



## Project Profile: Kern County, California

### Impact Statement

The Industry Resilience (IR) program fostered the organization and alignment of Kern County's economic development stakeholders in support of the China Lake and Edwards AFB military installations. OEA funds further support the development of maker spaces, workforce training programs, and a PTAC to help the local defense industrial base continue to support the DoD through expanded and improved capabilities. These programs increase DoD resiliency by organizing local support for the defense industrial base, increase DoD lethality by growing local entrepreneurship opportunities, and increase DoD readiness through training programs that grow the pipeline of skilled manufacturing workers.

### Key Project Takeaways

Developing a strategic diversification plan for each community in Kern County provided a foundation for local economic development officials to focus local officials in support of the DoD installations, diversify defense suppliers into new DoD and/or commercial markets, provide training to the local workforce and raise the quality of life for both Kern County residents and service members. Planning and organizing activities enabled community leaders to recognize the value of local military installations when presented with information about resulting economic impacts. As a result of increased connectivity with the local installations, community leaders are willing to support defense installations and suppliers to help diversify the region's economy and create jobs. Efforts to mobilize community assets (e.g., colleges, service providers) to support current or potential defense suppliers can strengthen the region's economic development ecosystem and capacity to support the current and evolving DoD mission.

### Project Description

#### Rationale

As Kern County's traditional industries of agriculture and petroleum continue to struggle under conditions of drought and low oil prices, respectively, the region became increasingly dependent on the defense industry. Edwards Air Force Base (EAFB) and the Naval Air Weapons Station – China Lake (NAWS) together account for at least 5% of the county's GDP, and government is the leading source of civilian employment in the County. Across Kern County, a lack of community amenities, such as retail and housing, seriously impair residents' and service members' quality of life, resulting in a population outflow to larger metropolitan areas and increased turnover of service members at local installations. Furthermore, Kern County faces massive geographic challenges in supporting the defense industrial base. The County is the size of New Jersey and is separated by a mountain range, making the coordination of resources in support of the DoD installations and defense suppliers challenging. Lacking the ability to train and retain a skilled workforce, and the resources with which to facilitate business expansion, the County struggles to attract or grow existing businesses.

Community amenities that raise the quality of life in Kern County can result in DoD cost savings through reduced turnover and relocation of staff from Kern County DoD and defense industry facilities. Investment in amenities to improve the livability of Kern County for the families of service members



located off base. Increasing the County's quality of life can also facilitate the development of a STEM pipeline to the DoD's STEM operations at local installations and defense suppliers. The accompanying increase in DoD agency and personnel expenditures captured by Kern County then benefits the local government and population. Orienting the Kern County business community to both local defense and more distant commercial opportunities helps local businesses leverage the presence of DoD facilities and a strong local transportation sector in need of diversification. By addressing issues that impact the livability and level of available talent in Kern County, the DoD can secure major improvements in resiliency, lethality, and readiness, while also benefitting the hardworking people of Kern County.

### Program Activities

Kern County's Phase 1 grant funding from the DoD Office of Economic Adjustment resulted in six economic diversification studies examining the challenges each portion of the County faces in retaining talent and encouraging business development. Across reports, County officials identified a serious lack of business resources and community amenities as a major challenge in developing and retaining local talent capable of developing a symbiotic relationship with the DoD.

Kern County focused its Phase 2 IR efforts on three strategies designed to increase the retention of talent, diversify the County economy and support the needs of the DoD supply chain: community revitalization, entrepreneurial support, and business diversification. Kern County used its Phase 2 funds to hire three fiscal policy analysts responsible for implementing the recommendations identified during Phase 1 of OEA support and embedding themselves in parts of the distant county. These analysts serve as a key line of communications between the county government and local communities, many of whom are unfamiliar with county services altogether. Kern County is the size of New Jersey and lacks any economic development body outside of these staff, making them a key tool for organizing community engagement. County officials trained each analyst in the organizational structure of the county government and so far, these officials have spent most of their time organizing support at Chamber of Commerce and community meetings for the recommendations identified during Phase 1 of the grant. Additionally, these analysts are responsible for recruiting staff for and implementing the maker spaces at community libraries that provide technical resources for businesses, entrepreneurs, and students. Potential technical resources range from 3D Printers to continuing education programs.

By identifying its challenges and resources during Phase 1 of OEA grant support, the Kern County team can implement recommendations identified during Phase 1 of the grant through a coordinated, multi-community plan enabled by the contracted analysts.

### Resiliency Impacts

#### Increasing Awareness of the Defense Industrial Base

Kern County's failure to understand the importance of its existing defense sector and defense industrial base resulted in its failure to realize benefits made possible by a more symbiotic relationship with local DoD facilities. While residents of the county are aware of the large DoD presence, they do not understand how to support the local DoD operations. Increased awareness of the needs of defense installations and suppliers in Kern County can help local businesses and communities capture a greater



share of benefits from DoD expenditures and simplify DoD logistics. Many of the opportunities for increased linkage with the defense sector and defense industrial base are present in East Kern, the typically neglected portion of the County.

California City identified both Edwards AFB and the commercial Mojave Air & Spaceport as potential partners with which to strengthen ties with the surrounding defense and commercial aerospace clusters. California City's Economic Analysis helped the city realize the comparative strength of its STEM workforce, and their commuting patterns to local defense installations and defense industry facilities. In the short term, California City can use this awareness to shape transportation policy that considers transportation patterns to DoD facilities. In the long-term, California City can use this concentration of talent in STEM fields as an opportunity to recruit defense contractors located at Edwards AFB in search of an off-base site. California City can further leverage its concentration of STEM workers to attract commercial aerospace companies supplying operations at the Mojave Air & Spaceport.

The NAWS-China Lake facility presents similar opportunities for the business community in Ridgecrest. The Ridgecrest City Council is strengthening lines of communication between the military and the City Council to understand upcoming business opportunities at NAWS-China Lake. The city also plans to host military appreciation events that aim to develop relationships between city officials, military personnel, and local businesses. Finally, organizing Kern County companies that received SBIR or STTR grants can provide a forum with which to share best practices between current and future grantees. Kern EDC is tasked with developing an inventory of businesses in Kern County that focuses on targeted high-tech clusters and tracking engagement with commercial and government opportunities. These activities aim to create an innovation hub for defense technology surrounding NAWS-China Lake in Ridgecrest that can serve the technical and logistical needs of the DoD installation.

Municipal governments in East Kern County became more aware of their workforce and business connections to the defense industrial base and defense community. Municipalities can capitalize on a STEM workforce in the defense aerospace cluster to attract businesses, and leverage proximity to defense installations to facilitate access to and best practice in defense contracting opportunities.

#### Enhancing Force multipliers to Support the Defense Industrial Base

Kern County chose to embed policy analysts familiar with the intricacies of its government in each region of the County. They enhanced local government responsiveness to business needs in the defense industrial base. Knowledge resources and training that meet the needs of the defense aerospace cluster can also service the existing commercial aerospace cluster. Existing knowledge serving the defense industry can help inform future efforts to increase competitiveness for defense contracts.

The City of Ridgecrest currently lacks the workforce and businesses equipped to capture downstream benefits of the Northrop Grumman B-21 factory expansion in Palmdale, a part of the greater Los Angeles area. The Los Angeles aerospace cluster represents a larger market of investors nearby to Kern County. The policy analyst will coordinate collaboration between Cerro Coso Community College and Northrop Grumman to develop a curriculum that creates a pipeline to occupations in aerospace manufacturing. Increased offerings of business-informed courses in STEM occupations across Kern County can capitalize



on the strength of the regional aerospace cluster. While directly addressing needs in the defense industrial base, a greater number of aerospace technicians can create opportunities for businesses interested in servicing the commercial aerospace cluster surrounding Mojave Air & Space Port.

Ridgecrest also will invest in the knowledge infrastructure to increase local business' competitiveness for defense contracts. Leveraging the expertise of Cerro Coso Community College and CSU Bakersfield, the analyst will help Ridgecrest to establish a Procurement Technical Assistance Center to serve businesses across Kern County competing for contracts at NAWS-China Lake and Edwards AFB. After identifying the large flow of STEM occupants to Edwards AFB, California City is improving road access to the installation. Municipalities can leverage local knowledge and resources to increase businesses' competitiveness in contracting, securing financing, and locating in Kern County.

Kern County officials used OEA funds to support the development of county partnerships. Analysts funded by OEA are organizing support among East Kern Chambers of Commerce to formally establish the East Kern County Alliance, which will help direct economic activity in that part of the county. The analysts are similarly working to strengthen and organize the Edwards AFB Community Alliance, made up of key stakeholders from local installations and the neighboring communities. Currently, the analysts are working with installation staff member Scott O'Neill to create a plan documenting how the local community can support the China Lake and Edwards AFB installations and set up a PTAC in East Kern.

These organizing efforts in support of local installations are already generating tangible impacts. After a July earthquake caused over \$3 billion in damage to the China Lake facility, elected officials in Kern County notified their representatives of the importance of the installation to the region and the necessity of funding its repairs.

Municipal governments in Kern County have the local knowledge and necessary connections to the defense community to develop resources that improve businesses access to opportunities to locate in Kern County and access government opportunities. Using local partnerships to expand educational opportunities that meet industry needs can provide further opportunities for business growth and the capture of downstream benefits from the larger aerospace industry cluster in Los Angeles.

#### [Commercial Diversification of Defense Companies to Sustain the Industrial Base](#)

Kern County sees the development of a high value research and development sector structured around the NAWS-China Lake and Edwards AFB as key in securing commercial sales, while also increasing local suppliers' ability to support the mission of the local DoD installations.

In conjunction with CSU-Bakersfield, Ridgecrest will host a Small Business Development Center in Ridgecrest that will leverage the pool of retired military and business leaders to provide business assistance. The intensity of STEM workforce in the region can empower a high value aerospace research and development sector that leverages existing DoD relationships with researchers in San Diego and Silicon Valley and the nearby Los Angeles economy. The Kern County Team is currently reaching out to installations to identify staff members interested in teaching and training opportunities for businesses.



The Kern County team also is working with aerospace firms that operate out of the Mojave Air and Space Port to target expansion or relocation to Kern County. The Team made connections with several CEOs with operations at the spaceport. Municipalities in Kern County can leverage their STEM workforce to attract aerospace firms serving the DoD installations and Spaceport to locate their operations closer to the facility and population centers in the County's micropolitan areas. The presence of the nearby commercial Mojave Air and Spaceport cluster also serves as a market for defense aerospace industry suppliers expanding their business to commercial sales. The Kern County Team partnered with Kern Economic Development Corporation, the Greater Antelope Valley Economic Alliance and the California Governor's Office of Business and Economic Development (GO-BIZ) to strategize how to relocate these businesses to the launch facility and vertically integrate the local aerospace and defense cluster in Kern County. Developing businesses capable of servicing the high value sectors of the defense industry likewise creates opportunity in parallel commercial clusters.

Economic activity in the aerospace cluster presents both commercial and defense opportunities in Kern County. The high-tech focus of both regional aerospace clusters presents high value opportunities for research and development activities that span both clusters. Furthermore, research and development activities create opportunities for private investment for commercial technologies. The Edwards AFB museum can be leveraged as a tourism destination around a community of aerospace enthusiasts.

## Lethality Impacts

### [Innovation through the Development of New Intellectual Property or New Technologies](#)

Technical and knowledge resources developed to support innovation and competitiveness among Kern County entrepreneurs and the existing defense industrial base offer to provide DoD benefits in the form of technologies that increase DoD lethality. These "Maker Spaces" act as a centralized site from which Kern County officials can provide local entrepreneurs and businesses with technical resources, including 3D printers, and training to increase local capacity and youth interest in STEM. Maker Spaces can similarly facilitate businesses' efforts to commercialize technologies that can support new DoD missions.

The policy analysts hired by Kern County are responsible for the coordinated implementation of Maker's Spaces throughout the Kern County Library System that contain the space, technology, and resources to provide workforce training, business development, and networking support to residents. Currently, the analysts are focused on identifying active and retired service members willing and able to provide training in STEM courses, including robotics and additive manufacturing. The deep community of former-DoD and retired STEM professionals in Kern County present an opportunity to leverage their expertise in designing training and providing services to Kern County residents. This creates opportunities for Kern County residents to obtain the training necessary to pursue jobs in the existing defense industry base. Maker Spaces can create a pipeline of innovative, local STEM talent in support of the defense industrial base and DoD.

Maker Spaces also present the opportunity to develop an innovation hub of entrepreneurs and small businesses specialized in high-tech manufacturing that meets niche DoD needs. 3D Printers and accompanying training open to all local businesses and entrepreneurs will be available at each Maker's



Space. Increased utilization of 3D Printing technology across Kern County can increase the range and competitiveness of local manufacturer's offerings to DoD, while also providing opportunities for commercial sales. Initiatives by the Kern Initiative for Talent and Entrepreneurship to expand entrepreneurial opportunities in East and West Kern County can support entrepreneurs developing new technologies. Maker's Spaces can provide innovative technology and the appropriate training to help local businesses maximize their ability to provide innovative and lethal technology to the DoD.

Currently, implementation of Maker Spaces has stalled. The Kern County General Services Department failed to provide libraries with the quotes for new flooring and paint to accommodate industrial equipment. In response, the OEA Team requested that the local libraries begin preparation to install any equipment without any renovation, meaning the Team may need to alter its original capital purchase plan. Still, Maker Spaces offer a centralized location to provide STEM training and resources that increase local workers' ability to support the defense industrial base and DoD through increased capacity and competitiveness, resulting in increased local manufacturer's capacity to compete for DoD contracts with novel and improved technologies.

## Readiness Impacts

### Training and People Support

The Kern County Team identified the development of community amenities and increased offering of STEM educational opportunities as vital support to the local DoD installations. Issues of livability in Kern County impact DoD and defense industry employees, along with the local population. A lack of STEM workforce development programs exacerbates local installations' and defense suppliers' inability to retain and attract highly educated STEM talent to the region.

The Economic Diversification Plans identified the leakage of retail expenditures outside the County and the net outflow of talent from Kern County as evidence the County lacks the requisite amenities, such as grocery stores, to meet the needs of STEM professionals. Developments in Kern County made possible by the IR Grant, ranging from park to downtown renovation, provide the opportunity to attract commercial businesses that can provide entertainment to the local STEM workforce. The presence of "off-hours" entertainment in Kern County similarly increases the livability of the region for DoD personnel, raising the quality of life for both on-base and off-base personnel and their families. Investment in retail and recreation by Kern County provides the opportunity for the County to enact changes that both attracts outside talent and satisfies the needs of the current population.

Kern County plans to use the Maker Spaces in conjunction with increased workforce development programs at local colleges to create a pipeline of STEM professionals in support of the local DoD installations and defense industrial base. With tighter restrictions on oil and gas drilling in California, many highly skilled technicians in West Kern are out of work. The Kern County Team is creating connections with machine shops in West Kern to link these workers with opportunities supporting the local installation. The creation of a PTAC in West Kern, distant from the PTAC currently in East Kern, will supplement this activity and help keep federal contractor awards local.



East Kern faces a lack of educational providers, with the nearest community college more than two hours away from parts of the county. In addition to funneling these transitioning workers in support of the DoD, the Team is developing a mobile welding classroom to train workers in East Kern. The Team is working with Cerre Costa Community college to establish a satellite campus in West Kern between Ridgecrest and Rosamond. The team is working with Edwards AFB personnel to serve as professors at this campus and provide training at Maker Spaces to show students career opportunities in support of the DoD. Further, the local four-year university, California State-Bakersfield is developing new aerospace engineering programs in response to the diversification plans supported by OEA.

## Other Community Benefits

### Industries Impacted and Communities Served

Outside of defense, the Kern County Team identified opportunities to leverage planning and organizing activities supported by the grant to develop the County's transportation and logistics industry in East Kern. West Kern already has a burgeoning transportation sector based around the I-99 Corridor. With less than 10% of the land in Kern County available for development, the OEA grant supported the development of an Economic Dashboard that tracks parcels available for development. This data is then listed in community profiles site selectors can use to analyze potential opportunities in Kern County. The profiles include vacant building and high priority, developable properties. GO-BIZ in turn provides this data to companies looking to locate in California and the information is listed on the new economic development tab of visitmojave.com. The Kern County Team also leveraged the tracking of parcels and a local lithium mine to identify opportunities for a renewable battery storage center that can service the local installations. Additionally, the Kern County Team has been vital in organizing stakeholder and community groups in support of the local installations and defense industrial base.

### Amenities and Infrastructure Developed as Part of the Project

Kern County lacked any county-level economic development organization prior to the period of OEA support. The County Team is using the impact of the OEA grant, especially its initial impacts in organizing local stakeholders, to demonstrate to the County Board of Supervisors the necessity of funding economic development in the county. Retaining the three analysts supported by the OEA grant is vital to this effort, with these analysts necessary in building the ecosystems to support the OEA funded activities. With previous county economic development concentrated around the I-99 corridor, the widespread small rural communities clustered around the installations suffer.

## Lessons Learned

### Greatest Challenge

Kern County's geography makes it difficult to connect with micropolitan areas and defense suppliers. The State of New Jersey can fit in the County. Additionally, a mountain range separates West and East Kern, which is mostly desert. Much of the county lacks access to higher education opportunities and as a result of the geography, many of the county's community organizations are disconnected from the county seat and community assets.



### Most Important Lessons Learned

The Team learned that it is important to temper expectations. One city manager upset with the pace of change failed to realize that the problem of economic development in Kern County is decades old and cannot be solved with one grant. It is difficult to help stakeholders understand the need for long term planning and sustained implementation. Many of the County's communities lacked any type of political engagement prior to this project, and the analysts have spent a lot of their time learning about the communities and their assets and challenges.

Strategic plans generally do not result in a straightforward plan of action as new information becomes available. The Team spends a lot of time engaging with stakeholders to scope the workplan and its goals.

Network building is an ongoing process beyond the strategic plan that requires the analysts to become embedded in the community. While the team initially saw the need to build a grocery store, engagement with stakeholders helped the team see the underlying issues preventing the establishment of the store.

### Changes to the Workplan

The Kern County Team initially assigned one analyst per every two communities but altered the workplan to assign one analyst each to the County's two isolated communities and the remaining analyst to serve 2 communities. Communication with local stakeholders informed this decision.

Sources: Six Economic Diversification Plans

<https://www.kerncounty.com/econdev/pdf/econ-dev-strategic-plan-ridgecrest.pdf>

<https://www.kerncounty.com/econdev/pdf/east-kern-econ-diversification-plan.pdf>

<https://www.kerncounty.com/econdev/pdf/econ-assess-and-swot-tehachapi-draft.pdf>

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