

August 10, 2018

Dr. William English “Brit” Kirwan  
Chair  
Maryland Commission on Innovation and Excellence in Education

RE: Career and Technical Education Workgroup Proposal

Dear Dr. Kirwan,

Thank you for the opportunity to comment on the Career and Technical Education workgroup consultant’s proposal. As you are aware, the Department of Labor, Licensing and Regulation takes building partnerships to advance innovative workforce solutions very seriously and appreciates the innovative thoughts and bold ideas presented in the proposal. The workgroup's proposed goals and outcomes are ambitious and timely given the expected workforce shortages facing Maryland, and the department is ready to assist the Commission on Innovation and Excellence in Education and other partners in meeting the state’s workforce needs.

The department has a long history of working with the workforce and education partners mentioned in the proposal, including the Maryland State Department of Education (MSDE), the Department of Commerce (Commerce), the Maryland Higher Education Commission (MHEC), the Maryland Association of Community Colleges (MACC), and the Department of Juvenile Services (DJS). Additionally, the Department of Labor houses the Governor’s Workforce Development Board (GWDB), the Maryland Apprenticeship and Training Council (MATC), the American Job Centers (AJCs), and local workforce development boards. Finally, the secretary of the Department of Labor has served as the chair of the Governor’s P-20 Leadership Council for the past four years.

As the consultant’s proposal points out, the number of students who leave our schools with a credential is much too small. In fact, many businesses report that the skills and competencies students are leaving high school and college with are not necessarily those that employers want or find useful to satisfy their workforce needs. This disconnect has led to the need for rapid growth and expansion of new and innovative programs such as the Employment Advance Right Now (EARN) program, Registered Apprenticeships in traditional and non-traditional occupations, growth of the youth apprenticeship program, and alignment with and involvement of our workforce partners in the federal Workforce Innovation and Opportunity Act (WIOA) implementation, all of which continue to experience profound success. As the consultant points out, a successful workforce model must be employer-lead with employers defining standards for the credentials so that students will know that at the end of their program, there is a good job leading to a rewarding career. These sector strategy approaches to workforce development define the goals of the department, its entities, and partners.

## **Use of existing Registered and youth apprenticeship occupations and pathways can advance the commission's timeline**

The proposed skills standards board, made up of business and labor leaders, will be tasked with developing occupational skill standards to drive the CTE system, including progressions, standards for each occupation, and steps for credentials. Development of these standards is expected to take two years following passage of enabling legislation for high priority occupations and industries, and longer for lower priority occupations and industries.

To accomplish the Commission's goals well before the proposed two-year timeframe, the department encourages the Commission to adopt the existing occupations approved for Registered Apprenticeships and youth apprenticeships, which have already developed the required skill standards, career pathways, and credentials central to the Commission's goals. These existing standards were developed under the guidance of industry and educational partners, many of whom are included in the proposed skills standard board. For a list of active Registered and youth apprenticeship occupations, please see Appendix I.

In addition, MATC and GWDB have begun working with MSDE to develop a comprehensive array of career progressions, standards for each occupation, and steps in those progressions, and for the credentials to be issued to individuals when they achieve the standards as well as the criteria for awarding those credentials. As part of Registered Apprenticeship and the compliance review process, Standards of Apprenticeship are regularly reviewed to make sure they are at industry standards which allows MATC to continuously react in real time. Thus by 2021, when the new board is proposed to be fully operational, Maryland's existing partners, under the leadership of MATC and GWDB, will have already implemented much of what is being proposed and will have had time to react to changes in future workforce needs by updating skill standards to remain relevant.

## **Nudging growth rather than forcing growth**

The department shares the Commission's enthusiasm and eagerness to grow and build a world-class workforce system, but cautions against being overly ambitious and forcing arbitrary goals on employers rather than employers driving growth and expansion on the state's workforce partners. The Department of Labor has learned through experience that natural, market-based growth, nudged along by a strong commitment of resources, will lay the foundation of long-term success as opposed to short-term accomplishments.

The workforce foundations laid in 2015 and 2016 are leading to sustained, long-term success for the department and our partners. For instance, Maryland's EARN program has seen a 300% growth in participating employers and boasts an 84% hiring rate of unemployed or underemployed grantees. Registered Apprenticeships had a record year in 2017 with 15 new apprenticeship programs activated and seven reactivated. The first six months of 2018 has already surpassed 2017 numbers with 20 new programs registered and nine reactivated, all of which demonstrate the department's hard work and focus on getting Marylanders back to work while simultaneously meeting the needs of industry is paying off.

Much of this success stems from building successful partnerships with MSDE, Commerce, and other state agencies. The leadership of these organizations have been successful in setting the goals that need to be met by bridging existing programs that had at one time been siloed within specific agencies. For example, during the second year of the youth apprenticeship pilot program, the department employed navigators and intermediaries on the local level that engaged CTE instructors and counselors at local schools to educate them on the possibilities of apprenticeships, who in turn relayed that message to students and established mechanisms to recruit interested students. Similarly, working closely with our partners at Commerce and local business associations has led to an increase in participation from the business community. Lessons learned from the pilot program, and the implementation of aggressive partnership activities, has resulted in a heightened interest in the youth apprenticeship program. In fact, Governor Hogan recently announced that due to the successful completion of the pilot program in the two counties, the program would expand to a statewide initiative, with Dorchester County Public Schools immediately taking advantage of the opportunity.

### **Rely on the department's partners and experience to build on existing successes**

The GWDB, already a member of the Commission and proposed to play a significant role in accomplishing its goals, stands ready to offer its assistance and coordination. The GWDB is a business-led board of 53 members that serves as the governor's chief policy-making body for workforce development. Federally mandated by the Workforce Innovation and Opportunity Act (WIOA), the GWDB works to address the challenges of Maryland's workforce needs in the 21st century. Members include the governor, cabinet secretaries, college presidents, the state superintendent of schools, elected officials, business people, labor, and representatives of nonprofit organizations.

The GWDB has capitalized on the state's workforce momentum by recruiting and engaging business leaders in the further expansion of workforce programs and partnerships with local school districts. In just four years, participation in GWDB meetings has grown 500%. For example, the GWDB is leading the fight to make Maryland a leader in computer science education by harnessing the power of partnerships between employers, job seekers, and education officials. The GWDB is creating opportunities for women in STEM fields by facilitating events such as the SANS Institute GirlsGoCyberStart challenge, and the GWDB continues to provide successful oversight of the 12 local workforce development boards throughout Maryland.

### **Maryland's Combined State Plan**

Another resource that would be helpful for the Commission is Maryland's WIOA Combined State Plan, which is Governor Hogan's blueprint for the creation of an effective and efficient workforce system. To establish the high quality network envisioned under WIOA, in 2016, Governor Hogan directed relevant Maryland agencies to jointly develop the state's workforce plan. This marked the first time that Maryland's Department of Labor, Licensing and Regulation (DLLR), the Department of Human Services (DHS - previously called the Department of Human Resources), the Maryland State Department of Education (MSDE), the Governor's Workforce Development Board (GWDB), and local workforce partners collaborated to develop the

operational components of Maryland's workforce system. The governor's charge to these stakeholders was to develop a plan that maximized state resources in order to deliver outstanding customer service to the workers and businesses that are vital to Maryland's economic growth and prosperity.

During its first two years of implementation, Maryland successfully launched an integrated workforce network that ensures citizens have access to quality occupational training and employment opportunities. Moving forward, Maryland has expanded its WIOA system to include new partners and resources to further support the state's jobseekers and businesses. For the first time ever, effective with this State Plan revision in July 2018, the Department of Housing and Community Development (DHCD)'s Community Services Block Grant program, the DLLR Division of Unemployment Insurance, and the Senior Community Services Employment Program (SCSEP) were added into Maryland's Combined State Plan. Recognizing that no single entity can exclusively provide *all* services to a customer, this more inclusive approach will diversify services and invest in new, integrated practices that surpass the traditional expectations of a workforce system.

### **The department is central to many existing workforce entities**

Workgroup Element Detail 3h proposes to create a new subcabinet to coordinate the disparate workforce related entities to drive the process of building a world-class career and technical education system for Maryland. This new entity will be comprised of the agency heads of MSDE, MHEC, DLLR, Commerce, and the GWDB; a representative of the community colleges; the chair of the Skills Standards Board; and four additional representatives of a diversified mix of employers, industry associations, and labor.

The proposed board would consist of members who currently serve as members of the GWDB, the Governor's P-20 Leadership Council, the Maryland Longitudinal Data System Board, the Commerce Subcabinet, and/or the Maryland Apprenticeship and Training Council. For a list of these members, please see Appendix II.

*The department encourages the Commission to establish clear goals and responsibilities of the new subcabinet to avoid duplication of efforts with these existing entities. Additionally, the department does not see the need to create new staff positions that would directly report to the subcabinet. The existing staff responsible for the existing entities should be directed to provide executive level resources, which in turn would foster greater communication. A similar model is utilized with the newly created Commerce Subcabinet, and has fostered new partnerships within the agencies.*

### **American Job Center (AJC) involvement**

The workgroup proposal recommends two options to provide someone who can counsel and advise every middle and high school student on CTE pathway options, and to help them navigate among the available and emerging opportunities. The first is to equip and train school counselors to provide this information, and the second is to provide this information through the AJCs. As

the consultant points out, the department operates AJCs throughout the state. These “one-stops” are an important resource for unemployed and underemployed adults seeking jobs.

The department supports this recommendation but notes that AJCs are currently serving this population with this information where possible. Additionally, the department cautions against committing additional resources to service more students because of transportation barriers, federal limitations, and other reasons.

AJCs are federally funded, and as such, AJC employees have specific federally mandated responsibilities which restricts them from performing duties outside of our federal mandates. Likewise, federal mandates place strict eligibility requirements on those they serve. Access and eligibility are very different when it comes to being served by AJCs. Anyone has access to an AJC, but not everyone is eligible to receive benefits under the current federal structure. Finally, AJCs do not administer the Armed Services Vocational Aptitude Battery (ASVAB) and staff are not trained or qualified on this assessment, thus, under the proposed scenario, the state and local AJC partners would be required to provide separate resources for these purposes that would include additional staff, equipment, and facility cost-sharing.

*The department does not agree that additional resources are necessary to achieve the outcome that the Commission is seeking. There are existing opportunities within the school system that could, and should, be able to support the needs of the student.*

As previously stated, the department greatly appreciates the work of the CTE workgroup and Commission on Innovation and Excellence and is ready to assist in any way possible. I have no doubt that together we can build a world-class CTE and workforce environment.

Thank you again for the opportunity to submit comments. If you have any questions about these recommendations, please do not hesitate to contact me or my policy director Michael Harrison at [Michael.Harrison@Maryland.gov](mailto:Michael.Harrison@Maryland.gov) or (410) 230-6008.

Kind Regards,



Kelly M. Schulz  
Secretary

# Appendix I

The following 102 occupations are approved for Registered Apprenticeships. To be an approved Registered Apprenticeship, each occupation must have a career pathway with designated benchmarks and goals.

- **ADDITIVE MANUFACTURING TECHNICIAN** - Operates, maintains, and calibrates 3D printers, and other related equipment.
- **ARBORIST** - Use hand and power tools to prune, hedge, and remove trees. May specialize in keeping trees healthy, planting trees, or landscaping. May work both in an office setting, designing park layouts or planning new planting, as well as outside, trimming and shaping trees.
- **ASBESTOS REMOVAL WORKER** - Identify, remove, pack, transport, or dispose of hazardous materials, including asbestos, lead-based paint, waste oil, fuel, transmission fluid, radioactive materials, contaminated soil, etc. Specialized training and certification in hazardous materials handling or a confined entry permit are generally required. May operate earth-moving equipment or trucks.
- **AUTOMOBILE MECHANIC** - Repair automobiles, trucks, buses, and other vehicles. Master mechanics repair virtually any part on the vehicle or specialize in the transmission system.
- **AUTOMOBILE-BODY REPAIR** - Repair and refinish automotive vehicle bodies and straighten vehicle frames.
- **BOILER OPERATOR** - Operate or maintain stationary engines, boilers, or other mechanical equipment to provide utilities for buildings or industrial processes. Operate equipment, such as steam engines, generators, motors, turbines, and steam boilers.
- **BOILERMAKER** - Construct, assemble, maintain, and repair stationary steam boilers and boiler house auxiliaries. Align structures or plate sections to assemble boiler frame tanks or vats, following blueprints. Work involves use of hand and power tools, plumb bobs, levels, wedges, dogs, or turnbuckles. Assist in testing assembled vessels. Direct cleaning of boilers and boiler furnaces. Inspect and repair boiler fittings, such as safety valves, regulators, automatic-control mechanisms, water columns, and auxiliary machines.
- **BRICKLAYER** - Lay and bind building materials, such as brick, structural tile, concrete block, cinder block, glass block, and terra-cotta block, with mortar and other substances to construct or repair walls, partitions, arches, sewers, and other structures.
- **BUILDING AUTOMATION TECHNICIAN** - Perform a variety of duties related to the design, development, and improvement of building automation systems (BAS). They inspect, troubleshoot, and maintain BAS, involving trades or contract personnel when necessary to make repairs or adjustments.
- **BUILDING MAINTENANCE REPAIRER** - Perform work involving the skills of two or more maintenance or craft occupations to keep machines, mechanical equipment, or the structure of an establishment in repair. Duties may involve pipe fitting; boiler making; insulating; welding; machining; carpentry; repairing electrical or mechanical equipment; installing, aligning, and balancing new equipment; and repairing buildings, floors, or stairs.

- **CABINETMAKER** - Cut, shape, and assemble wooden articles or set up and operate a variety of woodworking machines, such as power saws, jointers, and mortisers to surface, cut, or shape lumber or to fabricate parts for wood products.
- **CARPENTER** - Construct, erect, install, or repair structures and fixtures made of wood, such as concrete forms; building frameworks, including partitions, joists, studding, and rafters; wood stairways, window and door frames, and hardwood floors. May also install cabinets, siding, drywall and batt or roll insulation. Includes brattice builders who build doors or brattices (ventilation walls or partitions) in underground passageways to control the proper circulation of air through the passageways and to the working places.
- **CARPENTER (MAINT.)** - Construct, erect, install, and repair structures and fixtures of wood, plywood, and wallboard, using carpenter's hand tools and power tools.
- **CARPET LAYER** - Lay and install carpet from rolls or blocks on floors. Install padding and trim flooring materials.
- **CEMENT MASON** - Smooth and finish surfaces of poured concrete, such as floors, walks, sidewalks, roads, or curbs using a variety of hand and power tools. Align forms for sidewalks, curbs, or gutters; patch voids; use saws to cut expansion joints.
- **CHEMICAL OPERATOR** - Operate or tend equipment to control chemical changes or reactions in the processing of industrial or consumer products. Equipment used includes devulcanizers, steam-jacketed kettles, and reactor vessels.
- **CHILD CARE DEVELOPMENT SPECIALIST** - Attend to children at schools, businesses, private households, and child care institutions. Perform a variety of tasks, such as dressing, feeding, bathing, and overseeing play.
- **CNC SPECIALIST** - Set up, operate, or tend woodworking machines, such as drill presses, lathes, shapers, routers, sanders, planers, and wood nailing machines.
- **COMPUTER PROGRAMMER, BUSINESS** - Convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into computer language. Develop and write computer programs to store, locate, and retrieve specific documents, data, and information. May program web sites.
- **CONSTRUCTION CRAFT LABORER** - Perform tasks involving physical labor at building, highway, and heavy construction projects, tunnel and shaft excavations, and demolition sites. May operate hand and power tools of all types: air hammers, earth tampers, cement mixers, small mechanical hoists, surveying and measuring equipment, and a variety of other equipment and instruments. May clean and prepare sites, dig trenches, set braces to support the sides of excavations, erect scaffolding, clean up rubble and debris, and remove asbestos, lead, and other hazardous waste materials. May assist other craft workers.
- **CONSTRUCTION EQUIPMENT MECHANIC** - Diagnose, adjust, repair, or overhaul mobile mechanical, hydraulic, and pneumatic equipment, such as cranes, bulldozers, graders, and conveyors, used in construction, logging, and surface mining.
- **COREMAKER** - Make or form wax or sand cores or molds used in the production of metal castings in foundries.
- **CORRECTION OFFICER** - Guard inmates in penal or rehabilitative institution in accordance with established regulations and procedures. May guard prisoners in transit between jail, courtroom, prison, or other point. Includes deputy sheriffs and police who spend the majority of their time guarding prisoners in correctional institutions.

- **COSMETOLOGIST** - Provide beauty services, such as shampooing, cutting, coloring, and styling hair, and massaging and treating scalp. May also apply makeup, dress wigs, perform hair removal, and provide nail and skin care services.
- **CYBER SECURITY SPECIALIST** - Typically design firewalls, monitor use of data files, and regulate access to safeguard information and protect the network. Staying up-to-date on current virus reports and protecting networks from these viruses.
- **DIESEL MECHANIC** - Diagnose, adjust, repair, or overhaul trucks, buses, and all types of diesel engines. Includes mechanics working primarily with automobile diesel engines.
- **DIGITAL AND SOCIAL MEDIA SPECIALIST** - Develop relevant content topics to reach the company's target customers. Create, curate, and manage all published content (images, video and written).
- **DISPLAY MAKER** - Set up and operate machines, such as lathes, milling and engraving machines, and jig borers to make working models of metal or plastic objects.
- **DRYWALL INSTALLER** - Apply plasterboard or other wallboard to ceilings or interior walls of buildings. Apply or mount acoustical tiles or blocks, strips, or sheets of shock-absorbing materials to ceilings and walls of buildings to reduce or reflect sound. Materials may be of decorative quality. Includes lathers who fasten wooden, metal, or rockboard lath to walls, ceilings or partitions of buildings to provide support base for plaster, fireproofing, or acoustical material.
- **ELECTRICAL TECHNICIAN** - Apply electrical theory and related knowledge to test and modify developmental or operational electrical machinery and electrical control equipment and circuitry in industrial or commercial plants and laboratories. Usually work under direction of engineering staff.
- **ELECTRICIAN** - Install, maintain, and repair electrical wiring, equipment, and fixtures. Ensure that work is in accordance with relevant codes. May install or service street lights, intercom systems, or electrical control systems.
- **ELECTRO-MEDICAL EQUIPMENT REPAIRER** - Test, adjust, or repair biomedical or electromedical equipment.
- **ELECTROMECHANICAL ASSEMBLER** - Assemble or modify electromechanical equipment or devices, such as servomechanisms, gyros, dynamometers, magnetic drums, tape drives, brakes, control linkage, actuators, and appliances.
- **ELECTROMECHANICAL TECHNICIAN** - Operate, test, and maintain unmanned, automated, servo-mechanical, or electromechanical equipment. May operate unmanned submarines, aircraft, or other equipment at worksites, such as oil rigs, deep ocean exploration, or hazardous waste removal. May assist engineers in testing and designing robotics equipment.
- **ELECTRONICS MECHANIC** - Install, adjust, or maintain mobile electronics communication equipment, including sound, sonar, security, navigation, and surveillance systems on trains, watercraft, or other mobile equipment.
- **ELECTRONICS TECHNICIAN** - Lay out, build, test, troubleshoot, repair, and modify developmental and production electronic components, parts, equipment, and systems, such as computer equipment, missile control instrumentation, electron tubes, test equipment, and physics. Usually work under direction of engineering staff.
- **ELEVATOR CONSTRUCTION** - apply principles and theories of electronics, electrical circuitry, engineering mathematics, electronic and electrical testing Inspect structures using engineering skills to determine structural soundness and compliance with



specifications, building codes, and other regulations. Inspections may be general in nature or may be limited to a specific area, such as electrical systems or plumbing.

- **ELEVATOR MECHANIC** - Assemble, install, repair, or maintain electric or hydraulic freight or passenger elevators, escalators, or dumbwaiters.
- **EMERGENCY MANAGEMENT SPECIALIST** - Coordinate disaster response or crisis management activities, provide disaster preparedness training, and prepare emergency plans and procedures for natural (e.g., hurricanes, floods, earthquakes), wartime, or technological (e.g., nuclear power plant emergencies, hazardous materials ...).
- **ENVIRONMENTAL CARE SUPERVISOR** - Inspect and evaluate the environment, equipment and processes in working areas to ensure compliance with government safety regulations and industry standards.
- **ERECTOR** - Set-up, rearrange, or remove switching and dialing equipment used in central offices. Service or repair telephones and other communication equipment on customers' property. May install equipment in new locations or install wiring and telephone jacks in buildings under construction.
- **FIRE CAPTAIN** - Supervise fire fighters who control and extinguish municipal fires, protect life and property, and conduct rescue efforts.
- **FIREFIGHTER** - Control and extinguish municipal fires, protect life and property and conduct rescue efforts.
- **FLOOR COVERER** - Apply blocks, strips, or sheets of shock-absorbing, sound-deadening, or decorative coverings to floors.
- **GEAR CUTTER OPERATOR** - Set up, operate, or tend lathe and turning machines to turn, bore, thread, form, or face metal or plastic materials, such as wire, rod, or bar stock.
- **GLAZIERS** - Install glass in windows, skylights, store fronts, and display cases, or on surfaces, such as building fronts, interior walls, ceilings, and tabletops.
- **GRINDER OPERATOR, TOOL** - Perform precision smoothing, sharpening, polishing, or grinding of metal objects.
- **HORTICULTURIST** - Plan, organize, direct, control, and coordinate activities of workers engaged in propagating, cultivating, and harvesting horticultural specialties, such as trees, shrubs, flowers, mushrooms, and other plants.
- **HVAC/R TECHNICIAN** - Install, service, and repair heating and air conditioning systems in residences and commercial establishments.
- **INDUSTRIAL MAINTENANCE REPAIRER** - Perform work involving the skills of two or more maintenance or craft occupations to keep machines, mechanical equipment, or the structure of an establishment in repair. Duties may involve pipe fitting; boiler making; insulating; welding; machining; carpentry; repairing electrical or mechanical equipment; installing, aligning, and balancing new equipment; and repairing buildings, floors, or stairs.
- **INFORMATION TECHNOLOGY GENERALIST** - Provide similar services related to software, hardware, databases, Web resources, networks and enterprise systems. Duties can include network management, software development and database administration.
- **INSTRUMENTATION AND ELECTRICAL TECHNICIAN** - Lay out, build, test, troubleshoot, repair, and modify developmental and production electronic components, parts, equipment, and systems, such as computer equipment, missile control

instrumentation, electron tubes, test equipment, and machine tool numerical controls, applying principles and theories of electronics, electrical circuitry, engineering mathematics, electronic and electrical testing, and physics. Usually work under direction of engineering staff.

- **INSULATION WORKER** - Line and cover structures with insulating materials. May work with batt, roll, or blown insulation materials.
- **LINE REPAIRER** - Install or repair cables or wires used in electrical power or distribution systems. May erect poles and light or heavy duty transmission towers.
- **LODGING MANAGER** - Responsible for maintaining the smooth operation of a remote Lodge complex. Provides leadership to staff, maintain lodge facilities and provide a level of hospitality which meets the company's expectations.
- **MACHINE BUILDER** - Construct, assemble, or rebuild machines, such as engines, turbines, and similar equipment used in such industries as construction, extraction, textiles, and paper manufacturing.
- **MACHINE REPAIRER, MAINTENANCE** - Lubricate machinery, change parts, or perform other routine machinery maintenance.
- **MACHINIST** - Set up and operate a variety of machine tools to produce precision parts and instruments. Includes precision instrument makers who fabricate, modify, or repair mechanical instruments. May also fabricate and modify parts to make or repair machine tools or maintain industrial machines, applying knowledge of mechanics, shop mathematics, metal properties, layout, and machining procedures.
- **MAINTENANCE WORKERS, MACHINERY** - Lubricate machinery, change parts, or perform other routine machinery maintenance.
- **MARBLE MASON** - Apply hard tile, marble, and wood tile to walls, floors, ceilings, and roof decks.
- **MARINE SERVICE TECHNICIAN** - Repairs and adjusts electrical and mechanical equipment of gasoline or diesel powered inboard or inboard-outboard boat engines.
- **MEATCUTTER** - Use hand tools to perform routine cutting and trimming of meat, poultry, and fish.
- **MECHANIC, INDUSTRIAL TRUCK** - Diagnose, adjust, repair, or overhaul trucks, buses, and all types of diesel engines. Includes mechanics working primarily with automobile diesel engines.
- **METAL FABRICATOR** - Fabricate, lay out, position, align, and fit parts of structural metal products.
- **MILLWRIGHT** - Install, dismantle, or move machinery and heavy equipment according to layout plans, blueprints, or other drawings.
- **MOLD MAKER** - Make or form wax or sand cores or molds used in the production of metal castings in foundries.
- **MOLDER** - Set up, operate, or tend metal or plastic molding, casting, or coremaking machines to mold or cast metal or thermoplastic parts or products.
- **MOSH INSPECTOR** - Review, evaluate, and analyze work environments and design programs and procedures to control, eliminate, and prevent disease or injury caused by chemical, physical, and biological agents or ergonomic factors. May conduct inspections and enforce adherence to laws and regulations governing the health and safety of individuals. May be employed in the public or private sector.

- **NATURAL RESOURCES POLICE** - Plan, develop, and conduct programs to inform public of historical, natural, and scientific features of national, state, or local park.
- **OPERATING ENGINEER** - Operate one or several types of power construction equipment, such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, shovels, tractors, or front-end loaders to excavate, move, and grade earth, erect structures, or pour concrete or other hard surface pavement. May repair and maintain equipment in addition to other duties.
- **PAINTER/DECORATOR** - Paint walls, equipment, buildings, bridges, and other structural surfaces, using brushes, rollers, and spray guns. May remove old paint to prepare surface prior to painting. May mix colors or oils to obtain desired color or consistency.
- **PATIENT CARE TECHNICIAN** - Roles include assisting in examination and treatment of patients, measuring vital signs and monitoring health, collecting samples, recording information on patients' charts, and preparing treatment rooms for examination.
- **PILEDRIVER** - Operate pile drivers mounted on skids, barges, crawler treads, or locomotive cranes to drive pilings for retaining walls, bulkheads, and foundations of structures, such as buildings, bridges, and piers.
- **PIPEFITTER** - Assemble, install, alter, and repair pipelines or pipe systems that carry water, steam, air, or other liquids or gases. May install heating and cooling equipment and mechanical control systems.
- **PLASTERER** - Apply interior or exterior plaster, cement, stucco, or similar materials. May also set ornamental plaster.
- **PLUMBER** - Assemble, install, and repair pipes, fittings, and fixtures of heating, water, and drainage systems, according to specifications and plumbing codes.
- **POLICE OFFICER** - Patrol assigned area to enforce laws and ordinances, regulate traffic, control crowds, prevent crime, and arrest violators.
- **PROGRAMMER, ENGINEERING/SCIENTIFIC** - Apply electrical theory and related knowledge to test and modify developmental or operational electrical machinery and electrical control equipment and circuitry in industrial or commercial plants and laboratories. Usually work under direction of engineering staff.
- **REINFORCING IRONWORKER** - Position and secure steel bars or mesh in concrete forms in order to reinforce concrete. Use a variety of fasteners, rod-bending machines, blowtorches, and hand tools.
- **REPAIRER, WELDING SYSTEMS & EQUIPMENT** - Set up, operate, or tend welding, soldering, or brazing machines or robots that weld, braze, solder, or heat treat metal products, components, or assemblies.
- **RIGGER** - Set up or repair rigging for construction projects, manufacturing plants, logging yards, ships and shipyards, or for the entertainment industry.
- **ROOFERS** - Cover roofs of structures with shingles, slate, asphalt, aluminum, wood, and related materials. May spray roofs, sidings, and walls with material to bind, seal, insulate, or soundproof sections of structures.
- **SHEET METAL WORKER** - Fabricate, assemble, install, and repair sheet metal products and equipment, such as ducts, control boxes, drainpipes, and furnace casings. Work may involve any of the following: setting up and operating fabricating machines to cut, bend, and straighten sheet metal; shaping metal over anvils, blocks, or forms using

hammer; operating soldering and welding equipment to join sheet metal parts; inspecting, assembling, and smoothing seams and joints of burred surfaces.

- **SHELLFISH GROWER** - On an ownership or rental basis, operate farms, ranches, greenhouses, nurseries, timber tracts, or other agricultural production establishments which produce crops, horticultural specialties, livestock, poultry, finfish, shellfish, or animal specialties. May plant, cultivate, or supervise a farm labor contractor; may prepare cost, production, and other records. May maintain and operate machinery and perform physical work.
- **SPRINKLER FITTER** - Lay out, assemble, install, and maintain pipe systems, pipe supports, and related hydraulic and pneumatic equipment for steam, hot water, heating, cooling, lubricating, sprinkling, and industrial production and processing systems.
- **STATIONARY ENGINEER** - Operate or maintain stationary engines, boilers, or other mechanical equipment to provide utilities for buildings or industrial processes. Operate equipment, such as steam engines, generators, motors, turbines, and boilers.
- **STEAMFITTER** - Lay out, assemble, install, and maintain pipe systems, pipe supports, and related hydraulic and pneumatic equipment for steam, hot water, heating, cooling, lubricating, sprinkling, and industrial production and processing systems.
- **STONE FINISHER** - Cut or carve stone according to diagrams and patterns.
- **STONE MASON** - Build stone structures, such as piers, walls, and abutments. Lay walks, curbstones, or special types of masonry for vats, tanks, and floors.
- **SURGICAL TECHNOLOGIST** - Assist in operations, under the supervision of surgeons, registered nurses, or other surgical personnel. May help set up operating room, prepare and transport patients for surgery, adjust lights and equipment, pass instruments and other supplies to surgeons and surgeon's assistants, hold retractors, cut sutures, and help count sponges, needles, supplies, and instruments.
- **TELECOMMUNICATIONS INSTALLER-TECH.** - Set-up, rearrange, or remove switching and dialing equipment used in central offices. Service or repair telephones and other communication equipment on customers' property. May install equipment in new locations or install wiring and telephone jacks in buildings under construction.
- **TERRAZZO WORKER** - Apply a mixture of cement, sand, pigment, or marble chips to floors, stairways, and cabinet fixtures to fashion durable and decorative surfaces.
- **TILE SETTER** - Apply hard tile, marble, and wood tile to walls, floors, ceilings, and roof decks.
- **TOOL & DIE MAKER** - Analyze specifications, lay out metal stock, set up and operate machine tools, and fit and assemble parts to make and repair dies, cutting tools, jigs, fixtures, gauges, and machinists' hand tools.
- **TOOL DESIGNER** - Perform engineering duties in planning and designing tools, engines, machines, and other mechanically functioning equipment. Oversee installation, operation, maintenance, and repair of such equipment as centralized heat, gas, water, and steam systems.
- **TREE TRIMMER** - Cut away dead or excess branches from trees or shrubs to maintain right-of-way for roads, sidewalks, or utilities, or to improve appearance, health, and value of tree. Prune or treat trees or shrubs using hand saws, pruning hooks, shears, and clippers. May use truck-mounted lifts and power pruners. May fill cavities in trees to promote healing and prevent deterioration.

- **WASTE WATER TREATMENT TECHNICIAN** - Operate or control an entire process or system of machines, often using control boards, to transfer or treat water or liquid waste.
- **WATER PUMPING TECHNICIAN** - Operate or control an entire process or system of machines, often through the use of control boards, to transfer or treat water or liquid waste.
- **WATER REG. & VALVE REPAIRER** - Install, repair, and maintain mechanical regulating and controlling devices, such as electric meters, gas regulators, thermostats, safety and flow valves, and other mechanical governors.
- **WATER TREATMENT TECHNICIAN** - Inspect equipment or monitor operating conditions, meters, and gauges to determine load requirements and detect malfunctions. Maintain, repair, and lubricate equipment, using hand tools and power tools. Operate and adjust controls on equipment to purify and clarify water, process or dispose of sewage, and generate power.
- **WELDER COMBINATION** - Use hand-welding or flame-cutting equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metal products.
- **WELL-DRILL OPERATOR** - Set up or operate a variety of drills to remove petroleum products from the earth and to find and remove core samples for testing during oil and gas exploration.

In addition to the 102 Registered Apprenticeship occupations, the following youth apprenticeship occupations have been approved by MATC.

- |                                  |  |
|----------------------------------|--|
| • Machine Operator               | • Pre-Access Financial Counselor                   |
| • Mechanical Engineer            | • Auto Mechanic                                    |
| • Print Operator                 | • Arborist   |
| • Cabinet Maker                  | • Plumber's Assistant                              |
| • CNC Machinist (CAD/CAM)        | • Electrician's Assistant                          |
| • Manufacturing Technician       | • Communications Assistant                         |
| • Data Entry                     | • IT Support Assistant                             |
| • Computer Support Specialist    | • Telecommunications Equipment<br>Repair Assistant |
| • Business System Analyst        | • Diesel Maintenance Technician                    |
| • Interior Design                | • Refrigerant Reclaim Helper                       |
| • Project Management             | • Service Technician Apprentice                    |
| • Upholstery                     | • Sports Stringer Reporter                         |
| • Custom Furniture Manufacturing | • Press Assistant                                  |
| • Estimator                      | • Chef Assistant                                   |
| • Patient Access Registrar       |  |
| • Bio Med Technician             |  |

## Appendix II

As proposed, the subcabinet for career and technical education is proposed to include:

- James D. Fielder, Secretary, Higher Education Commission
- R. Michael Gill, Secretary, Department of Commerce
- Karen Salmon, State Superintendent of Schools, State Department of Education
- Kelly M. Schulz, Secretary, Department of Labor, Licensing and Regulation
- Michael Digiacoimo, Governor's Workforce Development Board
- Sandra Kurtinitis, President of the Maryland Association of Community Colleges
- Skills Standards Board Members
  - a. Senior business executives - i.e. members of GWDB
  - b. Representatives of Labor - i.e. members of the Maryland Apprenticeship and Training Council (MATC) and GWDB

The Governor's Workforce Development Board, as mandated by WIOA, shares many of the same members as the proposed subcabinet:

- Sam J. Abed, Secretary, Department of Juvenile Services
- Carol Beatty, Secretary, Department of Disabilities
- James D. Fielder, Secretary, Higher Education Commission
- R. Michael Gill, Secretary, Department of Commerce
- Rona E. Kramer, Secretary, Department of Aging
- Lourdes R. Padilla, Secretary, Department of Human Resources
- Stephen T. Moyer, Secretary, Department of Public Safety and Correctional Services
- George W. Owings III, Secretary, Department of Veterans Affairs
- Karen Salmon, State Superintendent of Schools, State Department of Education
- Kelly M. Schulz, Secretary, Department of Labor, Licensing and Regulation
- Sandra Kurtinitis, President of the Maryland Association of Community Colleges

Similarly, the Governor's P-20 Leadership Council and the Maryland Longitudinal Data System Board, which brings together education and workforce partners, also shares many of the same members as the proposed subcabinet:

- James D. Fielder, Secretary, Higher Education Commission
- R. Michael Gill, Secretary, Department of Commerce\*
- Karen Salmon, State Superintendent of Schools, State Department of Education
- Kelly M. Schulz, Secretary, Department of Labor, Licensing and Regulation
- Robert Caret, Chancellor, University System of Maryland
- David Wilson, Ed.D., President of Morgan State University\*\*
- Bernard Sadusky, Ed.D., Executive Director of the Maryland Association of Community Colleges\*\*
- Tina Bjarekull, President of the Maryland Independent Colleges and Universities Association\*\*
- Jack R. Smith, Ph.D., Superintendent of Montgomery County Public Schools\*\*
- Steven Rizzi, Vice President of PAR Government, and large data system and data security expert\*\*
- A.J. Brooks, Congressional Relations Officer for the Office of Congressional and Legislative Affairs, U.S. Department of Veterans Administration\*\*

- Christopher J. Biggs, Information Assurance Manager, Raytheon Company\*\*
- Scot Tingle, Ed.D., Assistant Principal, Snow Hill High School\*\*

Finally, the Commerce Subcabinet, created in 2015, which advises the governor on proposals to enhance the state's business climate, including collaborating to facilitate and expedite critical economic development projects in the state, also shares many of the same members as the proposed subcabinet:

- R. Michael Gill, Secretary, Department of Commerce, Chair
- Pete Rhan, Secretary, Maryland Department of Transportation
- Kelly Schulz, Secretary, Department of Labor, Licensing and Regulation
- Ben Grumbles, Secretary, Maryland Department of the Environment
- Ken Holt, Secretary, Department of Housing and Community Development
- Robert S. McCord, Secretary, Maryland Department of Planning
- Jimmy Rhee, Special Secretary, Governor's Office of Small, Minority and Women Business Affairs