeships: it provides an incentive for employers to use apprenticeships and register them with the state or federal government. This type of program ensures high-quality apprenticeships and training, allows programs to grow sustainably, and provides an immediate return on investment, as funding is only disbursed when outcomes are achieved (in other words, the money is only spent when an apprentice is on the job).

While the commission is not recommending a detailed structure for an expanded Pay Per Apprentice Program, it has created one possible model based on the Maryland experience, studies of apprenticeship public investment in the United States over the last decade, and international

models. (The model is available in Appendix H. Proposal for Pay Per Apprentice Program (Recommendation # 4).) The estimated costs of scaling Maryland's Pay Per Apprentice Program would start at less than $10 million per year and rise to no more than $210 million per year when the 2.3% goal is reached.[4] For comparison, the State currently spends $2 billion for the minority of Maryland high school graduates who earn a college degree.[5]

Recommendation # 5 – Grow public service registered apprenticeships.

Fifteen percent of Maryland's workforce is in public service, spanning a wide range of occupations from customer service and information technology to health care, logistics, and skilled trades.[6] State, local, and federal governments all face a shortage of skilled workers. Expanding registered apprenticeships in public service can make a major contribution to fixing these shortages, contribute to the State's 2030 goal, and demonstrate the applicability of the model across all occupations to the private sector.

By the end of 2025, the State should document current registered apprenticeships in the State workforce, set goals to scale them and establish registered apprenticeships in agencies that do not currently have them by 2030, and identify strategies needed to achieve the goals by agency and occupation. These positions should be permanent career positions within government; contractual positions should not be utilized to fill registered apprenticeship positions.

The Maryland Association of Counties and Maryland Municipal League should collaborate with their members to develop registered apprenticeship targets by jurisdiction and occupation by December 2025 and, with the support of MORAD, labor organizations, and interested intermediaries, develop plans for their members to join or create joint and group apprenticeship programs. And, since the federal government has already committed itself to scaling up registered apprenticeships in its agencies, MORAD and the Governor's Federal Relations Office should work with the federal agencies in Maryland to do the same.

Recommendation # 6 – Scale registered apprenticeships in State-regulated industries.

Like so many other industries, utilities, hospitals, and insurance carriers and agencies suffer from skilled workforce shortages.

Their regulators — the Public Service Commission, the Health Services Cost Review Commission, and the Maryland Insurance Administration — should work with their regulated

[4] Recommendation # 19 provides information on how the state could fund the expanded Pay Per Apprentice Program.

[5] In Fiscal 2025, the Maryland budget included over $2 billion in State general and special funds for state-operated public universities. Maryland Department of Budget & Management. (2024). FY 2025 Proposed Operating Budget Detail by Agency. https://dbm.maryland.gov/budget/FY2025FiscalDigest/Exhibit-C-Summary-of-Operating-Budget- Appropriations-FY25.pdf.

[6] Maryland Open Data Portal. Maryland Full and Part Time Employment by NAICS: 2010-2020 Historical and 2025-2050 Projected. https://opendata.maryland.gov/Business-and-Economy/Maryland-Full-and-Part-Time-Employment-by-NAICS-20/xzhk-d7hs/data_preview.

employers and labor organizations to document current registered apprenticeships, set goals to scale them by 2030, and identify strategies needed to achieve the goals.

Recommendation # 7 – Use State procurement to incentivize registered apprenticeships.

Maryland currently requires contractors on public works projects of more than $500,000 to participate in an apprenticeship training program, contribute to the State's apprenticeship fund, or make payment to a registered apprenticeship program or an organization that has a registered apprenticeship program. This policy should be expanded to all State vendors, and the MORAD advisory committee should recommend a procurement preference for vendors based on the numbers of registered apprentices on each contract.

Recommendation # 8 – Reform the Maryland apprenticeship tax credit.

Currently, Maryland has a tax credit of $3,000 per registered apprentice and $1,000 per youth apprentice with an annual cap of five apprentices per employer per year and a total budget cap of $1.0 million per year. It also requires a minimum starting wage of 50% of the State-set prevailing wage and expires on June 30, 2025. The law should be amended to continue through fiscal 2030, and, since the 50% provision is inconsistent with wages in both union and nonunion occupations, that provision should be repealed.

Recommendation # 9 – Direct State occupational and industry licensing boards to promote registered apprenticeships in their fields.

Hundreds of thousands of Marylanders work in occupations and industries licensed by the State. And many, from nursing and architecture to plumbing and tax preparation, have skills shortages. State oversight of these occupations and industries provides good opportunities to promote apprenticeships as a solution to workforce challenges.

Since the training provided through a registered apprenticeship may be equal to or greater than that required to qualify to take some occupational licensing tests, Maryland through MORAD should coordinate with industry groups and labor organizations to review and evaluate eligibility requirements to sit for licensure exams.

In addition, MD Labor licensing boards should document current registered apprenticeships in the industries they oversee, set goals to scale them by 2030, and identify the strategies needed to reach those goals by the end of 2025. Likewise, Maryland Department of Health (MDH) boards should document current registered apprenticeships, set goals to scale them by 2030, and identify the strategies needed to reach those goals by the end of 2025. Finally, the MDH workgroup on nursing apprenticeships should deliver a plan concerning degree apprenticeships in the field by the end of 2025.

Recommendation # 10 – Provide startup and scale up grants to registered apprenticeship intermediaries.

Throughout the United States and the world, apprenticeship intermediaries are critical to scaling registered apprenticeships. Neither employers, apprentices, nor training providers can make the apprenticeship system work on their own, so intermediaries, which are formed by labor unions, trade associations, community colleges, workforce boards, nonprofits, and others, can unify their efforts. Intermediary success requires specialized skills — particularly in recruitment, technical assistance, quality control, and regulatory compliance.

While recognizing the current fiscal situation of the State, to meet its apprenticeship goal, the State should invest a modest amount of money to help new and expanding intermediaries grow and create a robust, high-quality ecosystem in Maryland.

Recommendation # 11 – Improve registered apprenticeship processes.

Current apprenticeship processes in Maryland were designed for the early 20th century, not the 21st century, and established largely to meet the needs of construction industries. The Maryland Apprenticeship and Training Council established the Efficiency Committee to look at these issues and has been making changes to the State's processes since 2024. Its work needs to continue. Other specific opportunities to help the State meet its registered apprenticeship goal include reducing State and apprenticeship sponsor costs by investing approximately $2 million in digitalizing registered apprenticeship application and tracking processes as well as other required reporting and allowing MD Labor to adjust on-the-job mentorship ratios in nonhazardous occupations that are appropriate to those occupations.

Activating the Supply of Apprentices

While the general public and workers often express interest in and support for apprenticeships, most are unaware of the opportunities offered by registered apprenticeships in different industries and occupations. These recommendations will increase the number of workers starting and upskilling their careers in registered apprenticeships.

Recommendation # 12 – Market registered apprenticeships to potential apprentices.

Marketing to potential apprentices is easier than marketing registered apprenticeships to employers who need to update their hiring model, but it still requires focus.

Critical strategies within this marketing include:

- maximizing the percentage of high school students who earn an industry-recognized credential through the high school level of a registered apprenticeship, as the Blueprint has already mandated;

- training the career counselors created under the Blueprint on how to promote both nondegree and degree registered apprenticeships;

- better informing traditional school counselors and teachers about registered apprenticeships; and

- activating the Armed Services Vocational Aptitude Battery and Maryland Minor Work Permit databases so registered apprenticeship sponsors can recruit high school students directly, with student and parent approval as required by Maryland law.

Recommendation # 13 – Promote pre-apprenticeships that are connected to registered apprenticeships.

Because some high school students (especially those who are 14 and 15 years old) and other young people are not prepared academically for registered apprenticeships, pre-apprenticeships should be promoted both in high school and elsewhere. This should include both union and nonunion pre-apprenticeships equally.

Recommendation # 14 – Maximize registered apprenticeships for high school students.

More than 20% of high school students already have jobs, and the percentage is obviously much higher for 16- and 17-year-olds.[7] Unfortunately, that is dramatically down from the 1990s, and most of these working young adults are not pursuing career paths. That is a missed opportunity to introduce young people to a career pathway connected to their academic education. Offering these students registered apprenticeships, as other states and countries do, can minimize this problem.

Increasing opportunities for high school students to work as registered apprentices provides them pathways for careers, particularly for the majority of high school graduates who never enter college or who enter but never earn a college degree.

The Blueprint set a goal that 45% of high school graduates complete the high school level of a registered apprenticeship or another industry-recognized credential. The Accountability and Implementation Board, which oversees implementation of the Blueprint, has determined that registered apprenticeships are the preferred route for students to meet this goal.

Registered apprenticeships are not the right path for every student, just as college is not always the right path. Assuring that the new career counseling system, set up and funded under the Blueprint, effectively informs students and their parents about their options and counsels them on their choices will be critical to making registered apprenticeships work for young people and employers.

[7] The U.S. Census Bureau estimated that 22.5% of high school students nationally were employed in October 2023. U.S. Census Bureau. (2024). Employment–population ratio 22.5% for high school students, 44.3% for college students. TED: The Economics Daily. https://www.bls.gov/opub/ted/2024/employment-population-ratio-22-5-percent-for-high-school-students-44-3-percent-for-college-students.htm.

Given the Blueprint's emphasis on scaling up registered apprenticeships for high school students, the commission recommends that the State maximize the availability of the financial incentives for them, through reforming and continuing the current State apprenticeship tax credit, the proposed Pay Per Apprentice Program, and grants to start employer programs. To provide opportunities for high school students to take their related technical instruction (RTI) in career and technical education (CTE) programs, all local school systems should pay for dual enrollment in noncredit community college courses in registered apprenticeships as they do for credit-bearing courses.

The commission also recommends that the Attorney General and the Maryland Commission on Civil Rights issue public guidance to employers and to the public making clear that age discrimination against young people who can work legally is against the law in Maryland, as recommended in the interim report.

Funding the Scale Up of Registered Apprenticeships

Experiences in Maryland, other states, and other countries have demonstrated the need for public funding to support registered apprenticeships. While employers benefit from apprenticeships, many are hesitant due to the lower productivity levels during an apprentice's start and concerns about graduated apprentices moving to other employers. Moreover, Maryland already extensively funds post-secondary education in colleges and universities, even as a majority of residents do not have at least a bachelor's degree. These recommendations concern the funding of policies in this report to increase both the demand from employers and the supply of workers needed with respect to registered apprenticeships.

Recommendation # 15 – Maximize registered apprenticeship classroom instruction in high schools and community colleges.

Public high school CTE programs are 100% publicly funded, and community colleges are also primarily publicly funded.[8] The commission recommends that Maryland maximize the proportion of registered apprenticeship classroom instruction (RTI) undertaken in public high schools and community colleges using existing resources to support efficient use of public money and maximize high-quality instruction.

High school CTE programs have a goal in State law that, when the Blueprint is fully implemented, 45% of graduates should have completed the high school level of a registered apprenticeship or another industry-recognized credential. Community colleges need a goal as well. By the end of 2025, the Maryland Higher Education Commission should document current

[8] Maryland public high schools are funded by three primary sources: a base amount calculated on a per-student basis; weighted amounts for specific types of students (e.g., students with disabilities, multilingual learners); and program amounts based on district level factors and regional cost differences. Schools may also raise funds to support school activities. More information on funding for both public high schools and community colleges is available on the website of the Maryland Department of Budget and Management (https://dbm.maryland.gov/budget/pages/operbudhome.aspx).

apprenticeship RTI that community colleges provide, set goals to scale them by individual college and occupation by 2030, and identify strategies needed to achieve the goals.

Recommendation # 16 – Leverage existing workforce and higher education training subsidies for registered apprenticeships.

Maryland already invests State and federal funds in worker training in many occupations, but these trainings are not integrated with registered apprenticeships. By the end of 2025, MD Labor, MDH, and other State agencies should quantify all training subsidies that could support classroom instruction for registered apprenticeships and design ways to prioritize registered apprenticeships.

Recommendation # 17 – Use the $25 million appropriated for apprenticeships for startup costs for the commission's recommendations.

Chapter 484 of 2022 (the fiscal 2023 budget bill) provided $25 million in the Dedicated Purpose Account to cover startup costs for operationalizing the recommendations of the Apprenticeship 2030 Commission. The commission recommends that these funds be used to improve technology in the Maryland Apprenticeship and Training Program; launch MORAD; support initial marketing of the registered apprenticeship model to trade associations, employers, unions, and others; provide grants or contracts to intermediaries who can help current and potential apprenticeship sponsors create or scale programs; and expand the Pay Per Apprentice Program. The money currently available in the account could be used to implement the recommendations in this report and dramatically scale up the numbers of workers and employers assisted by intermediaries.

Recommendation # 18 – Identify a permanent revenue source for registered apprenticeships.

The experience of all other countries with robust apprenticeships across all major occupations is that permanent, sustained public funding that meets the scale of the ambition is required to expand apprenticeships. The commission recommends that Maryland should identify a revenue source to support registered apprenticeships on an ongoing basis. These funds would support activities such as the expanded Pay Per Apprentice Program, startup costs for new sponsors and intermediaries, and the operations of MORAD.

Options include general funds and earmarked funds such as corporate income and payroll taxes. While the commission is not making a specific recommendation for a revenue source, it is useful to note that 17 states fund workforce development and training with payroll taxes.[9]

[9] U.S. Department of Labor. (2023). Comparison of State Unemployment Laws 2023. https://oui.doleta.gov/unemploy/comparison/2020-2029/comparison2023.asp.

Insight and Accountability

Understanding the current apprenticeship ecosystem in Maryland and identifying evidence-based policies to increase the growth in apprenticeships requires additional data for decision-making. These recommendations will provide the information needed for Maryland policymakers to support registered apprenticeship programs in the State.

Recommendation # 19 – Require MORAD to collect relevant data on progress toward the 2030 goal and beyond.

MORAD should establish an accountability framework and monitor and publish a set of data that provides an assessment on progress toward Maryland's registered apprenticeship goals on an ongoing basis. MORAD should identify the data that is currently collected on registered apprenticeships and additional data needed with a focus on the outcomes of apprenticeships, including wages and ongoing careers post-apprenticeship.

Recommendation # 20 – Expand data collection from intermediaries.

As part of its data strategy, MORAD and its advisory committee should consider what data should be reported directly by apprenticeship intermediaries to MORAD and the existing Apprenticeship and Training Program.

Recommendation # 21 – Estimate the potential demand for registered apprenticeships.

MORAD should work with its advisory committee, MD Labor economists, and other staff to estimate the addressable market of occupations for registered apprenticeships.

Recommendation # 22 – Estimate the potential supply of registered apprentices.

MORAD should work with its advisory committee, MD Labor economists, the Governor's Workforce Development Board CTE Committee, and the Maryland State Department of Education to identify the potential supply of registered apprentices, considering both high school students and the wider population.

Recommendation # 23 – Provide an annual report publishing data on adults and high school students entering registered apprenticeships.

MORAD, working with its advisory committee, MD Labor economists, and MSDE, should publish an annual report assessing Maryland's progress toward its registered apprenticeship goals and the use of public funds toward these goals.

Chapter 1. Introduction

Maryland has long been a beacon of innovation, a State where progress and opportunity converge. Today, we stand at the cusp of a new era, one where we can harness the transformative power of registered apprenticeships to build a brighter future for all Marylanders. Chapter 168 (Senate Bill 104) of 2023 established the Apprenticeship 2030 Commission.[10] The purpose of the commission is to examine and make recommendations to reduce skill shortages in high-demand occupations and provide affordable training for career pathways for young people by:

- expanding registered apprenticeships in industry sectors with skill shortages;
- growing the number of registered apprenticeships to at least 60,000 by 2030; and
- reaching the Blueprint for Maryland's Future (Blueprint) goal for 45% of high school graduates completing the high school level of a registered apprenticeship or another industry-recognized credential.

This report – the culmination of a two-year process of extensive collaboration and insightful analysis with an extraordinary assembly of leaders across Maryland's workforce ecosystem – charts a bold course to expand and strengthen apprenticeship pathways, thus creating a more prosperous and equitable Maryland. The commission issued its interim report in January 2024. That report is currently available on the commission's webpage on the Department of Legislative Services (DLS) website at https://dls.maryland.gov/policy-areas/apprenticeship-2030-commission. In that report, commission members made 29 recommendations to help grow registered apprenticeships in Maryland, and work on those recommendations has already been completed or is in progress.[11]

A Moment of Opportunity

We are at a pivotal moment in history. Technological advancements, globalization, and shifting demographics are reshaping the world of work at an unprecedented pace. To thrive in this dynamic environment, we must be bold, innovative, and unwavering in our commitment to equip Marylanders with the skills and knowledge they need to succeed.

Registered apprenticeships offer a proven pathway to achieving this goal. They are not merely one of a myriad of employment models, but a dynamic and evolving model that can be adapted to meet the demands of the 21st century economy. This is our moment to seize the

[10] Text of legislation establishing the commission in 2023 and providing funding for the Schaefer Center for Public Policy at The University of Baltimore to staff the commission is available in Appendix A. Legislative Actions Concerning Commission.

[11] A list of recommendations included in the interim report is available in Appendix B. Recommendations from Commission's Interim Report in January 2024.

transformative power of apprenticeships and build a Maryland where opportunity knows no bounds.

Apprenticeships in Maryland

Apprenticeships are more than just training programs; they are a dynamic engine for economic growth, workforce development, and social equity. By seamlessly blending classroom learning with structured on-the-job training where apprentices are paid and advance their wages as they gain experience and skills, registered apprenticeships equip individuals with the skills and experience needed to excel in today's rapidly evolving economy. They are not simply a path to a job, but a gateway to a fulfilling career, offering continuous learning and advancement opportunities.

Maryland can lead the way to show that apprenticeships are a catalyst to create a new system of shared prosperity, driven by investing in our greatest asset – our people. For employers grappling with a persistent skills gap, apprenticeships provide a direct pipeline of highly qualified talent, cultivated and customized to meet their specific needs. For workers, apprenticeships offer a debt-free pathway to well-paying careers and lifelong learning, opening doors to industries and opportunities that may have seemed out of reach. And for Maryland, apprenticeships represent a strategic investment in our economic future, ensuring that we remain competitive in the global marketplace and cultivate a highly skilled workforce that attracts innovative industries and drives economic growth.

In 2024, the Apprenticeship 2030 Commission focused on identifying the policies Maryland should take to expand registered apprenticeships and establish Maryland as a leading apprenticeship state. Growing apprenticeships to 60,000, the task set for the commission, and reaching the Blueprint's goal for 45% of high school graduates completing the high school requirements of a registered apprenticeship or another industry-recognized credential would require around 2.3% of Maryland's workforce to be active registered apprenticeships.[12] This is an ambitious goal – a substantial increase compared to Maryland's current apprenticeship system.

When compared with current post-high school educational investments, scaling up registered apprenticeships is low-cost and high value. This is why the Commission on Innovation and Excellence in Education, and its resulting Blueprint, set goals for 45% of high school graduates to complete the high school level of a registered apprenticeship or another industry-recognized credential and why this commission was created to develop a plan to reach 60,000 apprenticeships.

[12] Maryland's workforce size, used to determine the 2.3% figure, is based on the Federal Reserve Economic Data (FRED) series "All Employees: Total Nonfarm in Maryland." This dataset estimates Maryland's nonfarm employment at approximately 2.6 million workers. The nonfarm employment metric is commonly used as an indicator of total workforce size, excluding agricultural and select other employment categories.

The commission began work by focusing on four key principles as it explored how Maryland can achieve the goal.

- ***Activating Employer Demand:*** The demand for a skilled, prepared, and future-ready workforce is clear. Talent shortages are limiting economic growth across Maryland's economy from information technology and health care to financial services and education to hospitality and retail: shortages that will not be filled by the existing supply of trained labor. The commission established the principle that its job was to establish clarity, predictability, and aligned incentives that would accelerate employer adoption of registered apprenticeship pathways to address acute workforce needs. This also philosophically focused the commission's explorations on how to incentivize employers to adopt registered apprenticeships by demonstrating their fundamental economic benefits and providing comprehensive support through intermediaries and chambers of commerce versus debating moral arguments or mandates. This included streamlining processes, addressing incompatible regulations, offering financial incentives, and showcasing successful apprenticeship models. The commission also worked to address perceived barriers to employer participation, such as administrative burdens and concerns about return on investment.

- ***Bridging Education and Workforce:*** Improving living standards for all Maryland residents requires the development of pathways other than the existing post-secondary offerings. While traditional college routes have provided a pathway into good jobs for the 45% of Maryland residents with a degree,[13] there is no corresponding answer for the majority who do not finish that path. To lead the way on apprenticeships, our commission established a principle that Maryland needs a better aligned education and workforce system. The commission identified the need to create a more fluid and interoperable system between education and the workforce, ensuring that occupational skills standards are aligned with industry competency frameworks. For students, this involves strengthening career counseling, promoting work-based learning opportunities, and aligning curriculum with industry needs. For educational institutions, this also led to the principle of fostering better collaboration between educational institutions, employers, and ecosystem intermediaries to ensure that registered apprenticeship pathways are responsive to the evolving demands of the labor market.

- ***Promoting Inclusive Economic Development:*** Registered apprenticeships – as a job with structured on- and off-the-job training – offer a proven way for a wider tranche of Maryland's residents to enter fulfilling, high-wage jobs with career progression and without incurring student debt. Creating a broader base of highly skilled, future-ready occupations regardless of background will have a transformative impact on stimulating economic growth and investment in communities across the State, creating place-based

[13] The most recent estimate from the U.S. Census Bureau is that 43.7% of Maryland residents have a bachelor's degree or higher. U.S. Census Bureau. (n.d.). Educational Attainment (S1501) [Data set]. U.S. Department of Commerce. Retrieved December 11, 2024, from https://data.census.gov/table/ACSST1Y2021.S1501.

work opportunities and revitalizing underinvested areas. This includes partnering with community organizations, supporting local workforce development initiatives, and promoting apprenticeships as a tool for economic revitalization. The commission also focused on developing apprenticeships in industries that are critical to the State's economic future, such as advanced manufacturing, health care, cybersecurity, and information technology. Registered apprenticeships should be accessible and an opportunity, particularly for individuals from underinvested communities, including those from diverse geographic, racial, and educational backgrounds. This led the commission to focus on how our State can catalyze a wider ecosystem, including intermediaries and community support organizations, to do targeted education and outreach, provide support services, and the removal of systemic barriers that limit participation.

- ***Longitudinal and Intergenerational Thinking:*** The commission adopted a long-term perspective, recognizing that the impact of apprenticeships extends beyond individuals to their families and communities for generations to come. This means investing in programs that provide ongoing support and mentorship, tracking long-term outcomes, and fostering a culture of lifelong advancement. This also led the commission to focus on how to track and ensure accountability of the efficacy of Maryland's registered apprenticeship system that supports career advancement, employer success, and promotes socioeconomic mobility.

Building on a Strong Foundation

Our shared vision is to make Maryland the national leader in registered apprenticeships, creating a dynamic and inclusive workforce system that empowers individuals and strengthens communities. We aim to dismantle barriers to opportunity, ensuring that all Marylanders, regardless of race, ethnicity, gender, or socioeconomic background, have access to the training and support they need to succeed in future-ready careers.

This means not only expanding the number of registered apprenticeships in the State to 60,000 by 2030 but also improving the quality of those opportunities. We recognize and celebrate the critical role organized labor has played in establishing and upholding the high standards that define registered apprenticeships. These standards ensure quality training, fair wages, and safe working conditions, creating a foundation of excellence upon which we can build. This report seeks to expand access to these proven pathways, ensuring that all Marylanders, regardless of background, can benefit from the opportunities they provide.

Compared to other states, Maryland has a strong track record on registered apprenticeships, with over 12,000 active apprentices.[14] The commission heard that, while ambitious, expanding registered apprenticeships is achievable. Lessons from similar countries internationally demonstrate the potential: with the introduction of the right policy levers, apprenticeships in

[14] Data provided by MD Labor.

England increased from 65,000 a year in 1997 to 500,000 a year in the mid-2010s.[15] In the United States, registered apprenticeships have flourished in construction and the skilled trades but are only beginning to emerge in the non-construction industries that make up the majority of the economy.[16] This demonstrates the potential for expansion.

Fully developing Maryland's apprenticeship ecosystem will require greater State intervention, funding, and support. This report lays out the challenges in Maryland's current post-secondary landscape in Chapter 2. It explains how registered apprenticeships can meet these challenges in Chapter 3 with the right State interventions. The report makes 23 recommendations:

- 11 recommendations to increase demand for registered apprenticeships by employers in Chapter 4;
- 3 recommendations to increase the supply of learners seeking registered apprenticeships in Chapter 5;
- 4 recommendations to fund the scale up of registered apprenticeships in Chapter 6; and
- 5 recommendations to improve accountability and oversight in Chapter 7.

Some of these changes will require increased funding. Cost benefit analyses of apprenticeships in the United States and internationally show an overwhelmingly positive public return on investment, especially when compared to other workforce development programs or higher education spending.[17] Chapter 6 provides recommendations for potential funding sources and ways to maximize the value for money of public investment in apprenticeships.

One of the commission's guiding principles is not to lower the high-quality standards for registered apprenticeships. Other training programs, such as internships and fellowships, provide important immersion into the workplace and training for future workforce participants. But what makes apprenticeships distinct – and makes registered apprenticeship the gold standard of workforce development – is that apprenticeships are paid jobs with structured training and the registration system provides external quality control. This means that outcomes and the value of

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[15] U.K. Department for Education. (2025a). Apprenticeships: Academic year 2024/25 [Dataset]. https://explore-education-statistics.service.gov.uk/find-statistics/apprenticeships.

[16] ApprenticeshipUSA. (n.d.). Apprenticeship Industries. https://www.apprenticeship.gov/apprenticeship-industries.

[17] https://www.commerce.gov/data-and-reports/reports/2016/11/benefits-and-costs-apprenticeships-business-perspective; https://www.urban.org/research/publication/did-apprentices-achieve-faster-earnings-growth-comparable-workers; https://mathematica.org/publications/an-effectiveness-assessment-and-costbenefit-analysis-of-registered-apprenticeship-in-10-states

public investment are guaranteed from the start: apprenticeships de-risk the transition from education to the labor market.

A Call to Action: Urgency, Purpose, and Vision

This is not a time for complacency. We must move forward with urgency, purpose, and a shared commitment to our vision for a future-ready Maryland. Registered apprenticeship pathways are one of the strategies to transform our economy. This report provides a roadmap for action, but it is only the beginning. We call on all stakeholders – government, employers, labor, education, and community organizations – to join us in this critical endeavor. Together, we can build a Maryland where every individual has the opportunity to achieve their full potential and contribute to our State's continued success.

The recommendations of this commission lay out a path to scaling up registered apprenticeships in Maryland while maintaining high standards. There are currently 12,451 registered apprentices in Maryland,[18] which is 21% of the commission's goal. To grow registered apprenticeships, the State needs to move quickly on a range of evidence-based policies and match the scale of investment to the scale of the challenge. There has already been forward movement on many of the recommendations made in the commission's interim report last year. Following through on those recommendations and the new recommendations in this report will help the State scale up quickly and meet the commission's goal. Maryland can do this, but we need to start now.

Review of Commission Activities in 2024

Assistance from Schaefer Center for Public Policy

In early 2024, the Department of Legislative Services contracted with the Schaefer Center for Public Policy (Schaefer Center) at The University of Baltimore to provide research and administrative support to the commission in 2024. The Schaefer Center assisted with the following activities: scheduling and hosting the public meetings of the commission; hosting and taking notes during most workgroup meetings; coordinating site visits for commission members in Maryland and assisting with planning for the European site visits; conducting a survey of employers and labor unions to estimate the prevalence of apprenticeships in Maryland; and providing supporting research as needed. This contract was in addition to a contract initiated in 2023 with Dr. Robert Lerman, an Institute Fellow with the Urban Institute and an expert on apprenticeships, as a consultant to the commission.

[18] Data provided by MATP, January 13, 2025.

Public Meetings of Commission Members

The commission met publicly five times in 2024. Agendas for the meetings are available in Appendix C. Agendas for Commission Meetings. Recordings of these meetings, materials presented during the meetings, and background materials are available on the commission's webpage on the DLS website at https://dls.maryland.gov/policy-areas/apprenticeship-2030-commission.

Workgroups

Six workgroups were established to provide research on apprenticeship and develop initial draft recommendations. Workgroups were led by commission members who served as chair, and, while some commission members served on more than one workgroup, most of those who participated were individuals who worked with or managed registered apprenticeships for employers or local education agencies. In total, over 70 individuals participated in the workgroups. More information about the workgroups is available in Appendix D. Information About 2024 Workgroups.

Site Visits

Commission members were invited to participate in both in-person and virtual site visits and meetings with employers, current apprentices, and academic experts to learn more about how successful programs operate and barriers to administering or expanding registered apprenticeship programs. In-person site visits were held at two businesses on the Eastern Shore and in Oxford, England, and Munich, Germany. Commission members were invited to a one-day apprenticeship roundtable in Baltimore City to hear from 11 employers from central Maryland. Finally, virtual meetings were held with apprenticeship experts, employers, and sponsors from Colorado, Indiana, Australia, Germany, Switzerland, and England. Many of these sessions were recorded and are available to the general public on the commission's webpage. Agendas for all site visits are provided in Appendix E. Agendas for Site Visits.

Surveys of Employers and Labor Unions

As part of its research work for the commission, the Schaefer Center conducted a survey of employers and labor unions about their apprenticeship programs or barriers to starting an apprenticeship program as well as general workforce challenges and training opportunities. There were 368 respondents to the survey from across Maryland. The Executive Summary of the report's findings is available in Appendix F. Executive Summary from Report of Survey of Employers and Labor Unions in Maryland, and the full report is hosted on the commission's webpage.

Chapter 2. Defining the Problem

The U.S. labor market is facing high levels of talent shortages. As of November 2024, the U.S. labor force participation rate was 62.5%, below prepandemic levels.[19] With more job openings than unemployed people, talent shortages are increasing. Approximately 70% of U.S. employers report difficulty in filling job roles.[20]

These trends are present in Maryland. Maryland's labor force participation, while comparatively high at 65.6%, has declined from 69.2% in February 2020 to 2024.[21] There are 3.1 job openings in Maryland for every job seeker, compared to an average of 1.3 nationally.[22]

As the Maryland Comptroller's State of the Economy 2023 report showed, Maryland's growth has been stagnating since 2017. The labor market plays an important role in this: employment in Maryland today is only 1% higher than it was in 2016, compared to 7.4% higher nationally and 5.3% higher in Virginia.[23] Analysis by the Comptroller's Office shows that the decline is due to workers ages 25 to 44 years old.[24] Usually low unemployment rates are positive signals, but Maryland's low rate – 3.1% as of December 2024 versus a national average of 4.1%[25] – combined with the factors above make for a tight labor market. According to the U.S. Chambers of Commerce, Maryland has one of the most severe worker shortages nationwide, with 33 available workers for every 100 open jobs.[26]

Talent shortages are evidenced across a range of occupations:

- A study for the Maryland Hospital Association estimates that the shortages of both ***Registered Nurses*** (RN) and ***Licensed Practical Nurses*** (LPN) will continue increasing without dramatic changes in the field. There is expected to be a shortage of 13,800 RNs and 9,200 LPNs by 2035. Counties in southern Maryland will have the most dramatic

[19] U.S. Bureau of Labor Statistics. (2024, November). Economic News Release: Employment Situation Summary. https://www.bls.gov/news.release/empsit.nr0.htm.

[20] Manpower Group. (2024). Global Talent Shortage. https://go.manpowergroup.com/talent-shortage.

[21] Maryland Department of Labor. (2024, January). Overview of Current Economic Conditions in Maryland. https://mwejobs.maryland.gov/admin/gsipub/htmlarea/uploads/MD_Economic_Overview.pdf.

[22] Comptroller of Maryland. (2023). Office Of Comptroller Maryland 2023: State of The Economy. https://www.marylandtaxes.gov/reports/static-files/SOTE.pdf.

[23] Comptroller of Maryland. (2023).

[24] Comptroller of Maryland. (2023).

[25] U.S. Bureau of Labor Statistics. (2025, February). Economy at a Glance: Maryland. https://www.bls.gov/eag/eag.md.htm; U.S. Bureau of Labor Statistics. (2025, February). Economy at a Glance: United States. https://www.bls.gov/eag/eag.us.htm.

[26] Cates, L., & Ferguson-Melhorn, S. (2024, November 4). Understanding America's Labor Shortage: The Most Impacted States. U.S. Chamber of Commerce. https://www.uschamber.com/workforce/the-states-suffering-most-from-the-labor-shortage?state=md.

shortages, with Charles County expected to have the biggest gap between need and supply for both RNs and LPNs in 2035.[27]

- In a study by the Greater Washington Partnership's Capital CoLAB, McKinsey & Co. estimated that the Capital Region, which includes central Maryland, will have gaps in ***tech talent*** and tech-adjacent talent of 50% and 67%, respectively, by 2025.[28]

- While Maryland and Washington, DC, combined have the fourth largest number of workers employed in ***cybersecurity***, the region has the second highest active demand for workers. Lightcast estimated that from December 2023 to January 2024, there was a demand for 9,781 cybersecurity workers in the region, ahead of even California and Texas, which have 90% and 40% more workers in the industry, respectively.[29]

- Maryland is facing a significant workforce shortage in ***behavioral health***: every county in the State except two is designated by the federal government as a Mental Health Shortage Area. Maryland is an estimated 50% short of the workers needed to meet behavioral health needs.[30]

- According to the Department of Legislative Services, as of January 2024, the ***State government*** Executive Branch had a 10.4% vacancy rate and an 11.4% vacancy rate in State jobs in public safety, health, and human services.[31] The problem is not limited to just State government, either, as local governments in Maryland are also experiencing vacancies and turnover.[32]

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[27] Global Data. (2022, June). Maryland Nurse Workforce Projections: 2021-2035. Maryland Hospital Association. https://mhaonline.org/wp-content/uploads/2024/05/Maryland-Nurse-Workforce-Projections-GlobalData.pdf.

[28] Gardner, N., Weddle, B., Cheng, W.-L., Carlin, D., in McKinsey & Company, & Johnson, L., in Capital CoLab. (2020, July). The Capital Region Faces a Huge Tech Talent Shortage [Brief]. Greater Washington Partnership. https://greaterwashingtonpartnership.com/wp-content/uploads/2017/09/GWP-RED-TECH-TALENT-200706_Final-1.pdf.

[29] Lightcast. (2024, March). Cybersecurity Workforce Analysis & Strategy: Maryland and D.C. TEDCO. https://www.tedcomd.com/sites/default/files/2024-05/TEDCO%20Cyber%20Maryland%20-%20Cybersecurity%20Workforce%20Strategy%20-%20Final%20Report.pdf.

[30] Hall, A., Korn, A., Waller, K., Shapiro, J., PhD, & Trailhead Strategies. (2024, October). Investing in Maryland's Behavioral Health Talent. Maryland Health Care Commission. https://marylandmatters.org/wp-content/uploads/2024/11/Full-Report_Maryland-BH-Workforce-Assessment-_Final-Oct-2024.pdf.

[31] Burch, H. L., Frank, P. S., Haskel, E. R., Klein, M. D., Kramer, J. A., McCulloch, S. D., Romans, D. C., Tuszynski, T. M., Zimmerman, T. D., Bishop, R., & Gruber, V. L. (2024, January). Fiscal Briefing. Maryland Department of Legislative Services. https://mgaleg.maryland.gov/pubs-current/2024_Fiscal_Briefing_Final.pdf.

[32] Brown, J. H. (2024, May 23). It's police recruitment season, but filling vacancies is a struggle across Maryland. Maryland Matters. https://marylandmatters.org/2024/05/22/its-police-recruitment-season-but-filling-vacancies-is-a-struggle-across-maryland/; Ford, W. J. (2024, February 2). Breaking down the Blueprint: How have school systems in Maryland struggled to hire educators? New reports detail difficulties. Maryland Matters. https://marylandmatters.org/2023/03/26/how-have-school-systems-in-maryland-struggled-to-hire-educators-new-blueprint-reports-detail-difficulties/.

- There is a persistent gap between supply and demand of ***teachers*** in Maryland, with 1,914 individuals completing teacher preparation programs in 2021–22, and 2,144 vacancies at the beginning of the 2022–23 school year – a deficit of 230.[33]

- Between May 2023 and May 2024, Maryland lost approximately 5,000 ***construction*** jobs according to AGC's analysis of federal data, despite high demand.[34] There are also concerns that Maryland will not have enough skilled workers to rebuild the Francis Scott Key Bridge.[35]

- There is a national shortage of individuals holding a commercial driver's license, which in Maryland caused significant shortages of ***school bus drivers*** in multiple counties and vacancies affecting light rail and subway operations.[36]

Talent shortages are a persistent and pressing issue. According to Bureau of Economic Analysis data, Maryland ranked 41st for real gross domestic product growth in 2023.[37] Slow employment, talent shortages in key areas, and a mismatch between the skills produced by education and the skills demanded in the labor market are increasingly limiting Maryland's growth. International studies show that skills development is crucial to productivity growth – in the United Kingdom, a third of productivity improvement over the last two decades is explained by improvements to the skills in the labor force.[38]

A tight labor market does not mean workers are in the ascendancy. While it is difficult to measure, there are signs that Maryland has high degrees of skills mismatch, with misalignment between the skills demanded in the labor market and the skills produced by the education and skills training system. According to the National Skills Coalition, Maryland has an oversupply of workers with four-year degrees compared to jobs that require them – 45% of workers but 38% of

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[33] Wright, M. C., Meadows, K., & Haislet, C. (2024, May 21). Maryland's Teacher Workforce: Supply, Demand, and Diversity [PowerPoint slides]. Maryland State Department of Education. https://marylandpublicschools.org/stateboard/Documents/2024/0521/Maryland-Teacher-Workforce-Supply-Demand-and-Diversity-A.pdf.

[34] Associated General Contractors of America. (2024, June 25). Construction Employment Increases In 39 States from May 2023 To May 2024, While 26 States Add Jobs Between April And May. https://www.agc.org/news/2024/06/25/construction-employment-increases-39-states-may-2023-may-2024-while-26-states-add-jobs-between-april. https://www.agc.org/news/2024/06/25/construction-employment-increases-39-states-may-2023-may-2024-while-26-states-add-jobs-between-april

[35] Tufo, E. (2024, April 10). Maryland's labor shortage may mean a lack of skilled workers for the Key Bridge rebuild. CNS Maryland. https://cnsmaryland.org/2024/04/09/marylands-labor-shortage-may-mean-a-lack-of-skilled-workers-for-the-key-bridge-rebuild/.

[36] Maryland Department of Transportation & Maryland Transit Administration. (2022, November). Hiring and Retention Comparison with Peer Agencies and Surrounding Jurisdictions. https://dlslibrary.state.md.us/publications/JCR/2022/2022_77.pdf.

[37] U.S. Bureau of Economic Analysis. (n.d.). GDP by State. https://www.bea.gov/data/gdp/gdp-state.

[38] Conlon, G., Dohler, G., Lee, S.-M., & Patrignani, P. (2023). Skills and UK productivity: Estimating the contribution of educational attainment to productivity growth. Department for Education. https://assets.publishing.service.gov.uk/media/63f4bee8d3bf7f62eaaf2e75/Skills_and_UK_productivity.pdf.

jobs in 2018. Maryland's deficit is in the 47% of jobs that require skills training beyond high school but not a four-year degree: jobs in growing industries such as health care, information technology and software, advanced manufacturing, and the skilled trades. Here, only 37% of Maryland workers have the required level of training.[39]

Emerging trends could exacerbate the level of talent shortages and skills mismatches. Compared to its neighboring states, Maryland has a relatively low proportion of the population aged 20–29 and the same or a relatively higher percentage in the 55–64 age bracket.[40] An aging workforce will mean skilled workers continue to retire and health care demands continue to increase, growing demand for skilled labor. All industries are seeing changes in their skills requirements from technology and from the infrastructure demand created by technology such as demand for data centers. The adoption of artificial intelligence may make some skills needs more acute if less entry-level jobs into occupations are required, but demand for experienced, skilled workers stays high.

Maryland's Talent Pipeline

Workforce development programs present a solution to these skills mismatches. However, in a high-cost-of-living state, workers need jobs that can cover the costs of housing and childcare, provide potential for advancement, and allow time for upskilling or retraining skills. These costs are especially high in Maryland, which ranks seventh highest for cost of living in the Forbes index.[41]

There is little evidence to suggest that employers will be able to meet the skills gap without intervention. Despite a positive trajectory for skills-based hiring, 44% of job advertisements in the United States in 2021 required a degree (although this is a decrease from 51% in 2017).[42] Employers still tend to hire based on existing qualifications and experience, rather than skills and potential.

College degrees will remain a vital path into some high-skilled careers, but this route cannot provide a solution for all of Maryland's population. In the 2023 cohort, 85.6% of Maryland high school students graduated from high school, but only 60.4% of the 2022 graduating class

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[39] National Skills Coalition. (2020). Lack of access to skills training hurts Maryland workers and businesses. https://nationalskillscoalition.org/wp-content/uploads/2020/12/MD-Skills-Mismatch-Fact-Sheet-2020.pdf.

[40] U.S. Census Bureau. (n.d.). Age and Sex (S0101) [Data set]. U.S. Department of Commerce. https://data.census.gov/table/ACSST1Y2021.S0101.

[41] Rothstein, R., & Jennings, C. (2024, July 15). Examining the cost of living by state in 2024. Forbes Advisor. https://www.forbes.com/advisor/mortgages/cost-of-living-by-state/.

[42] Levanon, G. (2022). U.S. labor market outlook. The Burning Glass Institute. https://static1.squarespace.com/static/6197797102be715f55c0e0a1/t/63865c667d4e5637c709dfae/1669749863982/BGI_LaborMarketOutlook_Nov2022_Final.pdf.

enrolled in postsecondary education within 12 months.[43] Moreover, of those going to college in Maryland, only 53% graduated within 150% of their standard program time by 2022.[44] Over 16% of Maryland residents completed some college but not enough to obtain a degree, according to the U.S. Census Bureau.[45] Maryland is a highly educated state — the fifth highest by share of people 25 and older who have an associate degree or higher according to U.S. Census Bureau data.[46] However, while college will continue to provide an important pipeline, a significant majority of young people are not served by the college pathway – both the 50% of high school students not going to college full-time immediately after high school in the first place[47] and the 50% of those who enter college but ultimately do not receive a degree.[48] The majority of young people in Maryland do not get a degree by age 25, with Census Bureau data showing that an estimated 44% of Marylanders age 25 years or older have a bachelor's degree or higher.[49]

There are signs attitudes toward college are changing. According to a Gallup poll, American confidence in higher education has fallen from 57% in 2013 to 36% in 2023, in the face of above-inflation rises in tuition, growing debt, low completion rates, and uncertain employment prospects. When asked to choose between a full-tuition college scholarship or a three-year apprenticeship that led to a credential and a well-paying job for their child, the majority of parents chose the latter.[50] Young people are increasingly recognizing this: 65% of high school students surveyed say their ideal post-high school learning should be on-the-job.[51]

Despite the evidence on labor market needs, there is an imbalance on public expenditure between higher education and workforce development. In fiscal 2025, the Maryland budget

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[43] Wright, M. C., & Haislet, C. (2024, March 26). Graduation Rate Information [PowerPoint slides]. Maryland State Department of Education. https://marylandpublicschools.org/stateboard/Documents/2024/0326/Graduation-Rate-Information-A.pdf.

[44] This statistic concerns how long it takes individuals to complete their post-secondary education program – it represents the percentage of those who obtained their bachelor's degree within six years of starting the degree and those who obtained their associate's degree within four years of starting. Welding, L. (2024, March 4). College graduation rates: Full statistics. Best Colleges. https://www.bestcolleges.com/research/college-graduation-rates/#fn-ref-6.

[45] U.S. Census Bureau. (n.d.). Educational Attainment (S1501) [Data set]. U.S. Department of Commerce. Retrieved December 11, 2024, from https://data.census.gov/table/ACSST1Y2021.S1501.

[46] U.S. Census Bureau. (n.d.). Educational Attainment (S1501).

[47] Maryland State Department of Education & Maryland Higher Education Commission. (2022). Increasing participation in postsecondary education. In Maryland Public Schools. https://marylandpublicschools.org/programs/Documents/reports/IncreasingParticipationPostsecondaryEd-v4_A.pdf.

[48]Hogan, Jr., L. J., Rutherford, B. K., & Fielder, Jr., J. D. (2022). Report on best practices and annual progress toward the 55% completion goal. In Maryland Higher Education Commission (2022 JCR p. 196). https://mhec.maryland.gov/publications/Documents/Research/AnnualReports/2022_p_196_Report_on_Best_Practices_and_Annual_Progress_Toward_the_55%25_Completion_Goal.pdf.

[49] U.S. Census Bureau. (n.d.). Educational Attainment (S1501).

[50] American Compass. (2021, December 14). Failing on Purpose Survey. https://americancompass.org/failing-on-purpose-survey-part-1/.

[51] ECMC Group. (2023, June). Question the Quo: Gen Z Teens Have Changed Their Priorities for Education and Work. Pandemic-Driven Shifts in Student Outlook Persist. https://www.questionthequo.org/media/x5zdjmxu/question-the-quo-june-2023-report.pdf.

included $2.5 billion in State general and special funds for State-operated public universities, while only $41.9 million of State funds was budgeted for MD Labor's Division of Workforce Development and Adult Learning. In summary, $2.5 billion is allocated to the minority of young people going into higher education, compared to just $41.9 million for those who go straight into the workforce or do not finish their degree. In other words, the State spends $59 on public higher ed for every $1 it spends on workforce development and adult learning.[52]

[52] Including federal funds Maryland receives for workforce development decreases this ratio to $17 on higher ed for every workforce dollar spent. Calculations do not include state funds for the Maryland Higher Education Commission and other funding mechanisms. Maryland Department of Budget & Management. (2024). Summary of operating budget appropriations. https://dbm.maryland.gov/budget/FY2025FiscalDigest/Exhibit-C-Summary-of-Operating-Budget-Appropriations-FY25.pdf.

Chapter 3. Defining the Opportunity

Chapter 2 laid out the challenges facing Maryland's labor market and the post-secondary education system's ability to meet them. This chapter sets out how registered apprenticeships can address these issues.

What Are Apprenticeships?

An apprenticeship is a job that prioritizes a candidate's potential over their existing skills or educational background. Apprentices are hired as employees, receive a paycheck, and gain structured training through on-the-job experience (on-the-job training (OJT)) and classroom-based learning (related technical instruction (RTI)). Since apprenticeships are jobs from day one, apprentices earn and learn concurrently.

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Apprenticeships can be registered or unregistered. Registered apprenticeships meet national standards and provide industry-recognized credentials. They need to be registered either with the federal Department of Labor's Office of Apprenticeship or a state apprenticeship agency (SAA), and they meet the requirements set out in Title 29 of the Code of Federal Regulations.

In Maryland, registered apprenticeship programs are approved by the Maryland Department of Labor (MD Labor) with the advice of SAA, the Maryland Apprenticeship and Training Program. A registered apprenticeship program must include at least 2,000 hours of OJT under a skilled journeyworker who acts as a mentor to the apprentice and 144 hours each year of RTI. Lengths of registered apprenticeship programs vary between one and six years. Apprenticeships must have a progressive wage structure, with the starting wage for a new apprentice matching at least the current minimum wage, intermediate wages with increases based on the apprentice reaching set milestones in the program related to the number of hours of OJT or specific competencies, and an exit wage. Registered apprentices also earn a national occupational credential upon graduation, and this credential can be used in any other state and as a stackable credential as the new journeyworker progresses in their career.[53]

Why Apprenticeships Can Help Meet Maryland's Workforce Challenges

Apprenticeships enable employers to hire based on potential and enable workers to develop the skills needed for in-demand roles. This means that registered apprenticeships are a vehicle that

[53] More information on Registered Apprenticeships is available on the website of the Maryland Apprenticeship and Training Program (MATP; https://labor.maryland.gov/employment/appr/).

can immediately alleviate talent shortages. As opposed to four-year degrees or other workforce development programs, there is no transition to an occupation: apprentices have jobs from day one and rapidly become productive employees as they learn occupational competencies. A scaled-up apprenticeship system in Maryland means a wider pool of skilled talent on which employers can draw.

For workers, a scaled apprenticeship system means the 56.3% of Marylanders who do not have a bachelor's degree or higher[54] can have a route to high wage, fulfilling jobs while avoiding student debt. Apprenticeships are not just for those who would not otherwise go to college: many current college students would be better off with a debt-free, paid route into the labor market. As apprentices receive a wage while training, registered apprenticeships can help workers who otherwise would not seek post-secondary education due to high costs of living.

Apprenticeships are stackable and are not just for young people – they can be taken later in life and assist with retraining as well as upskilling. With the disruptive effects of technological developments and artificial intelligence (AI), apprenticeships can help meet the increasing needs of employers and workers for more, faster training throughout careers. Particularly with AI, apprenticeships can help career-starters gain experience on the job where entry-level jobs may be in short supply as routine tasks are automated.

Apprenticeships provide a solution not only for middle-skill jobs but also for those that require degrees. Degree apprenticeships are apprenticeships where the related instruction forms the credits required for a degree. It is a growing concept, particularly in education, where at least six states – Alabama, Arkansas, California, Colorado, Texas, and Tennessee – are pioneering the model of debt-free degrees for educators.[55] In England, where apprenticeships are used more extensively than in the United States, degree apprenticeships are available in industries such as accounting, aerospace engineering, banking, business and finance, construction, defense, facilities management, nursing, law, nuclear science, and software development.[56] Maryland already has workgroups on designing degree apprenticeship programs for nursing and teaching. Degree apprenticeships can provide a solution for job roles that require accreditation or credentials by embedding those credentials within related instruction.

> Degree apprenticeships in England include aerospace engineering, software development, banking, business and finance, accounting, construction, defense, facilities management, nursing, law, and nuclear science.

[54] U.S. Census Bureau. (n.d.). Educational Attainment (S1501).

[55] Apprenticeships for America. (2024). How States are Driving the Expansion of Apprenticeships: State Apprenticeship Policy Scan. https://apprenticeshipsforamerica.org/resources/afa-publications/25/how-states-are-driving-the-expansion-of-apprenticeships-state-apprenticeship-policy-scan.

[56] United Kingdom Education and Skills Funding Agency. (n.d.) Apprenticeship Training Courses. https://findapprenticeshiptraining.apprenticeships.education.gov.uk/courses?keyword=&levels=6.

The academic literature shows that the benefits of apprenticeships are proven for the individual, employer, and the public as a whole:

- Registered apprenticeships offer significant returns for **individuals**. U.S. Department of Labor data shows that, after the completion of their program, 94% of apprentices are employed and earn an average salary of $80,000, which is $14,000 higher than the national average salary.[57] This data is based on current registered apprenticeships, which are primarily in construction and the trades, so wages for apprentices in other occupations such as information technology – where registered apprenticeships are currently less developed – could be higher. Completing an apprenticeship can add an estimated $300,000 to lifetime earnings.[58] According to one study, apprentices in Washington State saw a $30,000 annual pay increase – double the gains of professional technical degrees.[59]

- As a form of postsecondary education, apprenticeships can help address economic stagnation while reducing student debt and public expenditures on higher education. The literature suggests that apprenticeships are a **public good**: one recent study in Washington State showed that the taxpayer's 10-year net return on investment from registered apprenticeships was $7.80 for every dollar invested.[60]

- The benefits of apprenticeships apply to the **employers** that hire them. Apprenticeships improve productivity, increase retention, offer employers a diverse talent pipeline, and bring a number of indirect benefits such as innovation and development of future managers.[61] Analysis shows that employers see a net benefit of 44%: for every $1 invested in apprenticeships, employers get an average of $1.44 back.[62] Despite this evidence,

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[57] U.S. Department of Labor. (2024, April). Explore Registered Apprenticeship. Apprenticeship USA. https://www.apprenticeship.gov/sites/default/files/DOLIndFSApprent101-043024-508.pdf.

[58] Poyatzis, G., & Lingston, G. (2024, February 29). The Fast-Growing Number of Black Women Apprentices. U.S. Department of Labor Blog. https://blog.dol.gov/2024/02/29/the-fast-growing-number-of-black-women-apprentices#:~:text=The%20lifetime%20earning%20advantage%20of,to%20provide%20for%20my%20family.

[59] Washington Workforce Development Services. (2023, January). Annual participant and expenditure data is for 2020-2021 [Data set]. Workforce Training and Education Coordinating Board. Retrieved December 12, 2024, from https://wtb.wa.gov/wp-content/uploads/2023/03 Matrix_2023_Publisher_FINAL.pdf.

[60] Washington Workforce Training & Education Coordinating Board. (n.d.). Workforce Training Results: Apprenticeship. https://wtb.wa.gov/research-resources/workforce-training-results/#open.

[61] Marotta, J., Lerman, R., Kuehn, D., San Miguel, M., & Urban Institute. (2022, August). Beyond Productivity: How Employers Gain More from Apprenticeship. Abt Associates. https://www.dol.gov/sites/dolgov/files/ETA/publications/ETAOP2022-40_AAI_Brief-Indirect_Benefits_Final_508_9-2022.pdf.

[62] Kuehn, D., Mills De La Rosa, S., Lerman, R., & Hollenbeck, K. (2022, August). Do Employers Earn Positive Returns to Investments in Apprenticeship? Evidence from Registered Programs Under the American Apprenticeship Initiative (Issue 22-36). Abt Associates, Urban Institute, & W.E. Upjohn Institute for Employment Research. https://www.apprenticeship.gov/sites/default/files/do-employers-earn-positive-returns-to-investments-in-apprenticeship.pdf.

employers remain reluctant to invest because they cannot guarantee they will retain employees, meaning they still require incentivization.

- Apprenticeships can increase **equity and diversity**. Current registered apprenticeships are largely available in professions dominated by men, while expanding registered apprenticeships into other occupations will create a better route to high-paying careers for populations currently underserved by postsecondary occupations. In England, more females take STEM subjects via apprenticeships than via degree routes.[63]

The benefits of registered apprenticeships are proven. But evidence of these benefits alone is not enough to persuade employers to hire apprentices at scale. The low numbers of apprentices in the United States show this. Employers are put off by the risk that they will lose their investment since employees are free to move once trained. Employers also need to be prepared to pay apprentices a salary when they have low skills and are less productive – often a short-term barrier that affects decision-making on a long-term reward. This is why most countries with expansive apprenticeship programs provide incentives to employers to address these barriers.

Despite these benefits, investment in apprenticeship is often lower than public spending in other areas of postsecondary education, even as they come with higher returns. But they are vital to addressing the barriers that employers face in hiring apprentices: the risks of skilled workers being poached; paying wages for low skill employees; the costs of RTI and administration; unfamiliarity with the regulatory framework of registered apprenticeships; and preferences to hire existing skills and qualifications as opposed to potential.

Countries that have expanded apprenticeships successfully – and reaped the economic benefits – have made public investment in apprenticeship programs to ease these burdens for employers and incentivize them to hire apprentices. Construction industry unions and employers in the United States have also used a similar mechanism and funded their apprenticeship programs with a small levy on journeyworkers' hourly rates. They all recognize, as Maryland should, that public spending on registered apprenticeships is justified because:

- more registered apprenticeships in diverse occupations will improve the talent pipeline into Maryland's economy, increasing productivity growth and solving talent shortages, and increase government revenue from the workers' income and spending;

- investment in registered apprenticeships will come with greater and more immediate returns than the equivalent public investment in other areas of the postsecondary education system;

- investment in registered apprenticeships will increase equity and diversity; and

[63] U.K. Department for Education. (2025b). Achievement Rates Subjects - Volumes and rates by STEM, SSA T1, level, age, ethnicity, sex, LLDD [Dataset]. https://explore-education-statistics.service.gov.uk/data-catalogue/data-set/c38ad89d-7fe8-47aa-844d-d08778862489.

- growth will not happen without investment: employer behavior will not change without incentivization.

Scaling Registered Apprenticeships to 2.3% of Maryland's Labor Force

The goal set for the commission to explore – 60,000 registered apprenticeships in Maryland by 2030 – represents approximately 2.3% of Maryland's labor force becoming active apprentices. This goal is also comparable to the number of registered apprenticeship slots required for high school students to meet the goals set out in the Blueprint for Maryland's Future. It should be noted that only 30,000 Marylanders would need to enter apprenticeships each year, since most programs are at least two years long.

The United States has one of the smallest shares of apprenticeships compared to the wider labor force, but Maryland does not have to be part of this trend. While 2.3% of the labor force is ambitious, it is not aiming to be the best in the world. Apprenticeships as 2.3% of the labor force would mean an apprenticeship system still smaller than Australia, England, Germany, France, Switzerland, and others (**Exhibit 1**). Surely Maryland can achieve what these countries have.

Exhibit 1
United States and Other Countries' Apprenticeship Rates and Spending

Country	Active Apprentices as Percentage of Labor Force	Spending on Apprenticeships as Percentage of Government Spending
United States	0.33%	0.005%
Scotland	0.71%	0.15%
Austria	1.17%	n/a
Canada	2.07%	0.09%
Australia	2.32%	0.66%
England	2.48%	0.22%
Germany	2.65%	0.36%
France	3.19%	1.23%
Switzerland	3.93%	n/a

Notes: Sources available upon request. Canada's spending rate only reflects federal, not province or local, funds.

Throughout the last two years, the commission has heard the message that expanding registered apprentices is ambitious but achievable. The commission learned lessons from other countries, with a visit to England and Germany and meetings with experts from those countries as well as Australia and Switzerland. These countries have achieved levels of apprenticeship beyond Maryland's target and have apprentices in occupations across the economy. They did so through a

combination of policy levers, many of which provide the basis for the recommendations in this report. The lessons from these countries show that this level of growth in apprenticeships is achievable. The examples of Australia, England, and France show rapid progress is possible: all three countries managed to quickly build up apprenticeship systems from a low base.

In the United States, registered apprenticeships have traditionally been utilized in construction and the skilled trades. This is the one area of the economy where funding for registered apprenticeships is available and sustained and where the model is mainstream for employers. In 2024, there were over 320,000 registered apprentices in the construction industry nationwide,[64] and approximately eight million people nationwide working in construction.[65] This suggests around 4.3% of construction workers are apprentices – beyond what Maryland needs to achieve to reach its goal.

International examples show that the apprenticeship model can work across all industries and occupations, not just the skilled trades. If Maryland can achieve a similar saturation of registered apprenticeships in industries outside of construction to what has been achieved in construction, reaching 2.3% of the labor force as registered apprenticeships is a realizable goal.

The Market for Registered Apprenticeships in Maryland

As part of its work and in collaboration with economists at MD Labor, commission members looked at current employment and job openings in industries across Maryland. They also considered employment projections for the State and which industries and occupations do not require a bachelor's degree for entry-level staff. With this data and the distribution of registered apprenticeships by industry in other countries, the commission has established illustrative targets to provide a sense of the scale of apprenticeship starts needed by industry to reach 2.3%, as shown in **Exhibit 2**.[66]

[64] ApprenticeshipUSA. (n.d.). Construction. https://www.apprenticeship.gov/apprenticeship-industries/construction.

[65] U.S. Bureau of Labor Statistics. (n.d.). Employment by Major Industry Sector. https://www.bls.gov/emp/tables/employment-by-major-industry-sector.htm.

[66] More information about each of the examples in Exhibit ***2*** is available in Appendix G. Examples of Apprenticeship Programs.

Exhibit 2
Addressable Market and Potential Market Size for Registered Apprenticeships in Maryland

Sector	2024 Program Examples (Sponsor)	Potential Annual Apprenticeship Starts
Information Technology and Cybersecurity	• IT Professional (Tranzed Apprenticeship Services, LLC)	4,500
Business and Finance	• Financial Business Partner (AICPA)	4,200
Health Care	• Certified Nursing Assistant (Hamilton-Ryker) • Practical Nurse (Baltimore Alliance for Careers in Healthcare)	3,900
Retail and Wholesale	• Retail Store Manager (Royal Farms) • Branch Manager Apprentice (Travis Perkins, a U.K. construction supplier) • Manager, Retail Store (CVS Health)	3,000
Education	• K-12 teachers (St. Mary's County Public Schools) • Youth Apprentices (Local Education Agencies, LEAs)	2,100
Public Service	• Baltimore City Joint Apprenticeship Program • Department of Natural Resources Police Officers (Maryland DNR) • National Security Agency (for youth)	1,800
Construction	• Electricians (Insulators and Allied Local # 24) • IEC Chesapeake (for youth)	1,800
Hotels and Restaurants	• Restaurant Manager (Maryland Restaurant Association) • Community College Hospitality Programs • Hospitality Sector registered apprenticeship (American Hotel and Lodging Association)	1,500
Manufacturing	• CNC Specialist and Maintenance Mechanic (Maryland Manufacturing Extension Partnership) • Machinist (Dixon Valve)	1,200
Personal and Repair Services	• Building Maintenance (Bozzuto Management) • Automotive Technician (Washington Area New Automobile Dealers Association)	1,200
Other	• Telecommunications Industry registered apprenticeship Program (Wireless Infrastructure Association) • Anne Arundel Community College Landscape Management Technician (for youth)	4,800
Total		**30,000**

Note: Analysis conducted by MD Labor and Robert I. Lerman, former Institute Fellow, Urban Institute. Number of openings rounded for ease of reading. Only 30,000 apprenticeship starts are needed per year, as most apprenticeships take at least two years for completion. The data above are rough estimates, and Maryland Office of Registered Apprenticeship Development (MORAD) would conduct a detailed analysis as one of its first activities.

Innovative programs in Maryland, across the United States, and internationally demonstrate that expanding registered apprenticeships to nontraditional sectors is possible:

- In South Carolina, public and private organizations are using registered apprenticeships to train emergency medical technicians, paramedics, and other medical professionals. Three major hospitals in the state are using registered youth apprenticeships to recruit high school students into health care apprenticeships.

- States across the country are increasingly using registered apprenticeships to train teachers. As of May 2024, Tennessee had almost 700 people enrolled in K-12 teacher apprenticeship programs; other states including Missouri and New Hampshire also had teacher apprenticeship programs.[67] In Maryland, a teacher apprenticeship workgroup convened in summer 2024 to design a Teacher Apprenticeship Program where students can begin their career as an educator while in high school. The workgroup endeavored to define the key elements of the apprenticeship including education, supervision, and on-the-job training and was comprised of representatives from local education agencies, the Maryland State Department of Education, MD Labor, and the Maryland State Education Association.

To expand to new industries and scale registered apprenticeships, Maryland will need to address barriers including the cost of post-high school related instruction, startup costs, mentoring, and employer hiring culture. The commission's detailed recommendations in Chapters 4 through 7 address these and other barriers.

Scaling Up Apprenticeship Intermediaries

Beyond these recommendations, scaling up registered apprenticeships will require an expanded use of apprenticeship intermediaries. Apprenticeship intermediaries help set up and run apprenticeship programs. They recruit employers to join apprenticeship programs and help convince them of the return on investment from apprenticeships.

> An apprenticeship intermediary is a for-profit, nonprofit, private, or public organization that assists with any aspect of developing, starting, and administering an apprenticeship program.

[67] Educator Registered Apprenticeship Programs. (2024). Profiles of Educator Registered Apprenticeship Programs. https://www.apprenticeship.gov/sites/default/files/Profiles%20of%20Educator%20Registered%20Apprenticeship%20Programs.pdf.

Countries such as Australia and England have managed to scale apprenticeships quickly because they have supported intermediaries.[68] An intermediary is an organization – for-profit, nonprofit, private, or public – that assists with any aspect of developing, starting, and administering an apprenticeship program, including serving as the employer of record during training. Intermediaries include community colleges, workforce development boards, trade unions, nonprofit organizations, staffing agencies, and for-profit companies. Intermediaries help to set up and run apprenticeship programs. In particular, they work with employers, recruiting them to join apprenticeship programs and helping to convince them of the return on investment and the importance of prioritizing potential over existing qualifications. Intermediaries working across multiple employers are crucial for establishing registered apprenticeships at small- and medium-sized enterprises. They can create economies of scale for the administration of registered apprenticeships, and they use their expertise to make sure RTI and on-the-job training is high quality. Intermediaries take on the tasks that create barriers to employers hiring apprentices.[69]

The following recommendations provide policies that will strengthen the playing field for intermediaries in Maryland by stimulating demand and supply for registered apprenticeships. Successful implementation will require increased investment – discussed in Chapter 7 – but this investment will generate a positive economic and social return for the State of Maryland. Based on the costs of the Pay Per Apprentice proposal below, it is estimated that, when fully scaled, the long-term costs of generating 60,000 apprentices could amount to $210 million a year. The social return of this investment – the increased wages above that of a high school graduate alone – suggest a return on investment of at least $2 for every dollar invested. This analysis does not include the indirect productivity benefits to employers, any reduction in student debt, or reductions in other welfare costs such as unemployment.

Maryland can do this – the State can reach 2.3% of its labor force as registered apprenticeships by 2030. But it needs to act now to build the infrastructure that will enable it to reach this goal. The recommendations in the next four chapters will put Maryland on the pathway to do just that.

[68] Apprenticeships for America. (forthcoming). Apprenticeships Around the World: How Does the U.S. Compare Globally.

[69] More information on apprenticeship intermediaries is available on the USDOL ApprenticeshipUSA website (https://www.apprenticeship.gov/investments-tax-credits-and-tuition-support/registered-apprenticeship-industry-intermediaries).

Chapter 4. Activating Demand for Apprenticeships from Employers

The most important constraint in expanding registered apprenticeships is the limited number of registered apprenticeship slots provided by employers. These recommendations serve to increase employer demand for registered apprenticeships. Most of these recommendations need to be prioritized quickly and implemented in the near term if Maryland is to meet its timeline for expanding registered apprenticeships.

Recommendation # 1 – Embrace the goal of increasing active registered apprenticeships to at least 2.3% of the State's labor force.

Commission member Donna Edwards abstained from voting on this recommendation.

The commission recommends that its goals – expanding registered apprenticeships in industry sectors and occupations with skill shortages, growing the number of registered apprentices to at least 60,000 by 2030, and reaching the Blueprint for Maryland's Future (Blueprint) goal for 45% of high school graduates completing the high school level of a registered apprenticeship or another industry-recognized credential – are embraced by the State. The only adjustment to this should come in the form of a goal that at least 2.3% of Maryland's labor force will be active registered apprentices by 2030, which allows for fluidity and adjustment as the population and labor force change in future years.

Reaching this goal is ambitious, but achievable. Maryland has made serious progress on registered apprenticeships in recent years, growing from 10,031 active apprentices in 2018 to 12,451 as of December 31, 2024.[70] This has been without significant public funding and the public policy levers recommended in this report, and with the majority of registered apprenticeships still in the traditional areas of construction and the trades.

Setting the apprenticeship goal at 2.3% of Maryland's labor force being registered apprenticeships is comparable to apprentice rates in England, Canada, and Australia – all countries that have scaled apprenticeship recently. It is far below apprenticeship rates such as Germany or Switzerland, which have extensive histories of using apprenticeships. In the United States, approximately 4% of construction workers are apprentices – if Maryland is able to reach similar levels of apprentices in other industries, the State will overshoot this goal.

To promote long-term planning and resource allocation on major and smaller priorities, Maryland repeatedly sets numerical goals. Embracing this goal will focus policy and prioritize registered apprenticeships in long-term planning and investment. Recent examples include the Blueprint and the goal "that at least 55% of Maryland's adults age 25 to 64 will hold at least an

[70] Data provided by the Maryland Department of Labor (MD Labor).

associate's degree by the year 2025."[71] Embracing an apprenticeship goal would be a signal to employers and workers that Maryland is serious about registered apprenticeships and their role in the economy. Other states have seen success by setting goals for registered apprenticeships: a recent report by Apprenticeships for America highlights the states that have set targets for registered apprenticeships as leaders in the field.[72]

The commission wishes to note that not meeting this goal will not be considered a failure – any growth in registered apprenticeships is to be commended and means more economic opportunities for Marylanders. A goal in statute, however, will serve as a useful indication of where the State should be and what a developed apprenticeship system should achieve.

It is also important to note that the goal of scaling registered apprenticeships does not mean a focus on quantity over quality. Maryland's regulation of registered apprenticeships needs to continue to ensure that apprenticeship programs are high quality with classroom education, on-the-job learning, and progressive wages.

Industry Engagement and Partnerships

Recommendation # 2 – Create a Maryland Office of Registered Apprenticeship Development with an advisory committee consisting of employers, union leadership, and legislators.

The commission recommends that the State establish a new agency for registered apprenticeships. This office – the Maryland Office of Registered Apprenticeship Development (MORAD) – should focus on scaling registered apprenticeships across industries throughout the State. The office would have primary ownership of the strategy to reach the goal of Maryland reaching 2.3% of the labor force as registered apprentices by 2030. The foremost work of MORAD would be developing the strategy for the State's "north star" for registered apprenticeships – as the State moves to reach its registered apprenticeship goals, MORAD would continually refine the strategy using data and economic conditions. Creating such an office would also emphasize the importance of the State's goals with respect to registered apprenticeships, similar to the way codifying the goal in State statute reinforces the importance of registered apprenticeships in Maryland.

MORAD would be housed in MD Labor, which will build on the State's current growth in the number of registered apprenticeships and allow for the development and enforcement of new and existing safeguards concerning the quality of registered apprenticeships. Importantly,

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[71] Md. Code, Educ. § 10-205. https://casetext.com/statute/code-of-maryland/article-education/division-iii-higher-education/title-10-definitions-and-maryland-charter-for-higher-education/subtitle-2-maryland-charter-for-higher-education/section-10-205-goals

[72] Apprenticeships For America. (2024, November 19). How States are Driving the Expansion apprenticeships: State Apprenticeship Policy Scan. https://apprenticeshipsforamerica.org/resources/afa-publications/25/50-state-report.

MORAD's efforts need to be separated from the regulatory functions of the agency, although they will work closely on oversight and compliance functions.

The primary functions of MORAD should be to:

- Identify opportunities to increase the number of registered apprenticeships in industries and occupations that already have a strong apprenticeship presence, focusing on eliminating the barriers to creating new programs and expanding existing opportunities.

- Identify opportunities to increase the number of registered apprenticeships in industries that currently have apprenticeship opportunities available, but where the numbers are small and programs need to be developed. This work will involve understanding the barriers to scale in these industries and what can be done to unblock these barriers.

- Identify opportunities to create new apprenticeship programs in industries that do not have them. This is likely the largest area for growth. This work involves understanding and analyzing the workforces in industries with the largest workforce needs across the State and working with leadership to develop registered apprenticeships programs and address any industry specific barriers. This work requires connecting an in-depth understanding of the occupations in these specific industries with a deep understanding of how to construct and scale high quality registered apprenticeship programs.

In addition, MORAD should oversee functions included in other recommendations in this report:

- Produce an annual report documenting progress toward Maryland's apprenticeship goals and the effective use of programs and public money. (Recommendation 24).

- Oversee data collection on apprenticeships (Recommendations 20 and 21).

- Conduct annual demand and supply analyses of registered apprenticeships in Maryland (Recommendations 22 and 23).

- Oversee the marketing of registered apprenticeships to employers and potential apprentices (Recommendations 3 and 14).

- Explore how an information technology (IT) solution can support enhanced communication on registered apprenticeship incentives, such as grants and tax credits, so that employers and sponsors are more easily able to navigate the resource landscape and eligible entities could explore incentives and apply directly within an online portal (Recommendation 11).

- Administer the Pay Per Apprentice Program (Recommendation 4).

- Recommend process improvements to MD Labor, Maryland State Department of Education (MSDE), and other State agencies with respect to registered apprenticeships (Recommendation 11).

MORAD would work with all other State agencies – including major actors involved in registered apprenticeships such as MSDE, the Maryland Department of Commerce, the Department of Budget and Management, and the Maryland Higher Education Commission (MHEC) – as well as Maryland's local and federal partners to reach the State's apprenticeship goals. MORAD should include a small advisory committee of employers, labor unions, registered apprenticeship sponsors, and legislators to help guide and promote MORAD's work and to develop the State's strategy to grow registered apprenticeships.

Recommendation # 3 – Establish a major and continuing marketing campaign to increase understanding of registered apprenticeships among employers, unions, and others.

The commission recommends that MORAD oversee a marketing campaign targeting employers to persuade them to start or expand registered apprenticeship programs. Internationally, governments have run successful economy-wide marketing campaigns on apprenticeships. For example, in England the "Fire it Up" campaign was targeted at employers and potential apprentices and successfully raised the profile of apprenticeships.[73]

This campaign should promote the productivity benefits and business case for employers using registered apprenticeships and how they can be a solution for workforce shortages. This work should include:

- a high-level campaign to promote the productivity benefits of apprenticeships, the return on investment employers receive, and how registered apprenticeships can be a solution for workforce shortages;

- industry-specific strategies in partnership with State industries who can undertake outreach to the sectors they work with; and

- marketing material for intermediaries to use at a firm-level to promote registered apprenticeships.

This work should be overseen by MORAD, which should require clear, measurable goals on increasing the number of employers participating in registered apprenticeships.

[73] U.K. Department for Education, & The Rt Hon Damian Hinds MP. (2019, January 17). New apprenticeship campaign 'fire it up' launches. https://www.gov.uk/government/news/new-apprenticeship-campaign-fire-it-up-launches.

Employer Incentives and Support

Recommendation # 4 – Scale the Pay Per Apprentice Model.

Commission members Greg Akerman and Donna Edwards voted "no" on including this recommendation.

The commission recommends that the State of Maryland create a new, expanded Pay Per Apprentice Program to enable sustainable growth in the number of registered apprenticeships in Maryland.

Every single country with a developed apprenticeship system uses a pay per apprentice model, which is a public funding program that pays a fixed rate per apprentice. This has been a consistent factor in scaling apprenticeships; for example, the growth in apprenticeships in England in the last 20 years (from 65,000 new apprentices a year to over 500,000) was due to per-apprentice formula funding that incentivized training providers to promote and grow their apprenticeship programs, and in turn persuade employers to hire apprentices.[74]

In the United States, most funding for apprenticeship programs comes from competitive grants used to build capacity. However, competitive grants do not provide a long-term, sustainable funding solution. According to one analysis, only 20% of the $244 million in federal grants awarded in 2024 went to intermediaries, employers, and industry associations likely to start or expand apprenticeship programs.[75]

Pay Per Apprentice Programs only pay for real outcomes, which is when apprentices are hired, in training, and graduates of registered apprenticeship programs. This enables programs to scale and encourages the growth of an ecosystem of intermediaries who carry out the work registered apprenticeships require, including promoting apprenticeships with employers and registering and administering registered apprenticeship programs. There have been promising examples in other states of pay per apprentice funding. For example, California has seen growth in registered apprenticeships outside of construction since the introduction of the Apprenticeship Innovation Fund in 2022.[76]

Maryland and Baltimore City have already had small Pay Per Apprentice Programs using a small pot of federal funding. An enhanced Maryland Pay Per Apprentice Program would support sponsors and intermediaries who create and run registered apprenticeship programs. While the commission is not recommending a detailed structure for an expanded Pay Per Apprentice Program, it has created one possible model based on the Maryland experience, studies of

[74] Apprenticeships for America. (forthcoming). Apprenticeships Around the World: How Does the U.S. Compare Globally.

[75] Craig, R. (n.d.). Death by a thousand grants. Gap Letter. https://gapletter.com/letter_153.php.

[76] Apprenticeships For America. (2024, November 19). How States are Driving the Expansion apprenticeships: State Apprenticeship Policy Scan. https://apprenticeshipsforamerica.org/resources/afa-publications/25/50-state-report.

apprenticeship public investment in the United States over the last decade, and international models. To incentivize initial registration and retention throughout the program's duration, a model program would provide funding to apprenticeship sponsors or intermediaries as follows:

- a set amount for each apprentice registered and retained in employment for a specified and reasonable amount of time;

- set payments per retained apprentice in the second and subsequent years of a registered apprenticeship program; and

- a final set payment for each apprentice who successfully completes a registered apprenticeship program and is retained for a specified and reasonable amount of time.

This funding could be used flexibly by sponsors and intermediaries to pay for related technical instruction (RTI), mentoring during on-the-job training (OJT), recruitment of both employers and apprentices, and operating expenses. Apprentice wages should be paid by employers. If an apprentice leaves a program, the sponsor or intermediary would no longer receive funding. As part of its oversight, MORAD should develop program outcomes, for example on completion rates, longevity in the industry, and wages, to ensure that programs receiving funding remain in good standing.

More information about this recommendation is available in Appendix H. Proposal for Pay Per Apprentice Program (Recommendation # 4), including cost estimates. Recommendations in Chapter 6 relate to how to fund these commitments.

Public Sector Tools

Recommendation # 5 – Grow public service registered apprenticeships.

Commission member Donna Edwards abstained from voting on this recommendation.

The commission recommends that the State of Maryland acts as a trailblazer for apprenticeship by increasing the prevalence of registered apprenticeships in State and local workforces.

There are workforce shortages across State agencies that registered apprenticeships can be used to fill. Internationally, other countries have used the public sector as an example to demonstrate the potential of apprenticeships. England previously had a target of 2.3% of the public sector being apprentices.[77] Other states have made rapid progress in this area: Colorado, for

[77] United Kingdom Education and Skills Funding Agency. (2017). Public Sector Apprenticeship Target. https://www.gov.uk/government/publications/public-sector-apprenticeship-target.

example, managed to register 103 new apprenticeship programs in state agencies in 2022 and is now expanding on that growth.[78]

MORAD should work with State agencies and their (primary) collective bargaining partners to develop an overall strategy and agency-specific plans to increase the number of registered apprenticeships, including the position identification numbers (PINS) needed for these apprentices, throughout State public employment. These plans should be completed by December 2025. These positions should be permanent career positions within government; contractual positions should not be utilized to fill registered apprenticeship positions.

This recommendation should apply beyond the Executive Branch of the Maryland State government to other governmental entities. This includes other entities at the State level, including the University System of Maryland (USM) and community colleges.

Moreover, demographic, geographic, and employer size diversity should be prioritized when considering nominations to the Apprenticeship and Training Council or any other current or future standing statewide apprenticeship committees, career and technical education boards, or commissions.

Local governments above a certain population size should also have a plan to meet a goal for which apprentices are 2.3% of that government's workforce. The Maryland Association of Counties and the Maryland Municipal League should collaborate with their members to develop registered apprenticeship targets by jurisdiction and occupation by December 2025 and, with the support of MORAD and interested intermediaries, develop plans for their members to join or create joint and group apprenticeship programs. This includes coordinating with their members to meet with relevant exclusive bargaining representatives on registered apprenticeship targets by jurisdiction and occupation in the context of the statewide goal. As with the State government, these positions should be permanent career positions within the local governments and should not be filled by contractual workers.

While Maryland cannot require federal agencies to increase the number of registered apprenticeships among their workforce, MORAD and the Governor's Federal Relations Office should take the initiative to work with federal agencies in Maryland to implement the President's Executive Order on Scaling and Expanding the Use of Registered Apprenticeships in Industries and the Federal Government and Promoting Labor-Management Forums.[79] MORAD and the Governor's Federal Relations Office should also work with federal agencies in Maryland and the U.S. Department of Labor, the Office of Personnel Management, and others to help federal offices in Maryland develop and reach goals for registered apprenticeships throughout their workforce.

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[78] Apprenticeships For America. (2024, November 19). How States are Driving the Expansion apprenticeships: State Apprenticeship Policy Scan. https://apprenticeshipsforamerica.org/resources/afa-publications/25/50-state-report.

[79] The executive order is available at https://www.federalregister.gov/documents/2024/03/11/2024-05220/scaling-and-expanding-the-use-of-registered-apprenticeships-in-industries-and-the-federal-government.

More information about this recommendation is available in Appendix I. Details for Recommendations on Public Service Apprenticeships (Recommendation # 5).

Recommendation # 6 – Scale registered apprenticeships in State-regulated industries.

Commission members Donna Edwards and Tanya Terrell abstained from voting on this recommendation.

The commission recommends that State agencies and bodies responsible for regulated industries create plans to expand registered apprenticeships in those industries. Like so many other industries, utilities, hospitals, and insurance carriers and agencies suffer from skilled workforce shortages. The State of Maryland regulates the rates consumers pay in a number of industries, including utilities, transportation providers, insurance, and hospitals. In these industries, public agencies and labor organizations should identify existing opportunities for registered apprenticeships and produce plans to expand registered apprenticeships in the industry's workforce.

Specifically:

- The Health Services Cost Review Commission (HSCRC), which sets rates for the State's hospitals, should ask the Maryland Hospital Association to provide comprehensive information on current registered apprenticeship programs within Maryland hospitals and recommendations for their expansion to support workforce needs. HSCRC and MHEC should also report on how to expand the registered apprenticeship model within nursing support programs.
- The Maryland Insurance Administration, with assistance from MD Labor, should conduct a study of registered apprenticeship opportunities in the insurance industry for both carriers and brokers in Maryland. This would include identifying and quantifying existing applications in Maryland and developing targets for registered apprenticeships by 2034 by occupation and industry segmentation. The study would include a plan to reach the target and prioritizing registered apprenticeships in high school.

Recommendation # 7 – Use State procurement to incentivize registered apprenticeships.

The commission recommends that the State expand its requirement for vendors on public works contracts to have or support registered apprenticeships to all State procurement, including USM, for all State contracts above $500,000 in value. For contracts of smaller value, the State should provide a preference for bidding organizations that would use registered apprenticeships for positions related to the covered contract.

The current State requirement for public works contracts is that:

> *A contractor that is awarded a procurement contract for a project covered under this law shall provide to the procuring unit, as a condition of receiving the contract, written verification that:*
>
> *(1) the contractor participates in an apprenticeship training program for each covered craft in which it will employ persons for the covered project;*
>
> *(2) the contractor will make payments to the State Apprenticeship Training Fund; or*
>
> *(3) the contractor will make payments in amounts determined under the law to a registered apprenticeship program or to an organization that has registered apprenticeship programs for the purpose of supporting these programs.*[80]

Given the prevalence of apprenticeship programs in construction, this requirement has clearly been an effective tool. The State of Maryland procured goods and services totaling almost $7.6 billion in fiscal 2022.[81] Extending this requirement to apprenticeable positions in all procurement contracts would be a powerful way to grow apprenticeships using existing spending.

The same logic should apply to grant spending. Maryland provided almost $1.7 billion in grants in 2023.[82] Going forward, the State should use preferences for registered apprenticeships in State money given out as grant funding by considering registered apprenticeships as part of its assessment criteria. It is recommended that MORAD develop preference policies for organizations seeking State-level grant funds.

Maryland should also require local governments in Maryland – at the county level, municipalities and towns, and special purpose government entities – to follow these requirements, especially for procurement using State funding.

Recommendation # 8 – Reform the Maryland apprenticeship tax credit.

Commission members Greg Akerman, Kenya Campbell, Donna Edwards, and Denise Gilmore voted "no" on including this recommendation.

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[80] State of Maryland Board of Public Works. (Fiscal Year 2023.) Procurement Advisor's Report. https://bpw.maryland.gov/Publications/FY2023%20Procurement%20Advisor%27s%20Report_FINAL.pdf. The code containing this requirement is § 17-601-606.

[81] State of Maryland Board of Public Works. (Fiscal Year 2023.) Procurement Advisor's Report. https://bpw.maryland.gov/Publications/FY2023%20Procurement%20Advisor%27s%20Report_FINAL.pdf. This does not include procurement by the University System of Maryland, Morgan State University, and St. Mary's College. It should be noted that this was a substantial decrease in procurement from 2022, when the comparable procurement about was almost $16 billion, which was itself almost double the amount of procurement in Fiscal 2021.

[82] This data was retrieved from the Maryland Transparency Portal https://grantsandloans.maryland.gov.

The commission recommends extending the sunset for the registered apprenticeship tax credit in Maryland from June 30, 2025, until December 31, 2030, and waiving the tax credit requirement that the registered apprenticeship wage is at least 50% of the prevailing wage.

The State apprenticeship tax credit (SATC) incentivizes employers to use registered apprenticeships, and tax credits have been successful in promoting registered apprenticeships in other states, such as South Carolina.[83] Tax credits improve the return on investment calculation for an employer at the start of an apprenticeship when an apprentice is less productive. Tax credits can get key decision makers in an employer interested in registered apprenticeships.

The effectiveness of Maryland's apprenticeship tax credit has been hindered by design. The original 2017 apprenticeship tax credit legislation did not include a prevailing wage requirement. From 2017 to 2019, almost 850 registered apprenticeships were supported by the tax credit. A prevailing wage requirement was added by Chapter 643 of 2020 (Apprenticeship Start–Up Act). After that change, only 81 registered apprenticeships were supported by the tax credit.[84]

The commission, therefore, recommends that the wage requirements for the tax credit be waived. This would not change requirements around starting wages and progressive wage increases for registered apprentices, which are a long-standing and important part of program design and registration.

The commission also recommends that employers would not be entitled to receive both SATC and support from a new Pay Per Apprentice Program.

Recommendation # 9 – Direct State occupational and industry licensing boards to promote registered apprenticeships in their fields.

The commission recommends that the State of Maryland provide registered apprenticeship pathways for licensed occupations and industries regulated by MD Labor. Specifically, the State should coordinate with industry groups and labor organizations to review and evaluate eligibility requirements to sit for licensure exams for occupations such as plumbing. This is particularly important when individuals have successfully completed a registered apprenticeship with classroom learning and OJT that exceeds the requirements needed for the examination.

Licensing varies significantly by occupation and industry in Maryland. Currently, individuals participating in registered apprenticeships are required to complete at least 144 hours of RTI. This classroom training is essentially a post-secondary education classroom experience that is equivalent to the experience of a full-time worker obtaining an associate's degree. RTI programs are also rigorous and have specific skill standards that participants must meet in order to

[83] Apprenticeships For America. (2024, November 19). How States are Driving the Expansion apprenticeships: State Apprenticeship Policy Scan. https://apprenticeshipsforamerica.org/resources/afa-publications/25/50-state-report.

[84] Data provided by MDOL.

progress through the program, similar to or exceeding the standards represented in licensing tests in some industries and occupations. Therefore, one pathway could be for individuals in registered apprenticeship programs who are certified to meet or exceed skills markers demonstrated in licensing exams to be automatically deemed as meeting the requirements to sit for the exams if they graduate from their registered apprenticeship program. Their graduation would be the same marker of skills to meet the requirements for applying for the license exam.

The State should also promote the creation of multi-employer apprenticeship sponsors in industries and occupations with licensing requirements to help increase the number of registered apprenticeships available. Occupations and industries that seem particularly appropriate for new registered apprenticeships include architects, cemetery oversight, home improvement, HVAC, and professional engineers due to the current training and licensing regimes.

In the near term, Maryland should explore the provision of registered apprenticeship pathways for occupations and industries licensed by MD Labor, with the executive directors of these boards identifying current opportunities for registered apprenticeships in their respective industry or occupation and goals for increasing the use of registered apprenticeships by December 2025.

Longer term, the State should provide registered apprenticeship pathways for occupations and industries licensed by the Maryland Department of Health (MDH) and others. As many of these occupations include requirements for postsecondary degrees, these pathways may make use of degree apprenticeships, currently utilized in other states and countries, especially England. Overall, these programs will need more study with respect to consideration of registered apprenticeship pathways. For example, MD Labor and MDH should conduct a study of the demand for registered apprenticeships in public health careers.

More information about this recommendation is available in Appendix J. Licensing Compared to Apprenticeships (Recommendation # 9).

Enabling the Apprenticeship Ecosystem

Recommendation # 10 – Provide startup and scale up grants to registered apprentice intermediaries.

Organizations acting as intermediaries will be vital for scaling up the number of registered apprenticeship programs in Maryland. Intermediaries generate apprenticeships by persuading employers to start and expand programs, and they make life easier for employers, especially small- and medium-sized employers, by undertaking the administration and oversight required for registered apprenticeships. The commission advocates for their involvement in the registered apprenticeship process and recommends that MD Labor and the new MORAD continue to ensure the quality of registered apprenticeship programs and the intermediaries that support them.

The development of a mature intermediary sector where intermediaries operate registered apprenticeship programs across multiple employers has been vital to the expansion of apprenticeships in other countries. Where employers are reluctant to invest resources in training or cannot provide the administrative resources required, particularly in the case of small employers, intermediaries are needed. While recognizing the current fiscal situation of the State, the commission recommends that Maryland invests a modest amount of money to support the set-up costs of new intermediaries and expansion of existing intermediaries operating in fields where apprenticeships are not widespread.

Recommendation # 11 – Improve registered apprenticeship processes.

The commission recommends that the Maryland Apprenticeship and Training Council (MATC), in collaboration with MD Labor, should continue the procedural and process improvements work it has already started, including through its Efficiency Committee, to help more employers and workers access registered apprenticeship programs. As part of this effort, MATC and MD Labor should research best practices and lessons learned in other states.

As part of this recommendation, MD Labor should secure an investment to replace the State's apprenticeship legacy data infrastructure with a modern technology solution. This would address inefficiencies and bottlenecks and improve concierge and self-service tools for employers and sponsors. It is expected that this would cost approximately $2 million but save hundreds of hours of staff time currently spent on handling paper versions of the paperwork required for registered apprenticeship programs.

In addition, the commission recommends that there be a temporary deviation from required mentorship ratios for all occupations that are identified by the Secretary of Labor as nonhazardous to workers and members of the public and when provided with formal written deviation requests.

The commission also recommends, however, that these ratio expansions only be temporary – one of the reasons for the expansion of ratios for more apprentices per experienced worker is due to the insufficient number of current workers to act as mentors. Therefore, as the number of experienced workers who are available to provide mentorship to apprentices increases, the ratios should be decreased. This will also hedge against employers using apprentices as low-cost substitutes for full-time career workers. As with the other commission recommendations, the focus is always on the quality of registered apprenticeships rather than the quantity. Therefore, the commission also recommends that the State should conduct a study in 2030 to explore how expanded ratios are functioning and to evaluate their effectiveness.

More information about this recommendation is available in Appendix K. Details for Recommendation on Technology to Improve Registered Apprenticeship Processes (Recommendation # 11).

Chapter 5. Activating the Supply of Apprentices

Currently, the supply of potential apprentices is less of a barrier to scaling apprenticeships than demand from employers. Young people are increasingly preferencing apprenticeship solutions over higher education: 65% of high school students in a recent survey say their ideal post-high school learning should be on-the-job.[85]

With a rapid expansion of registered apprenticeships, however, Maryland will need to ensure that supply continues to match demand and employers can find candidates to fill registered apprenticeship slots. The following recommendations serve to increase the supply of learners looking for registered apprenticeships.

Outreach and Recruitment

Recommendation # 12 – Market registered apprenticeships to potential apprentices.

The commission recommends that, as part of its marketing efforts, the new Maryland Office of Registered Apprenticeship Development (MORAD) coordinate a campaign to increase the proportion of high school students and their families and workers already in the labor market who are aware of and interested in participating in registered apprenticeships. Apprenticeship is often referred to as "The Other 4 Year Degree." This marketing would highlight that apprenticeship is not just an alternative but an equal opportunity for a successful career, with significant benefits for the individual.

Critical strategies within this marketing include:

- maximizing the percentage of high school students who earn an industry-recognized credential through the high school level of a registered apprenticeship, since most 16- and 17-year-olds are in high school, as the Blueprint for Maryland's Future has mandated;

- training the career counselors created under the Blueprint on how to promote both non-degree and degree registered apprenticeships;

- better informing traditional school counselors and teachers about registered apprenticeships; and

[85] ECMC Group. (2023, June). Question the Quo: Gen Z Teens Have Changed Their Priorities for Education and Work. Pandemic-Driven Shifts in Student Outlook Persist. https://www.questionthequo.org/media/x5zdjmxu/question-the-quo-june-2023-report.pdf.

- activating the Armed Services Vocational Aptitude Battery and Maryland Minor Work Permit databases so registered apprenticeship sponsors can recruit high school students directly, with student and parent approval as required by Maryland law.

Education Pathways

Recommendation # 13 – Promote pre-apprenticeships that are connected to registered apprenticeships.

The commission recommends that local school systems, workforce boards, corrections agencies, and others promote and expand pre-apprenticeship programs to provide individuals who may face barriers to employment the necessary hard and soft skills they need to enter registered apprenticeship programs. Such individuals may include justice-involved individuals, individuals experiencing homelessness, individuals with disabilities, or those who did not successfully complete their high school education, among many others. Pre-apprenticeship programs include skills training and instruction, supportive services including education and career counseling, hands-on learning activities, opportunities to earn at least one industry-recognized credential, and partnership with a registered apprenticeship program so that individuals can move into the registered apprenticeship upon completion of the pre-apprenticeship program.

Removing Barriers for Registered Apprenticeships in High School

Recommendation # 14 – Maximize registered apprenticeships for high school students.

Greg Akerman, Kenya Campbell, Donna Edwards, and Denise Gilmore abstained from voting on this recommendation.

More than 20% of high school students already have jobs, and the percentage is obviously much higher for 16- and 17-year-olds.[86] Unfortunately, that is dramatically down from the 1990s. And today, most of these working young adults are not doing so in career paths. That is a missed opportunity to introduce young people to a career pathway connected to their academic education. Offering them registered apprenticeships, as other states and countries do, can minimize this problem. But more importantly, it will provide these working young adults with paths to family supporting careers and incomes, not just work experiences.

The commission recommends that the Maryland State Department of Education (MSDE), local education agencies (LEA), and their partners need to work to make the transition from youth

[86] The U.S. Census Bureau estimated that 22.5 of high school students nationally were employed in October 2023. U.S. Census Bureau. (2024). Employment–population ratio 22.5 percent for high school students, 44.3% for college students. TED: The Economics Daily. https://www.bls.gov/opub/ted/2024/employment-population-ratio-22-5-percent-for-high-school-students-44-3-percent-for-college-students.htm.

apprenticeships to registered apprenticeships for high school students. This will open up such programs to support via the State's current apprenticeship tax credit, increasing the value of the tax credit to these employers and sponsors from $1,000 to $3,000 per apprentice, or the new Pay Per Apprentice Program.

Students' education, safety, and well-being should be at the forefront of all registered apprenticeship opportunities for them. The commission recommends that programs for high school registered apprenticeships need to abide by all federal, State, and local safety regulations. Work-based learning should include safeguards for children's health and safety, not only in the nature of the work they are asked to perform, but also their exposure to environmental and security hazards. There should be a very high bar set for requested waivers of State or federal child labor restrictions if they are permitted to be considered at all. Additionally, worksites should be subject to the same security restrictions that exist for public schools such as those regarding registered sex offenders.

The commission has two recommendations specifically tied to high school students' curriculum. First, the only statewide education requirement for a subject is that "each student shall enroll in a mathematics course in each year that the student attends high school."[87] LEAs otherwise have flexibility on the subjects they require students complete with respect to the State code. While this legislation helps prepare the State's high school students for entry into the University System of Maryland, which requires incoming freshmen to have completed four years of mathematics education at the high school level, the requirement is out of step with the flexibility LEAs have for all other subjects and that they need to prepare their students to be career ready. Therefore, it is recommended that this requirement be removed from Maryland law.

Second, identifying classes that currently meet high school students' career and technical education (CTE) requirements could also meet graduation requirements if the class is focused on relevant mathematics, language, science, or other education and skills. MSDE and the State Board of Education should work together to find ways for courses to count for multiple requirements to ensure students are developing the skills needed for future education or workforce roles. To provide opportunities for high school students to take their related technical instruction in CTE programs, all local school systems should pay for dual enrollment in noncredit community colleges courses in registered apprenticeships as they do for credit-bearing courses.

The State always needs to increase employer understanding of the availability of high school students for apprenticeships. As previously identified in the commission's interim report, the commission recommends that the Attorney General and the Maryland Commission on Civil Rights issue public guidance to employers and to the public making clear that age discrimination against young people who can work legally is against the law in Maryland.

In addition, the commission also recommends the repeal of the Youth Apprenticeship Advisory Committee as the initial purpose of the committee has been met and there is no longer a

[87] Maryland Education Code Annotated 7-205.1.

need for an advisory group. Future planning related to connecting Maryland's youth to registered apprenticeship opportunities is already being covered by the CTE Committee and Maryland Apprenticeship and Training Council (MATC). Work associated with Apprenticeship Maryland would be part of MATC, not eliminated.

Finally, the commission recommends that the State increase the maximum number of students that can be transported in school vans to or from registered apprenticeship worksites subject to any safety considerations.

Chapter 6. Funding the Scale Up of Registered Apprenticeships

As noted elsewhere in this report, countries such as Australia, England, and France that have scaled up their apprenticeships programs in recent years have used public funds to do so. Moreover, Maryland already provides substantial funding for one post-high school pathway to a career and family supporting income via public funding of colleges, universities, and community colleges in the State. Supporting registered apprenticeships would provide a second pathway for residents after high school, and this path could ultimately serve more than half of young adults in the State. This chapter provides recommendations for how Maryland can best do so.

Recommendation # 15 – Maximize registered apprenticeship classroom instruction in high schools and community colleges.

Public high school career and technical education (CTE) programs are 100% publicly funded, and community colleges are also primarily publicly funded. Therefore, maximizing the proportion of registered apprenticeship classroom instruction (related technical instruction (RTI)) undertaken in public high schools and community colleges will support efficient use of public money, and maximize high quality instruction. As in England, Germany, Switzerland, and other countries, publicly funded classroom instruction reduces the disincentives on employers to train staff.

High school CTE programs have a goal in State law that, when the Blueprint for Maryland's Future is fully implemented, 45% of graduates should have completed the high school level of a registered apprenticeship or another industry-recognized credential. To achieve expansion, community colleges need a goal as well. By the end of 2025, the Maryland Higher Education Commission should document current apprenticeship RTI that community colleges provide, set goals to scale them by individual college and occupation by 2030, and identify strategies needed to achieve the goals.

Recommendation # 16 – Leverage existing workforce and higher education training subsidies for registered apprenticeships.

The commission recommends that the Maryland Department of Labor (MD Labor), the Maryland Department of Health (MDH), and the Maryland Workforce Association work together to maximize the State's use of workforce development funds available through State and federal workforce development programs. While such funds would not be sufficient support for the State to reach its registered apprenticeship goal, these programs can help support registered apprenticeship programs in general and in specific industries, occupations, or geographic areas.

By the end of 2025, MD Labor, MDH, and other State agencies should quantify all training subsidies that could support classroom instruction for registered apprenticeships and design ways to make them work.

Recommendation # 17 – Use the $25 million appropriated for apprenticeships for startup costs for the commission's recommendations.

Chapter 484 of 2022 (the fiscal 2023 budget bill) provided $25 million in the Dedicated Purpose Account to cover startup costs for operationalizing the recommendations of the Apprenticeship 2030 Commission.[88] The commission recommends that these funds be used to improve technology in the Maryland Apprenticeship and Training Program; launch the Maryland Office of Registered Apprenticeship Development (MORAD); support initial marketing of the registered apprenticeship model to trade associations, employers, unions, and others; provide grants or contracts to intermediaries who can help current and potential apprenticeship sponsors create or scale programs; and expand the Pay Per Apprentice Program.

Recommendation # 18 – Identify a permanent revenue source for registered apprenticeships.

Senator Carozza, Donna Edwards, and Delegate Wu voted "no" on including this recommendation.

The experience of all other countries with robust apprenticeships across all major occupations is that permanent, sustained public funding that meets the scale of the ambition is required to expand apprenticeships.[89] The commission recommends that Maryland should identify a revenue source to support registered apprenticeships on an ongoing basis. These funds would support activities such as the expanded Pay Per Apprentice Program, startup costs for new sponsors and intermediaries, and the operations of MORAD.

Options include general funds and earmarked funds such as corporate income and payroll taxes. While the commission is not making a specific recommendation for a revenue source, it is useful to note that 17 states fund workforce development and training with payroll taxes.[90]

[88] This funding was provided in 2022. Maryland SB 290. https://mgaleg.maryland.gov/2022RS/chapters_noln/Ch_484_sb0290E.pdf.

[89] Apprenticeships for America. (forthcoming). Apprenticeships Around the World: How Does the U.S. Compare Globally.

[90] U.S. Department of Labor. (2023). Comparison of State Unemployment Laws 2023. https://oui.doleta.gov/unemploy/comparison/2020-2029/comparison2023.asp.

Chapter 7. Insight and Accountability

Maryland is a leader in data-driven decision making in the public sector. While data is already being collected on registered apprenticeships by agencies including the Maryland Department of Labor (MD Labor) and the Maryland State Department of Education (MSDE), the State needs to build out its data ecosystem on registered apprenticeships to maintain the quality of its apprenticeship programs and help workers and employers make the right decisions for them about apprenticeships.

Continuous Improvement and Feedback Mechanisms

Recommendation # 19 – Require the new Maryland Office of Registered Apprenticeship Development to collect relevant data on progress toward the 2030 goal and beyond.

The commission recommends that the Maryland Office of Registered Apprenticeship Development (MORAD) should establish an accountability framework and monitor and publish a set of data which provides an assessment on progress toward Maryland's registered apprenticeship goals on an ongoing basis. MORAD should identify the data that is currently collected on registered apprenticeships and additional data needed with a focus on the outcomes of apprenticeships, including wages and ongoing careers post-apprenticeship. Data such as this will be collected via the new technology included in Recommendation #11.

Recommendation # 20 – Expand data collection from intermediaries.

As part of its data strategy, MORAD and its advisory committee should consider what data should be reported directly by apprenticeship intermediaries to MORAD and the existing Apprenticeship and Training Program. Existing quarterly reporting should be expanded to include any relevant information that MORAD requires for accountability and oversight. Taking into account the investment in technology in Recommendation #11, new data collections should prioritize automation where possible.

Recommendation #21 – Estimate the potential demand for registered apprenticeships.

The commission recommends that MORAD work with its advisory committee, MD Labor economists, and other staff to use public data and other data sources (*e.g.*, Lightcast) to estimate the addressable market of occupations that could yield registered apprenticeships. In developing estimates of the addressable market, MORAD should consider the following factors:

- Base estimates on data and trend projections for annual job openings by industry and occupation, produced by MD Labor and other data sources. New occupations can arise that are not included in the current projections. Projections that incorporate new occupations should be updated every five years.

- Targeted occupations and industries should be all-inclusive, including those that do or do not require a college degree.

- Data-driven estimates of the potential market for registered apprenticeships must be supplemented by gathering intelligence on demand directly from employers. The State can leverage collaborative efforts of the Governor's Workforce Development Board (GWDB) and of its individual members including private industry representatives, MD Labor and the Maryland Department of Commerce, to engage employer representatives – both to gather industry intelligence to inform real-world needs and to help encourage adoption of registered apprenticeships where it provides employers with a viable talent solution.

Transparency and Accountability

Recommendation #22 – Estimate the potential supply of registered apprentices.

The commission recommends that MORAD work with its advisory committee, MD Labor economists, the GWDB Career and Technical Education (CTE) Committee, and MSDE analysts to identify the number of high school students who are college and career ready (CCR) by the end of grade 10, by the time of graduation, and projected trends or, if trends are unavailable, annual targets if/as available for both. In developing these estimates, the State should consider the following factors:

- The Blueprint for Maryland's Future (Blueprint) sets the goal that by the 2030-31 school year, and each year thereafter, 45% of public high school graduates will complete the high school level of a registered apprenticeship or another industry-recognized credential, as defined by the GWDB CTE Committee. Per Blueprint statute, students will need to be CCR-ready before they are eligible to enter into a registered apprenticeship pathway. The Accountability and Implementation Board is currently granting exceptions until the new CCR standards are fully implemented. High school students in registered apprenticeships are part of the commission's goal of 60,000 active apprentices by 2030.

- Use MSDE's "career clusters" and crosswalk between clusters and standard occupation classifications.[91]

- MSDE should set up a system for school systems to survey students concerning their interest in becoming an apprentice in various fields/occupational areas. These surveys should be administered every year and for every grade level, beginning in the grade 6.

[91] Career clusters are high school model programs organized around specific career pathways. More information is available on MSDE's website at https://marylandpublicschools.org/programs/Pages/CTE-Programs-of-Study/Clusters/index.aspx.

Recommendation # 23 – Provide an annual report recording data on adults and high school students entering registered apprenticeships.

The commission recommends that MORAD work with its advisory committee, MD Labor economists, and MSDE to use data to project annual targets for the number of adults (18 years or older) participating in registered apprenticeships that do not start apprenticeship until after high school. In developing this report, MD Labor will specify the following factors:

- Duration of registered apprenticeship programs, where available, since this will impact annual fluctuations in numbers of active, registered apprentices as they complete their training programs.

- The number of registered apprenticeships that have been created relative to the number of applicants that have been generated.

Appendix A. Legislative Actions Concerning Commission

Bill Text – 2023

Chapter 168

(Senate Bill 104)

AN ACT concerning

Labor and Employment – ~~Apprenticeships~~ Apprenticeship 2030 Commission and Representation on the Apprenticeship and Training Council

FOR the purpose of requiring that the Apprenticeship and Training Council and consultants to the Council include representation by individuals who are Asian, Black, and Latino; establishing the Apprenticeship 2030 Commission to examine and make recommendations to expand access to apprenticeship to reduce skill shortages in high–demand occupations and provide affordable training for career pathways for young people ~~in the public and private sectors~~; ~~requiring the Governor to include certain amounts in certain fiscal years in the annual budget bill for a certain purpose~~; and generally relating to ~~apprenticeships~~ the Apprenticeship 2030 Commission and representation on the Apprenticeship and Training Council.

BY repealing and reenacting, with amendments,
Article – Labor and Employment
Section 11–403(b)
Annotated Code of Maryland
(2016 Replacement Volume and 2022 Supplement)

SECTION 1. BE IT ENACTED BY THE GENERAL ASSEMBLY OF MARYLAND, That the Laws of Maryland read as follows:

Article – Labor and Employment

11–403.

(b) (1) There is an Apprenticeship and Training Council as part of the Division of Workforce Development and Adult Learning. The Council consists of 12 members all of whom shall be appointed by the Governor of Maryland, with the advice of the Secretary and with the advice and consent of the Senate of Maryland.

(2) Four of the members shall be representatives of employee organizations; one shall be an employee; five shall be representatives of employers; and two shall be appointed from the general public.

(3) **(I)** The membership of the Council shall, to the extent practicable, reflect the geographic, racial, ethnic, cultural, and gender diversity of the State and shall include representation by individuals with disabilities **AND INDIVIDUALS WHO ARE ASIAN, BLACK, AND LATINO**.

(II) Consultants to the Council shall, to the extent practicable, reflect the geographic, racial, ethnic, cultural, and gender diversity of the State and shall include representation by individuals with disabilities **AND INDIVIDUALS WHO ARE ASIAN, BLACK, AND LATINO**.

(4) In advising the Governor, the Secretary shall give consideration to a balanced geographic representation from all of Maryland and a representative sampling and mix of Maryland industry.

(5) One member shall be appointed as Chairman by the Governor, with the advice of the Secretary, and serve as Chairman at the pleasure of the Governor. The Assistant State Superintendent, Career and Technology Education, and the Maryland State Director of the Office of Apprenticeship, U.S. Department of Labor, shall serve as consultants to the Council without vote.

(6) The Governor, with the advice of the Secretary may appoint up to three additional consultants to the Council from the public at large.

SECTION 2. AND BE IT FURTHER ENACTED, That:

(a) (1) There is an Apprenticeship 2030 Commission.

(2) The purpose of the Commission is to examine and make recommendations to reduce skill shortages in high–demand occupations and provide affordable training for career pathways for young people ~~in the public and private sectors.~~ by:

(i) expanding registered apprenticeships in industry sectors with skill shortages;

(ii) growing the number of registered apprenticeships to at least 60,000 by 2030; and

(iii) reaching the Blueprint goal for 45% of high school graduates completing the high school level of a registered apprenticeship.

(3) The Commission shall focus on registered apprenticeships at all education levels with the goal of recruiting unemployed and underemployed individuals at least 18 years old, as well as high school students, into apprenticeships.

(b) The Commission consists of:

~~(1) two representatives each from the Public Safety Apprenticeship Workgroup, the Healthcare Apprenticeship Workgroup, and the Transportation Apprenticeship Workgroup established in the Maryland Department of Labor, as directed by the 2022 Joint Chairmen's Report;~~

~~(2) the Chair of the Apprenticeship and Training Council, or the Chair's designee; and~~

~~(3) the Chair of the Career and Technical Education Committee, or the Chair's designee.~~

(1) four members of the Senate of Maryland, appointed by the President of the Senate;

(2) four members of the House of Delegates, appointed by the Speaker of the House;

(3) the Secretary of Labor, or the Secretary's designee;

(4) the Secretary of Commerce, or the Secretary's designee;

(5) the State Superintendent of Schools, or the Superintendent's designee;

(6) the Secretary of Higher Education, or the Secretary's designee;

(7) the Chair of the Governor's Workforce Development Board, or the Chair's designee;

(8) the Chair of the Maryland Apprenticeship and Training Council, or the Chair's designee;

(9) the Chair of the CTE Committee, or the Chair's designee;

(10) four members designated by the President of the Maryland State and DC AFL–CIO, including individuals representing the building trades, health care workers, and public service unions; and

(11) four members representing a diverse range of employers, with consideration given to including a minority contractor, appointed by the Governor.

(c) The chair of the Commission shall be ~~elected by the members of the Commission~~ jointly selected by the Governor, the President of the Senate, and the Speaker of the House.

(d) The Department of Legislative Services, with the assistance of staff from the State agencies represented on the ~~workgroups described in subsection (b)(1) of this section~~ Commission, shall provide staff for the Commission.

(e) A member of the Commission:

(1) may not receive compensation as a member of the Commission; but

(2) is entitled to reimbursement for expenses under the Standard State Travel Regulations, as provided in the State budget.

(f) The Commission shall:

~~(1) review the work of the individual workgroups described in subsection (b)(1) of this section;~~

~~(2) make preliminary recommendations regarding funding needed to expand public and private sector apprenticeship pathways; and~~

~~(3) work with any consultants contracted by the Department of Legislative Services as required by the fiscal year 2024 operating budget to examine national and international best practices.~~

(1) identify the largest occupational sectors with current or projected skill shortages, including health care, information technology, public service, manufacturing, and business services;

(2) examine the best practices for scaling registered apprenticeships used in other states and countries;

(3) examine industries that would benefit from creating and scaling registered apprenticeships;

(4) explore degree apprenticeships in fields requiring degrees, including health care, teaching, and other public services;

(5) engage members of the employer and labor communities to identify needs for registered apprenticeship career pathways;

(6) examine existing registered apprenticeships in the State and how best to scale them with registered apprenticeships at the federal level and in other states;

(7) identify funding needed to expand registered apprenticeship pathways and how to best disburse dedicated funding; and

(8) make recommendations regarding:

(i) specific goals by occupation and year to:

1. reach 60,000 apprentices by 2030; and

2. have 45% of high school graduates in apprenticeships by 2031; and

(ii) strategies to achieve the goals recommended under item (i) of this item, including:

1. recruiting new registered apprenticeship sponsors and apprentices for existing and new registered apprenticeships; and

2. appropriate funding levels.

(g) On or before December 1, ~~2024~~ 2023, the Commission shall report its findings and recommendations to the Governor and, in accordance with § 2–1257 of the State Government Article, the General Assembly.

(h) It is the intent of the General Assembly that in the event of a conflict between a decision or policy of the Apprenticeship 2030 Commission and the Career and Technical Education Committee established under § 21–209 of the Education Article related to youth apprenticeships, the Career and Technical Education Committee's decision or policy shall control.

~~SECTION 3. AND BE IT FURTHER ENACTED, That, for each of fiscal years 2025 through 2027, the Governor shall include in the annual budget bill an appropriation in the following amounts to the County Executive and County Council of Prince George's County to award grants to a nonprofit entity located in Prince George's County to provide workforce development services to at least 2,000 youth and adults in the community:~~

~~(1) for fiscal year 2025, $1,030,030;~~

~~(2) for fiscal year 2026, $1,106,996; and~~

~~(3) for fiscal year 2027, $1,119,482.~~

~~SECTION 4. AND BE IT FURTHER ENACTED, That this Act shall take effect October 1, 2023. Section 2 of this Act shall remain effective for a period of 1 year and 9 months and, at the end of June 30, 2025, Section 2 of this Act, with no further action required by the General Assembly, shall be abrogated and of no further force and effect.~~

SECTION 3. AND BE IT FURTHER ENACTED, That this Act is an emergency measure, is necessary for the immediate preservation of the public health or safety, has been passed by a yea and nay vote supported by three–fifths of all the members elected to each of the two Houses of the General Assembly, and shall take effect from the date it is enacted. Section 2 of this Act shall remain effective through December 31, 2024, and, at the end of December 31, 2024, Section 2 of this Act, with no further action required by the General Assembly, shall be abrogated and of no further force and effect.

Approved by the Governor, April 24, 2023.

Bill Text – 2024

Excerpt from SB 360: Budget Bill (Chapter 716 of 2024), page 309:

> (111) $25,000 in general funds is added to the appropriation for program R75T00.01 Support for State Operated Institutions for Higher Education for R30B28 University of Baltimore for the purpose of providing funds to the Schaefer Center for Public Policy to staff the Apprenticeship 2030 Commission. Funds not expended for this added purpose may not be transferred by budget amendment or otherwise to any other purpose and shall revert to the General Fund;

Appendix B. Recommendations from Commission's Interim Report in January 2024

Number	Recommendation
1	The Career and Technical Education (CTE) Committee should issue guidance clarifying that the most important outcome is for high school graduates to be on a structured career pathway at the time of graduation, whether or not they plan to attend college.
2	The CTE Committee should issue guidance clarifying the priority focus on registered apprenticeship/School-to-Apprenticeship within the Blueprint's 45% goal.
3	The Department of Budget and Management (DBM) should consult the original Department of Legislative Services (DLS) Blueprint fiscal note and the Governor's Workforce Development Board (GWDB)/CTE Committee staff on what budget and staffing resources are needed to achieve the work required of the committee under the Blueprint.
4	The CTE Committee should also be responsible for developing communications to educate and raise awareness of career readiness and apprenticeships in school. Career readiness and college readiness should not be mutually exclusive. The goal is to change perceptions of apprenticeships as only applying to "non-college" bound learners. registered apprenticeship opportunities and career readiness should be given equal consideration to college readiness. There needs to be more awareness that apprenticeships can be great career paths for youth seeking degrees as well as those who are not.
5	The CTE Committee should study adapting high school performance evaluation metrics to incorporate metrics for career readiness, including academic, technical, and employability skills, and registered apprenticeships. Currently, high schools are heavily weighted toward college readiness metrics versus successful work outcomes.
6	Form a workgroup addressing major aspects of high school juniors and seniors participating in apprenticeships, including their rights and benefits as employees and barriers such as those mentioned above.
7	The Attorney General and the Maryland Commission on Civil Rights should issue public guidance to employers and to the public making clear that age discrimination against young people who can work legally is against the law in Maryland.
8	The Maryland Insurance Administration and the Workers' Compensation Commission should issue public guidance to employers on workers' compensation insurance to clarify that rates are not higher for 16- and 17-year-olds with work permits.
9	The Maryland Department of Labor (MD Labor) and the Maryland Occupational Safety Health Administration should issue public guidance on occupational safety and health requirements for registered apprenticeships targeted at youth.

Number	Recommendation
10	The commission should work with the Maryland Department of Human Services to analyze the potential loss of temporary cash assistance, Supplemental Nutrition Assistance Program benefits, housing assistance, and other aid when youth are employed in apprenticeships.
11	The CTE Committee and the Maryland State Department of Education (MSDE) should explore a plan for high school schedules to help apprentices meet their school and work commitments under a registered apprenticeship.
12	MSDE should consider ways in which the "in school" requirements might be adjusted to better support students completing an apprenticeship. MSDE and the CTE Committee should explore new and innovative ways to leverage the new four-year Perkins plan to build, scale, support, and ensure the success of all students participating in a registered apprenticeship program.
13	GWDB and MD Labor should develop the new State Workforce Plan for Maryland with a priority on scaling apprenticeships.
14	MD Labor should continue expanding and properly resourcing the Maryland Apprenticeship and Training Council (MATC) to support growth of apprenticeship programs.
15	The State should consider adopting a standardized definition of "intermediary" for Maryland.
16	The Governor should issue an executive order requiring DBM to conduct a statewide review, in consultation with State employee exclusive representatives, of personnel and staff openings where registered apprenticeships may be utilized. The executive order should be issued by March 1, 2024, and review completed by December 31, 2024.
17	DBM and MD Labor, in consultation with State employee exclusive representatives, should review and modify the State workforce requisition process to eliminate barriers to hiring registered apprentices.
18	DBM and MD Labor, in consultation with State employee exclusive representatives, should determine how to adjust the current labor recruitment process to support hiring of registered apprentices and deliver an action plan by August 1, 2024.
19	The State should encourage building upon existing apprenticeship contract vehicles or create new contract vehicles to utilize more apprentices in either contingent or permanent technical staff positions.
20	The State should pilot a new workforce model that enables adoption of registered apprentices as part of the delivery of these engagements, with consideration given to pilots in the Department of Information Technology (DoIT), the Maryland Department of Health, MD Labor, and the Comptroller's Office.
21	State agencies should consider allocating some project set-asides or procurement preference for vendors who commit to sponsoring registered apprenticeship programs or who utilize or hire registered apprentices as part of their workforce strategy.

Number	Recommendation
22	The State should support the Baltimore TechHub designation by setting aside major projects that can be delivered with a registered apprenticeship workforce from vendors participating in the TechHub. State procurement from the TechHub would count toward regional investment and unlock more federal funding to support apprenticeship workforce development.
23	Form a commission workgroup to provide a plan for establishing and properly resourcing an entity accountable for recruiting employers and intermediaries to offer apprenticeships, to study the existing landscape of resources focused on recruiting employers, and to formulate a proposed structure for the entity for consideration by the General Assembly during the 2025 legislative session.
24	The commission should schedule site visits to quality apprenticeship programs in Maryland and other countries.
25	A commission workgroup should study options for consideration by the General Assembly during the 2025 legislative session, including RTI Subsidy, Procurement with a Purpose, and OJT Subsidy.
26	The commission should form a workgroup to study the impact of the State's current apprenticeship tax credit with comparable public investments in other states. Special consideration should be paid to provisions that may have a disproportionate impact on small and medium sized businesses such as provisions to access tax credits. The study should consider the relative effectiveness of tax credits versus other types of subsidies and make recommendations.
27	The commission should form a workgroup to work with the Department of General Services to develop a plan to create preferred procurement for vendors that sponsor registered apprenticeships or utilize apprentices in the delivery of work.
28	The commission should form a workgroup comprised of registered apprenticeship sponsors, labor organizations, MATC, and others to study registration and reporting issues.
29	Form a commission workgroup to develop plans for research and data collection led by MD Labor.

Appendix C. Agendas for Commission Meetings

Thursday, May 16, 2024

Apprenticeship 2030 Commission

Public Meeting – Thursday, May 16, 2024 at 1:00-3:00 pm

Insulators Local 24, 901 Montgomery Street, Laurel, Maryland

Zoom registration – https://ubalt.zoom.us/webinar/register/WN_38eU9I0JRdGWK-o5Z6pKMA

Agenda

1) **Welcome** – *Jacob Hsu, Chair*

2) **Review of Commission's Work in 2023** – *Jacob Hsu, Chair*

3) **Introduction of Schaefer Center for Public Policy** – *Ann Cotten, Executive Director*

4) **Status of Apprenticeship Legislation in Maryland General Assembly 2024** – *Senator Jim Rosapepe (tentative)*

5) **Labor Market Analysis** – *Robert Lerman, Urban Institute, 10 minutes*

6) **Workplan for 2024** – *Jacob Hsu, Chair*
   a. Commission Meetings – *Jacob Hsu, Chair*
   b. Workgroups – *Jacob Hsu, Chair*
   c. Site Visits – *Ann Cotten, Executive Director, SCPP*
   d. Employer Survey – *Ann Cotten, Executive Director, SCPP*
   e. Focus Groups and Other Research – *Ann Cotten, Executive Director, SCPP*

7) **Apprenticeship Roundtable** – *moderated by Jacob Hsu, Chair, with participants from Acquia and Fearless*

8) **Other Commission Business** – *Jacob Hsu, Chair*

9) **Adjournment** – *Jacob Hsu, Chair*

This Commission is staffed by the Schaefer Center for Public Policy at The University of Baltimore.

The Commission website is: https://dls.maryland.gov/policy-areas/apprenticeship-2030-commission#.
Email the Commission at Apprenticeship2030Commission@UBalt.edu.

Thursday, September 5, 2024

Apprenticeship 2030 Commission

Public Meeting – Thursday, September 5, 2024 at 1:00-3:00 pm
Virtual Meeting – Zoom

- *Commission members should have received a personalized link. They can contact Sarah Ficenec at the Schaefer Center if they need the link resent.*
- *Commission staff, members of the public, and other interested parties should register via this Zoom link – https://ubalt.zoom.us/webinar/register/WN_PCYF1uhVQeCoxmmaZAvl1g.*

Agenda

1) **Welcome** – *Jacob Hsu, Chair*

2) **Review of Workgroup Activities** – *Jacob Hsu, Chair*
   a. Addressing Barriers to High School and Youth Apprenticeships – *Myra Norton, Workgroup Chair*
   b. Expanding Registered Apprenticeships in the State Workforce – *Denise Gilmore, Workgroup Chair*
   c. Employer and Sponsor Recruitment – *TBD*
   d. Simplifying the Sponsorship Process – *Erin Roth, Workgroup Chair*
   e. Public Sector Tools and Accelerators – *Senator Jim Rosapepe, Workgroup Chair*
   f. Data and Insights – *Avonette Blanding, Workgroup Chair*
   g. Discussion – *Jacob Hsu, Chair*

3) **Review of Completed Site Visits** – *Jacob Hsu, Chair*
   a. Eastern Shore Site Visit – *Senator Mary Beth Carozza (invited)*
   b. Apprenticeship Roundtable in Central Maryland

4) **Results of Employer Survey** – *Dr. Ann Cotten, Executive Director*
   a. Presentation – *Dr. Ann Cotten, Executive Director, Schaefer Center for Public Policy*
   b. Discussion – *Jacob Hsu, Chair*

5) **Other Commission Business** – *Jacob Hsu, Chair*

6) **Adjournment** – *Jacob Hsu, Chair*

This Commission is staffed by the Schaefer Center for Public Policy at The University of Baltimore.

The Commission website is: https://dls.maryland.gov/policy-areas/apprenticeship-2030-commission#.
Email the Commission at Apprenticeship2030Commission@UBalt.edu.

Thursday, October 10, 2024

Apprenticeship 2030 Commission

Public Meeting – Thursday, October 10, 2024, at 1:00-3:00 pm
Virtual Meeting

- *Commission members will receive a personalized link to attend the meeeting. They can contact Sarah Ficenec at the Schaefer Center if they need the link resent.*
- *Commission staff, members of the public, and other interested parties should register via this Zoom link – https://ubalt.zoom.us/webinar/register/WN_nEwc9XCYSBKOSDy4QuJ48g.*

Agenda

1) **Welcome** – *Jacob Hsu, Chair*

2) **Draft Recommendations** – *Jacob Hsu, Chair*
   a. Addressing Barriers to High School and Youth Apprenticeships – *Myra Norton, Workgroup Chair*
   b. Expanding Registered Apprenticeships in the State Workforce – *Denise Gilmore, Workgroup Chair*
   c. Employer and Sponsor Recruitment – *Brian Cavey, Workgroup Chair*
   d. Simplifying the Sponsorship Process – *Erin Roth, Workgroup Chair*
   e. Public Sector Tools and Accelerators – *Senator Jim Rosapepe, Workgroup Chair*
   f. Data and Insights – *Avonette Blanding, Workgroup Chair*

3) **Review of Completed Site Visits** – *Jacob Hsu, Chair*
   a. Site Visits in the United Kingdom and Germany
   b. Meetings with Experts from Other Countries and States

4) **Updated Survey Findings**
   a. Presentation – *Dr. Sarah Ficenec, Assistant Director for Research, Schaefer Center for Public Policy*
   b. Discussion – *Jacob Hsu, Chair*

5) **Other Commission Business** – *Jacob Hsu, Chair*

6) **Adjournment** – *Jacob Hsu, Chair*

This Commission is staffed by the Schaefer Center for Public Policy at The University of Baltimore.

The Commission website is: https://dls.maryland.gov/policy-areas/apprenticeship-2030-commission#.
Email the Commission at Apprenticeship2030Commission@UBalt.edu.

Monday, December 16, 2024

Apprenticeship 2030 Commission

Public Meeting – Monday, December 16, 2024, at 3:00-5:00 pm
Virtual Meeting

- *Commission members should have received a personalized link. They can contact Sarah Ficenec at the Schaefer Center if they need the link resent.*
- *Commission staff, members of the public, and other interested parties should register via this Zoom link.*

Agenda

1) **Welcome** – *Jacob Hsu, Chair*

2) **Review of Recommendations** – *Jacob Hsu, Chair*

3) **Process for Final Report** – *Jacob Hsu, Chair*

4) **Other Commission Business** – *Jacob Hsu, Chair*

5) **Adjournment** – *Jacob Hsu, Chair*

This Commission is staffed by the Schaefer Center for Public Policy at The University of Baltimore.

The Commission website is: https://dls.maryland.gov/policy-areas/apprenticeship-2030-commission#.
Email the Commission at Apprenticeship2030Commission@UBalt.edu.

Friday, February 14, 2025

Apprenticeship 2030 Commission

Public Meeting – Friday, February 14, at 1:00-3:00 pm

Virtual Meeting

- *Commission members should have received a personalized link. They can contact Sarah Ficenec at the Schaefer Center if they need the link resent.*
- *Commission staff, members of the public, and other interested parties should register via this Zoom link –* https://ubalt.zoom.us/webinar/register/WN_3qDtYzWOT0mpIU9tpSXc3w#/registration.

Agenda

1) **Welcome** – *Jacob Hsu, Chair*

2) **Discussion and Vote on Draft Final Report** – *Jacob Hsu, Chair*

3) **Adjournment** – *Jacob Hsu, Chair*

This Commission is staffed by the Schaefer Center for Public Policy at The University of Baltimore.

The Commission website is: https://dls.maryland.gov/policy-areas/apprenticeship-2030-commission#.
Email the Commission at Apprenticeship2030Commission@UBalt.edu.

Appendix D. Information About 2024 Workgroups

Workgroup Names, Purposes, and Leadership, 2024

Number	Name	Purpose of Workgroup	Leadership
1	Addressing Barriers to High School and Youth Apprenticeships	The interim report last year identified issues that prevent students from participating in apprenticeship programs, such as lack of availability of physical apprenticeships in remote areas. This workgroup will explore students' barriers and how they can be overcome.	Chair – Myra Norton; Co-Chair – Senator Mary Beth Carozza
2	Expanding registered apprenticeships in the State Workforce	The interim report highlighted ways that potentially outdated State hiring practices prevent the government from adopting registered apprenticeship partnerships. This group will provide recommendations for increasing the number of apprenticeships in State government.	Chair – Denise Gilmore; Co-Chair – Christopher MacLarion
3	Employer and Sponsor Recruitment	This workgroup will build upon last year's work concerning the role of intermediaries and the need for expanded interagency cooperation.	Chair – Brian Cavey; Co-Chair – Sarah Sheppard
4	Simplifying the Sponsorship Process	This workgroup will identify ways to help more employers move through the registration process.	Chair – Erin Roth; Co-Chair – Senator Malcolm Augustine
5	Public Sector Tools and Accelerators	This workgroup will investigate what can be done on the public side to accelerate the adoption of apprenticeships and expand this ecosystem. It will look at subsidies, procurement incentives, licensing, and public service apprenticeships.	Chair – Senator Jim Rosapepe; Co-Chair – Delegate Chao Wu
6	Data and Insights	This workgroup will explore how to collect longitudinal outcome data and ensure that there is fidelity in the data.	Chair – Avonette Blanding; Co-Chair – Rachael Parker

The commission expresses its gratitude for the individuals who served on the commission's workgroups in 2023 and 2024. They were instrumental in the development of this commission's recommendations and interim and final reports.

These individuals were from organizations including:

- Adventist Healthcare
- AFSCME Local 770
- AFSCME MD Council 67
- American Federation of Labor and Congress of Industrial Organizations
- American Federation of State, County, and Municipal Employees-Maryland
- American Federation of Teachers-Maryland
- Anne Arundel Workforce Development Corporation
- Apprenticeships for America
- Arbogast & Associates
- ATU Local 1300
- BGE
- CityWorks DC
- Employ Prince George's Inc.
- Governor's Workforce Development Board
- Heating and Air Conditioning Contractors (HACC) Association
- Howard County Government, Bureau of Facilities
- IBEW Local Union 24
- IEC Chesapeake & IEC Chesapeake Apprenticeship & Training
- International Association of Heat & Frost Insulators and Allied Workers
- Johns Hopkins Technology Ventures
- Just Economy
- Lower Shore Workforce Alliance
- Maritime Applied Physics Corp
- Maryland Apprenticeship and Training Program
- Maryland Association of Community Colleges
- Maryland Department of General Services
- Maryland Department of Labor
- Maryland Department of Transportation
- Maryland General Assembly
- Maryland Longitudinal Data System Center
- Maryland Professional Employees Council, AFT, AFL-CIO Local 6197
- Maryland State Department of Education
- Maryland State Education Association
- Montgomery College
- Multiverse
- Royal Farms
- Somerset County Public Schools
- Urban Institute
- Western Maryland Consortium Workforce Alliance
- Wicomico County Public Schools
- Worcester County Public Schools
- WorkSource Montgomery

Appendix E. Agendas for Site Visits

Eastern Shore, August 2024

Apprenticeship 2030 Commission

Eastern Shore Site Visits

Tuesday, August 13, 2024

Agenda

1) 1:00 pm – Meet at Delaware Elevator, 2210 Allen Dr, Salisbury, MD
   a. 1:00-1:30 pm – Overview of apprenticeship programs
   b. 1:30-1:45 pm – Tour of their training facility
   Notes: Park in front of the building or across the street, then meet inside reception area.

2) 1:45-2:15 pm – Travel

3) 2:15 pm – Meet at Seaside Plumbing – 10545 Friendship Road, Berlin, MD
   a. 2:15-2:45 pm – Overview of apprenticeship programs
   b. 2:45-3:00 pm – Tour of their training facility
   Notes: Park around the building or in the lot next door for overflow, then use main entrance to meet inside.

4) Adjournment

If you need assistance in finding either location on August 13, you can contact Robert Hendricks, Deputy Director, Business Services, Lower Shore Workforce Alliance (LSWA). His cell phone number is 443-359-1013.

Apprenticeship Roundtable in Baltimore, August 2024

Apprenticeship 2030 Commission

Apprenticeship Roundtable

Wednesday, August 28, 2024, at 9:00 a.m. – 1:30 p.m.

CFG Bank Arena, Fearless Club

Agenda

Opening

8:30 - 9:00 a.m.	*Meet-and-Greet*
9:00 - 9:10 a.m.	*Kick-Off & Agenda* – Jake Hsu, Commission Chair
9:10 - 9:15 a.m.	*Host Welcome Remarks*
9:15 - 9:30 a.m.	Fearless → Early Career Programs / Tech + Workforce Solutions – LaToya Staten, Executive Director @ Technology Growth Initiative powered by Fearless
9:35 - 9:50 a.m.	*Spotlight:* BGE

Tech & Cyber Apprenticeship

10:00 - 10:15 a.m.	*Spotlight: Catalyte on Apprenticeship Roles of the Future in Tech Potential*
10:20 - 10:35 a.m.	*Spotlight:* BCR Cyber
10:40- 10:55 a.m.	*Spotlight:* Aquia

Apprenticeships in the Public Sector

11:10 – 11:25 a.m.	*Fireside Chat*: Michael Leahy- Secretary of DoIT & CIO, President NASCIO
11:30 - 11:45 a.m.	*Spotlight*: MDH Case Study with Catalyte
11:50 - 12:05 p.m.	*Spotlight:* Kinetic Potential

Policy

12:15 - 12:30 p.m.	*Spotlight:* ICF → Federal Apprenticeships & State Comparisons
12:35 - 12:50 p.m.	*Spotlight:* T. Rowe Price
12:55 - 1:10 p.m.	*Spotlight:* Baltimore Alliance for Careers in Healthcare

This Commission is staffed by the Schaefer Center for Public Policy at The University of Baltimore.

The Commission website is: https://dls.maryland.gov/policy-areas/apprenticeship-2030-commission#.
Email the Commission at Apprenticeship2030Commission@UBalt.edu.

Oxford, United Kingdom, and Munich, Germany, September 2024

NCSL
NATIONAL CONFERENCE OF STATE LEGISLATURES

Maryland International Apprenticeship Tour

Oxford University New College
Holywell St, Oxford OX1 3BN, UK
Oxford, United Kingdom
and
Munich, Germany

AGENDA

Sunday | September 8	
TIME	**SESSION DETAILS**
TBD	**Travel Day** Arrival in Oxford, UK.
4:00 PM	**Welcome Tour of Oxford University – OPTIONAL** Speakers: • Eric Dunker, NCAD Chief Executive *Location: Meeting Location, in front of New College Dining Hall*
5:30 PM	**Welcome Dinner and Networking in Oxford (and optional punting on the Thames River)** *Location: Cherwell Boathouse, Bardwell Rd, Oxford*

Monday | September 9	
TIME	**SESSION DETAILS**
8:00 – 9:00 AM	**Breakfast** *Location: New College Dining Hall*
9:15 – 11:15 AM	**Welcome Session – UK Degree Apprenticeships and International Model Overview** Speakers: • Professor Michael Gessler, University of Bremen (Germany) • Dr. Tom Bewick, Staffordshire University • Robert Lerman, Urban Institute *Location: McGregor Room, New College*

11:15 – 11:30 AM	**Break** *Location: McGregor Room, New College*
11:30 AM – 12:30 PM	**Matching Skills and Training for Future Demand** Speakers: • Frank Bowley, Head of Skill England Analysis • Yilan Huang, Head of Strategy and Engagement, Unit for Future Skills *Location: McGregor Room, New College*
12:30 – 1:00 PM	**Lunch** *Location: New College Dining Hall*
1:15 – 4:15 PM (BREAK INCLUDED)	**Site Visit to John Radcliffe Hospital, Oxford** *Bus will leave promptly at 1:15 pm outside of the Porters Lodge at New College.* *You will learn about the UK Health Apprenticeship model in action.*
4:30 – 6:00 PM	**Happy Hour (optional)** *Location: Turf Tavern, 4 Bath Place, Oxford*
6:00 – 9:00 PM	**Dinner on your own or with colleagues**

Tuesday | September 10	
TIME	**SESSION DETAILS**
8:00 – 9:00 AM	**Breakfast** *Location: New College Dining Hall*
9:15 – 10:45 AM	**The Degree Apprenticeship In Practice** Speakers: • Lindsay Conroy, Director, UK UCAS System • Jane Hadfield, Director of Health Apprenticeships, NHS Health Apprenticeships • Tim Stewart, Vice Chancellor, BPP University *Location: McGregor Room, New College*
10:45—11:00 AM	**Break**
11:00 AM—NOON	**US Model Applicability and Promising Practices** Speakers: • Joe Ross, President, Reach University • Eric Dunker, Chief Executive, National Center for the Apprenticeship Degree • Libuse Binder, Senior Advisor, National Center for the Apprenticeship Degree *Location: McGregor Room, New College*
NOON – 1:00 PM	**Lunch**

	Location: New College Dining Hall
1:00-4:45 PM	**Site Visit to BMW's MINI Plant Oxford**
5:30 – 8:30 PM	**Oxford Closing Dinner** *Location: The Varsity Club, Avenue 1, The Covered Market*

Wednesday | September 11	
TIME	**SESSION DETAILS**
8:00 – 9:00 AM	**Breakfast / Check Out** Please check out of your lodging during this time. *Location: New College Dining Hall*
10:00 AM – 12:00 PM	**Transportation to London Heathrow** • Head to airport to fly to Munich *Location: Heathrow International Airport*
12:00 – 6:00 PM	**Fly to Munich** • **Participants to book their own flights from London to Munich. There are five viable options that leave from London between 12 PM and 5 PM, allowing for participants to arrive and check into the hotel on the evening of the 11th.** *Location: Heathrow Airport and Munich Airport*
7:00 PM	**Check into Hotel** *Location: Le Meridien Munich*
8:00 PM	**Dinner** *Location: On own*

Thursday | September 12	
TIME	**SESSION DETAILS**
8:00 – 9:00 AM	**Breakfast** *Location: Le Meridien*
9:30 AM – 12:00 PM	**Meetings with Bavarian Legislature** This is a 40-minute walk or 10 minute taxi ride. NCSL will coordinate rides or walking there. *Location: Maximilianeum, Bavarian State Parliament*
12:00 – 1:00 PM	**Lunch** *Location: TBD*
1:30 – 5:00 PM	**Site Visit to Siemens** NCSL will coordinate taxis for a tour and meetings on the companies apprenticeship programs (Last minute cancellation)

	Location: Siemens
6:00 – 8:00 PM	Dinner *Location: TDB*

Friday | SEPTEMBER 13	
TIME	**SESSION DETAILS**
8:00 – 9:00 AM	Breakfast *Location: Le Meridien*
9:00 AM – 12:00 PM	Meetings with Chamber Of Commerce *Location: Chamber or Le Meridien Hotel*
12:00 – 1:00 PM	Lunch *Location: TBD*
1:00 – 5:00 PM	Site Visit #2 and Free Time *Location: Financial Industry*
6:00 – 8:00 PM	Dinner on Own *Location: TDB*

Virtual Meetings, September-October 2024

Apprenticeship 2030 Commission

Apprenticeships in Switzerland
Tuesday, September 24, 2024 at 10:00-11:30 am
Virtual Meeting – Zoom

Join Zoom Meeting – https://ubalt.zoom.us/j/94141103531
Meeting ID: 941 4110 3531
Passcode: 445230

Agenda

1) **Welcome**
   - *Sarah Ficenec, Schaefer Center for Public Policy, Assistant Director for Research*

2) **Introductions**

3) **Opening Remarks**
   - *Tracy Dove, Scientific Advisor, Embassy of Switzerland in Washington, DC*

4) **Discussion**

5) **Adjournment**

Future Meetings:

- Australia – September 30 at 6 pm EST (confirmed)
- UK – October 1 at 11 am EST (confirmed)
- Germany – October 2 at 10 am EST (confirmed)
- Other U.S. States – October 3 at 11:30 am (confirmed)

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Apprenticeship 2030 Commission

Apprenticeships in Australia

Monday, September 30, 2024 at 6:00-7:30 pm EST

Virtual Meeting – Zoom

Join Zoom Meeting – https://ubalt.zoom.us/j/97486685221
Meeting ID: 974 8668 5221
Passcode: 696222

Agenda

1) **Welcome**
   - *Sarah Ficenec, Schaefer Center for Public Policy, Assistant Director for Research*

2) **Introductions**

3) **Presentations**
   - *Nick Wyman – CEO, The Institute for Workplace Skills & Innovation*
   - *Andrew Sezonov – Group General Manager, WPC Group*
   - *Gary Workman – Executive Director, Apprenticeship Employment Network*

4) **Discussion**

5) **Adjournment**

Future Meetings:

- UK – October 1 at 11 am EST (confirmed)
- Germany – October 2 at 10 am EST (confirmed)
- Other U.S. States – October 3 at 11:30 am (confirmed)

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Email the Commission at Apprenticeship2030Commission@UBalt.edu.

Apprenticeship 2030 Commission

Apprenticeships in the United Kingdom
Tuesday, October 1, 2024 at 11:00 am – 12:30 pm
Virtual Meeting – Zoom

Join Zoom Meeting – https://ubalt.zoom.us/j/98016889664
Meeting ID: 980 1688 9664
Passcode: 885072

Agenda

1) **Welcome**
   - *Sarah Ficenec, Schaefer Center for Public Policy, Assistant Director for Research*

2) **Introductions**

3) **Opening Remarks**
   - *Delegate Marlon Amprey, Maryland General Assembly*
   - *Tom Bewick, Member of Board of Advisors, Apprenticeships for America*
   - *Sophie Smith, Strategic Client Services Director, Apprentify*

4) **Discussion**

5) **Adjournment**

Future Meetings:
- Germany – October 2 at 10 am EST (confirmed)
- Other U.S. States – October 3 at 11:30 am (confirmed)

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The Commission website is: https://dls.maryland.gov/policy-areas/apprenticeship-2030-commission#.
Email the Commission at Apprenticeship2030Commission@UBalt.edu.

Apprenticeship 2030 Commission

Apprenticeships in Germany
Wednesday, October 2, 2024 at 10:00-11:30 am
Virtual Meeting – Zoom

Join Zoom Meeting – https://ubalt.zoom.us/j/93285988341
Meeting ID: 932 8598 8341
Passcode: 061757

Agenda

1) **Welcome**
   - *Sarah Ficenec, Schaefer Center for Public Policy, Assistant Director for Research*

2) **Introductions**

3) **Opening Remarks**
   - *Delegate Marlon Amprey, Maryland General Assembly*
   - *Professor Samuel Mühlemann, Professor of Human Resource Education and Development, University of Munich*

4) **Discussion**

5) **Adjournment**

Future Meetings:
- Other U.S. States – October 3 at 11:30 am (confirmed)

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NCSL
CELEBRATING 50 YEARS

Maryland Apprenticeship Commission

US Examples - Virtual| October 3, 2024

APPRENTICESHIP IN THE STATES	
11:30 AM – 12:00 PM	Colorado – Misti Ruthven, Governor's Office Misti Ruthven will talk about the slew of legislation around apprenticeships and workforce development coming out of Colorado, including the creation of the Office of the Future of Work and the state's relatively new State's Apprenticeship Agency.
12:00 – 12:20 PM	Indiana – State Representative Chuck Goodrich Rep. Goodrich will talk about Indiana's efforts to create pipelines to apprenticeship and the state's innovative approach to weaving education with workforce development.
12:20 – 12:40 PM	NCSL Presentation – Landon Jacquinot This presentation will include updates on apprenticeship programs and state legislation from around the United States. It will include examples around federal funding, innovative apprenticeship programs, and trends in US apprenticeship policy. This presentation is designed to put Maryland in context of the rest of the United States.
12:40 – 1:00 PM	Additional Q&A Some presenters will be available for questions from Commission members about anything in their presentations.

Appendix F. Executive Summary from Report of Survey of Employers and Labor Unions in Maryland

The full report is available on the commission's webpage at https://dls.maryland.gov/policy-areas/apprenticeship-2030-commission.

Executive Summary

Apprenticeships are a long-standing, trusted method of developing and retaining employees in skilled trades such as construction, plumbing, and heating, ventilation, and air conditioning. In recent years, the use of apprenticeships has expanded in other occupations in fields as diverse as healthcare, information technology, education, and advanced manufacturing. Core traits of apprenticeships – including on-the-job training (OJT), related technical instruction (RTI), mentorship, progressive pay scales, and receipt of an industry-recognized credential – have been successfully used with both younger workers (such as those in and immediately out of high school) and those further along in their working years to develop skilled staff and deal with staffing shortages.

During the Maryland General Assembly session in 2023, legislators approved a bill to form a legislative commission to help the State achieve its goals of 60,000 registered apprenticeships by 2030, an increase of registered apprenticeships in industries with skill shortages, and 45% of high school graduates completing the high school level of a registered apprenticeship, a goal of the Blueprint for Maryland's Future. That commission met in 2023 and 2024 to identify policies that support Maryland in achieving these goals.

In its interim report issued in January 2024, the Apprenticeship 2030 Commission called for a survey to be conducted of employers and labor unions in Maryland to understand how apprenticeships are viewed and address concerns.

As part of its contract to provide staff support to the commission, the Schaefer Center for Public Policy at The University of Baltimore undertook a survey of employers, labor unions, and apprenticeship sponsors in Summer 2024 to provide more information to commission members about how apprenticeships are used in the State. Questions in the survey covered areas including why organizations used or declined to use apprenticeships in general and, specifically, registered apprenticeships, characteristics of existing apprenticeships, how apprenticeships could be scaled up or made more attractive to both employers and workers, and youth apprenticeships. Surveys also addressed employers' workforce challenges and current non-apprenticeship technical training opportunities.

The survey was administered among four audiences – a random sample of 20,000 employers in Maryland, all employers that had an apprenticeship registered with the State of Maryland in mid-June 2024, and labor unions and other apprenticeship sponsors registered with the State of

Maryland with active apprenticeships in mid-June as well (**Exhibit 1**). Due to the survey's design and length, most responses were received via trained telephone interviewers supplemented with responses from online surveys customized for (1) employers and (2) labor unions and sponsors. There were 368 complete and partial responses to the survey (**Exhibit 2**).

Exhibit 1
Employers Sampled

Sample Source	Employers
Original random sample of employers	10,000
Supplemental random sample of employers	15,000
Employers with registered apprenticeships	940
Total	**25,940**

Exhibit 2
Survey Responses by Modality

Mode	Complete Responses	Partial Responses	Total
Telephone survey of employers	314	50	364
Online survey of employers	4	0	4
Online survey of labor unions/sponsors	49	1	50
Total	**318**	**50**	**368**

Note: Partial responses are only included if respondents answered the survey question about whether their organization has an apprenticeship; respondents who did not reach that question were not included in the above table or the analysis.

Major Findings

Although the survey had a number of findings that confirmed known attributes of apprenticeship programs, other findings countered common perceptions about these programs.

Prevalence of Apprenticeships

- **One-third of respondents to the employer survey (31%) reported having an apprenticeship program.**[92] Apprenticeship programs remain prevalent in construction industries – where apprenticeships have long been used for the development of skilled employees – but apprenticeships are also used in other industries, including advanced manufacturing, human resources, transportation, education, creative arts, cosmetology, healthcare, and more.

- **Among employer respondents, unregistered apprenticeships were more prevalent than apprenticeships registered at the State or federal level.** Fifty-five employers reported offering an unregistered apprenticeship program compared to 45 respondents with a registered program.

    - Youth apprenticeship programs were prevalent but generally not registered.

- **The prevalence of apprenticeships across Maryland does not vary by region**, with approximately three in 10 employer respondents by region saying their organization had an apprenticeship.

- **Most respondents said their organization provides financial support for apprenticeships**, with most saying they cover 75% to 100% of the costs.

- **Most apprenticeship programs in Maryland are small**, with only 1 to 5 apprentices among employer respondents. Approximately three-quarters of respondents to the labor union/sponsor survey had up to 200 apprentices. While these programs were generally bigger, their size was partly a function of design, as many of the respondent organizations were created to train large classes of apprentices.

Benefits and Barriers to Apprenticeships

- **The primary benefits of apprenticeships included better-skilled employees, decreased employee turnover, and increased employee commitment.**

    - Registered apprenticeships' primary benefits included skill assurance and quality control, employee training and development, and employee recruitment and retention.

- **The primary obstacle to apprenticeships – specifically registered apprenticeships – was a lack of awareness of apprenticeships as an option.** When asked what could

[92] Due to the data collection methods used, all respondents to the labor union/sponsor survey had Registered Apprenticeships.

incentivize their organization to offer apprenticeships or increase the number of apprenticeships, the most common responses were to increase information about apprenticeships or offer financial incentives, such as funds to pay for training.

- When asked why their program was not registered or if they did not have a program, the most common reason was that the respondents were not aware that registered apprenticeships were an option. The secondary consideration usually involved the amount of work available for apprentices

- Respondents said the best incentive the State could offer to increase the number of apprenticeship programs or registered programs would simply be more information about apprenticeships. However, some said increasing financial incentives such as tax credits or reimbursement of expenses related to apprenticeships could also be helpful. These types of financial incentives were much more common for organizations that did not have apprenticeships.

- Most respondents to the employer survey and almost half to the labor union/sponsor survey said their organization did not receive tax credits for their apprenticeship program. Many respondents were unaware such tax credits were available.

- Many respondents – 83% of employers and 43% of labor unions/sponsors – were unaware or unsure if they knew that individuals who complete a registered apprenticeship receive a national credential. Most respondents thought this credential would be valuable for both employers and apprentices.

- Most respondents did not have difficulty meeting OJT, RTI, curriculum, and mentorship requirements for a registered apprenticeship. The only requirement that any respondent said was difficult to meet was the number of hours of RTI, which was selected by 2.5% of respondents to the employer survey. Skill standards were also generally useful and easy to use.

- Most employer respondents did not use intermediaries to help establish and maintain a registered apprenticeship, and the primary reason was a lack of awareness about intermediaries.

- **A majority of respondents said they were very satisfied with the support provided by State employees who support apprenticeship programs** and that these staff were helpful, knowledgeable, easy to contact, and responded in a timely manner.

  - Most respondents agreed with or were neutral in response to a statement that the apprenticeship registration process in Maryland was straightforward and would recommend a registered apprenticeship program to other employers and to job seekers.

Appendix G. Examples of Apprenticeship Programs

The Maryland Department of Labor provided the Apprenticeship 2030 Commission with the following examples of registered apprenticeships in Maryland. This information was supplemented by the Schaefer Center for Public Policy.

Information Technology

This industry aligns with the North American Industry Classification System sectors, *Information (51)* and *Professional, Scientific and Technical Services (54)*. But information technology (IT) occupations are common in many industries and sectors. This industry is **nontraditional** for apprenticeship both in Maryland and nationally.

Maryland Group Program Examples

Howard Community College – Group non-joint sponsor for the occupation of IT Field Support Specialist. Sponsors a number of employers including AT&T and Howard County Public Schools. Has registered over 90 apprentices across the occupation.

Tranzed Apprenticeship Services, LLC – Group nonjoint sponsor for the occupation of IT Professional. Sponsors a number of employers, many of which are small- to medium-sized companies and organizations: Amports, Inc., Crimson Vista, Inc., Data Processing Solutions, Llc, Department 13, Inc., Mns Group, Nes Associates, Llc, Nexagen Networks, Inc. Registered Apprentices.

Maryland Single Employer Examples

IBSS Corporation – sponsors the occupation of information security analyst. Has registered 28 apprentices.

Youth Apprenticeship Examples

Comparatively, the AMP program has a greater share of apprentices and employers involved in apprenticeship than registered apprenticeship. IT, cybersecurity, software development, and other occupations are in use across a number of employers for Youth Apprenticeship. 34 IT and Professional Services employers have Youth Apprentices statewide.

Business and Finance

This aligns with Management of Companies (55), Professional, Scientific, & Technical Services (54), and Finance and Insurance (52) with commonalities across many industries. This industry is **nontraditional** for apprenticeship both in Maryland and nationally.

Maryland Group Program Examples

AICPA – Group non-joint sponsor for the occupation of Financial Business Partner. Sponsors a number of employers including Care First, Marriott International, Stanley Black & Decker, Sinclair Broadcasting. Has registered over 50 apprentices across the occupation. Also registered nationally.

National Programs

Society of Human Resources Managers (SHRM) – Operates a national group non-joint program and provides instruction that is used by a number of AMP Youth Employers across Maryland.

Health Care

This aligns with *Health Care and Social Assistance (62).* This industry is **nontraditional** for apprenticeship both in Maryland and nationally.

Historically apprenticeship was much more common in healthcare, with 20+ hospitals, nursing homes, and treatment facilities being registered as sponsors in Maryland. Most are inactive or canceled today, with most current apprentices participating in small but growing group programs.

Maryland Group Program Examples

Baltimore Alliance for Careers in Healthcare – Group nonjoint sponsor for the occupation of Practical Nurse. Sponsors a number of employers including Northwest Hospital, Sinai, St. Elizabeth's, Genesis. Has registered 16 apprentices.

Hamilton-Ryker – Group nonthe joint sponsor for the occupation of CNA. Sponsors a number of employers including Charter Senior Living, Commonwealth Senior Living, Cottages of Perry Hall. Has registered 118 apprentices.

Dr. Masica Jordan, LLC – Group non-joint sponsor for the occupation of community health workers. Sponsors a number of employers including Green and Healthy Homes, District Healthcare Services, Methods Therapy, LLC, Emerge Baltimore. Has registered 52 apprentices.

Retail/Wholesale

This aligns with Wholesale Trade (42), Retail Trade (44-45), and Transportation and Warehousing (48-49). This industry is **nontraditional** for apprenticeship both in Maryland and nationally.

Maryland Single Employer Examples

Royal Farms – sponsors the first program in Maryland for the occupation of Retail Store Manager. Has only registered a small number of apprentices but is rapidly expanding the program and publicly recruiting for apprentices.

Education

This aligns with Educational Services (61) and Religious, Grantmaking, Civic Organizations (813). This industry is **nontraditional** for apprenticeship both in Maryland and nationally.

Maryland Group Program Examples

University of Maryland Center for Early Childhood Education and Intervention (Maryland Early Ed Corps) – Group non-joint sponsor for the occupation of Early Childhood Educator. Sponsors a number of employers including the Y and CentroNia.

Maryland Single Employer Examples

St. Mary's County Public Schools – sponsors the first program for K-12 Teachers, recently registered with 6 apprentices in the program already.

Youth Apprenticeship Examples

Education is the second largest employment sector for the AMP Program. All 24 local education agencies are approved as youth employers, and they collectively employ about 25% of Maryland's Youth Apprentices. The most common occupation is Teaching Assistant/Teacher's Aid, followed by IT occupations, and administrative support.

Public Service

This aligns with Public Administration (92). This industry is **nontraditional** for apprenticeship both in Maryland and nationally.

Maryland is seeing a resurgence in public sector apprenticeships, led primarily by public safety. Charles County Sheriff, the Washington Metropolitan Area Transit Authority, and

Prince George's County Police all recently launched or are launching police registered apprenticeship programs. Anne Arundel County Detention also recently received approval for a Detention Officer Program.

Maryland Group Program Examples

Maryland Rural Water Association – Group non-joint sponsor for the occupation of Water Treatment Operator. Sponsors a number of employers including the Town of Berlin and Town of Grantsville.

Maryland Single Employer Examples

Baltimore City Joint Apprenticeship Program – sponsors a number of occupations for Baltimore City employees, primarily in maintenance and facilities. Has registered 1,642 apprentices historically with 108 active today.

Baltimore County Police Department – sponsors a Police Officer program. Has registered 3,015 since 1987.

Department of Natural Resources – sponsors a Department of Natural Resources Police Officer program. Has registered 91 apprentices.

Youth Apprenticeship Examples

The public sector is the largest employer of AMP Youth Apprentices with neatly 30% of all apprentices. This is led by a large program hosted at the National Security Agency, but county and city governments also employ around another 100 youth apprentices. The leading occupations are IT and Office Administration.

Construction

This aligns with Construction (23) and Utilities (22). This industry is **traditional** for apprenticeship, with over 80% of apprentices working in construction both presently and historically. Despite high participation rates there is still room for growth particularly in residential construction.

Construction has numerous program examples including around a dozen group programs that function both as joint and non-joint programs. The industry is led by large scale industrial and commercial construction firms with the highest numbers of apprentices appearing as electricians, steamfitters, HVAC technicians, and other skilled trades people.

Construction participation is heavily influenced by apprenticeship benefits around prevailing wage and Davis-Bacon contracting requirements. Electricians and HVAC

Technicians can also receive a State journeyworker license without exam through registered apprenticeship.

Hotel/Restaurant

This aligns with Arts, Entertainment, and Recreation (71), Accommodation and Food Services (72). This industry is non-traditional for apprenticeship both in Maryland and nationally.

Maryland Group Program Examples

Maryland Restaurant Association – Group non-joint sponsor for the occupation of Restaurant Manager, recently registered, intending to expand to Line Cook.

Community College Hospitality Programs – Five community colleges: Allegany, Frederick, Carroll, Howard, and Prince Geroge's serve as group non-joint sponsors for the occupations of Hotel and Lodging Manager and/or Restaurant Manager. Around 30 employers participate in the programs. Newly registered in 2024.

National Programs

The following national organizations sponsor group apprenticeship programs and have or had apprentices active in Maryland: **National Hotel and Lodging Association** and **National Restaurant Association**

Youth Apprenticeship Examples

Anne Arundel Community College hosts a Landscape Management Technician apprenticeship that covers all facets of golf course maintenance and prepares apprentices to take the Maryland Pesticide Certification Exam and earn OSHA certification.

Manufacturing

This aligns with Manufacturing (31-33). This industry is **traditional** for apprenticeship but with small numbers in Maryland, owing to the relatively small share of large scale manufacturers in the State.

Maryland Group Program Examples

Maryland Manufacturing Extension Partnership – Group non-joint sponsor for the occupations of CNC Specialist and Maintenance Mechanic. Sponsored employers like Berry Global, Pompeian Oil, Tulkoff Foods. Registered 4 apprentices.

Maryland Single Employer Examples

Dixon Valve – sponsors a Machinist program. Has registered 127 apprentices.

Personal and Repair Services

This aligns with Repair and Maintenance (811), Administrative and Support Services (56), Personal and Laundry Services (812), and Real Estate and Rental and Leasing (53). This industry is **traditional** for apprenticeship but with some limitations. For example, licensing structures have created a separate system for apprenticeship within barbering and cosmetology.

Maryland Single Employer Examples

Bozzuto Management – sponsors a Building Maintenance program. Has registered 2 apprentices.

Washington Area New Automobile Dealer's Association (WANADA) is a group non-joint sponsor for the occupation of automotive technician. WANADA sponsors 31 employers and has registered 112 apprentices.

Similarly, **Pohanka Automotive Technology Training Center** is a group non-joint sponsor that is exclusive to employers in the Pohanka Autogroup. They sponsor 9 member shops in Salisbury and have registered 80 apprentices. They have two occupations, automotive technician, and auto body technician.

Other

Other industries would include Agriculture, Forestry, Fishing and Hunting (11), Mining, Quarrying, and Oil and Gas Extraction (21). These are generally somewhat **traditional** industries for apprenticeship, but with limitations. For example, informal apprenticeship is common in agriculture.

Appendix H. Proposal for Pay Per Apprentice Program (Recommendation # 4)

The most important constraint in expanding registered apprenticeships is the limited number of apprenticeship slots provided by employers. The U.S. Department of Labor (USDOL) has funded a number of intermediaries to recruit employers in a variety of fields. Although grantees have passed some of the funding on to employers, most of the funds have been used by intermediaries to recruit employers to start programs and to help design and register them. A study by Abt Associates and Urban Institute in 2021 found that the average cost to stimulate employer offers of apprenticeship was about $5,000.[93] USDOL grants have provided fixed sums regardless of the actual increases in apprenticeship numbers. In a Pay Per Apprentice model, the government limits funding to pay only for apprenticeships created at the amount the program specifies and only when there is a worker in the apprenticeship.

The countries that have scaled up their apprenticeship programs in recent decades, such as Australia, England, and France, have used Pay Per Apprentice Programs successfully. California instituted a Pay Per Apprentice Program at $3,500 per year per apprentice for positions outside construction and firefighting. Maryland and Baltimore City, meanwhile, have had small Pay Per Apprentice Programs using federal funding. Expanding Maryland's program is critical for the State to reach its goal of 2.3% of the labor force being registered apprentices.

The public benefits of expanding apprenticeship will be substantial. Several studies find significant increases in earnings of workers who become apprentices, increases that benefit the state and state taxpayers as well as the apprentices and the employers themselves. One study of Washington State found that apprentices gained an additional $34,500 per year compared to what they would have earned in the absence of apprenticeship.[94] The taxpayer return was $7.80 dollars for each $1 spent by the government. According to a 2022 analysis, apprentices participating in the American Apprenticeship Initiative (AAI) estimated that average quarterly earnings of the AAI apprentices rose by 43% from one year before entering the apprenticeship until two and a half years after starting, compared to only 16% for comparable workers during the same period.[95] Beyond the earnings gains documented in these and other studies are increased productivity for employers and increased revenue to the state.

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[93] Lerman, R., Shakesprere, J., Kuehn, D., and Katz, B. (2022). *What Are the Costs of Generating Apprenticeships? Findings from the American Apprenticeship Initiative Evaluation.* https://www.dol.gov/sites/dolgov/files/OASP/ evaluation/pdf/AAI/AAI_Brief-Costs-Grantees_Final_508_9-2022.pdf.

[94] https://wtb.wa.gov/research-resources/workforce-training-results/#open

[95] Batia Katz, Daniel Kuehn, Jessica Shakesprere, and Robert I. Lerman., 2022. Did Apprentices Achieve Faster Earnings Growth Than Comparable Workers? *Findings from the American Apprenticeship Initiative Evaluation.* Urban Institute.
https://www.urban.org/research/publication/did-apprentices-achieve-faster-earnings-growth-comparable-workers

Pay Per Apprentice Proposal

The commission recommends that Maryland implement a Pay Per Apprentice Program that would reimburse sponsors who create and run registered apprenticeship programs. The funding should be used flexibly to pay for related technical instruction (RTI), on the job training (OJT) mentoring, recruitment of both employers and apprentices, and/or operating expenses. Apprentice wages should be paid by employers.

The initial Pay Per Apprentice Program would scale up Maryland's pay per apprentice program. Based on the experience in other states and countries, Maryland should structure a model in which apprenticeship sponsors would receive direct funding of $3,500 for each registered apprentice hired and retained for the probationary period, $500 per quarter for each apprentice in the second and subsequent years of a registered apprenticeship program starting in the quarter beyond 2,000 hours and with evidence that sufficient progress toward apprenticeship goals has been made, and, to incentivize apprenticeship completion, $1,500 for each apprentice who graduates from the registered apprenticeship. Going forward, variations in the amount of funding per apprentice may be appropriate due to variations in costs for specific occupations (*e.g.*, costs of RTI, costs of OJT mentorship, length of apprenticeship). As the program grows, the ultimate cost would rise to $210 million for 60,000 workers in registered apprenticeships (**Exhibit 1**). Sponsors would be able to propose higher amounts for specific occupations, to be approved by the Maryland Office of Registered Apprenticeship Development (MORAD). As such variations are approved, they would become guidelines for future new registered apprenticeship programs in similar occupations. MORAD and its advisory committee should evaluate the program's effectiveness every year and propose changes as appropriate.

Exhibit 1
Summary of Estimated Individuals in Registered Apprenticeships and Funding Needed
Fiscal 2026-2030

Fiscal Year	Entering RA	In Year 2+ of RA	Completing RA	Total RA	Funds Needed
2026	10,000	10,000	10,000	20,000	$70,000,000
2027	15,000	15,000	15,000	30,000	105,000,000
2028	20,000	20,000	20,000	40,000	140,000,000
2029	25,000	25,000	25,000	50,000	175,000,000
2030	30,000	30,000	30,000	60,000	210,000,000

RA: registered apprenticeships

Efficient and accountable administration of the program is critical to maximize the number of apprentices hired, retained, and trained per public dollar spent. The Maryland Department of Labor currently pre-populates invoices for reimbursement of apprenticeship expenses by training sponsors. This system could be used to reimburse the Pay Per Apprentice Program's costs. To assure apprenticeship sponsors are meeting appropriate benchmarks for receipt of funds, MORAD will need to audit a percentage of invoices each year. Channeling payment eligibility through Maryland's data system will incentivize sponsors to keep data up to date and accurate. If data is insufficient for this purpose, sponsors could file a reimbursement form to claim their funding once an apprentice has been retained for the probationary period and for the quarterly funding after the first year of training.

Appendix I. Details for Recommendations on Public Service Apprenticeships (Recommendation # 5)

As noted earlier in this report, the commission recommends that the State of Maryland lead by example on increasing the prevalence of registered apprenticeships. The public sector in Maryland can serve as an example to the private sector on the use of and diversity among registered apprenticeships programs. Increasing the number of apprenticeships among local, State, and federal workforces in Maryland can also help address the worker shortages they are all experiencing. There are a number of policies the State can adopt to do so.

State Government

The new Maryland Office of Registered Apprenticeship Development (MORAD) should work with State agencies and labor organizations to develop an overall strategy as well as agency-specific plans for increasing the number of registered apprenticeships, including the position identification numbers (PINS) for these apprentices, throughout State public employment by December 2025. Contractual positions should not be utilized to fill registered apprenticeship positions. Further, all recommendations concerning apprenticeships in the State workforce should include State governmental entities outside the Executive Branch, including the University System of Maryland and community colleges.

Statewide Apprenticeship and Training Fund

A statewide and/or agency joint registered apprenticeship and training fund should be created, with adequate budgetary contributions from employers and supplemented by grants. The fund should be administered by the registered apprenticeship Joint Labor-Management Partnership Committee. The union shall be able to bargain over State/agency contributions to the fund, and the fund should provide for related instruction to the apprentices. Initial public funding should be a baseline minimum of the estimated cost of education for projected openings, and departments should be able to seek external funding opportunities, including applying for grants, to enhance public funding. The fund's budget should be a mandated line item which will allow Joint Apprenticeship and Training Committees to maximize the registered apprenticeship program and process and should help cover the costs for marketing registered apprenticeships.

Managing Apprenticeships

The State should create a registered apprenticeship Joint Labor-Management Partnership Committee at the State and departmental levels to increase communication, efficiency, and expedited registration of registered apprenticeship programs. Policy guidance should be issued by the registered apprenticeship Joint Labor-Management Partnership Committee requiring State units of government to implement processes to utilize registered apprenticeship to create entry and advancement pathways into positions well-suited to primarily acquiring the required knowledge,

skills, and abilities through work-based learning under the mentorship of experienced incumbents, supplemented by related academic or technical instruction. The State will work with the Maryland Department of Labor, the Maryland State Department of Education, unions, and other partners such as local school systems to raise awareness of the opportunities in public sector employment through registered apprenticeship.

Local Governments

Local governments above a certain population size should be required to have a plan to meet a goal that apprentices are 2.3% of that government's workforce. By December 31, 2025, the Maryland Association of Counties (MACo) and the Maryland Municipal League (MML) should work with their members to develop apprenticeship targets by jurisdiction and occupation by December 2025 and, with the support of MORAD and interested intermediaries, develop plans for their members to join or create joint and group apprenticeship programs. This includes coordinating with relevant exclusive bargaining representatives on registered apprenticeship targets by jurisdiction and occupation in the context of the statewide goal. With the support of MORAD, MACo and MML will develop plans for their members to join and/or create joint and group registered apprenticeship programs. Intermediaries may be used to develop these plans.

MORAD should lead on creating groups and sponsors for registered apprenticeship programs in smaller jurisdictions. MORAD should also create and make available an online tool for local governments in Maryland to connect with each other about registered apprenticeship programs and to learn how other governments in Maryland implemented their registered apprenticeship programs. This tool would include models of local registered apprenticeship programs and technical assistance.

Federal Government

While Maryland cannot require federal agencies to increase the number of registered apprenticeships among their workforce, MORAD and the Governor's Federal Relations Office should take the initiative to work with federal agencies in Maryland to implement the President's Executive Order on Scaling and Expanding the Use of registered apprenticeships in Industries and the Federal Government and Promoting Labor-Management Forums. MORAD and the Governor's Federal Relations Office should also work with federal agencies in Maryland and the U.S. Department of Labor, the Office of Personnel Management, and others to help federal offices in Maryland develop and reach goals for registered apprenticeships throughout their workforce.

Appendix J. Licensing Compared to Apprenticeships (Recommendation # 9)

Licensing can be viewed as a pathway to job security and wealth in many occupations, such as HVAC, electrical, and plumbing occupations. When a registered apprentice completes their registered apprenticeship and receives a journeyworker license, they have proven to be fully qualified in their occupation. The journeyworker license allows them to move seamlessly from one employer to the next in the event of a life change such as an employer going out of business, the employee moving across the State, or leaving for a better paying opportunity. Conversely, when a worker does not have a license, they may become more reliant on the employer because there is no standard or certification to verify their experience to other potential employers.

Licensing barriers can be partially removed by including the opportunity to obtain a license as a condition of graduating from registered apprenticeship program. For those in the HVAC and electrical occupations, for example, individuals who graduate from a registered apprenticeship program and submit their Certificate of Completion to the Maryland Department of Labor (MD Labor) may receive a journeyworker license without needing to take the examination. This benefits both the apprentice and the employer who has invested in the apprentice for four years. Both parties are now assured of licensing, and the employer and graduating registered apprentice will financially gain from this license.

Licensing is included in some registered apprenticeship programs because some programs will exceed, by far, all requirements for licensing. For example, licensing in the HVAC field requires workers to spend three years and 6,000 hours working under a licensing HVAC contractor. A registered apprenticeship in HVAC, however, provides four years of work (totaling 8,000 hours of on-the-job learning) as well as 576 hours of related technical instruction (RTI). As such, a registered apprenticeship in HVAC exceeds the requirements for licensing in the field.

There are other occupations where a registered apprenticeship could end with a license. In Maryland, a registered apprenticeship in plumbing, for example, does not end in a license. A license as a plumbing journeyworker requires 7,500 hours over four years under a licensed master plumber. This is exceeded by the requirements of a registered apprenticeship in the field (*i.e.*, four years of work, totaling 8,000 hours of on-the-job learning and 576 hours of RTI). The registered apprenticeship, therefore, exceeds the requirements, but a license in plumbing has never been awarded in Maryland without an exam. In the State, there are approximately 6,500 "licensed apprentices" in plumbing, but there are only 745 workers enrolled in a registered apprenticeship in plumbing.[96] Providing a license upon completion of the registered apprenticeship would bring those apprenticeships into the regulatory structure for registered apprenticeship in Maryland. It would also increase the appeal of registered apprenticeships for residential contractors. For these reasons, MD Labor is working on creating this pathway for licenses in plumbing.

[96] Data provided by MD Labor.

In Maryland, there are almost 18,000 more apprentice licenses than there are registered apprenticeships. As shown in **Exhibit 1**, this includes licenses in HVAC and refrigeration, plumbing, and electrical occupations. Adding a pathway to licensure in these three fields would be a big step toward Maryland's apprenticeship goals while benefiting both workers and employers.

Exhibit 1
Comparison Between Apprenticeship Licenses and Registered Apprenticeships

Occupation	Apprentice Licenses	Registered Apprentices	Maximum Difference
HVACR	11,106	622	10,484
Plumbers	6,475	749	5,726
Electrician	5,665	4,074	1,591
Total	**23,246**	**5,445**	**17,801**

HVACR: heating, ventilation, air conditioning, and refrigeration

Note: Data provided by the Maryland Department of Labor. Counts as of April 22, 2024.

There is also the potential for creating a registered apprenticeship pathway to licensing for occupations in telecommunications, or so-called "low-voltage" occupations, including burglar or fire alarm or cable installation. This is a large pool of potential jobs that would be accessible and especially attractive for bringing high school students into the field via registered apprenticeship. Currently, the electrical industry is not in favor of licensing for low-voltage/telecommunication (based on current licensing requirements), but a license would definitely increase the number of registered apprenticeships and reduce misclassification with respect to prevailing wage jobs.

Occupations Licensed by MD Labor

- Architects
- Athletic
- Barbers
- Bay Pilots
- Cemetery Oversight
- Certified Interior Design
- Certified Public Accountants
- Cosmetologists
- Elevator Safety Review
- Foresters
- Home Improvement
- HVACR Contractors
- Individual Tax Preparers
- Land Surveyors
- Landscape Architects
- Locksmiths Master Electricians
- Plumbers
- Precious Metal Dealers and Pawnbrokers
- Professional Engineers
- Real Estate
- Real Estate Appraisers and Home Inspectors
- Stationary Engineers

Occupations Licensed by the Maryland Department of Health

- Acupuncturist
- Audiologist
- Cannabis Dispenser
- Child and Youth Care Practitioner
- Child Care Program Administrator
- Chiropractor
- Dental Hygienist
- Dentist
- Dietitian
- Environmental Health Specialist
- Funeral Director
- Hearing Aid Dispenser
- Licensed Clinical Professional Counselor
- Licensed Graduate Professional Counselor
- Massage Therapist
- Mortician
- Music Therapist
- Nursing Home Administrator
- Nutritionist
- Occupational Therapist
- Optometrist
- Pharmacist
- Pharmacy Technician
- Physical Therapist
- Physician
- Podiatrist
- Psychologist
- Registered Nurse
- Social Worker
- Speech Language Pathologist

Appendix K. Details for Recommendation on Technology to Improve Registered Apprenticeship Processes (Recommendation # 11)

The commission recommends that the Maryland Department of Labor secure a $2 million investment to cover upfront costs to replace the State's registered apprenticeship legacy data infrastructure with a modern technology solution that offers a balance of off-the-shelf capabilities and Maryland-specific customization to effectively address inefficiencies and bottlenecks and to improve concierge and self-service tools for employers and sponsors. Enhancements should seek to eliminate manual, time-intensive processes currently used to administer the State's registered apprenticeship program. A modern technology solution should also allow sponsors to easily view and submit information related to their program and its apprentices to minimize tracking burdens, reduce errors, and to cut down on time spent on administrative functions.

Examples of possible enhancements include:

- self-service access to standards for registered apprenticeships;
- allow for ability to view and submit information in real-time about active apprentices and their activities in the registered apprenticeship program;
- permit applications for State registered apprenticeship incentives (*i.e.*, grants, tax credits, other resources) and track pertinent information about applications;
- allow sponsors to submit program information for inclusion on the State's registered apprenticeship locator so that jobseekers can more easily access accurate and real-time information about available opportunities;
- staff tracking enhancements; and
- allow registered apprenticeship entities to submit and access information related to processes of occupational licensing and/or prevailing wage that may benefit certain registered apprenticeship sponsors.

Consideration for Application Programming Interface (API) connection points, which allow software applications to communicate with each other, should be prioritized in the information technology (IT) buildout to further enhance Maryland's ability to leverage technology to simplify and streamline. APIs could, for example, support seamless connection points with technology used by intermediaries, local school systems, or future U.S. Department of Labor systems.

Notably, once the IT system is built with an initial investment, it is expected that future costs would be limited to maintenance and user license costs, which would be more nominal costs in comparison to the initial upfront investment.

Appendix L. Commission Member Statements

Statement by Jake Hsu, Commission Chair

MARYLAND APPRENTICESHIP 2030 COMMISSION

Friday, February 21, 2025

Letter of Support from the Chair of the Apprenticeship 2030 Commission

We gather today at a pivotal moment in Maryland's journey toward a future-ready workforce. Our economy is evolving at an unprecedented pace, reshaping industries and redefining the skills necessary to succeed. Despite decades of efforts—through boot camps and new training methods, expanded credentialing and accreditation efforts, and a myriad of reskilling initiatives—the gap between the skills workers possess and those demanded by today's industries remains a persistent challenge.

As Chair of Maryland's Apprenticeship 2030 Commission, I am proud to share our Final Report, which represents the best thinking and broad consensus of experts committed to addressing our workforce challenges. I firmly believe that modernizing and expanding registered apprenticeships is one of the most powerful solutions available. It is time to move beyond the traditional confines of apprenticeships in conventional trades and extend these opportunities into high-growth fields such as cybersecurity, healthcare, IT, energy, and education. By doing so, we create direct, sustainable pathways to well-paying careers that can serve as the engine for inclusive economic growth.

We have witnessed that quality matters. Our partners across sectors have shown that workers need apprenticeships leading to family-sustaining careers—not merely additional rounds of training that fail to deliver. Likewise, employers will only shift their hiring practices when the business case is crystal clear: if apprenticeships offer the right skills faster and more affordably, with long-term returns that outpace the traditional methods of talent acquisition, they will embrace them as a core strategy.

Recognizing that many small and mid-sized employers may lack the capacity to build apprenticeship programs independently, our report emphasizes the vital role of a broader ecosystem. Intermediary organizations—such as chambers of commerce, workforce nonprofits, education providers, and training organizations—must collaborate to develop and manage large-scale apprenticeship pipelines. These entities ensure that recruitment, screening, training, and support services meet the highest standards of quality and accountability, reinforcing a system that remains strong, sustainable, and focused on the worker.

Perhaps the most transformative aspect of our vision is the recognition of apprenticeships as generational investments. When individuals secure stable, well-paying careers, the benefits extend to families and communities—uplifting education, health, and overall well-being. Our report is grounded in real data and a commitment to measuring success, driving accountability, and scaling only those solutions that truly work.

We acknowledge that there is no one-size-fits-all approach. Each region in Maryland has unique industries, demographics, and workforce challenges. By tailoring these broad principles to local needs while preserving the integrity of what makes apprenticeships effective, we can build a blueprint not only for Maryland but also for the nation.

This report is not the final answer—it is the beginning of our shared journey to close the skills gap, fuel economic mobility, and expand opportunity for all. I invite you to join us in moving forward together. The time for action is now.

Respectfully yours,

Jacob Hsu
Chair, Apprenticeship 2030 Commission

Statement by Senator Jim Rosapepe, Commission Member

As a fervent champion of scaling apprenticeships across industries and occupations, I support all of the commission's recommendations and appreciate the support of a strong majority of the commission, including members from a variety of sectors, supporting all the recommendations as well.

While each of the recommendations can contribute to our goal of fixing Maryland's broken labor market to promote prosperity for working people, employers, and all of us, I believe the most important recommendations are the following:

Recommendation # 1 – Embrace the goal of increasing active registered apprenticeships to at least 2.3% of the State's labor force.

No one ever reaches a goal they don't set. And publicly stated goals focus strategy, leadership and resources.

Recommendation # 2 – Create a Maryland Office of Registered Apprenticeship Development with an advisory committee consisting of employers, union leadership, and legislators.

Scaling registered apprenticeships, particularly in occupations and industries which have not traditionally used them in the United States, requires a laser-focused team of public servants and publicly motivated private-sector leaders to drive change in employer recruitment and training strategies.

Recommendation # 4 – Scale the Pay Per Apprentice Model.

This is the only proven model in the world to rapidly expand registered apprenticeships in industries from IT and education to healthcare, business services, and more.

Recommendation # 14 – Maximize registered apprenticeships for high school students.

By prioritizing registered apprenticeships which start in high school, the State will:

- incentivize the creation of registered apprenticeships by reducing the cost to employers of related technical instruction because so much of it can be provided in CTE instruction, already paid for in the State's public school funding;

- reduce the friction in labor market, in which too many young people pursue costly college credits and jobs unconnected to career paths; and

- grow the entire economy by growing the size and productivity of the labor force.

Recommendation # 18 – Identify a permanent revenue source for registered apprenticeships.

Several of the other commission recommendations address startup funding for registered apprenticeship expansion. This recommendation addresses the longer term priority of assuring that Pay Per Apprentice, like higher education, is assured long term funding at the appropriate scale.

Finally, thank you to Senate President Bill Ferguson, who suggested creating the commission, his staff and others who supported it, and all the members of commission and of its workgroups who worked hard and cooperatively to create this roadmap for Maryland to lead America in growing registered apprenticeships to the breadth and scale our economy desperately needs.

Statement by Delegate Chao Wu, Commission Member

CHAO WU, PHD
Legislative District 9A
Howard and Montgomery Counties

Ways and Means Committee

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THE MARYLAND HOUSE OF DELEGATES
ANNAPOLIS, MARYLAND 21401

Friday, Feb. 21, 2025

To Maryland Apprenticeship 2030 Commission and Chair Mr. Hsu:

It has been a rewarding two years serving on the commission, and I am deeply grateful to Chair Hsu, as well as all committee members and staff.

I wholeheartedly support the commission's mission to address skill shortages in high-demand fields and expand access to affordable apprenticeship programs. Strengthening our workforce is essential to building a more competitive economy that creates greater opportunities for Marylanders. My commitment to these initiatives—including career and technology education (CTE), internships, and apprenticeships—began with my service on the Howard County Board of Education in 2018. I believe we are on the right track in expanding apprenticeships and fostering industry collaboration.

Given the current challenges and uncertainties, I opposed creating a tax to fund this program. Instead, we must prioritize it and explore alternative solutions to support its growth and contribute to a stronger economy.

Thank you.

Sincerely,

Chao Wu, PhD

Maryland State Delegate, District 9A (Howard and Montgomery Counties)

Chair, Howard County House Delegation (2024-2025)

Statement by Kenya Campbell, Commission Member

A Union of Professionals
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Kenya Campbell
PRESIDENT

LaBrina Hopkins
SECRETARY-TREASURER

February 21, 2025

Dear members of the Apprenticeship 2030 Commission:

As one of the unions engaged in the work of this commission, and one where our members are directly working with the students who would be impacted by the policy changes that may come out of this commissions' recommendations, we do want to register a concern we have regarding recommendation 14– "Maximize Registered Apprenticeships for High School Students."

On page 60 of the draft, the paragraph begins

> *Students' education, safety, and well-being should be at the forefront of all Registered Apprenticeship opportunities for them. The Commission recommends that programs for high school Registered Apprenticeships need to abide by all federal, state, and local safety regulations.*

Left out of this document are the details that will show how we will do this. We have heard throughout the commission that the details would be worked out later. However, the more we work out now the better informed our students, families, schools and businesses will be. Pressing questions such as

- Who at the school level will monitor and/or advocate for students?
- Who will ensure that the educational plan is adhered to?
- Who will coordinate between the school and the apprenticeship, and what will be the nature of that coordination?
- How will we ensure that our students are safe at work?
- If a student has an issue on the job, what procedure will be in place for reporting or resolving issues?

Of course, we want to attract students to these programs and make families feel secure in knowing that the apprenticeship experience is one that will ensure safety, prioritize the educational mission and offer a quality on-the job training that prepares the student for their future. If we can offer responses to these questions posed above, AFT-Maryland believes we can better promote these programs to students and their families. We have been told answers to these questions and details regarding this recommendation would be worked out later; we

cannot agree to that delay. We must not ignore or punt on the idea that our obligation is to ensure that our students receive a quality education while engaging in an apprenticeship. Our duty as educators demands that we protect both their short-term and long-term interests, and we must spell out precisely how we, as a commission, will plan to protect our students' education, safety, and well-being.

Sincerely,

Kenya Campbell
President, AFT-Maryland
Certified Baltimore City School Educator

Statement by President Donna S. Edwards, Maryland State and DC AFL-CIO, Commission Member

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President
Donna S. Edwards

Secretary-Treasurer
Gerald W. Jackson

Statement by President Donna S. Edwards, Maryland State and DC AFL-CIO

Apprenticeships are fundamental to many of our unions, serving as the 'gold standard' in our nation's workforce development system. Organized labor is the bedrock factor in building the American middle class by maintaining the integrity of apprenticeships, setting high industry standards, and protecting workers' rights to good jobs with good wages, benefits and protections. Our unions ensure that apprentices will be equipped for gainful employment and provide the labor market with the highest possible quality workers that relate to probable employment demands.

We appreciate the time, sincerity and dedication every Commissioner brought to the 2030 Apprenticeship Commission. We had consequential dialogues and substantial ideas were presented. We anticipate future conversations.

As a Commissioner on the 2030 Commission, I have presented labor's apprenticeship principles at length. We strongly believe that maintaining a ratio of one-to-one between journeyperson or experienced dedicated superior and the apprentice is paramount to successful apprentices. We believe the integrity of earning fair commensurate wages from the beginning and receiving progressive wage and benefits and a job placement after successfully completely the apprenticeship are essential to all apprenticeship programs.

We believe the Commission's work shifted away from supporting the very people who are essential to our state's success—the workers. It failed to recognize that prioritizing quality development and positive outcomes for workers is critical to building and maintaining a strong workforce and successful apprenticeships.

Overall concerns:

We believe the report barely scratches the surface of defining and developing rigorous apprenticeship programs that provide lifelong opportunities and earnings for adult workers and fails to address multiple needs of school age apprentices.

We believe the report emphasizes development of convincing businesses on their need to create an apprenticeship program with tax payers dollars without development of a lifelong product with successful outcomes is for the apprentice.

We do not see the need for scaling up intermediaries with payment of precious taxpayer dollars to convince businesses apprenticeship as a good idea. The bulk of taxes used for this program, and any program, comes from income taxes paid by workers. Therefore, it should be emphatically emphasized that apprenticeships must result in high wage family sustaining careers for the apprentices to create lifelong earners that have a positive impact on the State of Maryland's economy.

The self-attesting and reporting by businesses that they expect to retain the apprentice does not go far enough in ensuring that their program will be results oriented for the worker.

We are concerned that there was no baseline of data from which to really develop a results oriented apprenticeship framework from which the Commission and businesses could adapt to an overall pathway or to an employment sector.

The current program in Maryland for Pay for Performance of Apprenticeship Programs does not track the outcome of the apprentice. So, there is no data that proves that this results in a successful outcome of sustainable middle class jobs and careers for the apprentice. What is tracked are the number of businesses with apprenticeship programs, how many apprentices they started with, how many were there after a certain number of months and completions.

The report seems to focus on how many Intermediaries will be created; how many new sponsors will be created, and how many new businesses will have apprenticeship programs. It does not follow the apprentice to evaluate the success of the programs created beyond months.

Where is the apprentice in five years from being in an apprenticeship program and successfully completing? Do they have a middle class income and benefits? Have they been able to build a career from the apprenticeship program?

We hope to continue to discuss, collaborate and create with members of the Commission.

We look forward to continuing to be strong advocates for highroad, results driven apprenticeship programs.