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Date: March 11, 2020
BILL NO.: House Bill 804
TITLE: Workgroup to Study Maryland’s Emerging Digital Economy
COMMITTEE: House Economic Matters

Statement of Information

House Bill 804 seeks to establish a new Workgroup to study the impact of the emerging digital economy on the manufacturing industry (often referred to as Industry 4.0). The bill defines the members of the workgroup to include a mix of legislators, several State agencies, academia, industry and organizations such as the Maryland Manufacturing Advisory Board (MMAB), Regional Manufacturing Institute (RMI), Maryland Manufacturing Extension Partnership (MD MEP) and RAMP MD, and directs the Maryland Department of Commerce (Commerce) to staff the workgroup. The final report and recommendations would be due to the General Assembly on or before December 1, 2021, providing approximately 18 months to complete the tasks. There are 15 tasks assigned to this workgroup:

Economic Development-related Tasks:

- Examine existing financial resources available to manufacturers to invest in Industry 4.0 technologies
- Examine new and viable tax credits and programs for manufacturers to be more competitive and marketable in the new digital economy
- Examine the State’s current statutory and regulatory authority over manufacturing to examine potential reforms to attract new manufacturing businesses brought by Industry 4.0
- Recommend additional financial support delivery mechanisms, to enable state manufacturers to adopt Industry 4.0 technology and enhance the ability of industry service providers to increase the scope of their industry support.

Workforce-related Tasks:

- Examine existing research to make recommendations that manufacturing organizations may use to adequately develop their workforce to meet the skill demands of Industry 4.0
- Examine current State higher education curriculum and evaluate if students are fully prepared for technology and processes in future manufacturing
- Evaluate whether current State training programs and resources need to be modified to prevent worker displacement resulting from Industry 4.0
- Examine new strategies and incentives that manufacturers may use to reskill the current workforce
- Examine MIT’s research entitled “The Work of the Future: Shaping Technology & Institutions”

- Make recommendations to facilitate the State’s robust entry into Industry 4.0 technology to improve the perception of manufacturing careers
- Employ workforce development strategies for manufacturers to attraction certain minority/underserved populations to Industry 4.0 careers
- Recommend various solutions for manufacturers to prepare for the potential workforce gaps resulting from the loss of current workers.
- Make recommendations for industry-academia collaborations to develop curriculum that meets the needs of the industry
- Propose appropriate annual State grant funding to create a statewide training program
- Examine mentorship or apprenticeships programs

Industry 4.0 in an increasing area of interest and discussion both in the private sector and the economic development field, and an important topic facing the manufacturing industry. There is value in the work outlined in this bill to ensure Maryland manufacturers remain competitive in the future. In June 2019, the International Economic Development Council (IEDC) released a report entitled “Industry 4.0 – Supporting Small and Medium-Sized Manufacturers” based on four areas of economic development practice and influence, drawing on a survey of their members and several case studies in order to recommend best practices in economic development. According to this study, “Industry 4.0 is a shorthand term for a group of advanced digital and physical technologies and applications that are rapidly changing manufacturing. Those technologies include additive manufacturing/3D printing; cybersecurity; advanced materials; modeling, simulation, visualization and immersion; artificial intelligence; robotics; big data; the industrial internet of things; and cloud computing.”

There are several ongoing initiatives among State agencies that address several of the tasks outlined in this bill:

- **Maryland Manufacturing Advisory Board** – staffed by Commerce, members include 10 manufacturing industry representatives, two labor representatives, two legislators, the Maryland Chamber of Commerce and a higher education representative (currently Morgan State). The Secretary of Commerce is ex-officio.
 - Current priorities of the MMAB include a significant focus on the image of manufacturing (See Workgroup task #7 (i) and (ii)). For example, in 2018 and 2019 MMAB, in partnership with Commerce, MD MEP, and other partner organizations, worked with school systems in Baltimore, Harford and Washington counties and Baltimore City to take teachers on tours of area manufacturers to better understand the industry and workforce skills and explore ways to better incorporate those skills into the classroom. In addition, the Maryland Chamber Foundation created a four-week externship program for educators in partnership with MSDE to give teachers the opportunity to work in a business for several weeks over the summer and then take those lessons learned and incorporate it into the curriculum. MMAB and the Chamber are discussing ways to expand those programs.
- In August 2019 Maryland was accepted into the National **Manufacturing Policy Academy (MPA)**, a program administered through NIST. Funded by NIST MEP and organized by State Science and Technology Institute (SSTI) and the Center for Regional Economic

Competitiveness (CREC), the MPA program is designed to help states build upon existing strategies, leverage available resources, and spur creative new ideas about how to address major challenges or leverage opportunities around the manufacturing sector. This is a one-year program which will conclude in August 2020.

Commerce, in partnership with the Maryland MEP, established a robust team of advisors from the public and private sectors, including the Maryland Department of Labor (Labor), and identified the following areas of focus:

- Goal 1 - Improving alignment between industry needs and State programs/resources - this include better alignment of workforce needs and supporting programs, a review of existing incentive programs and if those programs meet the changing needs of the industry, and recommendations on potential new programs to better support industry investment in Maryland. Action items within this goal address several areas of HB 804 including Workgroup tasks 3, 6, 7, 13 and 15.
 - Goal 2 - Position Maryland and its manufacturers to compete for unique growth opportunities. The focus of this goal is on developing specific capabilities in areas of opportunity for manufacturers. The three areas of focus include Offshore Wind, **Industry 4.0** and DOD Supply Base. The specific action items related to Industry 4.0 are currently being researched and developed by the MPA Workgroup.
 - Goal 3 - Promote Manufacturing in Maryland, includes six areas of focus of which one is improve the image of manufacturing for future workforce, and exploring opportunities for public-private partnerships (Workgroup task 7).
- Department of Labor Apprenticeship program – Labor has been very successful in growing both the Apprenticeship and Youth Apprenticeship programs in Maryland over the last few years. There is good collaboration among partners and stakeholders, including Commerce and MMAB, to support the establishment of more manufacturing-focused apprenticeships within this program. This addresses Workgroup task 12.
 - Other non-state agencies are also doing work in the manufacturing workforce areas, in close collaboration with Labor, Commerce and the MMAB. For example, Junior Achievement (JA), in partnership with Baltimore County Public Schools and Commerce hosts JA Inspire, an annual event at the Timonium Fairground where this year over 8,000 middle school students had the chance to engage with a variety of employers and works with the industry members, including those of MMAB to ensure strong representation from the manufacturing sector.

Commerce is committed to promoting and growing manufacturing in Maryland, as it is a key industry sector and applauds the sponsor for recognizing the importance of Industry 4.0. The fifteen tasks called for in HB 804 as part of the Workgroup’s charge exceed Commerce staff resources and would require the Department to engage a consultant to manage the workload of the proposed Workgroup.