



## Project Profile: South Carolina

### Impact Statement

This Industry Resiliency grant provided market diversification services directly to 39 companies in the defense supply chain. These services contributed to those companies experiencing results such as retaining more than 1,000 jobs and creating roughly 65 new positions with many other new jobs projected. Over 335 employees received training on topics such as lean manufacturing, quality certifications, value stream mapping and project management, with these process improvements potentially resulting in major cost savings for the DoD and higher tier defense suppliers.

### Key Project Takeaways

South Carolina's activities as an OEA grantee increased the resiliency of DoD operations by raising local awareness of the impact of the defense industry and reducing the defense industrial base's reliance on DoD contracting, which also yields cost savings to the DoD. The Industry Resiliency grant assisted local defense firms' efforts to diversify into commercial markets serving the aerospace and automotive sectors. These activities had the added impact of growing the state's key industry sectors in commercial aerospace and automotive manufacturing and services. The defense asset mapping and the market diversification services provided to South Carolina's defense industrial base mitigate the risk of and effects of budget cuts on South Carolina defense suppliers and enhance their ability to supply consistently to defense contractors through fluctuations in expenditures.

### Project Overview

#### Rationale

The Department of Defense is a major force in South Carolina's economy. Much of this impact occurs from the large number of military facilities operating in the state, including eight military installations that collectively employ roughly 74,000 people. Every branch of the armed forces has an installation in South Carolina that has yielded numerous opportunities for South Carolina companies. Over 600 defense prime contractors operate in the state supported by hundreds of sub-contracted suppliers. South Carolina defense contractors operate in a diverse mix of sectors, and are especially concentrated in the Professional, Scientific & Technical Services, Construction, Transportation Equipment Manufacturing, Computer and Electronic Product Manufacturing, and Telecommunications industries. These concentrations are closely aligned with key functions related to local military facilities, especially the Space and Naval Warfare Systems (SPAWAR) Center - Atlantic operations in Charleston. SPAWAR ensures secure information systems for the Navy and is the largest employer of electrical engineers in South Carolina. However, DoD budget cuts substantially reduced the value of DoD contracts as a percentage of GDP in South Carolina from 5.7% in 2011 to 2.7% in FY 2015. As a result, many smaller contractors were at risk of default after having lost major contracts with SPAWAR. Fearing the economic ripple effects of these job cuts, the South Carolina Department of Employment and Workforce (SCDEW) sought assistance from OEA.



### Program Activities

To diversify South Carolina's economy and support defense suppliers, SCDEW and the project team pursued several sets of activities. These included:

- Undertaking a supply chain analysis to better understand the needs and challenges facing lower tier suppliers and to identify firms at potential risk due to projected defense contract reductions.
- Hosting workshops for South Carolina defense firms to raise awareness of the key opportunities offered in the direct grant program, including technical assistance and training, and to create a condensed curriculum from which companies could learn in less time and with fewer resources.
- Providing consulting and other support services to at-risk defense contractors seeking to identify and capture new commercial and non-DoD business opportunities.

As the grant manager, SCDEW engaged multiple partners to accomplish these activities. Researchers from the University of South Carolina Darla Moore School of Business conducted the supply chain mapping and assessed the concentration of DoD contracts by region, value, and defense product. This resulted in a publication entitled *Mitigating the Effects of Sequestration: An Economic Analysis of Defense Contractors in South Carolina*. Through this process, South Carolina identified 1143 prime and sub-tier defense suppliers potentially eligible to receive diversification services, identified major military contractors, and determined key products supplied by South Carolina defense contractors to the DoD and its installations.

This research into South Carolina's defense industrial base allowed SCDEW, the South Carolina Department of Commerce (SCDOC), and the South Carolina Manufacturing Extension Partnership (SCMEP) to conduct outreach to defense companies as part of its diversification efforts for defense companies. In conjunction, SCDEW, SCDOC, and SCMEP hosted 3 workshops to market the diversification services, using defense supplier associations such as the Charleston Defense Contractors Association to reach defense companies. During these workshops, the Project team refined their curriculum and training topics to meet the needs of South Carolina defense suppliers. Continuing its outreach efforts, the team held direct meetings with more than 115 contractors along with on-site visits to at least 85 of these firms.

With a clear understanding of South Carolina's defense industry and its commercial diversification needs, the Project team developed a suite of direct services to commercially diversify at risk defense contractors. SCDEW and SCDEC jointly managed this component of the project, with diversification services provided by three contractors selected through a competitive Request for Proposals. KGlobal (the consulting arm of Zenetex), Dilks-Simone Enterprises, and the SCMEP network were selected to provide these services. Diversification services provided to local firms included strategic planning, lean product development, and sales and marketing support.

The Project team selected defense contractors from among those applying for assistance according to several criteria, including evidence of at-risk or lost contracts and jobs due to sequestration, and specifications for the diversification services they were seeking. A firm could potentially receive up to



\$75,000 in services from any of three approved contractors through an industry resilience diversification grant. Based on this process, 39 companies employing approximately 2,681 workers participated. Participating firms included specialty manufacturers, cybersecurity/information technology firms, and technical services/engineering firms.

## Resiliency Impacts

### Increasing Awareness of the Defense Industrial Base

The supply chain research helped the Project team to better understand the nature and extent of the defense suppliers in the state. Moreover, this aided in locating and engaging suppliers in opportunities to participate in this project and beyond.

The state hosted three workshops to increase awareness of the defense industrial base. Initially these workshops identified the key services needed for diversification by defense suppliers. To prepare companies for diversification assistance, workshops explained the criteria and qualifications necessary to apply for the Industry Resiliency Diversification Grant, outlining the diversification services made available by the grant. One such information session was held during a symposium at the state's Aerospace Conference. This session included informational components and a shortened version of the training made available by the grant. In addition, the grantee provided cybersecurity awareness sessions between November 2017 and 2019, highlighting the need to secure suppliers' digital systems and adhere to NIST 800-171 requirements; there were 93 total attendees over seven sessions. Through its defense diversification sessions and workshops, SCDEW identified and conducted outreach with 1143 companies comprising the state's defense industrial base.

Identifying the size and scope of South Carolina's DoD supplier ecosystem enabled the state to spread awareness around the state regarding defense suppliers' importance to the economy. As part of this effort, the Project team identified the key items purchased by local military installations. A majority of DoD contracts in the state fell under six categories: Maintenance, Repair and Rebuilding of Equipment -- Communication, Detection, and Coherent Radiation Equipment; Combat, Assault, and Tactical Vehicles, Tracked; Telephone and Telegraph Equipment; Composite Food Packages; Other ADP and Telecommunications Services (includes data storage on tapes, compact disks, etc.); and Non-nuclear ship repair. This asset map of DoD suppliers, primarily SMMs (Small Medium Manufacturers), enabled the state to target the outreach for its diversification assistance through defense associations, reaching the largest possible swathe of South Carolina DoD suppliers.

### Commercial Diversification of Defense Companies

Identifying the size and scope of South Carolina's DoD supplier ecosystem enabled the state to successfully identify defense companies for diversification, advancing the resiliency of the defense industrial base. In total, 580 defense firms were deemed eligible to receive assistance; 51 of those companies applied and 39 companies received customized diversification services. The typical company assisted was an average size of 50-70 employees. Participating firms included specialty manufacturers, cybersecurity/information technology firms, and technical services/engineering firms. Provided services included sales and marketing, quality certifications, lean concept training, including value stream



mapping and Six Sigma, and project management services. By increasing the commercial viability of these businesses, the DoD ensures that these businesses can maintain profitability and mitigate any changes to defense spending. The commercial products developed by these companies could also yield products for the DoD in the future.

Of the 39 companies receiving diversification assistance, follow-up survey information received from 18 of the manufacturers served by SCMEP documented the following impacts: \$18.5 million in new sales, \$271 million in new sales, 65 jobs created and 635 jobs retained, 27 new clients and \$5.3 million in new investment. Two companies reported cost savings of \$60,000 each. This assistance allowed South Carolina defense suppliers to identify new customers and retain, as well as grow, their sales volume. Services targeting workforce skills enabled Summit Worx to diversify from IT and communications into structured integration projects and resulted in the attainment of Project Management Professional (PMP) certifications by VT Group employees. This upskilling of workers enabled both companies to expand their market space and offerings in the commercial sector through increased competitiveness.

North Charleston's CodeLynx LLC, a software developer and security integration firm, was one of the program's first customers. Founded in 2003, CodeLynx enjoyed great early success and was named to the *Inc.* 5000 list on several occasions. However, CodeLynx was highly dependent on DoD work as contracts with SPAWAR and related entities accounted for about 80% of the company's revenue.<sup>1</sup> After it lost a major contract in 2013, the firm's managers began a focused diversification effort, investing in new product research and searching for new markets for its technologies. CodeLynx managers quickly embraced the IR diversification initiative and began partnering with the SCMEP program. They used these funds to identify and target new commercial markets, including utilities, oil & gas, and critical infrastructure protection. These customers have a need for strong security systems akin to those used by CodeLynx's traditional clients in the DoD. In addition, CodeLynx leveraged the diversification assistance to obtain state incumbent worker training funds used to upgrade the skills of its workforce and assist key personnel in obtaining critical industry certifications in cybersecurity.

A second example is Mt. Pleasant's ORBIS, a system testing and engineering firm, which enjoyed similar benefits from the program. ORBIS provides surge maintenance services for the Navy and provides professional support services for the NAVSEA submarine programs. ORBIS and its affiliate, ORBIS Labs, were almost 100% dependent on DoD-related business, primarily in the submarine market. With strategic planning assistance provided by KGlobal, ORBIS developed a new strategic plan, a new website and new marketing materials. The firm is now aggressively targeting new markets, especially in the rail transportation and transit sectors and is growing its line of commercial projects.

Founded in 1979 as a small repair shop, Coastal Hydraulics has grown to become a leading expert in hydraulic and pneumatic components and complete systems. Located in Charleston, South Carolina, Coastal Hydraulics re-engineers, repairs, and custom build cylinders, hydraulic components, and complete systems, often improving on OEM designs for the customer's application. Their most recent offering includes HVOF (High Velocity Oxy Fuel) coatings that replace hard chrome coatings and improve

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<sup>1</sup> Company Interview, February 2, 2016



a component's machine life and performance. With over 20 employees, and a vast array of in-house capabilities, the company is positioned to provide fast turnaround, especially for emergency repairs. However, following a Competitiveness Review, Coastal Hydraulics decided they needed to better understand their marketplace and opportunities for business development. The company sought to diversify business outside of the defense industry, identify new markets and grow commercial sales. Coastal Hydraulics received diversification services from SCMEP. Using the OEA grant funds, SCMEP worked closely with the company and recommended a Sales and Marketing Boost training program, which included a website redesign, search engine optimization, paid advertising, and retargeting efforts. As a result, Coastal Hydraulics offered more on-site services to customers, implemented a CRM database to better track new and existing business contacts, and adopted a new ISO Quality System. The new website and related efforts helped Coastal Hydraulics generate more revenue from their newest product offering, HVOF coatings. Now, HVOF accounts for nearly 10% of overall sales for the company. The assistance provided by SCMEP secured a new revenue stream and retained 24 jobs, with new positions expected to be added.<sup>2</sup>

## Lethality

### Innovation through the Development of New Intellectual Property or New Technologies

The process improvements provided to defense suppliers resulted in new technologies for the DoD, in addition to increasing their ability to service commercial markets. Through the provided defense diversification assistance, ORBIS developed the CATTALL and VIRTSTAR products. While VIRTSTAR is still in development, CATTALL is currently utilized by the Navy Calibration Laboratory, with plans to expand the product to other government departments. Mission Solutions Group, an information security infrastructure and services provider, expanded its offering as a result of strategic guidance services provided by the grant. This included providing new satellite communications services to the DoD both in combat theatres and the Continental US, and enhanced cybersecurity and cloud deployment services to defense customers. Finally, the grant resulted in the development of cybersecurity systems for aerostat (blimp) operators overseas. A year after receiving the grant, Mission Solutions Group has almost doubled its workforce, and their new product offerings identified by the strategic guidance services resulted in a more than 50% growth in sales, and increased profitability. While targeted at diversifying defense companies, the process improvements provided by the grant dually enhanced these companies' ability to enhance DoD lethality overseas.

## Other Community Benefits

### Alignment with Stage Programs

This work complemented the state's Aerospace Strategic Plan developed to take advantage of expansion by Boeing in South Carolina. Expanding the capabilities of defense suppliers to serve the commercial aerospace sector brings job creation and creates a stronger and more diversified state economy. The DoD efforts through the IR Grantee to commercially diversify and enhance South

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<sup>2</sup> <https://ws680.nist.gov/mepmeis/ManufacturingSuccesses.aspx?SSID=4589>



Carolina's defense industrial base directly support the mission of the state's strategic plan to increase the competitiveness of and grow new business opportunities its aerospace manufacturers.

## Lessons Learned

### Greatest Challenge

The grantee faced several challenges. Partnership and collaboration are critical to a project of this nature, so coordination, regular communication, and alignment of expectations are critical. Moreover, clearly defined roles and responsibilities, especially when working with prospect companies, is important. Some companies had difficulty understanding their eligibility for the grant or did not understand the eligibility requirement that they had to show a decrease in revenue or a high percentage of their income from the DoD.

A second challenge involved the development and timing of the survey instrument for companies. The survey was not ready early; this made it difficult for the companies to provide the necessary data when the grantee followed up after the training. Ideally, the survey instrument should capture how the consulting services align with companies' expectations and allow the grantee to track immediate outcomes.

### Most Important Lessons Learned

The SCDEW identified several important lessons from its experience as an IR grantee. South Carolina undertook an aggressive outreach strategy that ensured businesses knew about the program and could access it. In addition, South Carolina provided a clear value proposition to businesses. Many OEA projects have faced challenges in engaging business partners and customers. South Carolina mitigated this challenge because of aggressive marketing, engaging partners with experience working with the defense suppliers, and the generous support package provided for each project. Even still, the difficulty in recruiting companies was surprising, likely because many SMMs didn't want to admit they had a vulnerability and had to act upon it. And regarding implementation, by eschewing a match requirement, the Project team learned that project managers had limited leverage to encourage participating companies to act on project recommendations made as part of the diversification assistance.