



# Maryland's Construction Industry Workforce Report

September 2009



## MARYLAND

GOVERNOR'S WORKFORCE INVESTMENT BOARD

Committee Co-Chairs:  
Gino J. Gemignani, Jr.  
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## ACKNOWLEDGEMENTS

This report was produced under the direction of the Governor's Workforce Investment Board (GWIB) Construction Industry Initiative Steering Committee (Steering Committee), which was composed of stakeholders from the various sectors of the construction industry, unions, specialty trade contracting, utilities, member organizations, business services, education and state and local government. The GWIB would like to thank the members of the Steering Committee for their time, guidance and contributions to this report.

Special appreciation goes to Steering Committee co-chairs Gino J. Gemignani, Jr., Senior Vice President of The Whiting-Turner Contracting Company, and Martin G. Knott, Jr., President of Knott Mechanical, Inc. Both co-chairs serve on the GWIB Board of Directors.

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## EXECUTIVE SUMMARY

The construction industry is a driving force for Maryland's economy, benefiting from Maryland's position as a major metropolitan region with proximity to the federal government, as well as technology, health care and education centers. Maryland's construction industry is well-positioned for robust growth as the economy emerges from recession. Expansion of military installations as a result of the Base Realignment and Closure Act (BRAC), including Ft. Meade in Anne Arundel County and Aberdeen Proving Grounds in Harford County, will result in unprecedented growth opportunities for the construction industry.

With the industry poised for recovery and expansion, significant construction workforce training and education challenges must be addressed. Currently there is an inadequate pipeline of qualified workers within the state to fuel the future growth of Maryland's construction industry. Prior to the downturn in the economy, shortages of workers already existed, both in the skilled trades and in occupations such as engineering, construction management and project management. An aging workforce, and the predicted loss of workers through retirement or attrition, adds to the problem.

Maryland companies have been struggling to attract, recruit and train sufficient numbers of qualified construction employees from within Maryland to meet the growing needs of the construction industry. In spite of excellent earnings potential, including hourly wages that exceed the national average for non-supervisory workers in private industry, sufficient numbers of young people and career changers do not opt for a career in construction. Further, as the construction industry becomes more technologically advanced, current employees may lack the necessary technical and professional skills. With initiatives such as BRAC expected to bring new high-tech buildings to Maryland, having sufficient numbers of construction and building trades workers skilled in the latest technologies is critical.

The Governor's Workforce Investment Board's (GWIB) Construction Industry Initiative Steering Committee (Steering Committee) identified the critical workforce issues and barriers that hamper the creation and maintenance of a vibrant construction workforce, and developed recommendations to resolve those issues. Participants at the Construction and Energy Workforce Solutions Forum held in July 2009 provided feedback on the recommendations in a series of breakout sessions.

This final report summarizes the Steering Committee's work and presents its recommended solutions and strategies for implementation that address the most critical issues facing Maryland's construction industry. Of those recommendations, three have been selected for initial implementation over the next 12-15 months.

### Exciting but Challenging Times for the Construction Industry

*This is an exciting but challenging time to be in the construction industry. New technologies, such as BIM (Building Information Modeling) / VDC (Virtual Design and Construction), along with the Green / LEED (Leadership in Energy and Environmental Design) movement and the demand for new sustainable building systems, will force all of us to rethink the future of our current jobs or positions.*

- Gino J. Gemignani, Jr.  
Senior Vice President, The Whiting-Turner Contracting Company

## Selected Recommendations

The construction industry's critical workforce development challenges fall into three broad categories: (1) image and branding; (2) alignment and connectivity of education and training elements; and (3) pipeline development. The following three recommendations address those challenges.

### Recommendation 1: Image and Branding

Create an independent center of excellence that will be recognized as the primary resource for construction training and education coordination, industry advocacy, and alignment of industry workforce needs with workforce training programs. The Center will be the lead in promoting construction education and training and career opportunities in Maryland.

### **Action Step(s) and Outcome(s)**

- Establish the Maryland Center for Construction Education and Innovation (MCCEI) housed at Towson University, through a public/private partnership between the construction industry, education and training community, and other appropriate stakeholders. (Fall 2009)
- MCCEI serves as a repository of information and resource clearinghouse for prospective workers in the construction industry on how to access training programs, locate resources and obtain various levels of education and training. (Spring 2010)

### Recommendation 2: Alignment and Connectivity of Education and Training Elements

Align, integrate and connect construction education and training at all levels of Maryland's PreK-20 education system.

### **Action Step(s) and Outcome(s)**

- Work with MSDE and CETEC to promote and expand articulation agreements between high schools, community colleges, and four-year institutions to facilitate the successful transition of students who wish to obtain associates and bachelors degrees in a construction-related occupation. (Fall 2010)
- Encourage MSDE and MHEC to advocate for policy changes that promote college credits for students participating in apprenticeship programs. (Fall 2010)

### Recommendation 3: Pipeline Development

Develop a pipeline of prospective workers from Pre K – 20, high school graduates not currently employed or in school, the immigrant community, and other untapped populations.

### **Action Step(s) and Outcome(s)**

- Develop partnerships between MCCEI and MBRT to develop marketing materials promoting construction industry careers to be distributed to Pre K – 20 students. (Fall 2010)
- Develop partnerships between MCCEI and MBRT to identify, recruit and train 20 construction industry professionals to speak to students about career opportunities. (June 2010)
- Work with DLLR's Division of Apprenticeship to develop communication materials to be distributed to One-Stop Workforce Center staff on career opportunities in the construction industry. (June 2010)
- Recommend to the Governor the creation of a tuition assistance fund for students pursuing construction-related degrees. (December 2009)
- Partner with the Departments of Public Safety and Correctional Services and Juvenile Services to encourage policy changes, including reduction in barriers, that provide employment opportunities to ex-offenders entering careers in the construction industry. (Spring 2010)
- Work with DLLR to promote skills upgrade training through the expanded use of Maryland Business Works for construction-related education and training. (December 2009)

## Call to Action

The Steering Committee's report and recommendations is a blueprint for building a workforce that supports the continued growth of Maryland's construction industry. Construction industry stakeholders – businesses, education, building trades, independent training vendors, industry associations and state agencies - must become engaged in and responsible for implementation of the selected recommendations. The GWIB will work with all stakeholders to execute the recommendations.

The recommendations outlined above are actionable and doable in the current economic climate. As the economy improves and additional resources become available, the GWIB will revisit the report to identify additional recommendations for implementation.

# CONSTRUCTION INDUSTRY PROFILE

## Introduction

The Steering Committee, established in 2007, was charged with addressing the workforce development challenges of the construction industry, including development of a robust pipeline of skilled, qualified construction workers to support Maryland's current and future construction industry workforce requirements. Cochaired by Gino J. Gemignani, Jr., senior vice president of The Whiting-Turner Contracting Company and Martin G. Knott, Jr., president of Knott Mechanical, Inc., the Steering Committee is composed of representatives from construction industry organizations – both merit shop and union – as well as education, association, utility, and government stakeholders. Construction industry sectors represented include: real estate and development; architecture; engineering; construction; operations and maintenance; prefabricated manufacturing; roads and transportation; utility (sewage and water); and government/regulatory.

## Industry Profile

Maryland's construction industry plays a vital role in the state's economy and employment sectors. Regionally, more than \$10 billion worth of construction activity is underway or in the pipeline. As Maryland's fifth largest economic sector, the construction industry accounts for 7 percent of the state's employment, higher than the national average of 5.4 percent (as of 2008, Source: U.S. Department of Labor, Quarterly Census of Employment and Wages). Although the construction industry has felt the effects of the nation's current economic downturn, demand for workers is expected to grow as new programs and projects, such as BRAC and the Hopkins Biotechnology initiative, bring jobs and support services to the region. Driving continued demand for construction will be growth in the non-residential sector of the industry, i.e. the demand for nursing homes and extended care facilities, high-technology medical treatment facilities, and the remodeling of industrial plants. The construction industry is likely to continue to experience demand fueled by \$1.5 trillion that will be spent on construction and infrastructure renewal projects. (Sage Growth Partners, *The Maryland Center for Construction Education and Innovation*, 2007) In addition, the construction industry will benefit from Maryland's ARRA stimulus monies.

A number of construction projects are currently underway and in the pipeline. They include government buildings, BRAC-related building projects, healthcare construction projects and life sciences and biotechnology building projects.

### Exhibit 1: Projects Underway and in the Pipeline

| Type of Construction                              | Square Footage | Estimated Value |
|---|----------------|-----------------|
| Federal Government Buildings                      | 9.13 Million   | \$4.49 Billion  |
| BRAC  | 6.9 Million    | \$2.95 Billion  |
| BRAC Demand for Office Space-Not on Base: By 2017 | 8.4 Million    |                 |
| BRAC Related Increase in Retail Space             | 1 Million      |                 |
| Life Sciences and Biotechnology                   | 2.3 Million    |                 |
| Healthcare Construction                           |                | \$2.1 Billion   |

Sources: Construction Wire, Baltimore Sun, Johns Hopkins, University of Maryland, Aberdeen Proving Ground Impact on Seven Counties, US Army, Center for Regional Economic Competitiveness



## Industry Opportunities and Challenges

Trends in the construction industry will impact future growth opportunities as well as the future workforce. While commercial construction remains the primary driver of the construction industry, there are other influential trends.

**Green Construction:** The impact of environmental awareness and the emerging “green building” movement present exciting opportunities for the industry – as well as a new source of jobs for construction workers. Green building design incorporating energy efficiency and sustainability is expected to impact both commercial and residential construction to an extent not seen since the Americans with Disabilities Act. Some of the challenges have been addressed through the development of advanced tracking, design, and technology systems. For example, the Leadership in Energy and Environmental Design (LEED) Green Building Rating System enables builders to assess the environmental impact and sustainability of planned structures.

**Technological Advancements:** New technologies are dramatically changing the construction industry. Building Information Modeling (BIM), a new model-based technology that uses three-dimensional, real-time software to increase productivity in building design and construction, advances design work. The use of prefabricated modular components, manufactured and assembled remotely from the project site, reduces environmental impact and speeds up construction, resulting in cost savings. BIM is currently employed by professionals on all building types from the simplest warehouse to many of the most complex new buildings.

Another new technology with increasing application for the construction industry, given Maryland’s abundance of defense contractors, is Sensitive Compartmented Information Facility (SCIF) building. These new technologies and improved techniques provide both new opportunities and training/retraining challenges for Maryland’s construction industry.

**Base Realignment and Closure (BRAC):** is expected to bring thousands of new jobs to Maryland. The construction industry will benefit enormously from the building activity that supports such growth, but there are significant challenges to tackle. Some challenges are beyond the control of the industry, but nonetheless have a tremendous impact on its future. For example, the current economy, with its volatile financial market and credit crunch, affects the new housing market. More workers with security clearances will be needed, especially at BRAC and other government-related building sites, yet the current security clearance process is complicated and time-consuming.

## CONSTRUCTION TRENDS

### Building Information Modeling (BIM)

A Building Information Model (BIM) is a digital representation of physical and functional characteristics of a facility. As such, it serves as a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life-cycle from inception onward.

(National Institute of Building Sciences)

### Secure Compartmented Information Facility (SCIF)

A Sensitive Compartmented Information Facility is an enclosed, secure room, area or entire building used to process Sensitive Compartmented Information level classified information. The SCIF is designed to eliminate potential electronic surveillance and data leaks.

### Leadership in Energy and Environmental Design (LEED)

LEED is an internationally recognized green building certification system, providing third-party verification that a building or community was designed and built using strategies aimed at improving performance across all the metrics that matter most: energy savings, water efficiency, CO<sub>2</sub> emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts.

Developed by the U.S. Green Building Council (USGBC), LEED provides building owners and operators a concise framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions.

(U.S. Green Building Council)

**The American Recovery and Reinvestment Act of 2009 (ARRA):** Maryland’s construction industry is directly benefiting from a variety of state and local jurisdiction “shovel ready” building projects funded by ARRA stimulus monies, including roads/bridges repairs and construction as well as new building projects. Maryland’s share of ARRA funds include \$610 million dedicated to transit and highway transportation, \$193 million dedicated to housing, and \$57 million dedicated to energy.

**Immigration:** The limited availability of work visas for immigrant construction workers - skilled professionals, as well as seasonal laborers - makes it difficult to hire adequate numbers of workers for project sites. Communicating with workers who have limited English language skills is an additional challenge for the industry.

**Bureaucracy:** Currently, individual county and local jurisdictions in Maryland require separate licenses, which is burdensome both for employers and employees. Development of one standardized requirement for statewide licenses would be beneficial.

### Industry Workforce Profile

The construction industry and its workforce are changing. Maryland’s construction industry must confront challenging workforce issues, including an aging workforce (the average age of craft workers is 47), foreign workers and immigration issues (recent studies show that Hispanics comprise one-third of the construction workforce), changes in education trends which channel youth toward college and away from the skilled crafts, a poor image (high school and vocational students ranked “construction worker” 248<sup>th</sup> out of 250 as an occupation of choice), and the emergence of new technologies impacting the nature and needs of the workforce. These factors contribute to shortages of skilled craft workers and qualified management personnel across the industry.

### Exhibit 2: Construction Employment in Maryland, by Industry: 2008

| Industry  | Employment     | Share of Construction Sector |
|---|----------------|------------------------------|
| <b>Construction of Buildings</b>                  | <b>40,675</b>  | <b>23%</b>                   |
| Residential building construction                 | 23,840         | 13%                          |
| Nonresidential building construction              | 16,835         | 9%                           |
| <b>Heavy &amp; Civil Engineering Construction</b> | <b>17,012</b>  | <b>10%</b>                   |
| Utility system construction                       | 7,397          | 4%                           |
| Land subdivision                                  | 1,582          | 1%                           |
| Highway, street, and bridge construction          | 5,763          | 3%                           |
| Other heavy construction                          | 2,270          | 1%                           |
| <b>Specialty Trade Contractors</b>                | <b>120,626</b> | <b>68%</b>                   |
| Building foundation and exterior contractors      | 24,862         | 14%                          |
| Building equipment contractors                    | 59,374         | 33%                          |
| Building finishing contractors                    | 21,796         | 12%                          |
| Other specialty trade contractors                 | 14,594         | 8%                           |
| <b>Construction Sector - Total</b>                | <b>178,313</b> | <b>100%</b>                  |

Source: U.S. Department of Labor, Bureau of Labor Statistics

The impact of labor shortages has real effects on the construction industry, causing delays in project completion, wage inflation, and overall increases in project costs. Prior to the recession, a majority of contractors and industry leaders noted they were experiencing shortages on current projects and that the shortages were driving up costs by nearly 25 percent. Nearly all of them were concerned about craft labor shortages in the future.

An informal polling of construction industry companies indicates an ongoing need for short-term skills enhancement training. Two broad areas of training mentioned across the many construction industry sectors

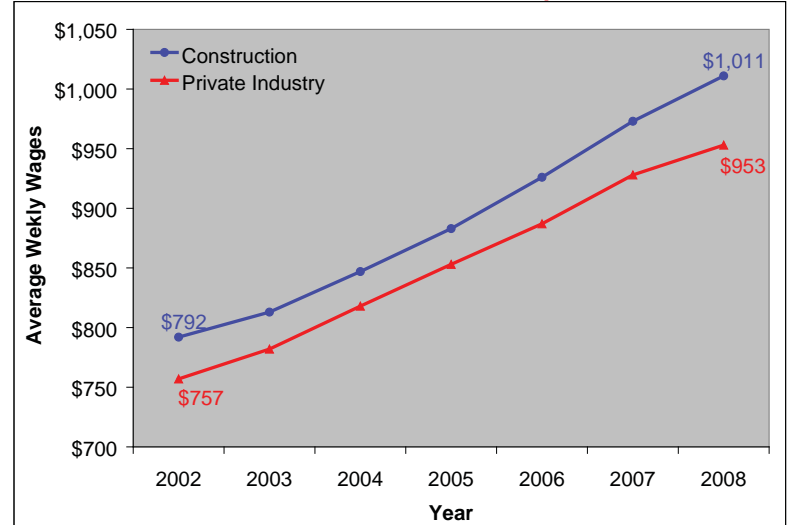


are safety training (both in English and Spanish) and supervisory and management skills training. New technologies, such as BIM and SCIF require upskilling and retraining. Training for specific certifications is another area of need noted by the industry. Equipment and worker certifications are essential for both employees and their companies. As the emphasis on environmentally-friendly green buildings increases, so does the need for employees to be LEED-certified.

### Industry Wage Profile

Construction offers significant earning opportunities for those entering the field. The industry has many myths to dispel, and chief among them is that construction is not a good career and does not pay well. To the contrary, in 2008 the annual earnings averaged \$52,572 for workers in Maryland’s construction industry, 10 percent higher than the overall average for private industry workers. Exhibit 3 demonstrates the construction industry’s earning power relative to other careers. Exhibit 4 shows more detailed earning ranges for skilled crafts, construction management, and other professional careers in Maryland.

**Exhibit 3: Average Weekly Earnings in Maryland, Construction Sector vs. Private Industry**



Source: Maryland Department of Labor, Licensing and Regulation

**Exhibit 4: Earnings Ranges and Educational Requirements for Construction Occupations**

| Industry                          | Salary Range       | Educational Requirements                       |
|-----------------------------------|--------------------|--|
| <b>Helper</b>                     |                    |  |
| Carpenter - Helper                | \$24,000-\$30,000  | Short-term on-the-job training                 |
| Electrician - Helper              | \$25,000-\$33,000  | Short-term on-the-job training                 |
| Laborer                           | \$27,000-\$34,000  | Moderate-term on-the-job training              |
| <b>Skilled Craft</b>              |                    |  |
| Sheet Metal Worker                | \$34,000-\$45,000  | Apprenticeship / Long-term on-the-job training |
| Welder                            | \$34,000-\$46,000  | Apprenticeship / Long-term on-the-job training |
| Carpenter                         | \$36,000-\$47,000  | Apprenticeship / Long-term on-the-job training |
| Plumber                           | \$43,000-\$57,000  | Apprenticeship / Long-term on-the-job training |
| Electrician                       | \$43,000-\$57,000  | Apprenticeship / Long-term on-the-job training |
| Surveyor                          | \$46,000-\$63,000  | Bachelor’s degree                              |
| <b>Construction Management</b>    |                    |  |
| Estimator                         | \$54,000-\$71,000  | Bachelor’s degree                              |
| First Line Manager                | \$54,000-\$87,000  | Work experience in a related occupation        |
| Construction Manager              | \$76,000-\$117,000 | Bachelor’s degree                              |
| <b>Other Professional Careers</b> |                    |  |
| Architect                         | \$61,000-\$87,000  | Bachelor’s degree                              |
| Civil Engineer                    | \$64,000-\$90,000  | Bachelor’s degree                              |

Sources: careervoyages.gov and U.S. Department of Labor, Bureau of Labor Statistics

## Apprenticeship and Training in Maryland

Maryland currently has 230 registered apprenticeship occupations, and more than 28,500 individuals that have completed apprenticeship training. Apprenticeships are industry-driven programs sponsored by employers, employer associations, and jointly by management and labor. Apprenticeship programs include both union-sponsored programs and programs sponsored by non-union organizations such as Associated Builders and Contractors. Pre-apprenticeship programs that prepare individuals for apprenticeship are offered in Maryland's PreK-12 school system in the Career and Technology Education programs, as well as in adult education and alternative education venues. The Maryland Apprenticeship and Training Council is the registration agency for apprenticeship programs in Maryland.

With the advent of advanced technology innovations and green building practices, apprenticeship programs are expanding their instruction programs - both on-the-job training and related classroom instruction hours – to reflect the changes taking place in the industry.

### The Importance of Connecting Education and Training with the Construction Industry

*It is critical that we connect Maryland's Prek-12 education system, community colleges, apprenticeship programs and the construction industry. We must create onramps between the various education entities to facilitate seamless transition for individuals pursuing a career in construction in Maryland.*

- Martin G. Knott, Jr.  
President, Knott Mechanical Inc.

## ISSUES AND RECOMMENDATIONS

Maryland's construction industry faces diverse and complex workforce challenges that require targeted, practical solutions. The Steering Committee focused on developing solutions and implementation strategies that addressed three major categories of workforce issues: **Image and Branding; Alignment and Connectivity of Education Components; and Pipeline Development**. The following pages contain the Steering Committee's synopsis of the issues as well as their recommendations and implementation strategies.

### **Issue 1. Image and Branding**

Maryland's construction industry offers rewarding and highly paid jobs and careers, yet many students and potential workers consider the construction and building trades as a "career of last resort." Parents, teachers, guidance counselors, and other influential adults often do not encourage students to pursue a career in construction.

#### Recommendation 1

Establish an independent Center of Excellence (Center) for Maryland's construction industry that will be recognized throughout Maryland as the resource for construction industry education innovation and expertise. The Center will include representation from all aspects of the construction industry – union and merit shop, apprenticeship and training entities (including private career schools), PreK-12 education system, community colleges, four-year higher education institutions, associations, professional organizations and government agencies. The Center will promote construction industry careers through a focus on education and training resources for those seeking apprenticeships, internships and training information, as well as showcasing new technologies and management practices within the construction industry.

#### **Implementation Strategies/Outcomes:**

1. The establishment of the Maryland Center for Construction Education and Innovation (MCCEI), a private/public partnership of the construction industry and Maryland's education system. The Center's focus will include boosting the construction industry's image via marketing and public awareness.

#### **Lead Organization/Champion:**

- Gino J. Gemignani, Jr., Senior Vice President, The Whiting-Turner Contracting Company
- Michael Henderson, Executive Director, Associated Builders and Contractors/Baltimore Chapter

#### Recommendation 2

Develop a unified statewide, industry-wide marketing campaign to promote construction industry jobs and careers. The campaign will include components that engage students at all levels - from elementary school to graduate school - as well as graduates of pre-apprenticeship and apprenticeship programs and non-traditional populations in Maryland.

#### **Implementation Strategies:**

1. The Maryland Center for Construction Education and Innovation will focus on development of a coordinated statewide construction industry marketing and public awareness campaign.
  - Consider development of a web portal for resources and information on Maryland's construction industry and careers in the construction industry.
2. Collaborate with the Maryland Business Roundtable for Education (MBRT), organizations/programs such as FutureForceNow, and state agencies, including the Maryland Department of Labor, Licensing and Regulation's Apprenticeship and Training Division (DLLR/Apprenticeship Division), the Maryland Apprenticeship and Training Council (MATC), and Maryland's local workforce investment One-Stop system to promote construction careers.
3. Partner with the Maryland Department of Business and Economic Development (DBED) to promote Maryland's construction industry.

### Lead Organization/Champion:

- Maryland Center for Construction Education and Innovation

## Issue 2. Alignment and Connectivity of Education Components

There is a lack of alignment and connectivity among school curricula and apprenticeship programs at all levels - from secondary through four-year higher education. The lack of alignment and connectivity creates challenges for those who wish to move seamlessly from one training program or career level to the next. Further, there is an under-utilization of current education and training resources at the secondary education level, resulting in limited numbers of high school students transitioning to construction-related apprenticeship programs and community college programs. At the community college level, few students transition from the two-year to the four-year college level in advanced construction-related programs.

### Recommendation 1

Align, integrate and connect construction education and training at all levels of Maryland's PreK-20 education system. Alignment will include comprehensive knowledge of curriculum and training programs at each educational level, the creation of a logical sequence for pre-apprenticeship and apprenticeship training, and the development of articulation agreements for college credits.

### Implementation Strategies:

1. Create a statewide construction industry advisory board to facilitate coordination of construction-related education and training programs at all levels of Maryland's PreK-20 education system. Align and coordinate the PreK-20 education system's pre-apprenticeship programs and curriculum with that of the building trades, independent apprenticeship and training entities, and private career schools.
2. Develop articulation agreements between education institutions and apprenticeship programs/training vendors to provide college credits to student apprentices.
3. Develop articulation agreements between community colleges and four-year educational institutions that allow for AA degree-holders to move into Bachelor degree programs in construction and construction technology.
4. Develop credentialing and continuing education units (CEUs) articulation agreements between education institutions and training vendors.
5. Create and award training certificates that are recognized by, and transferable to, other education/training programs, vendors and facilities.
6. Awarding of college credits by community colleges and four year higher education institutions for on-the-job training and length of time worked.
7. Partnering by education institutions at all levels to coordinate programs and resources, thereby freeing up faculty and facilities and leveraging resources.

### Lead Organization/Champion:

- The Construction & Energy Technologies Education Consortium of Community Colleges (CETEC). CETEC's members are:
  - The Community College of Baltimore County
  - Prince George's Community College
  - Montgomery College
  - Frederick Community College
  - College of Southern Maryland

### Recommendation 2

Ensure that high school Career and Technology Education (CTE) students graduate prepared for college-level construction programs, apprenticeship training and entry into construction-related careers as demonstrated by meeting academic standards, technical skill standards and earning college and apprenticeship-level credit while in high school.

### **Implementation Strategies:**

1. Identify the additional coursework required to have graduates of CTE programs rated as “college ready” and include the additional coursework in CTE programs.
2. Expand access to CTE construction-related programs to support more high school students in learning about and preparing for careers in construction.
3. Align CTE construction program requirements to advancement in apprenticeship programs and entry in the career field.

### **Lead Organization/Champion:**

- MSDE
- DLLR/Apprenticeship Division

**Issue:** There is not one standard curriculum for pre-apprenticeship training programs that is recognized by all private and public training entities. Maryland’s PreK-12 CTE programs, as well as many private independent training vendors, use the National Center for Construction Education and Research (NCCER) curriculum. The building trades’ apprenticeship programs use proprietary training curricula. The lack of standardization impedes the seamless transfer from pre-apprenticeship programs to apprenticeship programs.

### **Recommendation 1**

Review the curricula for pre-apprenticeship programs in PreK-12 CTE programs, community colleges, the building trades, independent training entities, and private career schools. Adopt a set of standards that is nationally and state-recognized by most parties and that allows for credit and certification recognized across the state and by all training entities.

### **Implementation Strategies:**

1. Create a work group composed of representatives from the DLLR/Apprenticeship Division, MSDE, CETEC, the building trades, independent training entities and private career schools to review requirements of major apprenticeship and training programs and recommend standards for pre-apprenticeship programs.

### **Lead Organization/Champion:**

- DLLR/Apprenticeship Division
- MSDE
- MATC

## Issue 3. Pipeline Development

Maryland does not have an adequate pipeline of employees with the technical and professional skills required to meet the growing needs of Maryland's construction industry.

### Recommendation 1

Develop a pipeline of prospective employees from Maryland's PreK-20 education system.

#### Implementation Strategies:

1. Ensure that a construction industry component is offered in all PreK-12 CTE programs.
2. Provide financial incentives, such as tuition assistance, to students who enter higher education programs leading to jobs in high demand occupations in the construction industry.
3. Develop opportunities for students to obtain required on-the-job training for pre-apprenticeship and apprenticeship programs.
4. Replicate school-to-career models such as Project Lead the Way, FutureForceNow, and the Maryland Business Roundtable for Education for construction.
5. Advocate for increased resources for construction and trades-related education and training in the Pre-K-12/CTE and community college education systems – including career exploration and career development resources and activities.
6. Develop partnerships between community colleges and the construction industry to increase the amount of - and access to - instructional lab space, as well as the number of qualified instructors.

#### Lead Organization/Champion:

- MHEC
- MSDE
- DLLR/Apprenticeship Division
- CETEC

### Recommendation 2

Expand the pipeline of prospective employees by targeting the following groups: (1) high school graduates who are not enrolled in college or an apprenticeship program; (2) those with two years of college who are non-completers of higher education; and (3) non-traditional pools of workers such as ex-offenders and at-risk youth. As part of the implementation process, collect and analyze data to identify trends in the workforce pipeline.

#### Implementation Strategies:

1. Institute statewide data collection and analysis to track individuals from pre-apprenticeship to apprenticeship training and from two-year to four-year higher education training.
2. Develop new and alternative delivery methods for instruction in education and training programs.
3. Develop partnerships with businesses, industry, education, government and non-profit agencies to increase training capacity and expand the use of alternative training locations – including financial incentives.
4. Address the challenges and restrictions associated with hiring ex-offenders and at-risk youth through collaboration with the Maryland Department of Public Safety and Correctional Services, Maryland Department of Juvenile Services, and local social services agencies. Specifically:
  - Individuals on probation barred from crossing state lines to work on job sites.
  - Ex-offenders prevented from working on many government-related job sites because of security restrictions.
5. Increase knowledge of construction career opportunities among Maryland's One-Stop Center staff.
6. Advocate for continued funding of training funding assistance programs such as Maryland Business Works.



**Lead Organization/Champion:**

- DLLR
- CETEC

**Recommendation 3**

Expand the pipeline of foreign-born workers by addressing language and cultural barriers and safety/risk issues in job site operations for foreign-born workers.

**Implementation Strategies:**

1. Promote use of the Maryland Business Works training funding program to support critical workforce training needs such as safety training in Spanish, and English language classes for key employees.
2. Support legal permission for employers to verify a worker's employment eligibility prior to the first day on the job.
3. Sponsor in-status documented temporary work visa employees for permanent work visa status.
4. Advocate for immigration reform for a stable, safe and productive labor force in Maryland in lieu of the current immigration policy.

**Lead Organization/Champion:**

- DLLR

**Issue:** A lack of connectivity exists between the construction industry and the education and training pipeline to facilitate moving students into the workplace.

**Recommendation 1**

The construction industry collaborates with education and training entities to develop pathways between the construction industry and the education/training pipeline of prospective construction industry workers. This will facilitate employers encouraging their existing employees to continue their education, as well.

**Implementation Strategies:**

1. Expand partnerships that connect industry to career training programs, assuring students entry into the construction industry workforce and career opportunities.

**Lead Organization/Champion:**

- CETEC
- DLLR/Apprenticeship Division
- MCCEI

## CONCLUSION

The Steering Committee's recommendations serve as a blueprint for building a workforce that supports the continued growth of Maryland's construction industry. It is imperative that the construction industry address workforce challenges now to ensure an adequate supply of skilled construction workers in the future. Leaders and stakeholders who represent all sectors of the construction industry must come together to support and implement recommendations that comprehensively address the issues related to the workforce pipeline.

The GWIB is committed to supporting the agencies and organizations implementing the recommendations outlined in this report. The GWIB will assess the status and progress of the recommendations and will request periodic updates to assist in tracking of outcomes of recommendations.

# GOVERNOR'S WORKFORCE INVESTMENT BOARD CONSTRUCTION INDUSTRY INITIATIVE STEERING COMMITTEE

## Committee Cochairs:

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# ABOUT THE GOVERNOR'S WORKFORCE INVESTMENT BOARD

## Overview

The Governor's Workforce Investment Board (GWIB) is the governor's chief policy-making body for workforce development. The GWIB is a business-led board of members, a majority of whom represent the business community, as mandated by the Workforce Investment Act of 1998 (WIA). Other members include the governor and the lieutenant governor, cabinet secretaries, college presidents, the state superintendent of schools, elected officials, labor, and representatives of nonprofit organizations. The GWIB is responsible for developing policies and strategies to form a coordinated workforce system from a variety of education, and employment and training programs. It brings together and focuses various workforce development partners and stakeholders on two key outcomes - a properly prepared workforce that meets the current and future demands of Maryland employers, and providing opportunities for all Marylanders to succeed in the 21<sup>st</sup> century workforce.

## GWIB's Center for Industry Initiatives

The Center for Industry Initiatives assesses the workforce issues and demands of Maryland's targeted industry sectors. Leaders from private industry, government, education and other stakeholders are engaged in a collaborative process which identifies critical industry workforce challenges and develops recommendations and strategies to address those challenges.

## Vision

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

- Alignment of the business, workforce system, and economic development interests in Maryland.
- Well-integrated, coordinated and collaborative systems across agencies, institutions, local areas, and business.
- Preservation and expansion of Maryland's highly-educated workforce.
- Creation of opportunities for all Maryland residents to participate and succeed in the workforce.

## Goals

- Align the educational system (P through 20) with economic development and industry needs.
- Increase the supply of skilled and trained workers to address worker shortages.
- Enhance connections between the emerging workforce (youth) and the workplace.
- Provide opportunities for untapped workers (people with disabilities, ex-offenders, TANF recipients, immigrants, etc.) to realize their full potential.

## GWIB Priorities: Education

- Develop a Science, Technology, Engineering and Math (STEM) agenda to prepare the emerging workforce for knowledge-based industries and occupations, and the influx of STEM-related jobs associated with Base Realignment and Closure (BRAC) actions.
- Expand Career and Technology Education (CTE) programs.
- Align adult learning efforts with existing workforce development programs.
- Increase faculty capacity in critical shortage areas (e.g., healthcare, education, STEM instruction, engineering, and BRAC-related occupations).
- Enhance opportunities for "early access" from high school to college.

## GWIB Priorities: Workforce Creation

- Increase access to employment opportunities for historically untapped workers.
- Ensure a supply of well-prepared workers to address critical worker shortages.
- "Grow our own" skilled workers and link them with Maryland businesses.
- Create greater awareness and expand use of Maryland's One-Stop Workforce System with employers.



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The Governor's Workforce Investment Board is the Governor's chief policy-making body for workforce development.

**Martin O'Malley, Governor**  
**Anthony G. Brown, Lt. Governor**

**William G. Robertson, Chair**

**Thomas E. Perez, Secretary**  
**Department of Labor, Licensing and Regulation**

**Eric M. Seleznow, Executive Director**  
**Governor's Workforce Investment Board**