Project Profile: Maryland

Impact Statement

The Maryland Department of Commerce used Industry Resilience (IR) grants from the Office of Economic Adjustment (OEA) to generate important impacts in increasing awareness and understanding of the critical defense assets in the state. Moreover, projects have enhanced the production capabilities and diversified the customer base of dozens of defense suppliers in the state while increasing their cybersecurity awareness and compliance with DoD requirements. Their efforts under the Industry Resilience grants have enhanced collaboration across several communities and key DoD facilities in Maryland and strengthened their collective benefit to DoD critical interests.

Key Project Takeaways

Maryland hosts a diverse array of defense-related activities and the OEA Industry Resilience (IR)-focused projects reflect this diversity. OEA-funded supply chain research provided an essential foundation for expanded efforts to support the defense industry in the state. Major program investments built closer ties between major facilities at the Aberdeen Proving Ground and the Patuxent Naval Air Station and the surrounding business community. Statewide programming helped identify new business opportunities for defense suppliers and provided them with needed services such as cybersecurity support and new market development.

Project Description

Rationale

Maryland is home to a sizable base of defense activity. Maryland hosts 20 military facilities and 60 other government facilities, many of which operate in critical defense-related areas like cybersecurity. In FY2017, Maryland ranked 4th among US states in terms of total defense spending. Overall defense spending in Maryland exceeded $21.1 billion and accounted for roughly 5.2 percent of Gross State Product. In addition to hosting major federal facilities such as the National Security Agency's Ft. Meade headquarters, the Patuxent River Naval Air Station and the Aberdeen Proving Ground, Maryland is also home to major operations for many of the world's largest defense contractors including Lockheed Martin and Northrop Grumman.

With such a large defense presence, Maryland was hard hit by budget sequestration-related downsizing that began in 2013. These impacts were especially significant in key regions with especially large levels of defense contracting activity. Areas in Southern Maryland (near Patuxent River Naval Air Station) and Northeast Maryland (surrounding the Aberdeen Proving Ground) saw some job loss and business shutdowns. Other Maryland regions, especially the central areas surrounding Fort Meade, headquarters for the National Security Agency (NSA), saw fewer effects from budget reductions.

Because of these high levels of defense contracting activity, Maryland has always placed great emphasis on supporting its aerospace and defense clusters. The Maryland Department of Commerce (DOC) targets aerospace, defense, and cybersecurity as "key industries," and local networks supporting the

defense sector and the military operate across Maryland. As part of this focus, Maryland DOC officials worked with OEA to develop a series of Industry Resilience projects that launched in 2014.

Program Activities

In Phase I, the Maryland Defense Diversification Initiative assisted Maryland and its most defense-reliant regions with data and strategies to increase economic diversification and minimize impacts of the spending cuts tied to budget sequestration. The program began with a major statewide research and supply chain mapping effort, leading to the Maryland Defense Network (MDN), and targeted pilot projects to promote regional economic diversification in Maryland's heavily defense dependent regions. Subsequent work built on this initial research, including enhancing the State's primary defense industry network tool to better connect with defense contractors and provide them with diversification opportunities, the developing and executing a statewide training and assistance program providing skills and resources to diversify defense businesses, and developing two regional Technology Commercialization Programs in Southern Maryland and Northeast Maryland.

Several specific projects provided direct assistance to Maryland-based defense suppliers. From September 2017 until December 2019, the Maryland Defense Diversification Assistance (MDDA) project worked with 33 companies on technical assistance projects related to exporting or commercialization assistance. Additionally, through assistance from University of Maryland (UMD) instructors, MDDA provided 16 companies with an "Industry Innovation" course to help them think outside of the DoD contracting mindset and provided six (6) firms with an "Export Management Bootcamp" class to help them understand how to start exporting their goods or services. Fourteen (14) firms completed diversification projects with the Maryland Manufacturing Extension Partnership (MEP) and six (6) firms completed executive coaching program with TEDCO, Maryland's technology development corporation. In addition, nine (9) other firms worked with the Maryland/DC District Export Council (DEC) on export projects, including three firms that used MDDA funds to participate in the NIST MEP ExporTech program to create customized strategic exporting plans. Currently, Maryland is focusing on providing cybersecurity training and other support to small defense contractors.

Resiliency Outcomes

Increasing awareness of the defense industrial base

Creating the MDN had a big impact on increasing local awareness of the defense industry's importance to Maryland's economy. This research also aided state and local economic development officials in crafting more effective programs to assist small and medium-sized defense contractors in identifying and capturing new market opportunities through the Maryland Defense Diversification Assistance (MDDA) Program and other Commerce programs. For instance, MDOC is contacted by foreign companies looking to partner with local manufacturers to partner on wind energy production projects, and MDOC will use the manufacturing directory and the MDN to identify potential businesses.

Examples of commercial diversification to help maintain a resilient defense industrial base

The direct assistance services to defense suppliers in late 2017 through 2019 produced several important results. One firm, Coherent Technical Solutions (CTSi) reported 25 new jobs, $10 million in

projected increased revenue, and 3 new markets/customers as a result of the assistance received through the ExporTech program and additional consulting help they received via MDDA funds. A second firm, Orbis Technologies, reported 1 new job, $50,000 in new sales, $80,000 in projected new revenue, 3 new markets and 2 new customers as result of their ExporTech participation and additional consulting services received through the MDDA program.

To promote the MDDA program and exporting as a means of revenue diversification for defense contractors, Maryland DOC generated interest in this work by sponsoring a number of "Exporting for Defense" series with topics like: "Is Exporting an Option?", "State and Federal Resources," and "First Steps to Exporting" and "ITAR/EAR Compliance." In total, six events were held in Howard, Harford, St. Mary's, and Prince George's counties, and 149 attendees received additional consulting support and training through these informational events.

The MDDA project made a big impact on the 34 companies that received commercialization and export assistance. From a $300,000 OEA investment, the MDDA program created (or is projected to create) over 320 new jobs, $745,000 in new sales, more than $69 million in new revenue, and identified 22 new markets and 27 new customers for program clients. These outcomes may increase as most firms anticipate long term growth as a result of their program participation. Additionally, an OEA-funded business valuation workshop held with four MDDA clients identified approximately $10 million in collective business valuation growth opportunities for the participating companies.

Lethality Impacts

Innovation Through the Development of New Intellectual Property or New Technologies

Over the past several years, Maryland DOC and its project partners have collaborated with thousands of local defense suppliers, trade associations, economic development organizations, and other partners. The Maryland Defense Network mapping tool tracks thousands of contractors and is based on extensive surveys of these suppliers. A related Maryland Defense Patent Database tracks available defense lab patents and other technologies with potential for commercialization – it currently features 1,795 patents from DoD labs in the state -- and is a tool used by technology transfer offices and potential entrepreneurs to identify patents with commercial use available for licensing at Maryland federal labs. MDN has nearly 900 active users and features 8,267 Maryland vendors and 8,456 out-of-state vendors.

Two regional projects – the Maryland Defense Technology Commercialization Center (DefTech) in Havre de Grace and the Southern Maryland Innovation Program -- actively engaged in outreach to community and company leaders and are continuing to build strong ties to local military installations and units as well during the post-project period. For example, Army Research Laboratory (ARL) and Chemical and Biological Center (CBC) technology transfer offices, based at Aberdeen Proving Ground (APG), co-locate operations at DefTech – minutes from APG's main gate. At the end of the OEA-funding period, the DefTech Center had engaged 272 contacts in their mission, assisted 21 clients (14 active at the close of the period and seven inactive) with technology transfer (T2) support, including patent licensing and CRADA support, provided in-depth mentoring support to seven clients, and delivered a series of educational events with 91 attendees. In addition, the DefTech center hosts monthly meetup events

focused on entrepreneurship skill-building through the "Taking Technologies to Market" meetup group which had 101 members spanning Maryland, Delaware, DC, Virginia and Pennsylvania.

Several programs are underway as part of a Southern Maryland Regional Planning effort under the auspices of a regional innovation project. The team developed Southern Maryland Innovates, a SoMd Innovation Resources Directory featuring 175 regional resources for entrepreneurs with filtering, searching, and sorting capabilities, and completed a major strategic planning effort to build a more robust regional entrepreneurial ecosystem in March 2019. This latter effort resulted in an MOU signed by all three Southern Maryland counties establishing the Regional Innovation Council (RIC) that is meeting regularly to accomplish three strategies set forth by the plan: 1) promote quality of life assets to attract a talented workforce, 2) create a more coordinated and robust startup and entrepreneurship support system, and 3) develop programming to support diversification through small business growth. Additional programming in the region included a pitch workshop for participants in the regional 2018 Crab Pot Pitch competition – a workshop attendee won the pitch workshop for that year. Three Innovation Outreach Discovery events were held featuring eight (8) naval technologies found at NAS Patuxent River and NSF Indian Head T2 labs, leading to six follow-up opportunities for licensing or commercializing featured technologies.

Readiness Impacts

Training and People Support

Maryland DOC and local partners sponsored a host of local training and awareness programs. These included traditional training programs as well as business plan competitions such as Southern Maryland's Crab Pot Business Pitch Contest. Trainings offered by the DefTech center in entrepreneurship have helped to build an entrepreneurship ecosystem and build their client base, leading to increased general awareness about the technology transfer process and the execution of five technology transfer agreements.

The Southern Maryland Regional Planning effort mentioned above, using the "strategic doing" methodology for regional place making, successfully united the three counties behind a regional effort to retain and attract a young, innovative workforce that can sustain the critical mission needs of the region's bases. Dubbed "Southern Maryland 2025," all three counties are engaged and invested in seeing this plan focused on a "live, play, innovate" ethos come to fruition. This effort led to the creation of the RIC, an independent regional entity, focused on implementing the strategic plan mentioned above. This action plan was a primary output from the OEA-funded Accelerated Regional Diversification plan in phase 1 of the Southern Maryland Technology Commercialization pilot program, along with the creation of the Southern Maryland Innovates website. The counties have assigned members to the RIC and are exploring funding resources to implement the plan.

Improved Capabilities and/or Production Adjustments

At least nine firms participating in the MDDA program were able to tie the program to the development of new capabilities. One firm received AS 9100 certification which is expected to increase business enough to triple their workforce in the next 3-5 years. At least four firms are ready to export their

products or are in the process of doing so. One company developed a new product using funds that led to $75,000 in new sales and $300,000 in projected sales. One firm received ASNT NDT Level III Certification and Training and expects this assistance will enable them to double their workforce (50-70 new jobs) and they expect about $2-3 million in new revenue as a result of this capability.

Cybersecurity Preparedness

Maryland's cybersecurity-focused programs are rapidly scaling up. In 2019, the Supply Chain Resiliency program led by the Maryland MEP connected with 1,000 contractors across the state to share information on leading cybersecurity practices. The program provided cybersecurity assessments for forty-six (46) firms and extensive technical assistance to an additional thirty-three (33) companies. Impacts gathered from all firms that received technical assistance are impressive, with more than $358 million in retained sales and 2,318 retained jobs. Clients also report $142 million in increased sales and 101 increased jobs as a result of this assistance and new contracting opportunities available to them.

Other Community Benefits

The regional projects have had a profound effect on the local ecosystems in rural parts of Maryland. In both Southern and Northeast Maryland, regional leaders are making big investments to support the creation of more entrepreneurs and more innovative companies. The defense-related program is a core part of these wider regional strategies. In addition to building more robust regional ecosystems, these programs are also engaging the military in a shared effort to promote local innovation and provide enhanced support for key military missions.

Lessons Learned

Most Important Lessons Learned

The project has faced several challenges and learned important lessons from each. These include:

- Think Regionally: Defense industry clusters operate at the regional level, so programming that reflects unique regional characteristics is best suited to engage firms. This strategy has paid dividends in both Northeast Maryland and Southern Maryland.
- Tie Programming to Areas of Competitive Advantage: Maryland's defense sector is among the world's most technologically advanced. Recognizing these factors, much of Maryland's IR-backed programming—such as the patent databases—seeks to build on these technology-oriented capabilities.
- Build a Diverse Program Portfolio: Maryland's Military and Federal Affairs programs, led by the Maryland Department of Commerce, include a diverse portfolio of programs, some backed with IR funds and some developed and financed in-house. This diverse program mix helps the Department and its partners customize programs based on specific contractor needs and interests. Instead of promoting a few flagship programs, Maryland can help defense firms and their home communities with a variety of solutions related to planning, business support services, workforce development, technology development, and cybersecurity.

Sustainability

Based on the success of the OEA-funded pilot program, Maryland DOC and 12 supporting community match partners received a $750,000 Economic Development Administration Regional Innovation Strategies (RIS) i6 challenge grant in late 2018 to grow and sustain the DefTech Center for three years. In 2019, year one of funding, the DefTech Center made significant progress. They grew their contacts list to 326 new contacts, held 21 open educational events on the T2 process, served 44 new clients (individuals and companies) with one-on-one support (providing 25 of them with IP matchmaking services), had 2 patents licensed and 3 CRADAs executed by clients, and created 57 jobs, 4 new businesses, and saw clients attract $2.66 million in new investment.[1]

---

[1] Data track outcomes through September 2019.