



California Research Bureau
California State Library



2020 Counties Supplement
California Statewide
National Security Economic Impacts



USS Midway Museum in San Diego.

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Requested by

Governor's Office of Planning and Research
Governor's Military Council

Acknowledgements

This report was prepared under contract with the California Research Bureau at the request of the Office of Planning and Research and the Governor's Military Council with financial support from the Department of Defense, Office of Local Defense Community Cooperation (formerly the Office of Economic Adjustment). The content included in this report does not necessarily reflect the views of the Department of Defense or the Office of Local Defense Community Cooperation.

Recommended Citation:

Nothnagel, D.M. & Lavelle, D.M., "California Statewide National Security Economic Impacts, 2020 Counties Supplement." California Research Bureau, California State Library, Apr. 2021.

ISBN 1-58703-287-2

Key Findings

Economic output is concentrated in Southern California, the SF Bay Area and the Sacramento region

Over \$180 billion in economic output was generated statewide as a result of national security spending in 2019.

\$10.1B

\$9.7B

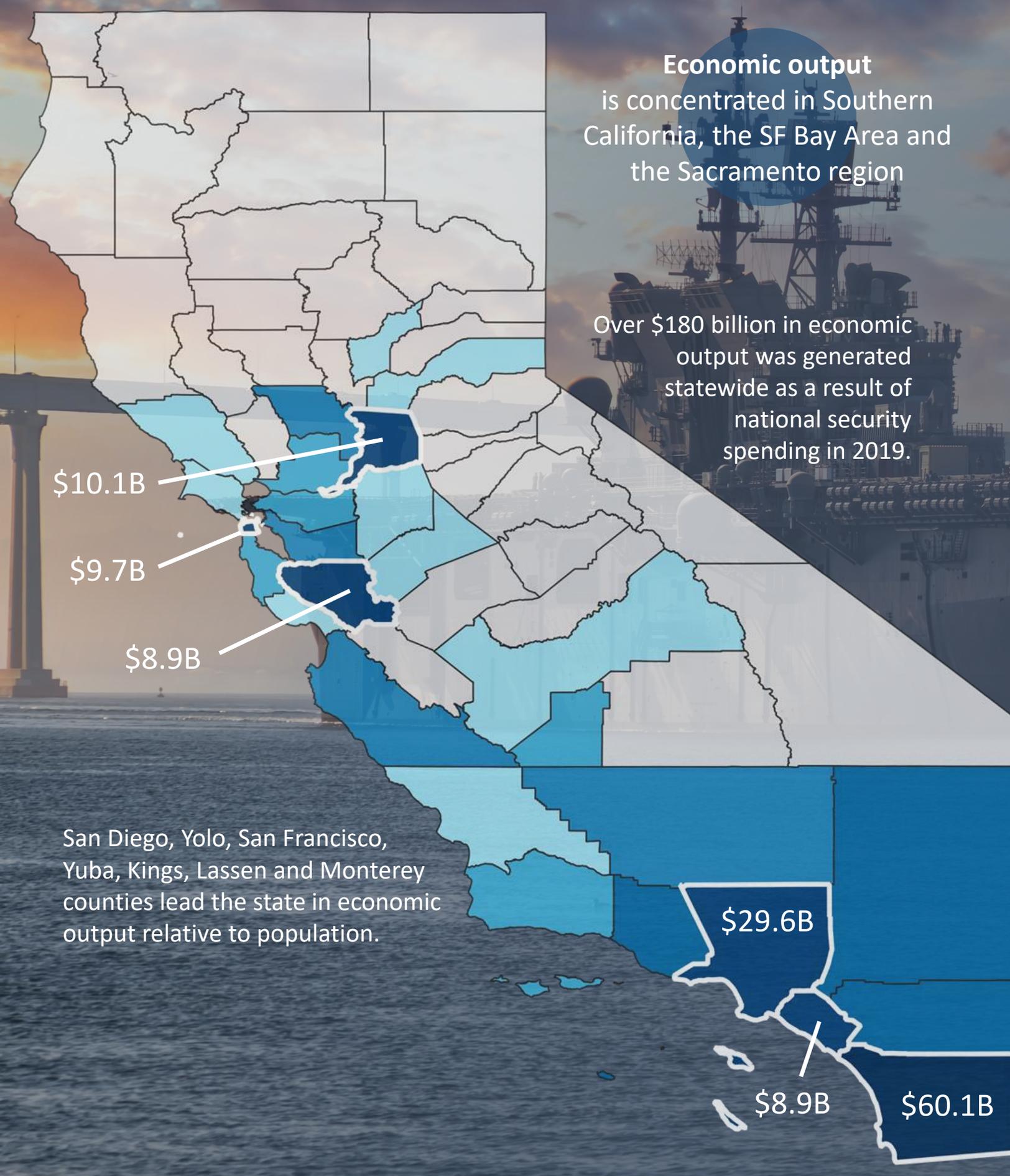
\$8.9B

San Diego, Yolo, San Francisco, Yuba, Kings, Lassen and Monterey counties lead the state in economic output relative to population.

\$29.6B

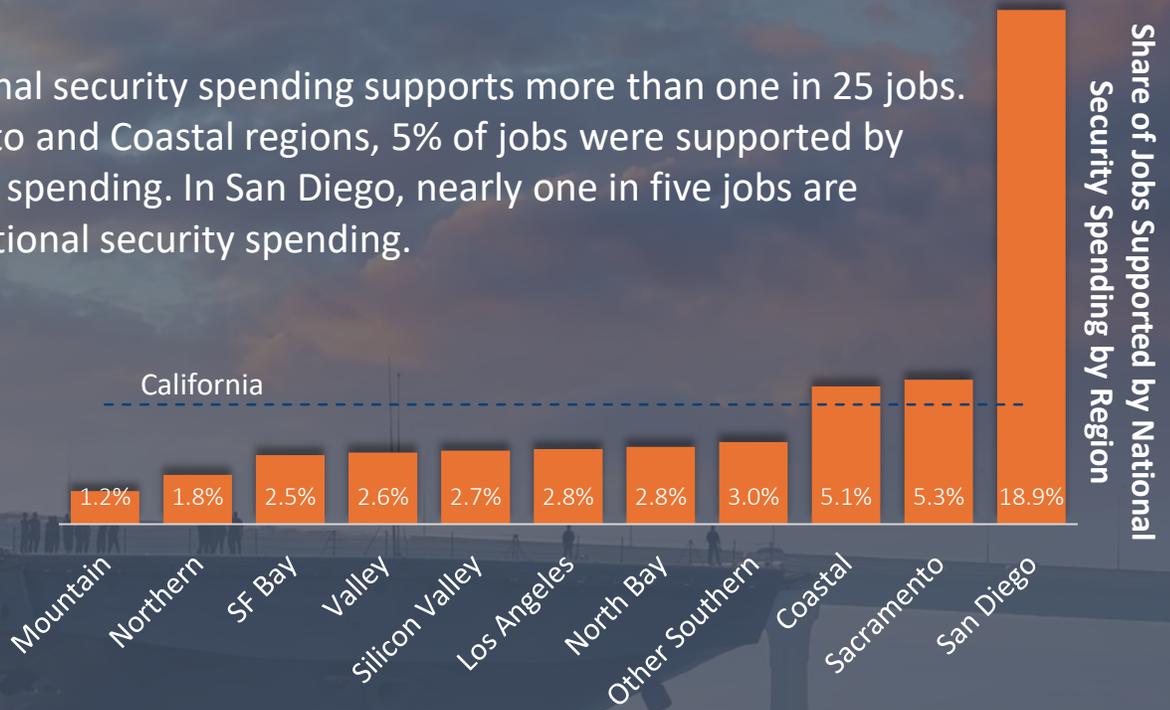
\$8.9B

\$60.1B



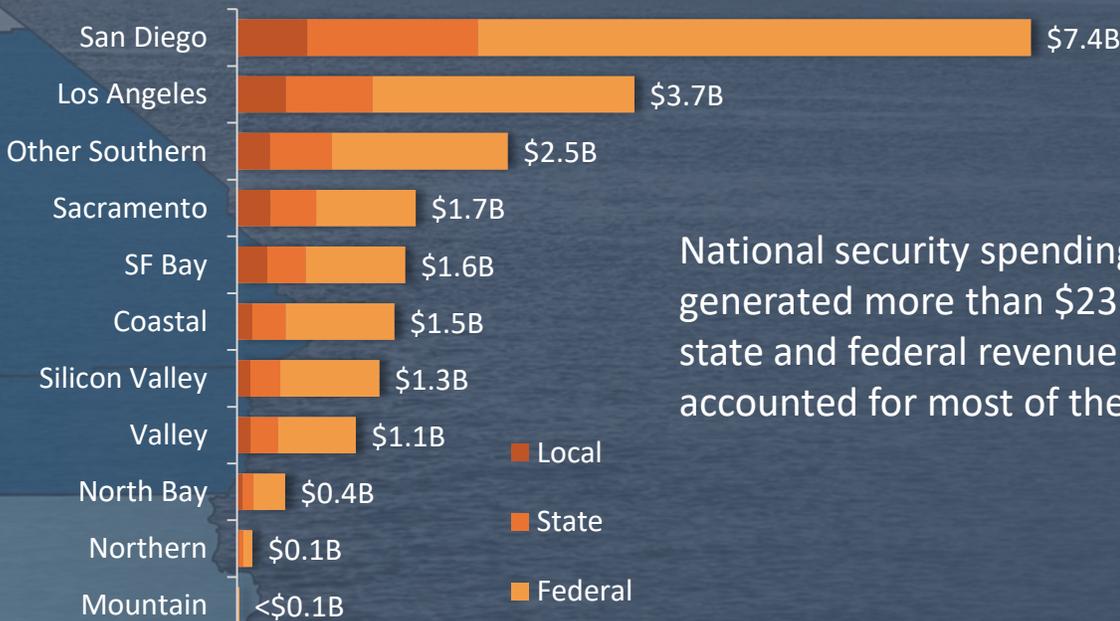
National security spending supports at least 5% of jobs in the San Diego, Sacramento and Coastal regions

Statewide, national security spending supports more than one in 25 jobs. In the Sacramento and Coastal regions, 5% of jobs were supported by national security spending. In San Diego, nearly one in five jobs are supported by national security spending.



Spending generated more than \$13 billion in government revenue in Southern California alone

Government Revenue by Region



National security spending in California generated more than \$23 billion in local, state and federal revenue. Federal revenue accounted for most of these funds.



The Thunderbirds perform at
The Great Pacific Airshow in
Huntington Beach, 2019

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A U.S. Coast Guard C-27J aircrew assigned to Coast Guard Air Station Sacramento flies over Yosemite National Park during an area familiarization training.

California Statewide National Security Economic Impacts, 2020 Counties Supplement

Introduction

In December 2020, the California Research Bureau at the California State Library published the third annual report on Statewide National Security Economic Impacts in California.¹ CRB produced this report at the request of the Governor’s Office of Planning and Research and the Governor’s Military Council. Support from the U.S. Department of Defense has allowed for an expanded scope, including two local supplements. This supplement details findings by county and the second provides findings by congressional district. Readers should refer to the [California Statewide National Security Economic Impacts, 2020 Update](#) and forthcoming Congressional Districts Supplement for more information.

Using fiscal year 2019 spending and employment data from the Department of Defense (DoD), the Department of Homeland Security (DHS) and the Department of Veterans Affairs (VA), this report examines the impact of national security spending and employment in California’s 58 counties.

In addition to this report, factsheets highlighting key metrics for each county are available in Appendix II. [An online interactive](#) map with complete results for each county is also available for readers interested in comparing numbers between various counties.

Example of a County Factsheet – Orange County



In this report, counties are grouped into 11 regions (see Figure 1), based on the California Employment Development Department’s “California Economic Markets”² but customized slightly to add greater detail in the San Francisco Bay Area and Southern California regions.

The report begins with an overview of economic impacts by region. County results are detailed in the following section and examined through comparison with other counties in their region. Sections are designed to illustrate the unique impacts of national security spending in each county and region, highlighting the diversity of national security activity that make California a leader in the defense domain.

¹ Lavelle, DM (2020) [California Statewide National Security Economic Impacts, 2020 Update. CRB.](#)

² EDD. Interactive Maps and Data Tables. Source: [Regional Economic Markets Boundary Map | EDD Data Library \(ca.gov\)](#)



Figure 1: California Counties Grouped by Regions

Regional Overview

Direct Activity

Direct Employment

In fiscal year 2019, the U.S. Departments of Defense, Homeland Security and Veterans Affairs directly employed 339,000 civilian and military employees in California, accounting for 860 of every 100,000 Californians. Employment is concentrated in the Southern California Area, which includes the San Diego, Los Angeles and Other Southern Counties regions, with 241,000 military and civilian personnel – over 60% of the statewide total. Most of this employment is in the San Diego region, with nearly 165,000 civilian and military personnel, making up nearly 5,000 out of 100,000 residents in the region. The San Francisco Bay Area, including the San Francisco Bay, Silicon Valley and North Bay regions, had 27,000 military and civilian employees. The Sacramento region was home to 13,000 employees.

Only the San Diego and Coastal regions have a higher proportion of military and civilian employment to the region’s population than the state average. The Coastal region ranks fourth in military employment but is the fourth smallest region in total population.

Figure 2: Direct Employment by Region

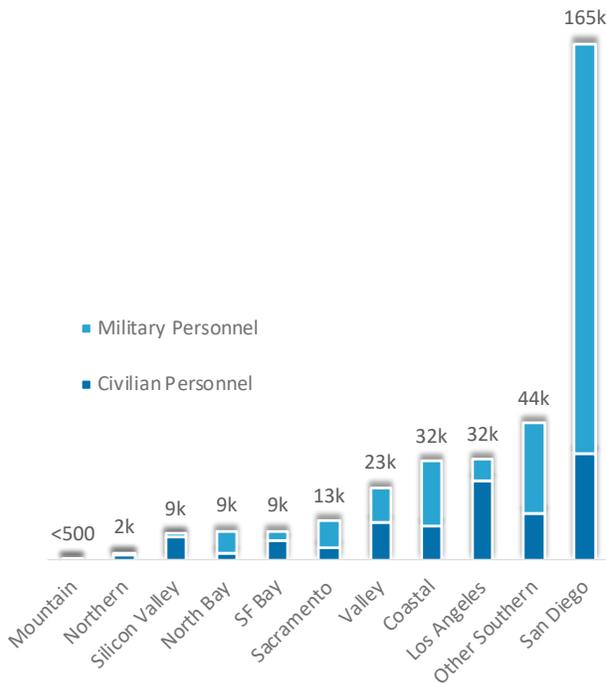
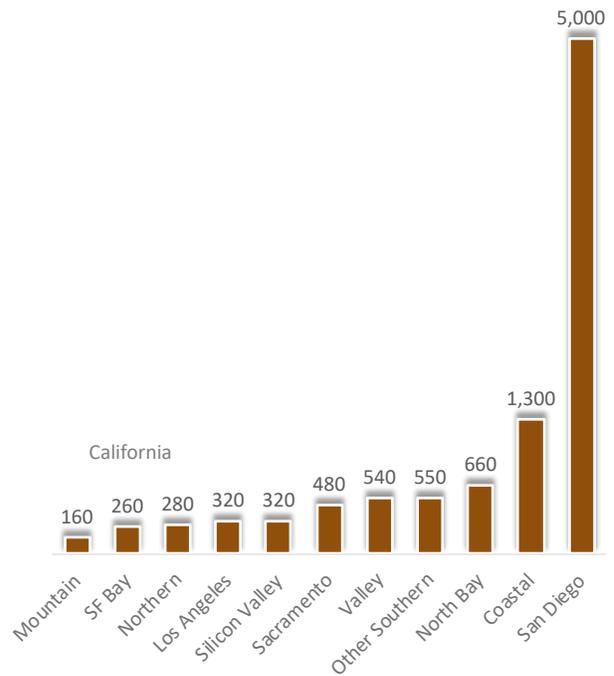


Figure 3: Direct Employment per 100k Residents



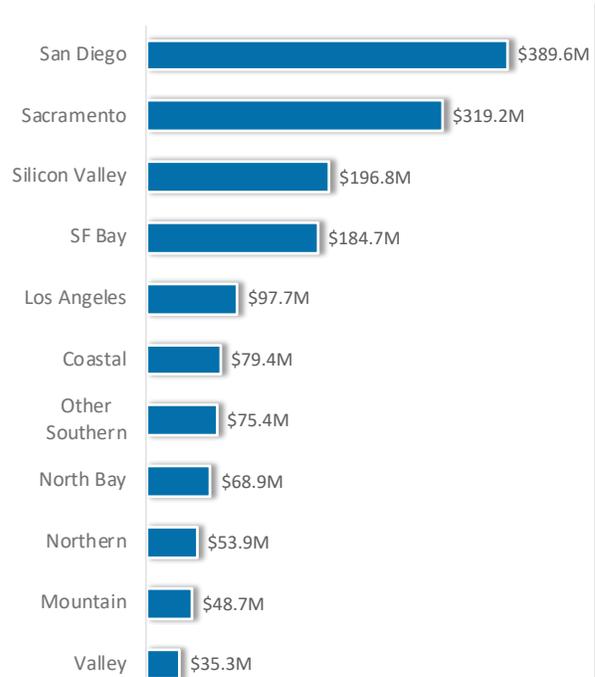
Direct Spending

In fiscal year 2019, the Departments of Defense, Homeland Security and Veterans Affairs collectively spent \$54.3 billion on national security activity, or about \$138 million per 100,000 California residents. The Southern California Area, which includes the San Diego Region, received \$28.9 billion in spending, just over half of the state’s total. The San Diego region alone, which accounts for 24.0% of all national security spending in the state, received \$13.0 billion in fiscal year 2019. The San Francisco Bay Area also received about 24.1%, or \$13.1 billion, of national security spending in California. The Sacramento region received \$8.4 billion, or 15.5%.³

Figure 4: Direct Spending by Region



Figure 5: Direct Spending per 100k Residents



While the Los Angeles region receives a considerable portion of total national security spending in California, it received less per resident than the state average, the Sacramento region and most of the San Francisco Bay Area, which includes the North Bay, San Francisco Bay and Silicon Valley regions.

³ This may overstate the true local spending, however, as a portion of this spending flows through the state government in Sacramento to other regions where the actual economic activity occurs.

Economic Impacts

This report models economic impacts using IMPLAN software, based on standard Input-Output methodology.

The IMPLAN software estimates the direct, indirect and induced economic activity that typically results in a region from spending and employment in each given industry. Direct effects include the employment and economic output from the federal government as well as the employment and economic output of its direct contractors. Indirect effects include the output and employment of subcontractors. Induced effects include the employment and economic output generated because of spending created from earnings generated in the first two categories.

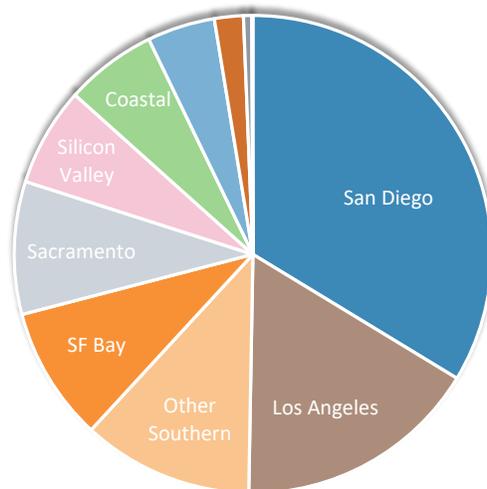
For more information about the methodology employed in this study, please refer to the methodology section in Appendix I of this report.

Total Output

Economic output follows a similar pattern to spending and employment. The San Diego region has the largest share, \$60.1 billion, accounting for a third of California’s \$181.2 billion in total economic output generated by national security spending and employment. The Los Angeles region is second with \$29.6 billion. In total, the Southern California Area accounts for \$110.4 billion in economic output, almost two-thirds of the state’s total, due to the high concentration of military facilities, major national security contractors and servicing industries in the area. The San Francisco Bay Area made up almost one-fifth of the state’s total economic output, about \$31.7 billion, generated by national security spending and employment.

(Note that, throughout the report, local estimated outputs add up to a modestly smaller amount than the statewide figure. A small amount of leakage from counties is unable to be accounted for within IMPLAN, resulting in this difference.)

Figure 6: Share of Total Output by Region



The San Diego and Sacramento regions have larger proportions of total output than the state average of \$451.6 million. The Coastal, Silicon Valley and San Francisco Bay regions are similar to the state average.

Figure 7: Total Output by Region

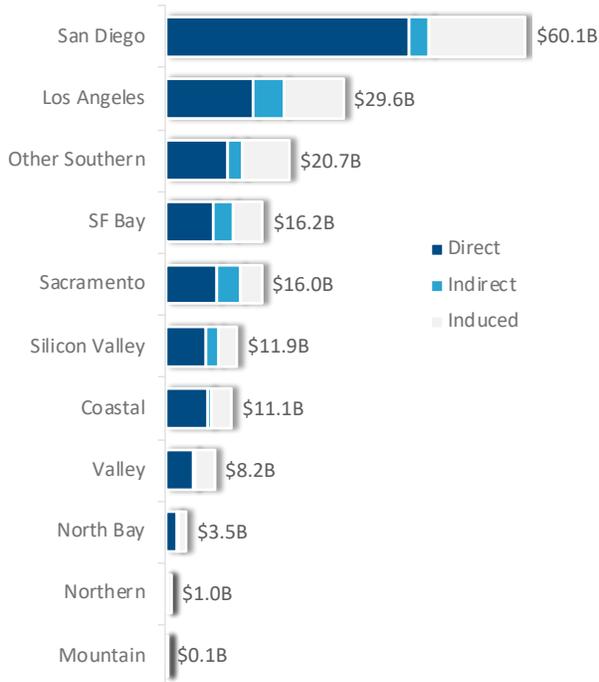


Figure 8: Total Output per 100k Residents by Region



Total Employment

Estimated total employment follows a similar pattern to total output across the regions. The San Diego region supported 292,000 full-time equivalent (FTEs) jobs, accounting for 35.7% of the 818,000 FTEs generated by national security activity in California. The Southern California Area, consisting of the San Diego, Los Angeles and Other Southern regions, accounts for two-thirds of all employment, about 536,000 FTEs. The San Francisco Bay Area includes 109,000 FTEs, or 13.3% of national security supported employment. The region’s output is driven in large part by technology and other high-skilled industries that typically pay well per employee.

Most regions are near the state average with 2.5% to 3.0% of employment being supported by national security activities. San Diego is the state’s leader with nearly one in five jobs supported by national security activities, while the Sacramento and Coastal regions are next with just over 5%.

Figure 9: Total Employment by Region (FTEs)

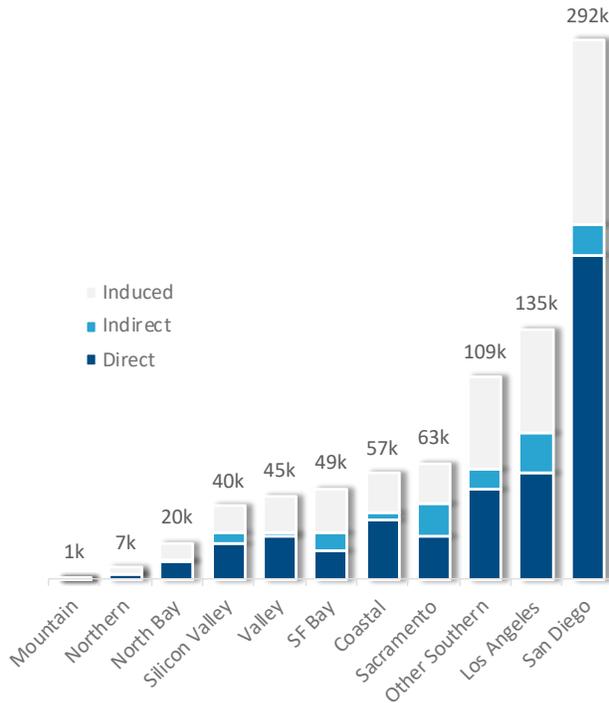
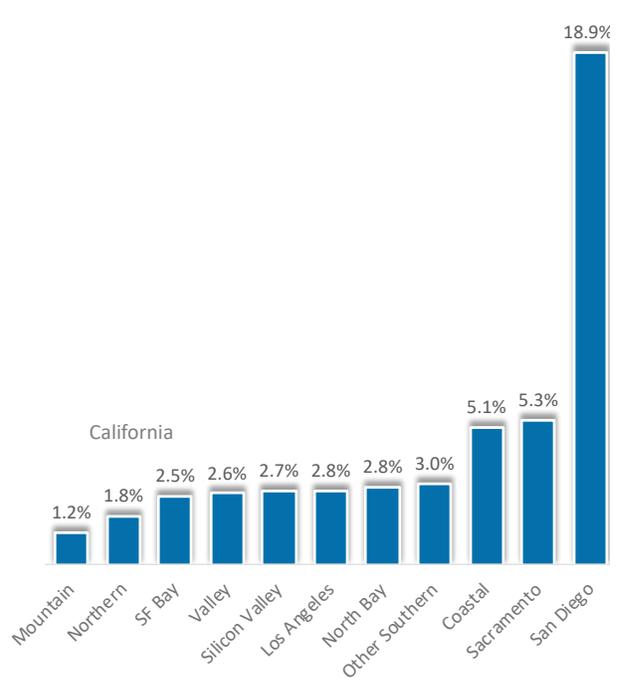


Figure 10: Total Employment as Percentage of Region’s Employment



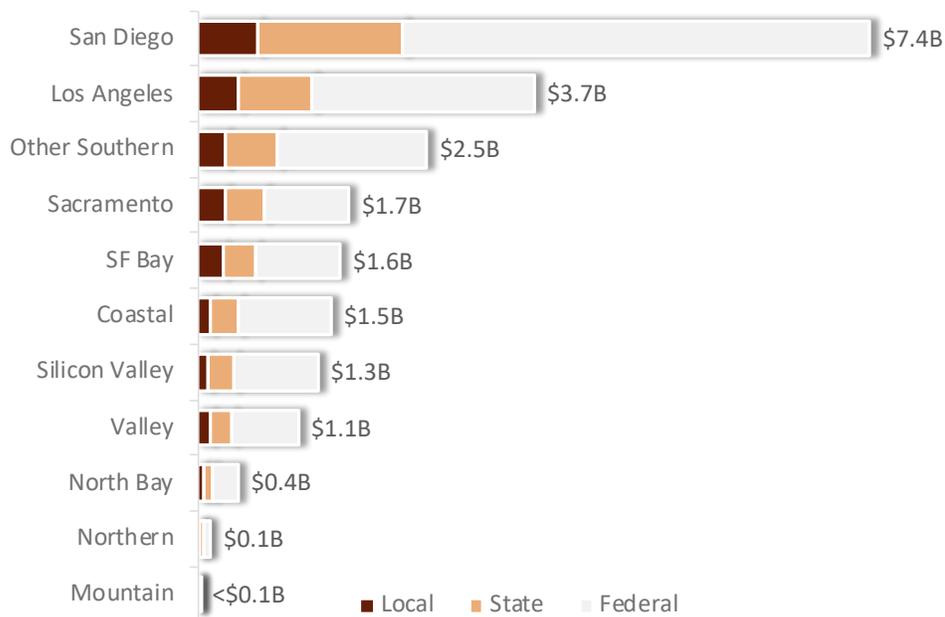
Government Revenue

National security activity in fiscal year 2019 generated \$7.4 billion in combined local, state and federal revenue in the San Diego region, which accounted for about a third of the state’s \$23.2 billion in total government revenue from national security activity. The Southern California Area totaled \$13.6 billion in total government revenue, more than two-thirds of the state total. The San Francisco Bay Area made up 15.6% of total revenue, just over \$3.3 billion in combined government revenue, including both taxes and fees.⁴

Statewide, 66.2% (\$15.4 billion) of government revenue was federal and 33.8% (\$7.8 billion) was state and local, combined. In the San Diego, Silicon Valley and Coastal regions, federal revenue made up the highest portion of total revenue, about 70% in each region. The Sacramento and Mountain regions have the highest share of state and local revenue, 44.3% and 47.8%, respectively.

IMPLAN generally considers revenue that is collected by the state but passed through to local governments to be considered state revenue.

Figure 11: Government Revenue by Region



⁴ IMPLAN Data Team (2021). [Generation and Interpretation of IMPLAN's Tax Impact Report](#)

Industries Impacted

Nearly every industry in the state benefits from national security activity. Some industries – such as real estate, healthcare, wholesale, retail and financial – are spread relatively evenly throughout the state. These sectors, which service the population broadly, are typically associated with indirect and induced economic activity.

Other, more specialized industries that are concentrated in one or more regions are more typically associated with direct economic activity. This includes industries such as aerospace manufacturing in the San Francisco Bay Area, Los Angeles and San Diego regions; or pharmaceutical manufacturing in the Sacramento and San Francisco Bay regions. Professional services and insurance are among those industries whose activity are split relatively evenly between direct and indirect/induced. Similarly, both are represented broadly through the state, but also show clear concentrations in certain regions. Insurance has a major concentration in the Sacramento region, while professional services has concentrations in the Coastal, Los Angeles and Silicon Valley regions.

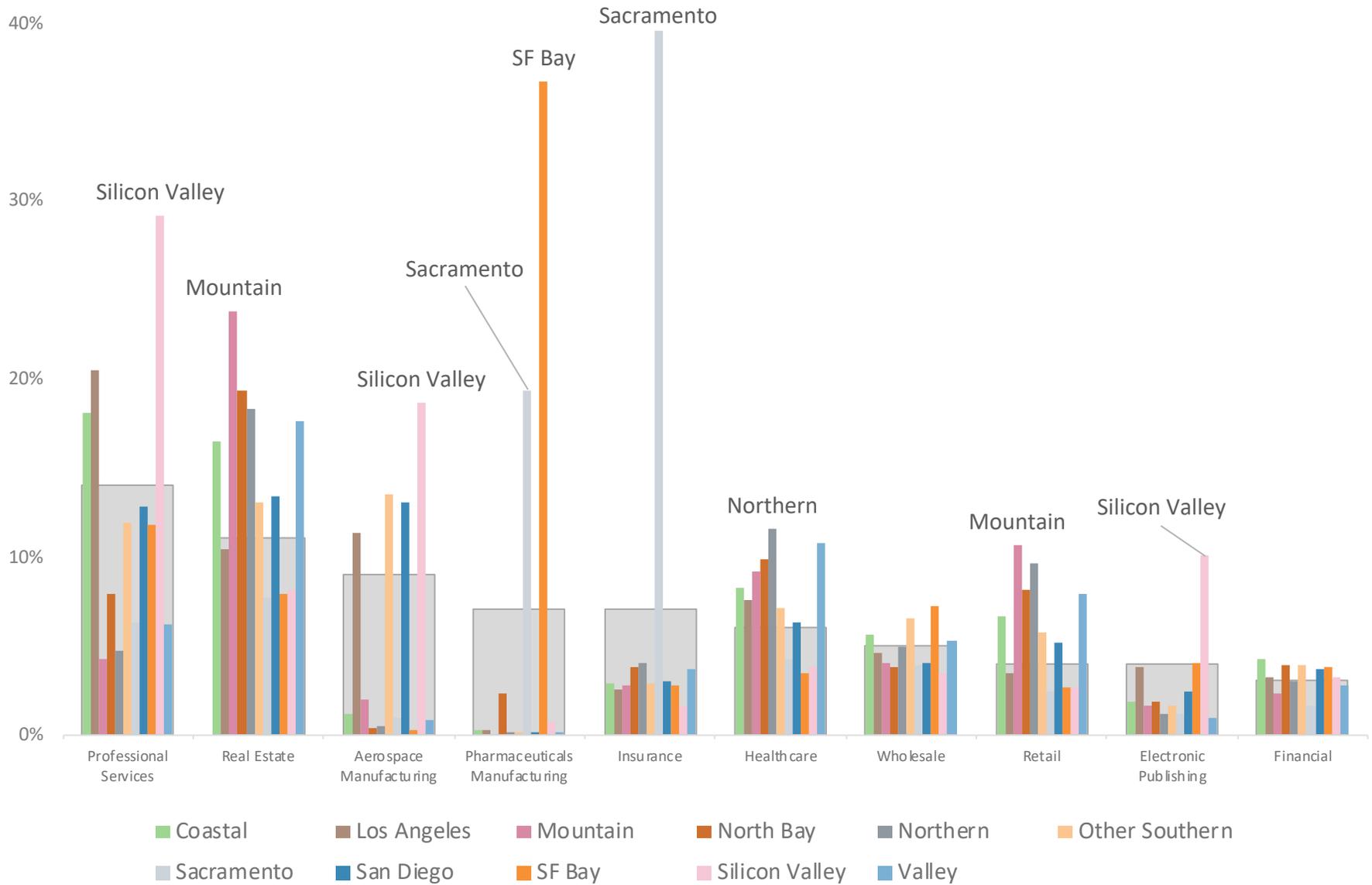
Spending is analyzed based on an IMPLAN industrial code,⁵ which is assigned based on the North American Industry Classification System (NAICS) code provided in USASpending.gov to allow for the collection, analysis and publication of data related to the U.S. economy. NAICS codes are self-assigned by each company, typically based on that company's primary industry. Many larger corporations do business across different sectors and specific contracts may be for services in an industry other than those described by that corporation's NAICS code. This could lead to an overstatement of direct activity in that industry and an understatement of direct activity in the other industry. In addition, this may have a smaller impact on indirect economic activity. Cyber security related activities have been raised as a potential area where this phenomenon may occur.⁶

Regional employment by industry followed similar patterns to output. In nearly all regions, the professional services, retail, restaurant and healthcare industries saw a significant amount of employment supported by national security activity.

⁵ Clouse, C. (2020), [IMPLAN Sectoring & NAICS Correspondences](#)

⁶ Per CRB interviews with stakeholders.

Figure 12: Statewide Top Industries as a Percentage of Total Regional Output



Securing Aircrew Eye and Respiratory Protection System gear during a base exercise at Travis Air Force Base.



A helicopter crew from U.S. Coast Guard Air Station Humboldt Bay pull volunteer victims out of the water during a mass rescue drill.



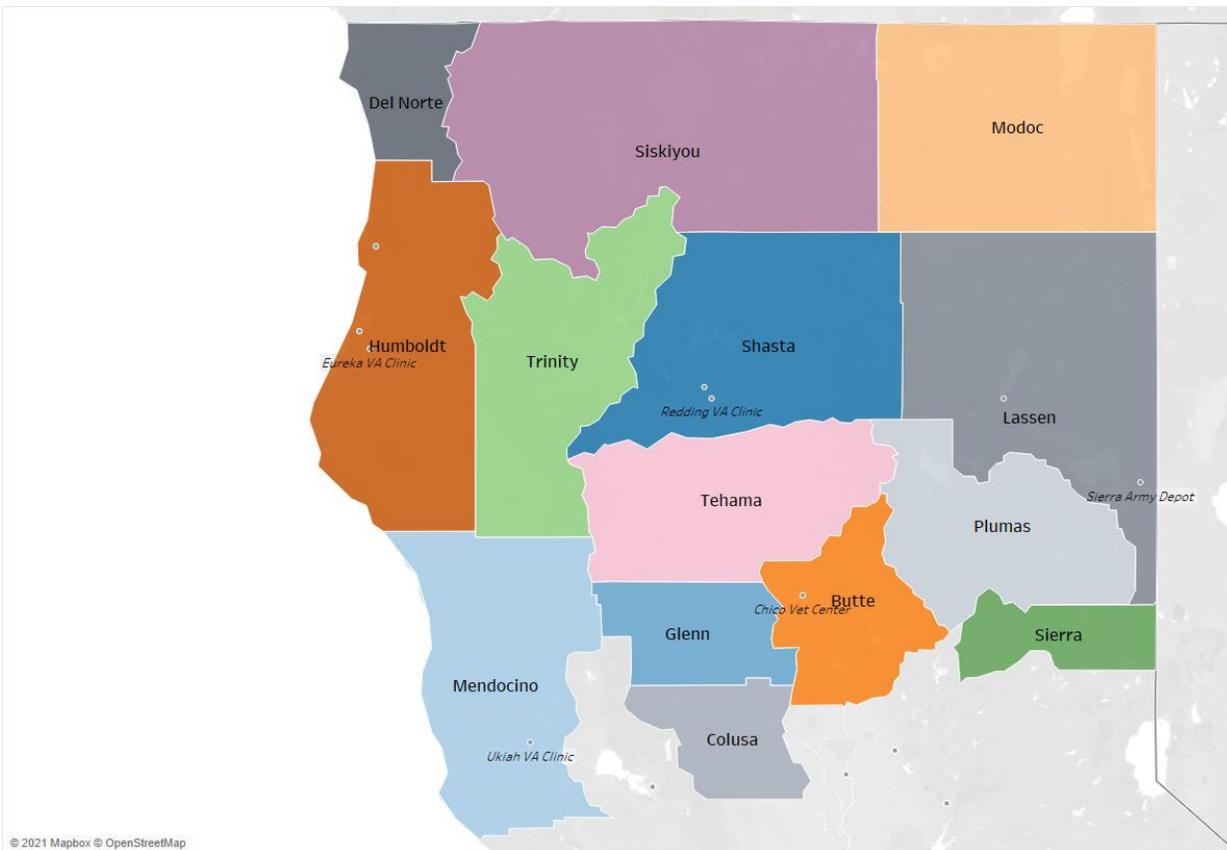
Results by Region

Northern Region

The Northern region spans the northern half of the state and includes 14 counties: Butte, Colusa, Del Norte, Glenn, Humboldt, Lassen, Mendocino, Modoc, Plumas, Shasta, Sierra, Siskiyou, Tehama and Trinity. It makes up more than a quarter of the state’s land area – the largest of any region – but accounts for only 2.2% of California’s population.

The region has one military base, Sierra Army Depot in Lassen County. The depot is the largest U.S. facility dedicated to equipment retrograde, regeneration, reutilization and redistribution.⁷ The Northern region has nine Veterans Affairs healthcare and service facilities and one port of entry, the Eureka Port of Entry.⁸

Figure 13: Counties in the Northern Region



⁷ Sierra Army Depot, [Sierra Army Depot Welcome Page](#)

⁸ VA, DoD and DHS property counts are estimates based on 2019 federal property data and department websites. Facilities that have since opened or closed and facilities not listed on department sites may not be included.

Direct Activity

The Northern region ranked 10th of the 11 regions with \$475.5 million in direct spending and around 2,000 employees (700 military and 2,000 civilian) in fiscal year 2019.⁹ Adjusted for population, it ranks ninth out of 11 in spending and employment.

Direct Employment

Lassen County was home to about 1,000 direct employees, half of the Northern region’s 2,000 total military and civilian employees. Mendocino, Shasta and Humboldt counties followed, with approximately 440, 220 and 130 national security employees, respectively. Other counties in the region had fewer than 100 military and civilian employees.

Lassen County has the largest direct employment, relative to population, over 11 times larger than Mendocino, the next largest.

Figure 14: Direct Employment – Northern Region

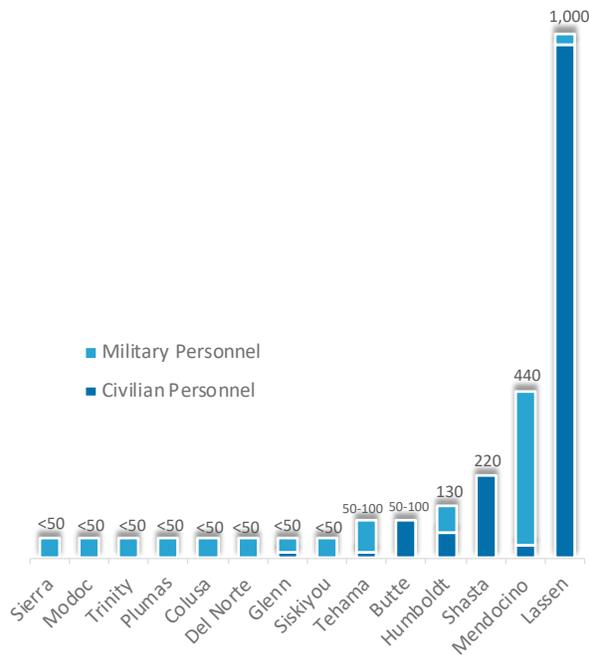
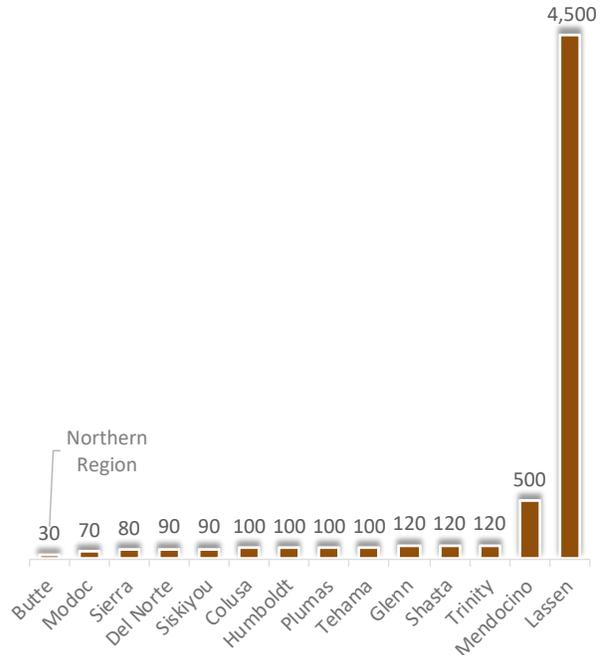


Figure 15: Direct Employment per 100k residents – Northern Region



⁹ Figures listed throughout report may not sum due to rounding.

Direct Spending

The largest share of the region’s \$475.5 million in direct spending occurred in Shasta County, totaling \$130.2 million. This was primarily driven by trailer and camper manufacturing and construction contracts in the county. Butte and Humboldt counties received the second and third largest amounts of spending in the region, with \$108.2 million and \$69.2 million, respectively. Contracting in commercial and industrial machinery and equipment and leasing apparel manufacturing were the top areas of direct spending in Butte and Humboldt counties, respectively.

Figure 16: Direct Spending – Northern Region

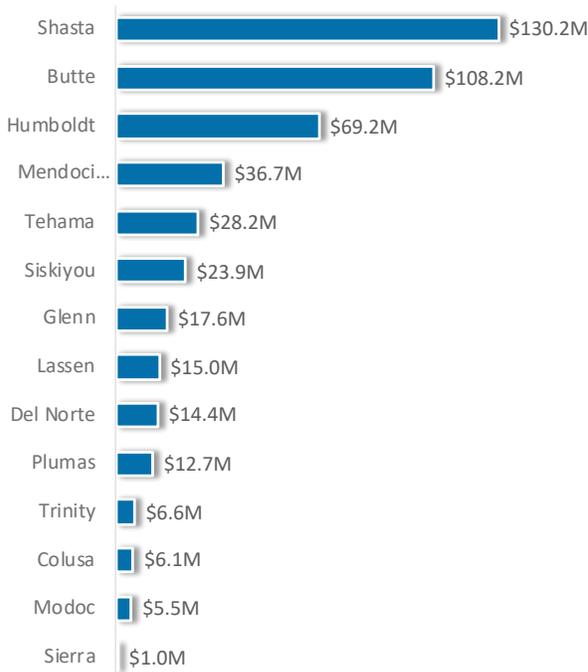
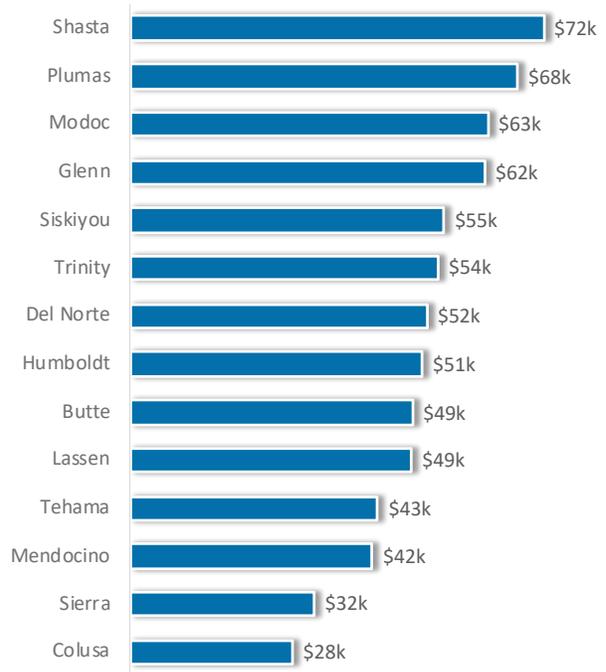


Figure 17: Direct Spending per 100k residents - Northern Region



Spending relative to population was more balanced across the counties. The top county, Shasta, had about 2.5 times the spending per 100,000 population as the lowest county, Colusa.

Economic Impacts

The Northern region ranked 10th of the 11 regions with \$997.1 million in output and 7,000 FTEs. It also ranks 10th relative to population.

Total Output

The spending and employment included in this estimate generated \$270.7 million in economic output in Lassen County, accounting for 27.1% of the Northern region’s total. Despite a relatively small portion of national security spending, military and civilian employees associated with the Sierra Army Depot contributed significantly to Lassen County’s output. Shasta and Butte counties followed, with \$202.2 million and \$165.4 million in output, respectively.

Relative to its population, economic output in Lassen County was about eight times higher than other counties in the region.

Figure 18: Total Output – Northern Region

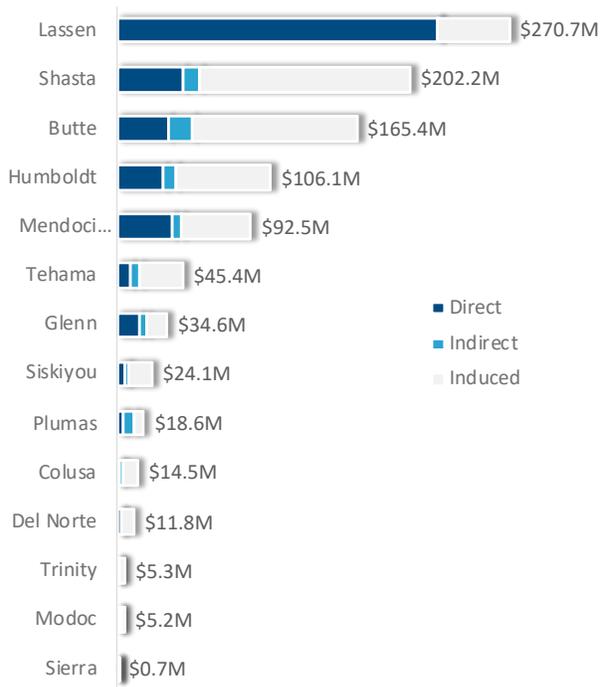
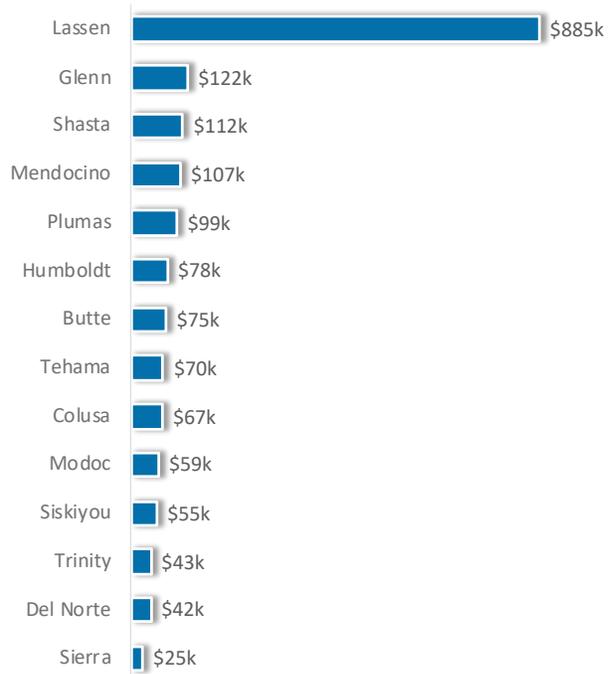


Figure 19: Total Output per 100k residents—Northern Region



Total Employment

National security activity supported 7,000 FTEs in the Northern region. Almost two-thirds of these jobs were in Lassen, Shasta and Butte counties, totaling 2,000, 1,000 and 1,000 FTEs, respectively.

Jobs supported by national security activity accounted for almost 2% of employment in the Northern region, below the state average. Lassen County leads the region and is second in the state with nearly one in five jobs in the county supported by national security activity.

Figure 20: Total Employment (FTEs) – Northern Region

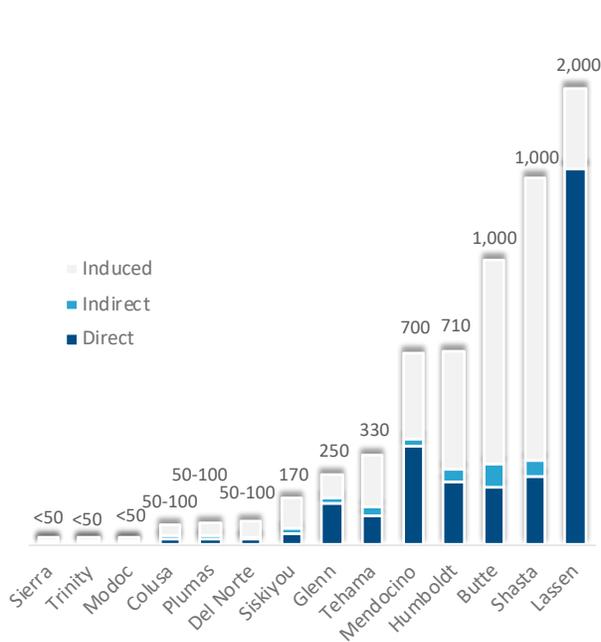
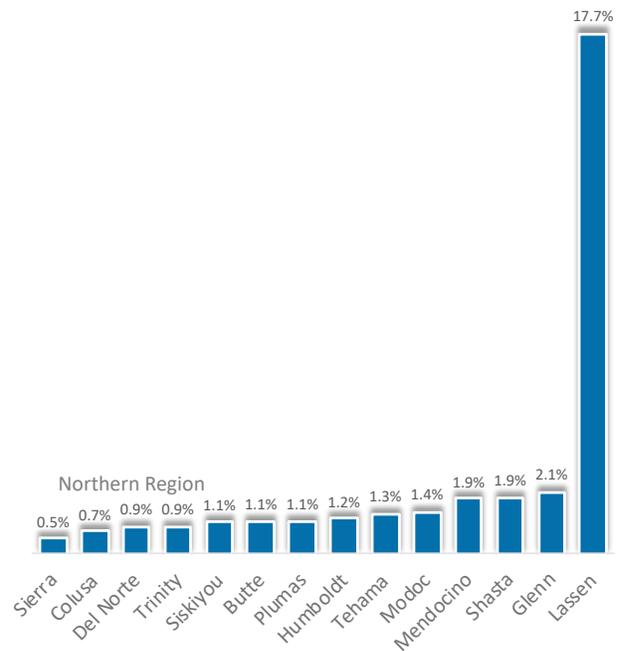


Figure 21: Total Employment as Percentage of County’s Employment - Northern Region



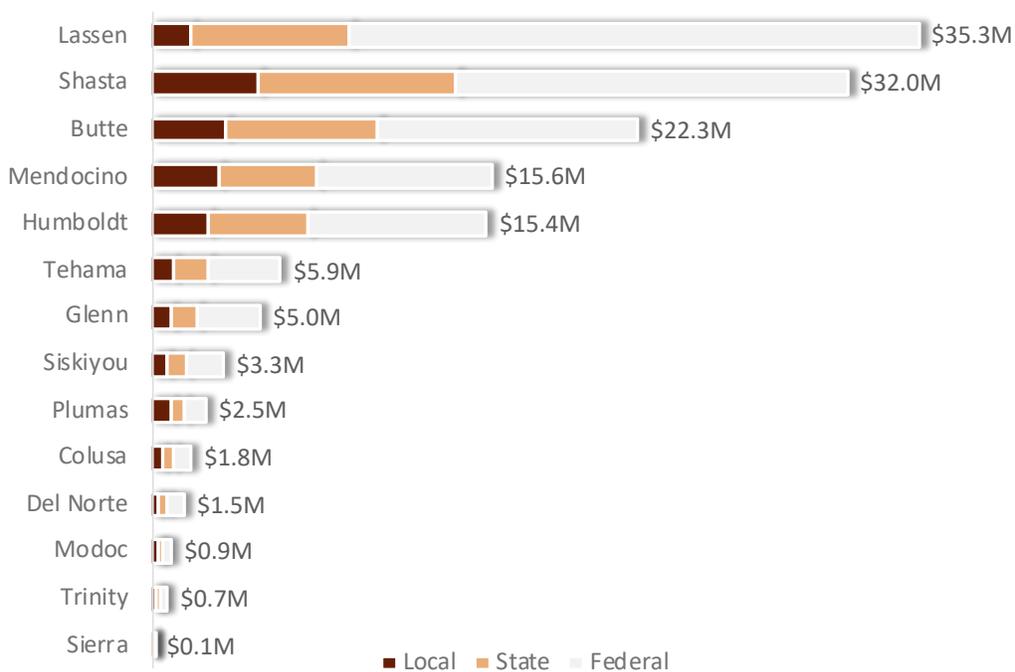
Government Revenue

National security activity in the Northern region in fiscal year 2019 generated \$20.5 million in local revenue, \$38.1 million in state revenue and \$83.7 million in federal revenue, totaling \$142.3 million in combined government revenue.

Lassen, Shasta and Butte counties were the primary contributors, generating combined government revenue of \$35.3 million (\$1.8 million local, \$7.3 million state and \$26.2 million federal), \$32.0 million (\$4.9 million local, \$9.1 million state and \$18.1 million federal) and \$22.3 million (\$3.4 million local, \$7.0 million state and \$12.0 million federal), respectively.

Lassen County ranked first in federal revenue, generating more than \$26.2 million, but fifth in local revenue and second in state revenue, generating \$1.8 million and \$7.3 million, respectively. Conversely, in Sierra County, local revenue from national security activity made up 42.2% of the county’s total revenue in fiscal year 2019, the highest in the region. In Sierra County, only 14.6% of government revenue from national security activity went toward the state, lower than any other county in the region.

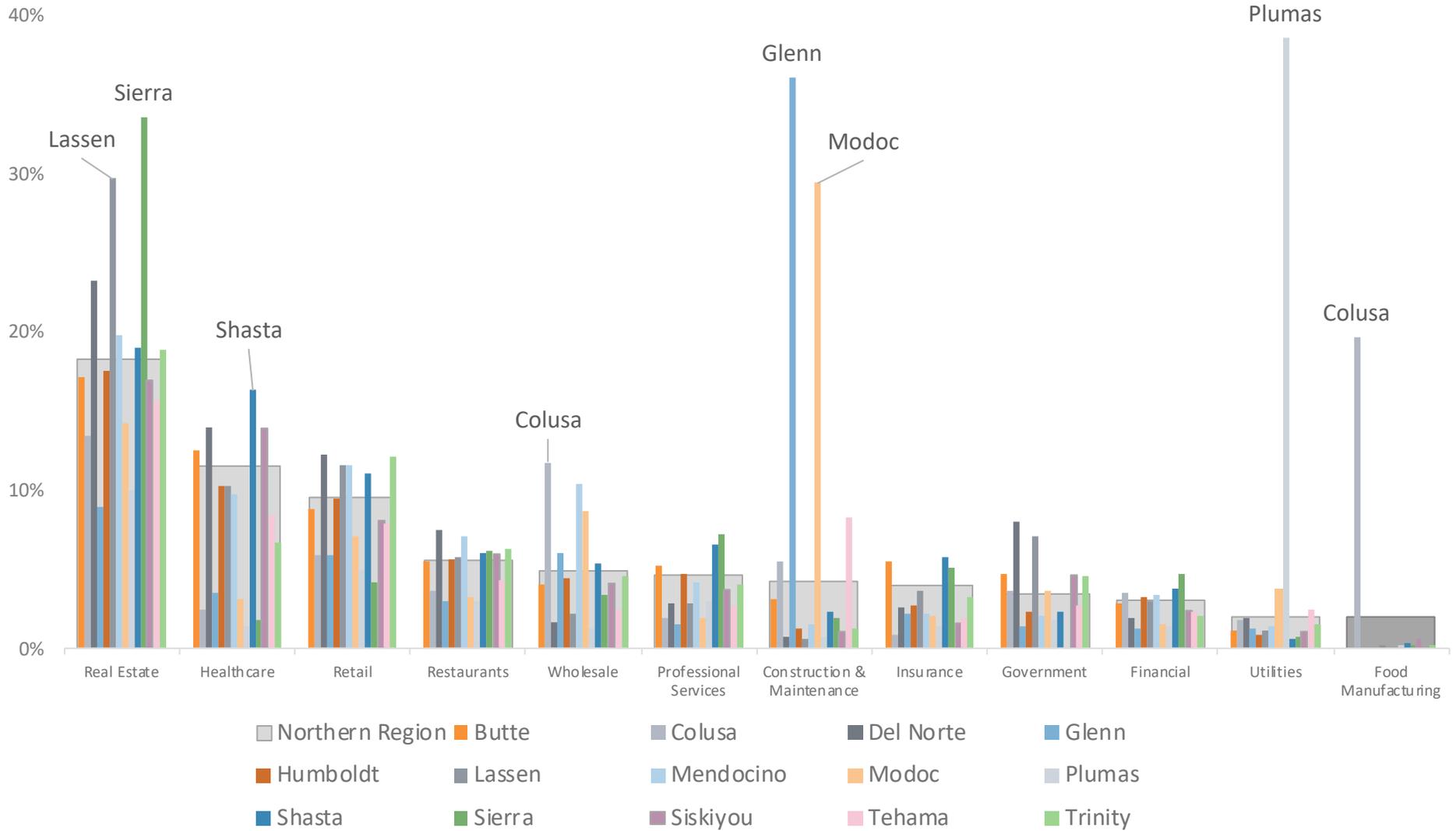
Figure 22: Government Revenue - Northern Region



Industries Impacted

Real estate, healthcare and retail are the industries that had the most economic output supported by national security activity in the region in fiscal year 2019. Government was among the top industries in Lassen County, and the rental and leasing services industry was among the top industries in Butte County. Construction & maintenance made up nearly a third of spending in both Modoc and Glenn counties, while utilities made up almost 40% of spending in Plumas County.

Figure 23: Top Industries as a Percentage of Total County Output – Northern Region





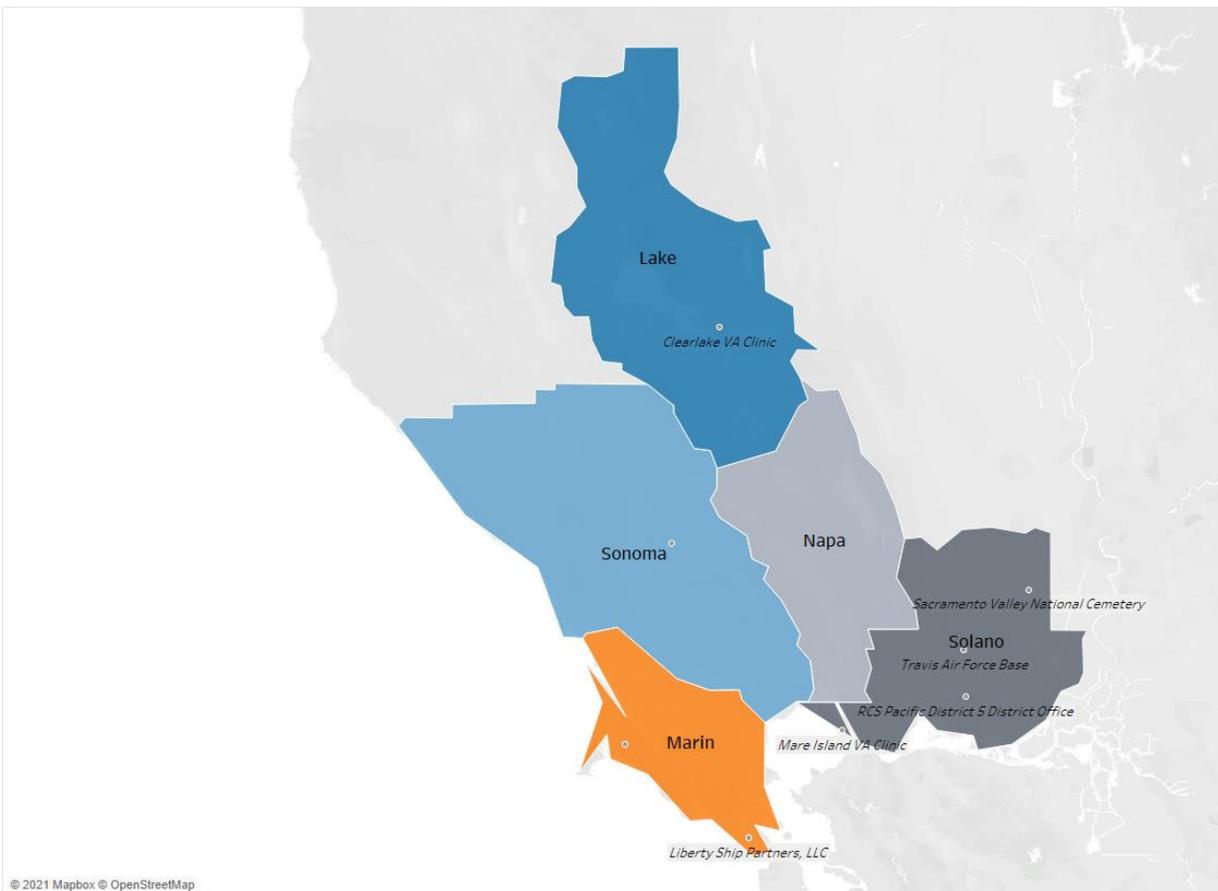
A 22-aircraft "freedom launch" took place at Travis Air Force Base in 2013 to commemorate the attacks on 9/11.

North Bay Region

The North Bay region makes up the northern portion of the San Francisco Bay Area and includes five counties: Lake, Marin, Napa, Solano and Sonoma. It accounts for 3.6% of the state’s population and 3.2% of the state’s land area.

Solano County is home to the region’s only military base, Travis Air Force Base. Known as the “Gateway to the Pacific,” more passengers and cargo travel through Travis Air Force Base than any other Air Force base in the nation.¹⁰ The region has six Veterans Affairs healthcare and service facilities.

Figure 24: Counties in the North Bay Region



¹⁰ Visit Vacaville (2021) [Travis Air Force Base](#)

Direct Activity

The North Bay region ranked ninth of the 11 regions with \$967.0 million in direct spending and 9,000 employees (7,000 military and 2,000 civilian). Adjusted for population, it ranks eighth out of 11 regions in spending and employment.

Direct Employment

The region was home to 9,000 civilian and military employees. Nearly 80% (7,000 total; 2,000 civilian and 5,000 military) of direct employees reside in Solano County. Sonoma County followed with approximately 1,000 direct employees (100 civilian and 1,000 military).

Figure 25: Direct Employment – North Bay Region

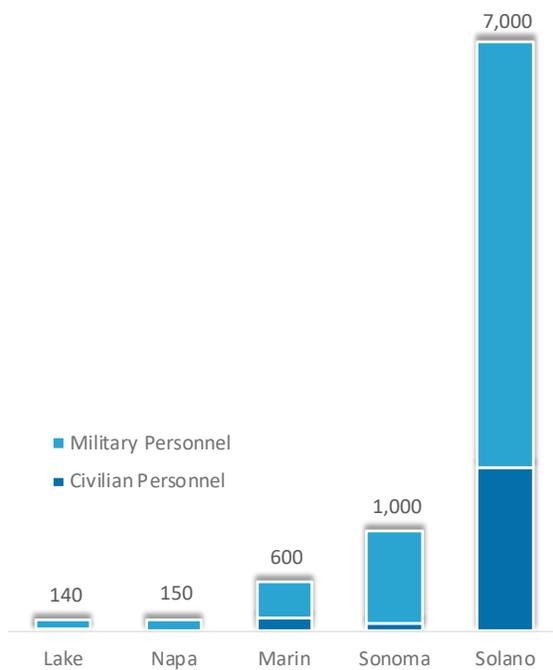
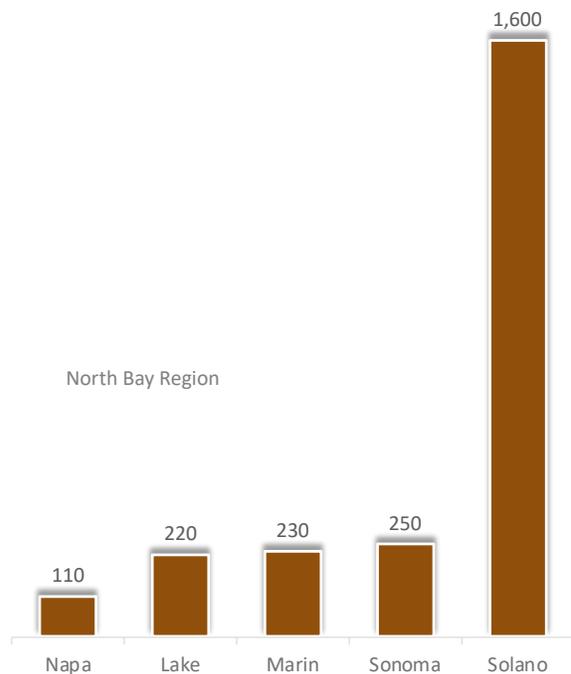


Figure 26: Direct Employment per 100k Residents – North Bay Region



Direct Spending

The North Bay region received \$967.0 million in national security spending in fiscal year 2019. Solano County received \$552.4 million, almost 60% of the region’s total. Among Solano County’s top industries by spending were construction and explosives manufacturing. Sonoma County is second with \$243.4 million, accounting for an additional 25.2% of regional spending.

Search, detection and navigation instruments manufacturing was the top industry in terms of spending in Sonoma County.

Lake County’s spending per resident is second in the region, behind Solano County.

Figure 27: Direct Spending – North Bay Region

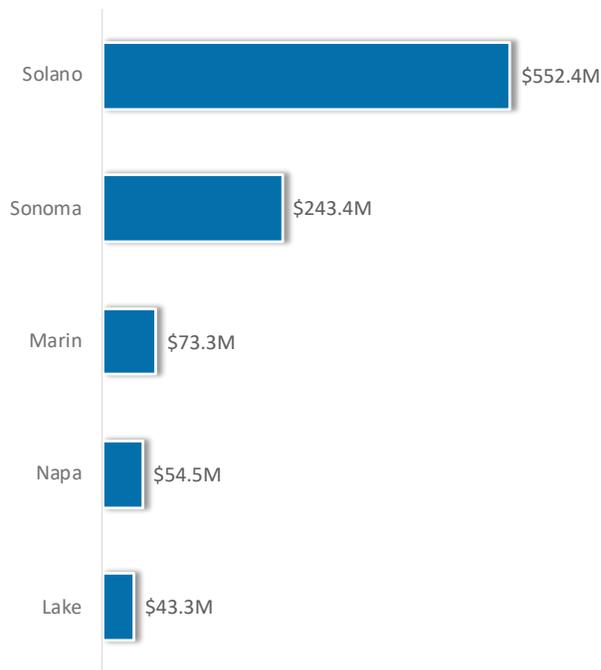
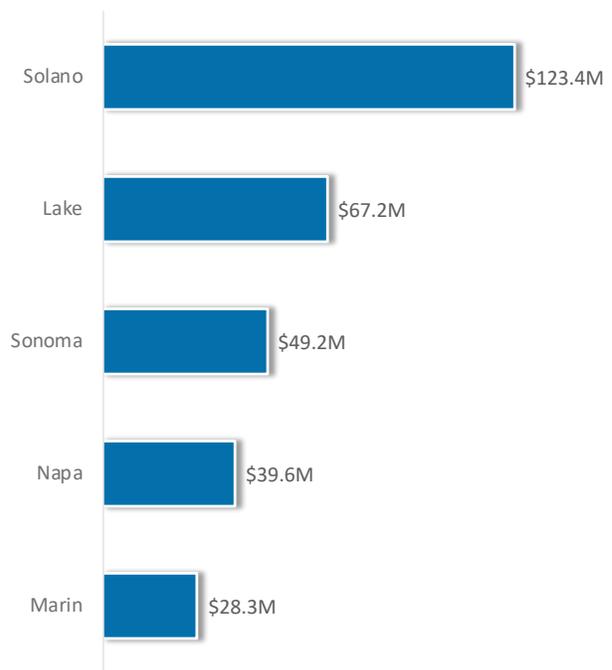


Figure 28: Direct Spending per 100k Residents – North Bay Region



Economic Impacts

The North Bay region ranked ninth of the 11 regions with \$3.5 billion in output and 20,000 FTEs in fiscal year 2019. Relative to population, it ranks eighth in total output and fifth in FTE output.

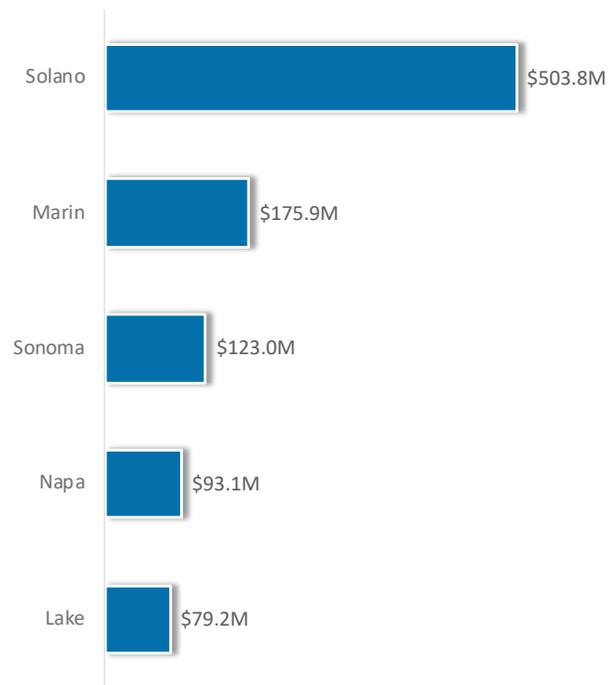
Total Output

The North Bay region saw \$3.5 billion in economic output as a result of national security activity in the state. Almost two-thirds of economic output in the region occurred in Solano County, which generated \$2.3 billion. Sonoma County generated \$608.3 million, about 17% of region’s economic output.

Figure 29: Total Output – North Bay Region



Figure 30: Total Output per 100k residents– North Bay Region



Total Employment

More than 20,000 FTEs were generated in the North Bay region. More than 60% of the region’s job creation occurred in Solano County, with 12,000 FTEs. Some 4,000 jobs were generated in Sonoma County and more than 3,000 FTEs were supported in Marin County.

FTEs supported by national security activity accounted for almost 3% of all jobs in the region, similar to the state average. This figure is highest in Solano County, where 6.1% of the county’s employment was supported by national security activity, ranking eighth in the state among counties.

Figure 31: Total Employment (FTEs) – North Bay Region

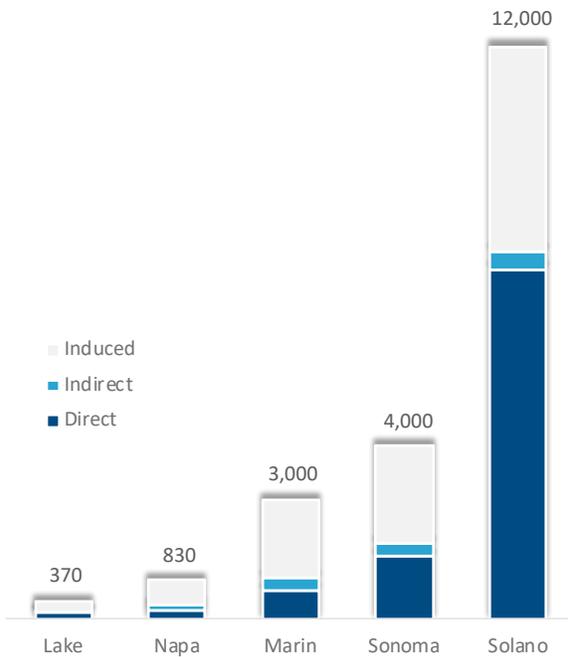
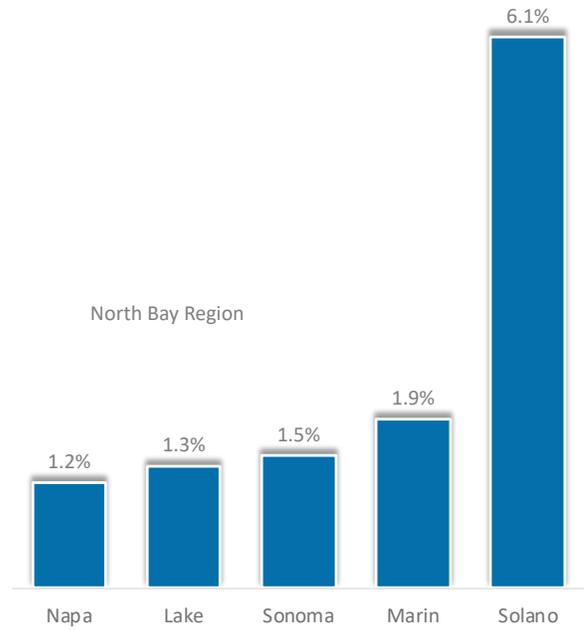


Figure 32: Total Employment as Percentage of County’s Employment – North Bay Region



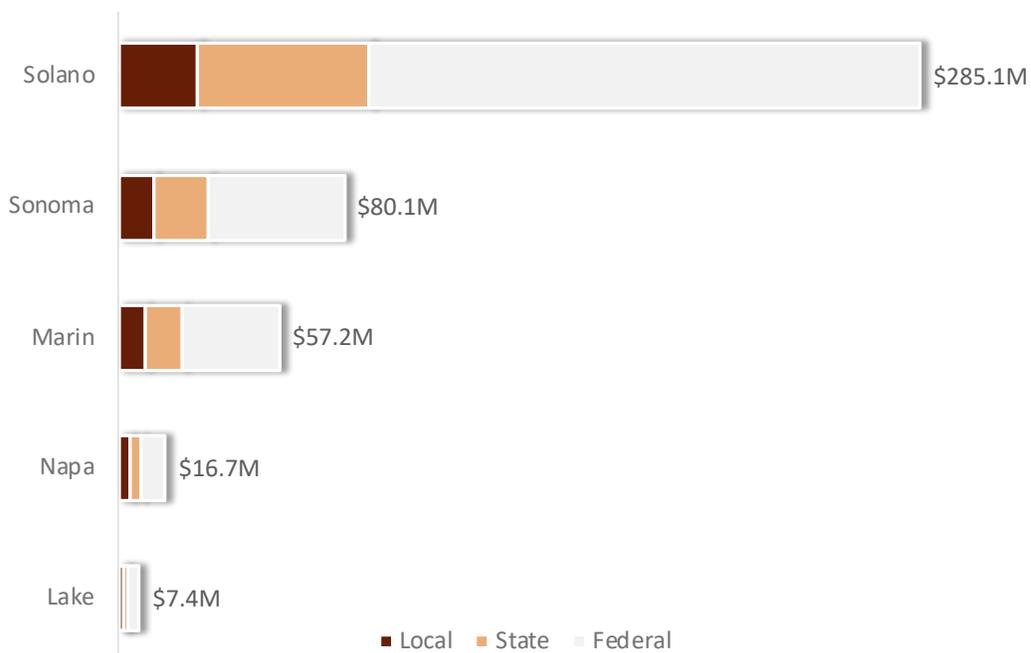
Government Revenue

National security activity in the North Bay region generated \$55.6 million in local revenue, \$98.6 in state revenue and \$292.2 million in federal revenue, totaling \$446.5 million in combined government revenue.

Solano County accounts for nearly two-thirds of the region’s government revenue, totaling \$285.1 million (\$27.6 million local, \$61.1 million state and \$196.3 million federal). Sonoma County generated \$80.1 million in combined revenue, followed by Marin County with \$57.2 million, Napa County with \$16.7 million and Lake County with \$7.4 million.

The distribution was similar to the state average, with federal making up approximately two-thirds of revenue.

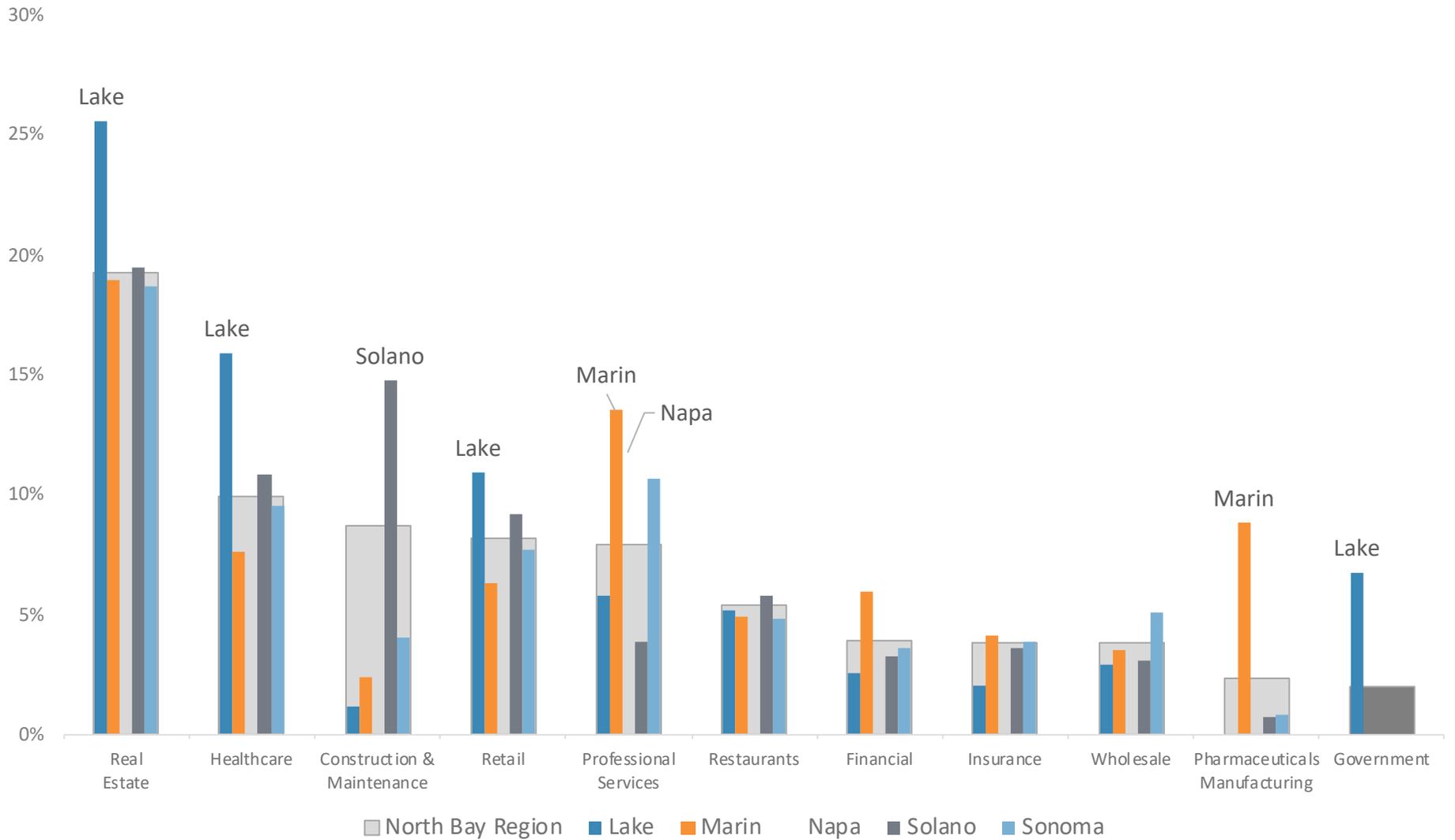
Figure 33: Government Revenue – North Bay Region



Industries Impacted

National security activities produced the most economic output in the real estate, healthcare, construction & maintenance, retail and professional services sectors. Construction & maintenance is concentrated in Solano County, while the others are more evenly distributed. Pharmaceutical manufacturing was significantly higher in Marin County than other North Bay region counties.

Figure 34: Top Industries as a Percentage of Total County Output – North Bay Region





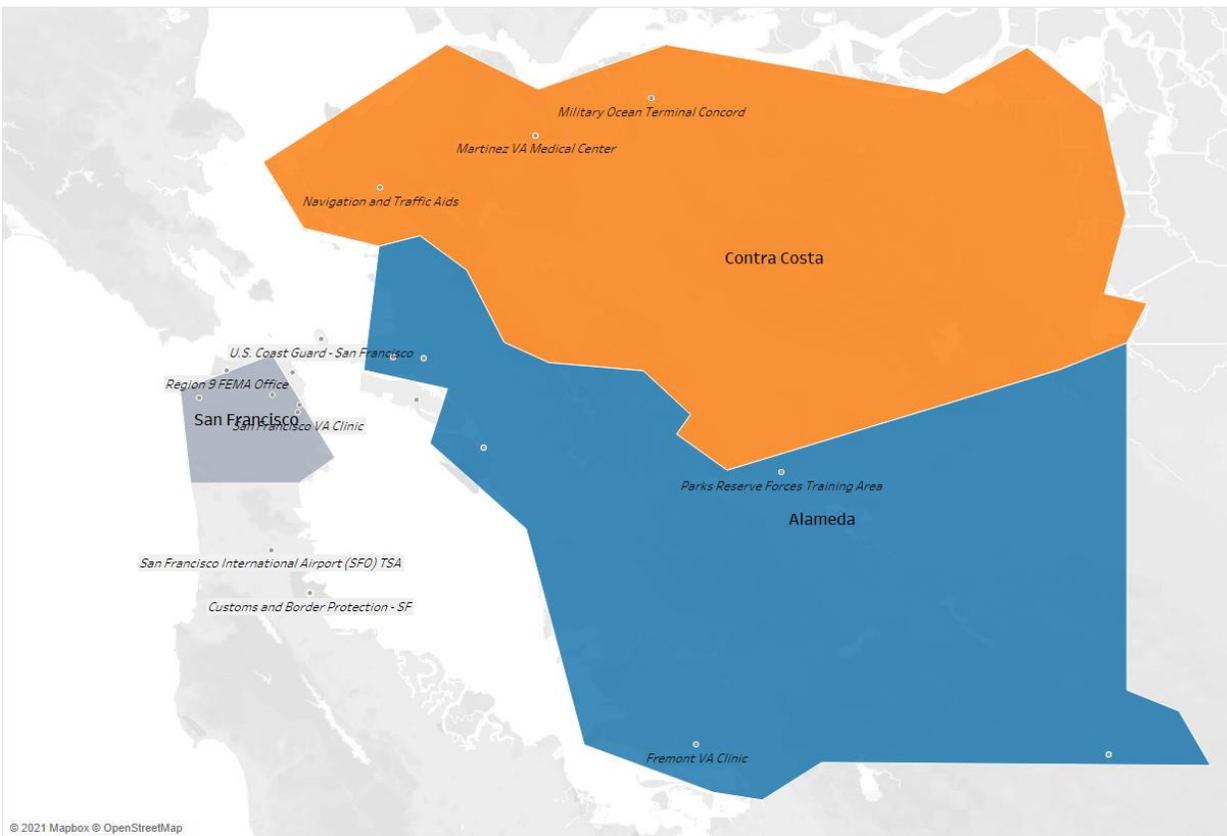
A machinery technician performs checks during his engineer rounds on a U.S. Coast Guard patrol boat enforcing a safety and security zone on the San Francisco Bay during the 34th America's Cup World Series, 2012.

San Francisco Bay Region

The San Francisco Bay region includes the three counties surrounding the San Francisco Bay: Alameda, Contra Costa and San Francisco. The San Francisco Bay is geographically the smallest region in California. It accounts for 9.4% of the state’s population, but only 1.0% of its land area.

The region has two military bases: Parks Reserve Forces Training Area (a sub-installation of Fort Hunter Liggett) in Alameda County, and the Military Ocean Terminal Concord (MOTCO) is in Contra Costa County. There are two federally funded research and development centers located in Alameda County as well: Lawrence Livermore National Laboratory and Sandia National Laboratory. The San Francisco Bay region has 14 Veterans Affairs healthcare, services, laboratory and housing facilities as well as 13 Homeland Security facilities primarily affiliated with regional airports and the San Francisco Port.

Figure 35: Counties in the San Francisco Bay Region



Direct Activity

The San Francisco Bay region ranked fourth of the 11 regions in direct spending with \$6.8 billion and seventh in direct employment with 9,000 employees (6,000 civilian employees and 3,000 military employees). Adjusted for population, this region ranks fourth in direct spending and 10th in direct employment.

Direct Employment

Of the 9,000 military and civilian employees residing in the region, 4,000 (2,000 civilian and 2,000 military) lived in Alameda County, 4,000 (3,000 civilian and 530 military) in San Francisco County and 2,000 (910 civilian and 840 military) in Contra Costa County.

Figure 36: Direct Employment – SF Bay Region

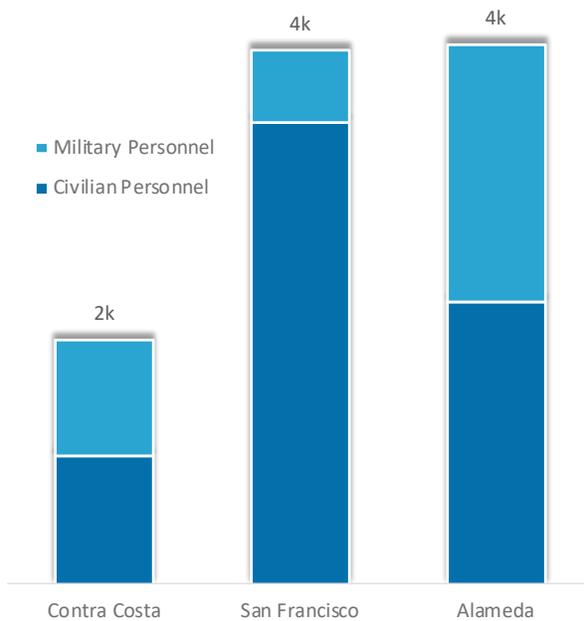
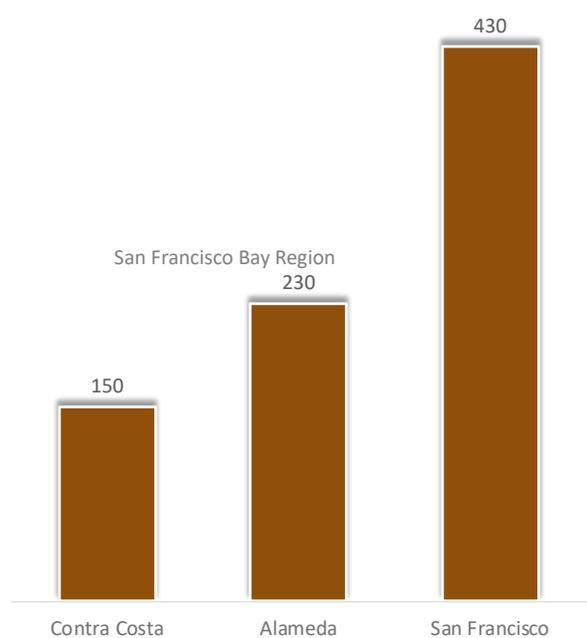


Figure 37: Direct Employment per 100k Residents – SF Bay Region



Direct Spending

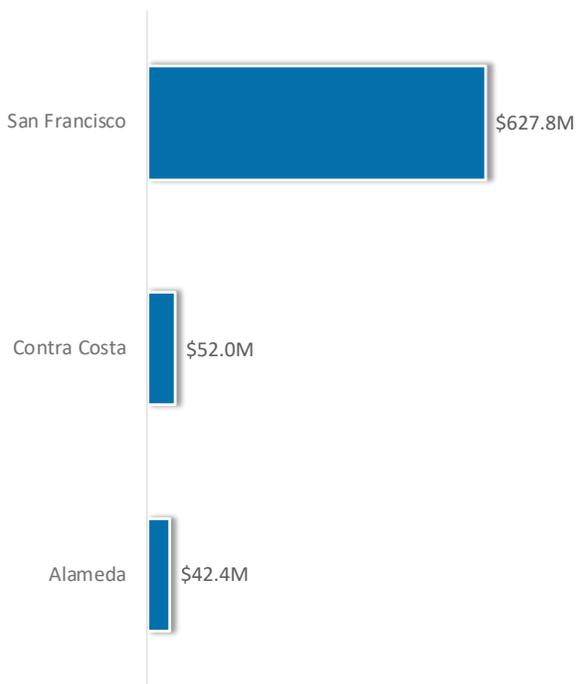
The largest share of the region’s \$6.8 billion in national security spending occurred in San Francisco County, totaling \$5.5 billion. More than \$5 billion of this spending went toward pharmaceutical manufacturing.

Alameda and Contra Costa counties had similar spending levels, with \$709.2 million and \$600.2 million, respectively. Water transportation was a top industry in terms of spending in Contra Costa County, while broadcast and wireless communications equipment manufacturing was a significant recipient of national security spending in Alameda County.

Figure 38: Direct Spending – SF Bay Region



Figure 39: Direct Spending per 100k Residents – SF Bay Region



Economic Impacts

The San Francisco Bay region ranked fourth of the 11 regions with \$16.2 billion in total output and sixth in employment with 49,000 FTEs. Adjusted for population, it is fifth in total output and eighth in FTEs.

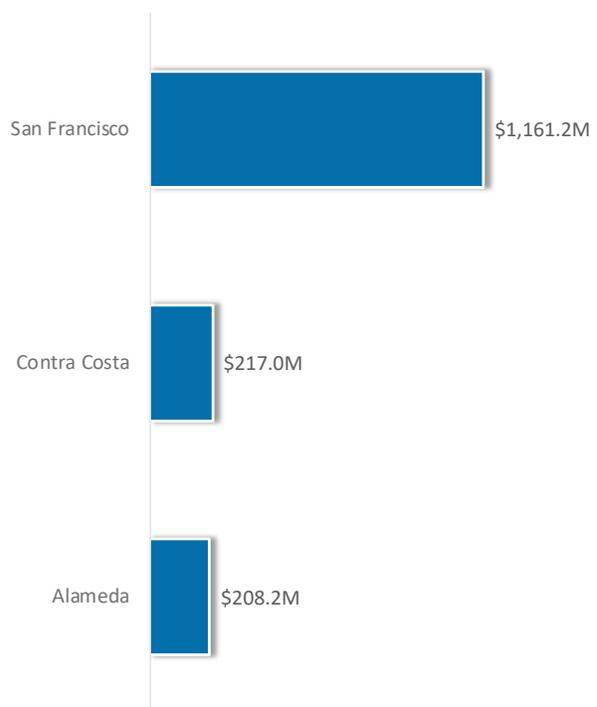
Total Output

Output in San Francisco County totaled \$10.2 billion, a majority of the region’s \$16.2 billion in total output. Alameda County and Contra Costa County saw \$3.5 billion and \$2.5 billion in output, respectively. San Francisco County ranks third in the state in both total output and output relative to population.

Figure 40: Total Output – SF Bay Region



Figure 41: Total Output per 100k residents– SF Bay Region



Total Employment

National security activity supported almost 50,000 FTEs in the San Francisco Bay region. San Francisco County accounted for 20,000 FTEs, while Alameda County and Contra Costa County accounted for 18,000 and 12,000, respectively.

San Francisco County ranks ninth in the state in total employment.

Jobs supported by national security activity accounted for about 2.5% of all employment in the region. San Francisco County is higher than the statewide average with 3.5%, while Alameda and Contra Costa counties are modestly below average at 2.2% and 2.1%, respectively.

Figure 42: Total Employment (FTEs) – SF Bay Region

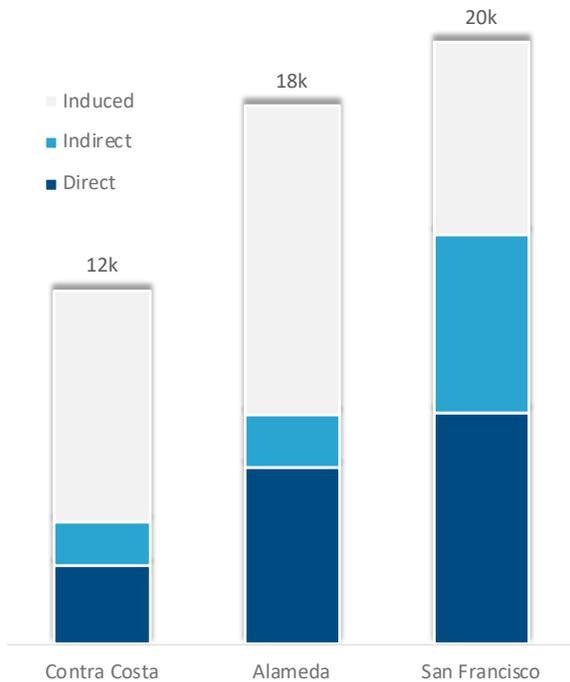
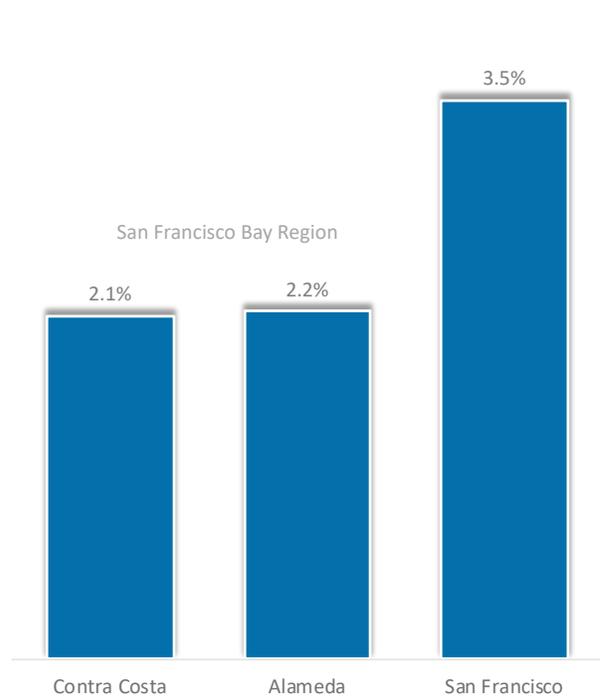


Figure 43: Total Employment as Percentage of County's Employment – SF Bay Region

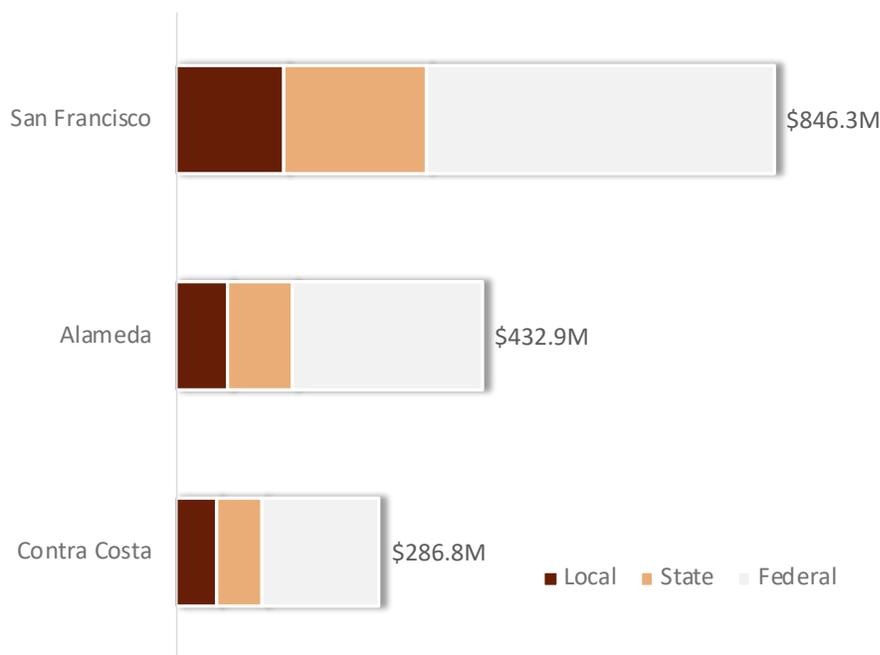


Government Revenue

National security activity in the San Francisco Bay region generated \$281.3 million in local revenue, \$359.5 million in state revenue and \$925.3 million in federal revenue, totaling \$1.6 billion in combined revenue in fiscal year 2019.

San Francisco County generated \$846.3 million in combined revenue (\$153.1 million local, \$200.1 million state and \$493.1 million federal). Alameda and Contra Costa counties generated \$432.9 million and \$286.8 million in combined revenue, respectively.

Figure 44: Government Revenue - SF Bay Region



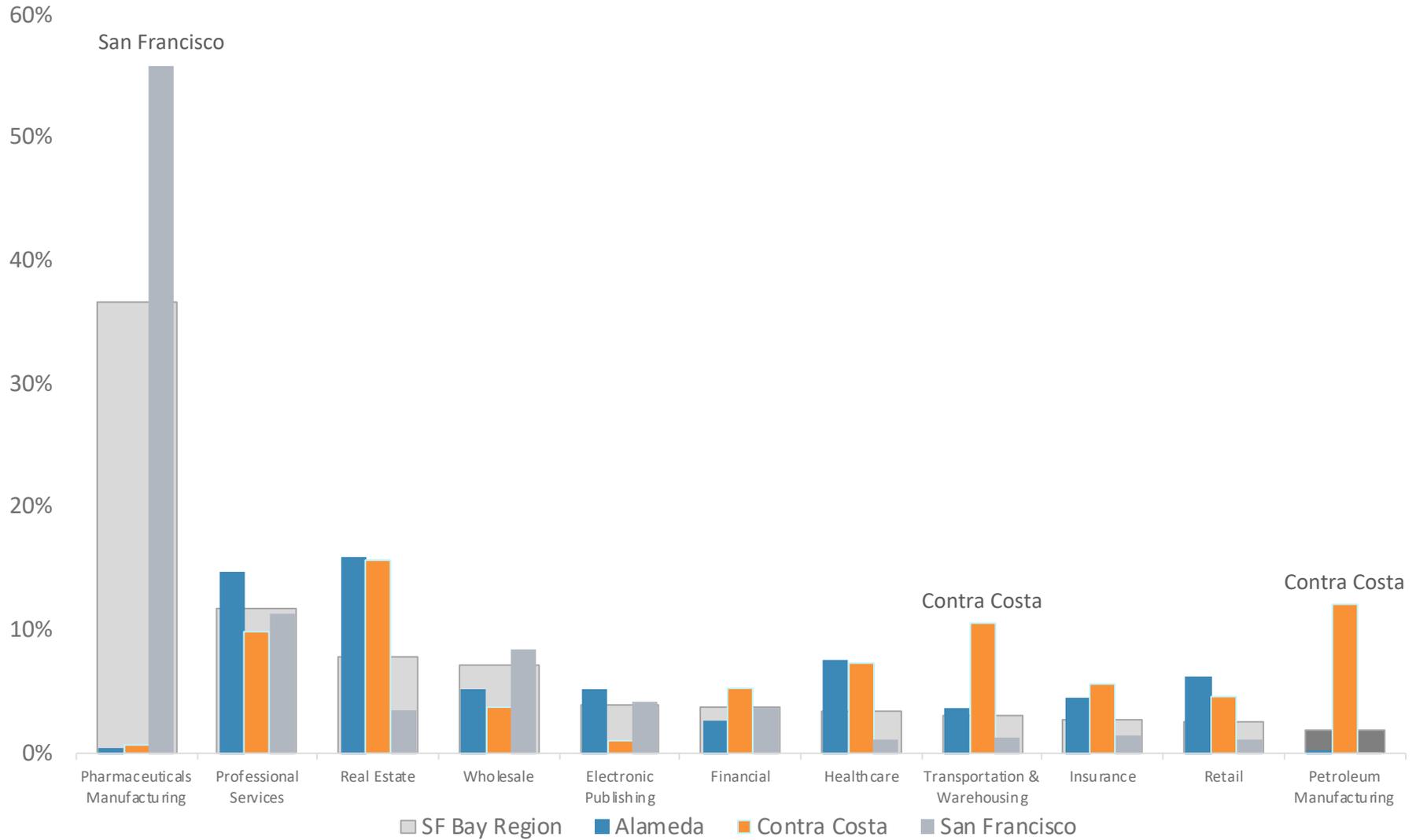
Industries Impacted

Pharmaceutical manufacturing, professional services and real estate led the region in national security supported output.

Pharmaceutical manufacturing was concentrated in San Francisco County, while other top industries are more evenly distributed. San Francisco County lags the East Bay counties in industries associated with residential concentrations, such as real estate, healthcare and retail. Contra Costa County has significant concentrations in petroleum manufacturing and transportation & warehousing.

The professional services, retail and healthcare sectors were the top three industries for the region in total employment. San Francisco County lagged in healthcare but accounts for nearly all of the region’s pharmaceutical manufacturing employment.

Figure 45: Top Industries as a Percentage of Total County Output – SF Bay Region



Counterdrug Task Force members
obtaining hoist training certification
at Moffett Federal Airfield, 2020.



Silicon Valley Region

The Silicon Valley region includes Santa Clara and San Mateo counties. The region makes up the southern portion of the San Francisco Bay Area. It accounts for 6.8% of the state’s population, but only 1.1% of its land area.

Santa Clara County is home to Moffett Federal Airfield and the Defense Innovation Unit. The region also includes six Veterans Affairs housing, healthcare and services facilities and two Homeland Security facilities associated with local air and sea ports.

Figure 46: Counties in the Silicon Valley Region



Direct Activity

The Silicon Valley region ranked sixth of the 11 regions with \$5.3 billion in direct spending. It ranked ninth in direct employment, with about 9,000 direct employees (7,000 civilian employees and 1,000 military employees). Adjusted for population, it ranks third in direct spending and eighth in direct employment.

Direct Employment

About 6,000 employees resided in Santa Clara County (5,000 civilian and 1,000 military) and 2,000 were in San Mateo County (2,000 civilian and 190 military) in fiscal year 2019.

Figure 47: Direct Employment – Silicon Valley Region

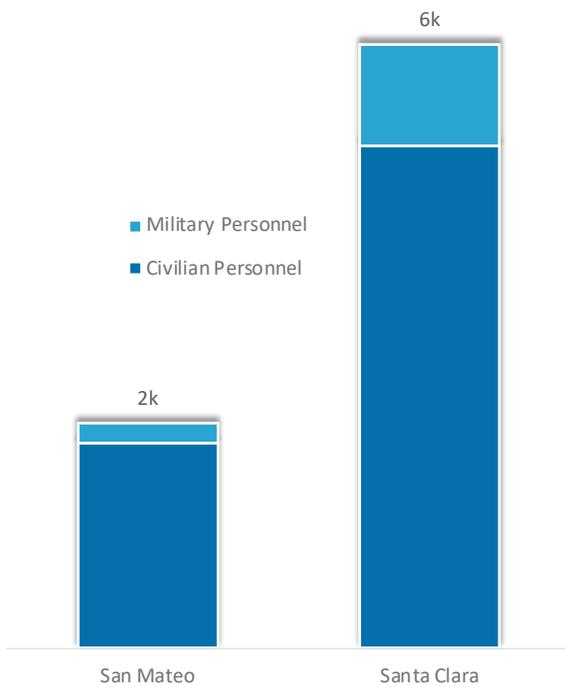
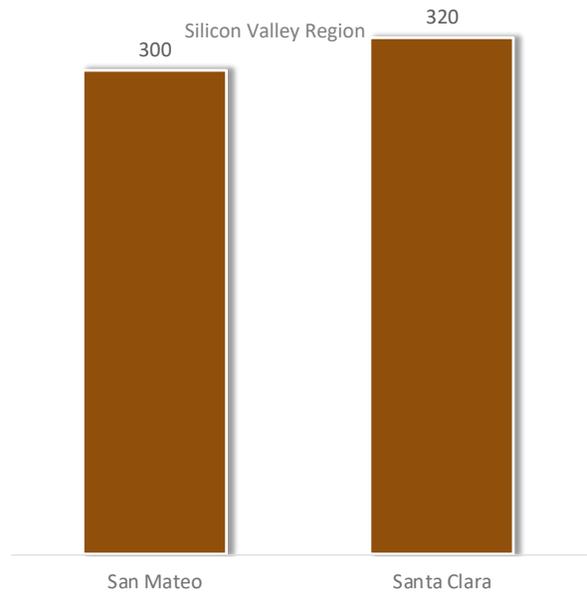


Figure 48: Direct Employment per 100k Residents – Silicon Valley Region



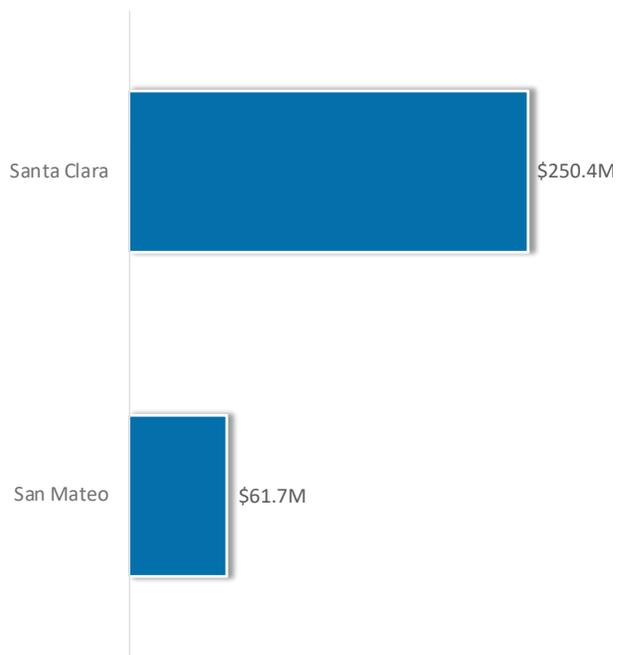
Direct Spending

Of the \$5.3 billion in total national security spending in the region, \$4.8 billion was spent in Santa Clara County. About \$473.2 million was spent in San Mateo County. Spending in the region was largely focused on science and technology. In Santa Clara County, top industries by spending included guided missile and space vehicle manufacturing as well as scientific research and development. In San Mateo County, construction was a primary recipient of national security spending along with scientific research and development.

Figure 49: Direct Spending – Silicon Valley Region



Figure 50: Direct Spending per 100k Residents – Silicon Valley Region



Economic Impacts

The Silicon Valley region ranked sixth of the 11 regions with \$11.9 billion in output. It ranked eighth with 40,000 FTEs. Adjusted for population, it ranked fourth in both categories.

Total Output

A majority of the \$11.9 billion in regional economic output occurred in Santa Clara County, about \$9.7 billion. The additional \$2.2 billion was generated in San Mateo County.

Santa Clara County ranks fifth in the state in total output and 10th in output relative to employment.

Figure 51: Total Output – Silicon Valley Region

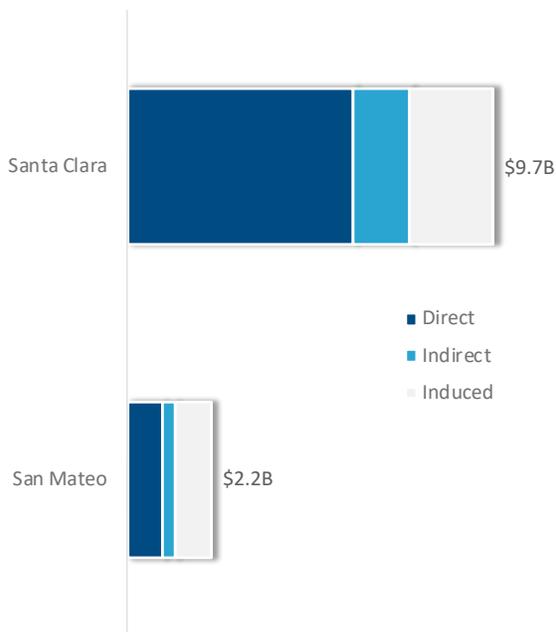


Figure 52: Total Output per 100k residents– Silicon Valley Region



Total Employment

Over three quarters of the 40,000 FTEs supported by national security activity in the region, or 31,000 FTEs, were in Santa Clara County, ranking sixth in the state. The remaining portion, 9,000, were in San Mateo County.

In Santa Clara County and in the region as a whole, employment supported by national security activity accounted for about 3.0% of jobs in the county. In San Mateo, national security-supported jobs accounted for 2.1%.

Figure 53: Total Employment (FTEs) – Silicon Valley Region

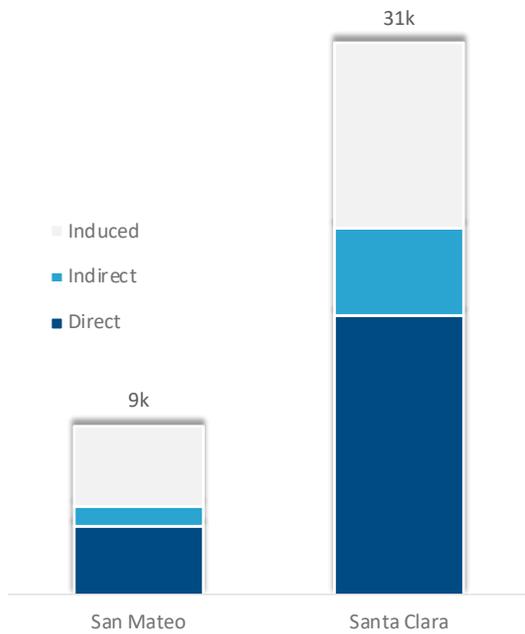
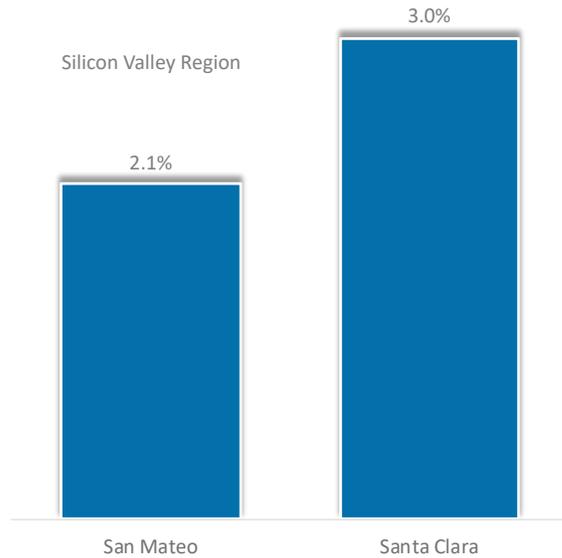


Figure 54: Total Employment as Percentage of County’s Employment – Silicon Valley Region



Government Revenue

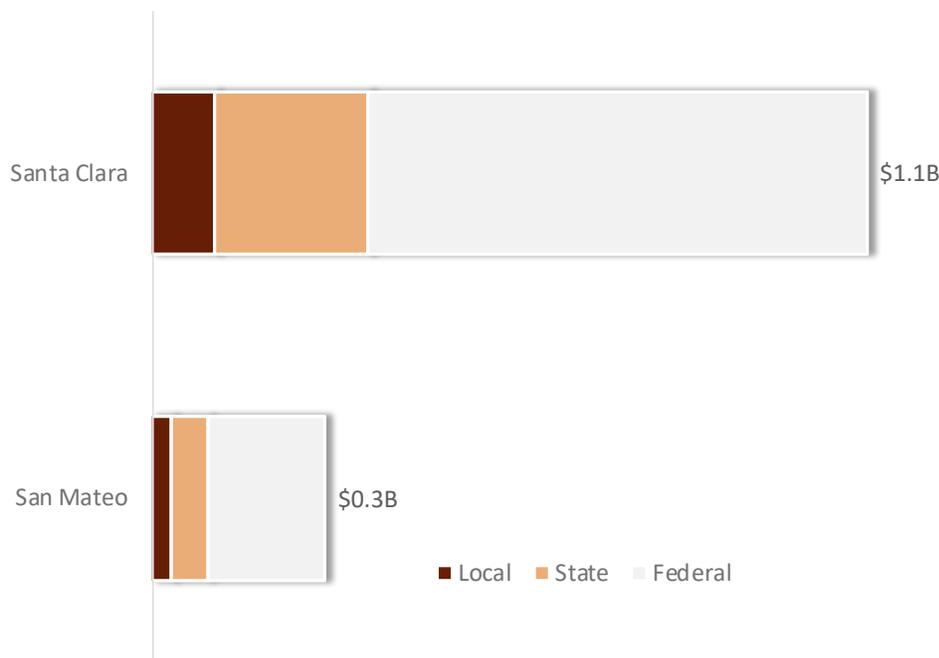
National security activity in the Silicon Valley region generated \$122.8 million in local revenue, \$297.9 million in state revenue and \$921.6 million in federal revenue, totaling \$1.3 billion in combined government revenue.

Santa Clara County had the largest share, about \$1.1 billion (\$93.9 million local, \$226.7 million state and \$746.3 million federal).

San Mateo added \$257.4 million (\$28.8 million local, \$53.2 million state and \$175.3 million federal).

In both counties, federal revenue made up more than two-thirds of total government revenue.

Figure 55: Government Revenue - Silicon Valley Region



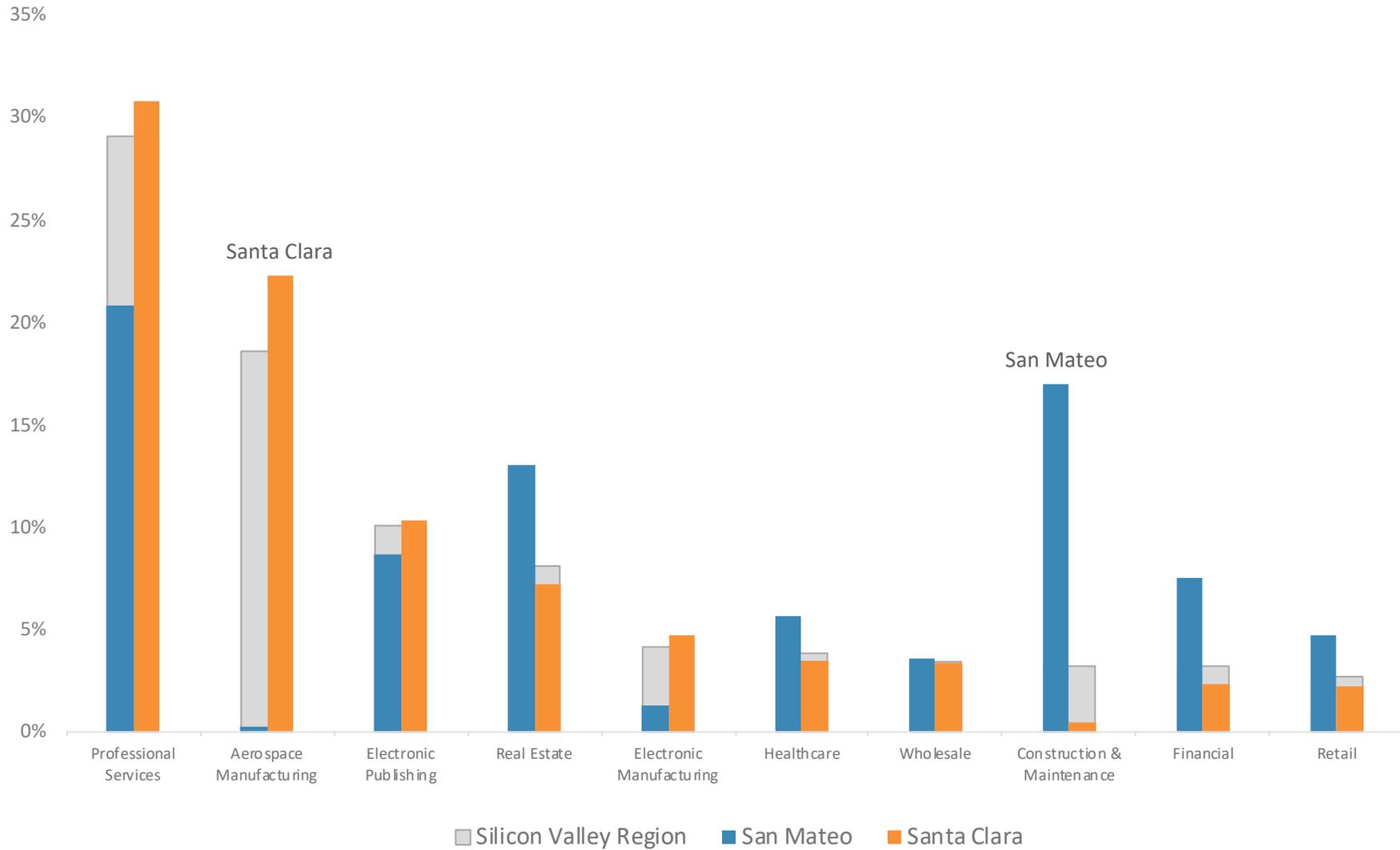
Impacted Industries

Professional services, aerospace manufacturing, electronic publishing and real estate had the most economic output supported by national security activity in the region.

Both counties had large shares of output in professional services, electronic publishing and real estate, while Santa Clara accounted for nearly all of the aerospace manufacturing output. Construction & maintenance was a large contributor in San Mateo County.

Professional services and aerospace manufacturing were also the top two industries in employment. In addition, restaurants and healthcare also made up a significant portion of employment output in the region.

Figure 56: Top Industries as a Percentage of Total County Output – Silicon Valley Bay Region





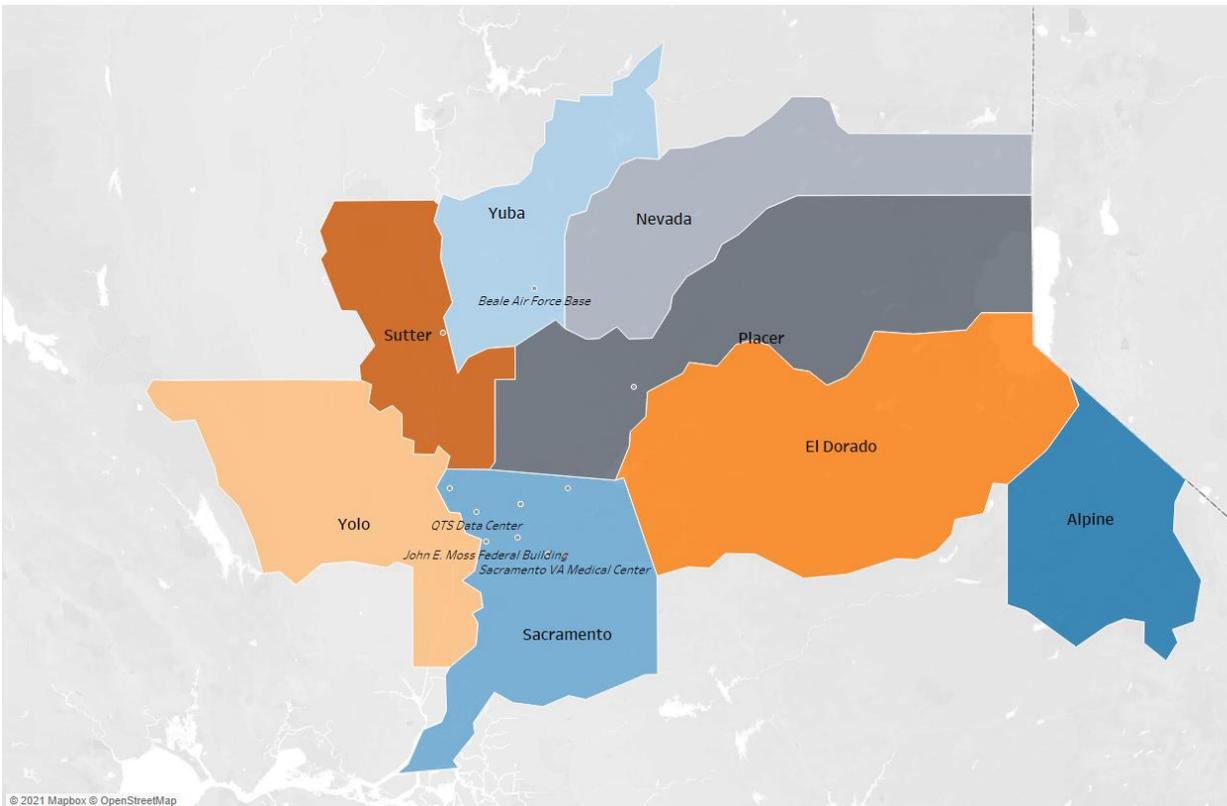
A U.S. Air Force Academy Parachute Team Wings of Blue member jumps out of a U.S. Army CH-47 Chinook helicopter at Beale Air Force Base, 2018

Sacramento Region

The Sacramento region makes up the north-central part of the state. It includes eight counties: Alpine, El Dorado, Nevada, Placer, Sacramento, Sutter, Yolo and Yuba. The region accounts for 6.7% of the state's population and 5.1% of its land area.

The region is home to California's capital, Sacramento, as well as the Beale Air Force Base, in Yuba County. Beale Air Force Base covers almost 23,000 acres and is home to some of the nation's most advanced intelligence technology.¹¹ The Defense Microelectronics Agency, which develops and delivers microelectronic technology critical to national security, is in Sacramento County.¹² The Sacramento region has eight Veterans Affairs healthcare and service facilities, several Homeland Security facilities affiliated with regional airports and the Western Regional Office for Department of Defense's Office of Local Defense Community Cooperation.

Figure 57: Counties in the Sacramento Region



¹¹ Beale Air Force Base (2016) [Beale's History: Past to Present](#)

¹² [Defense Microelectronics Activity](#)

Direct Activity

The Sacramento region ranked third of 11 regions with \$8.4 billion in direct spending. It ranked sixth in direct employment with around 13,000 employees (4,000 civilian and 8,000 military). Adjusted for population, it ranks second in spending and sixth in direct employment.

Direct Employment

Some 6,000 of the 12,000 total employees lived in Sacramento County (3,000 civilian and 2,000 military). About 4,000 employees lived in Yuba County (790 civilian and 3,000 military). All other Sacramento region counties had less than 1,000 direct employees.

Yuba County ranked second statewide in direct employment relative to population.

Figure 58: Direct Employment – Sacramento Region

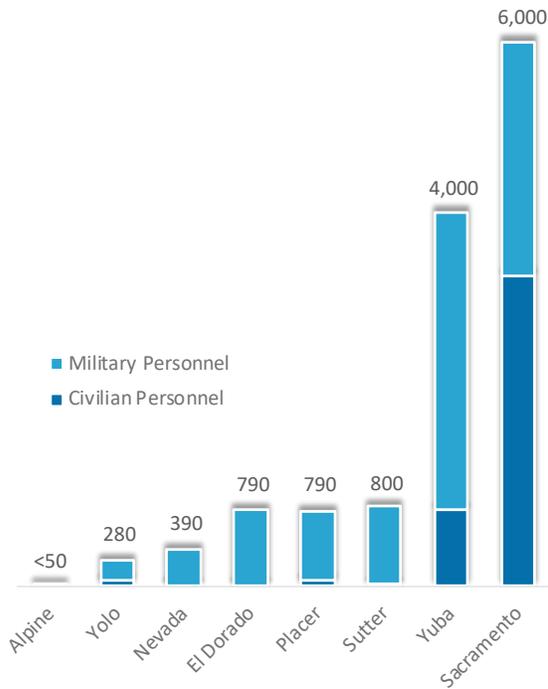
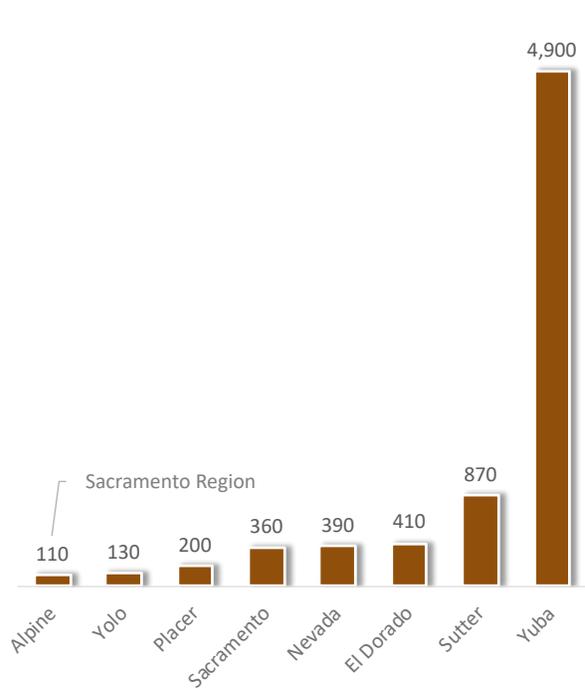


Figure 59: Direct Employment per 100k Residents – Sacramento Region



Direct Spending

Of the \$8.4 billion in total national security spending in the region in fiscal year 2019, Sacramento County received the largest share, \$5.0 billion.¹³ Insurance carriers were the top recipient of spending in Sacramento County. Yolo County received \$2.8 billion in spending, much of that going toward medicinal and botanical manufacturing. Placer County and El Dorado County received \$284.2 million and \$103.0 million, respectively. Sutter, Yuba, Nevada and Alpine counties all received less than \$100 million in spending.

Yolo County received the largest portion of spending per resident.

Figure 60: Direct Spending – Sacramento Region

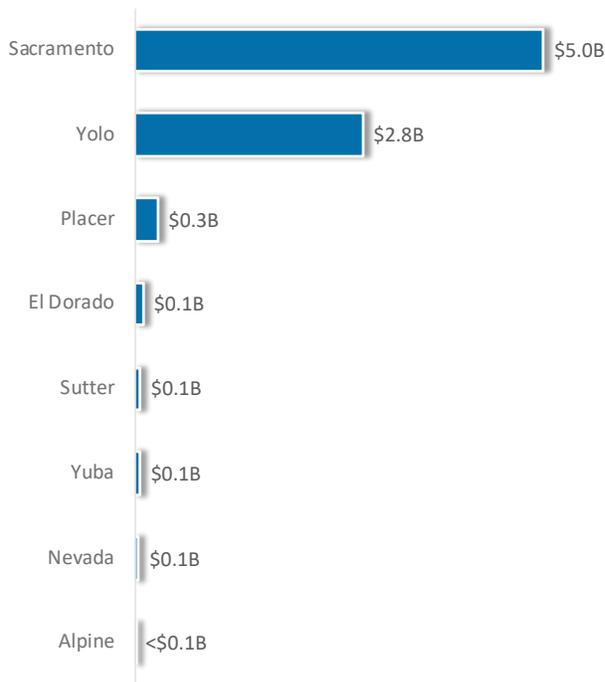
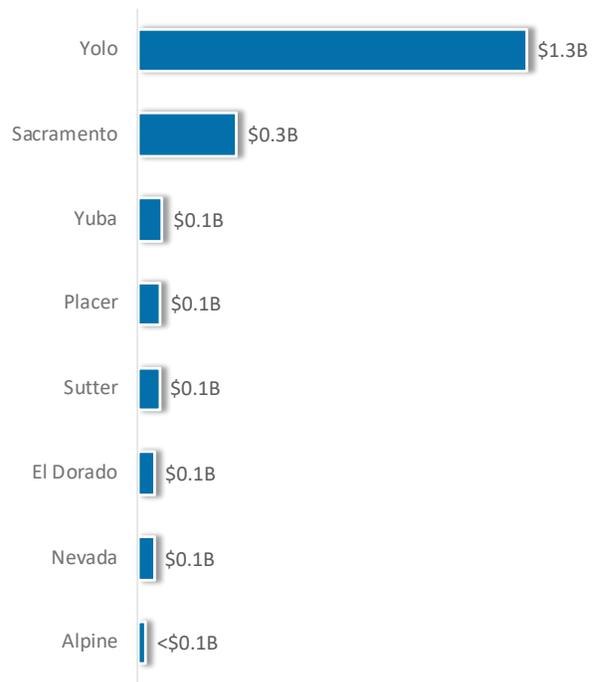


Figure 61: Direct Spending per 100k Residents – Sacramento Region



¹³ This may overstate the true local spending, however, as a portion of this spending flows through the state government in Sacramento to other regions where the actual economic activity occurs.

Economic Impacts

The Sacramento region ranked fifth of the 11 regions, with \$16.0 billion in output. It ranked fourth in employment outputs with 63,000 FTEs. Adjusted for population, it ranked second in output and third in FTEs.¹⁴

Total Output

Some \$10.1 billion of the \$16.0 billion in regional total economic output occurred in Sacramento County alone. An additional \$3.9 billion was generated in Yolo County. Yuba and Placer counties generated \$786.9 million and \$719.5 million, respectively.

Relative to population, Yolo County ranks second in the state, Yuba County fourth and Sacramento County eighth.

Figure 62: Total Output – Sacramento Region

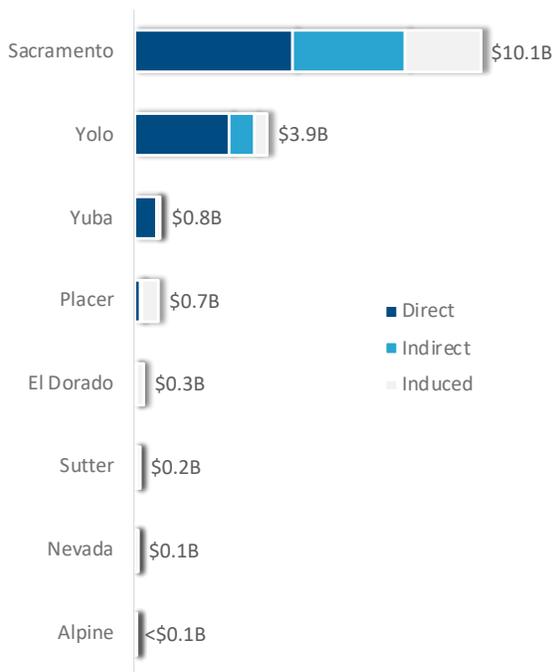
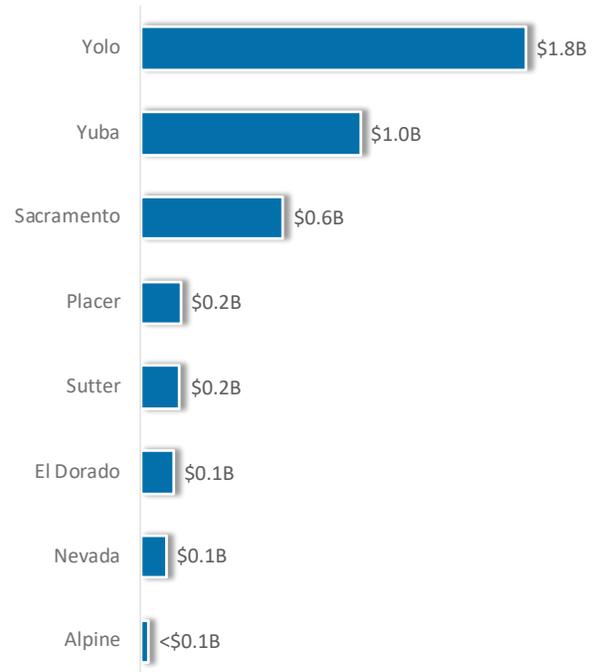


Figure 63: Total Output per 100k residents—Sacramento Region



¹⁴ This may overstate the true local economic activity, however, as a portion of spending flows through the state government in Sacramento to other regions where the actual economic activity occurs.

Total Employment

Of the 63,000 FTEs supported by national security investment, Sacramento County accounts for almost two-thirds of the total with 40,000 FTEs. Yolo, Placer and Yuba counties saw 9,000, 5,000 and 4,000 FTEs, respectively.

In the Sacramento region, 5.9% of all jobs are supported by national security activity.

Ranking third in the state, 14.3% of employment in Yuba County can be attributed to national security activity. In Yolo and Sacramento counties, national security activity supported 8.8% and 5.8% of all jobs in the county, respectively (ranking fifth and 10th statewide).

Figure 64: Total Employment (FTEs) – Sacramento Region

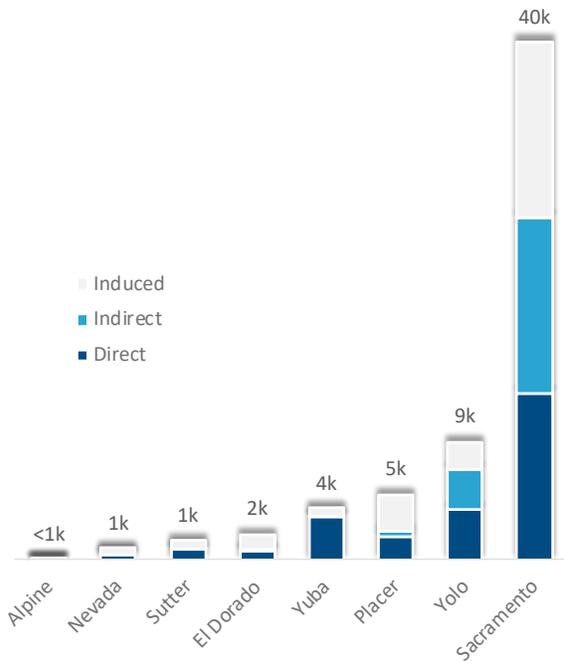
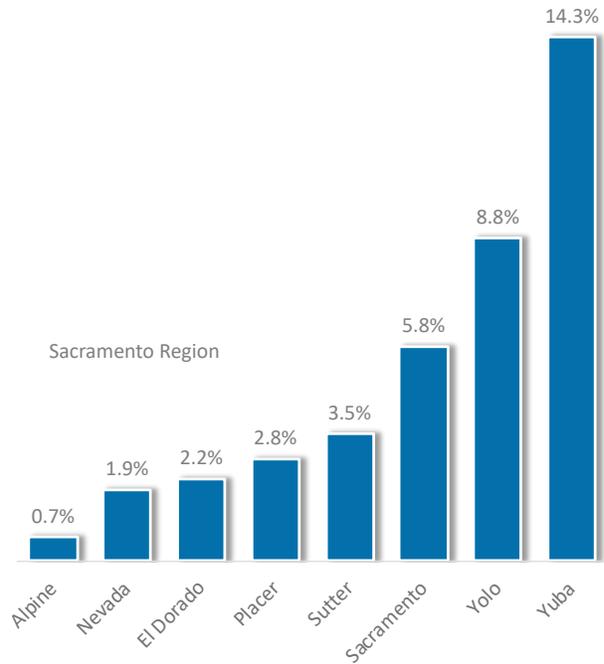


Figure 65: Total Employment as Percentage of County’s Employment – Sacramento Region



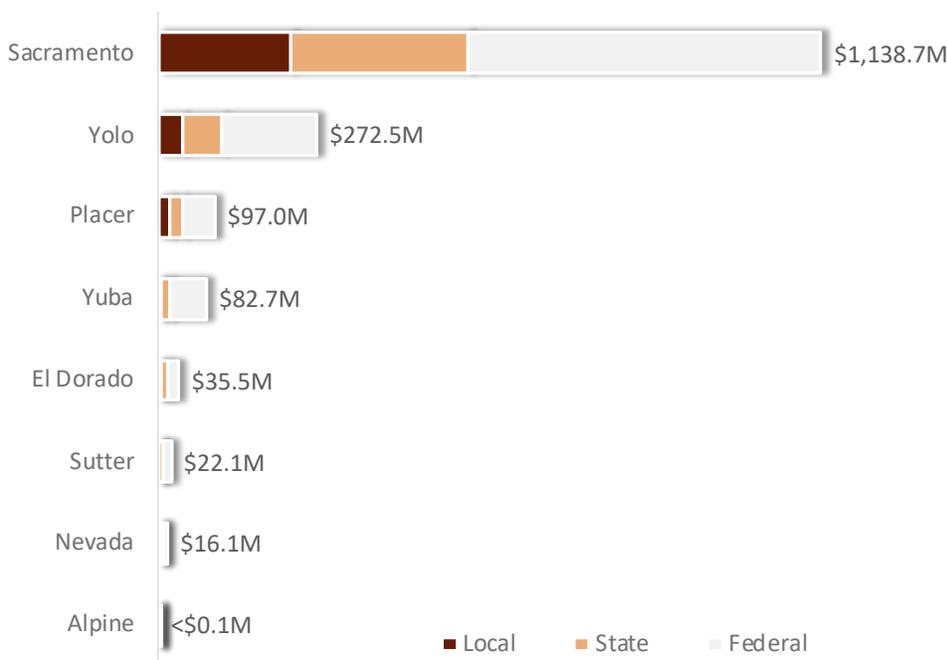
Government Revenue

National security activity in the Sacramento region generated \$308.9 million in local revenue, \$429.2 in state revenue and \$926.5 million in federal revenue, totaling \$1.7 billion in combined government revenue in fiscal year 2019.

Revenue generated in Sacramento County represents more than two-thirds of regional revenue, totaling \$1.1 billion (\$227.2 million local, \$306.7 million state and \$604.8 million federal). Yolo County generated \$272.5 million in revenue.

Regionally, 18.6% of government revenue went to local government, 25.8% went to state government and 55.7% went to federal government. Alpine County had a larger share of local revenue, more than a third of total government revenue. In Yuba County, federal revenue accounted for nearly 75% of revenue, while local government revenue was 6.1%.

Figure 66: Government Revenue - Sacramento Region

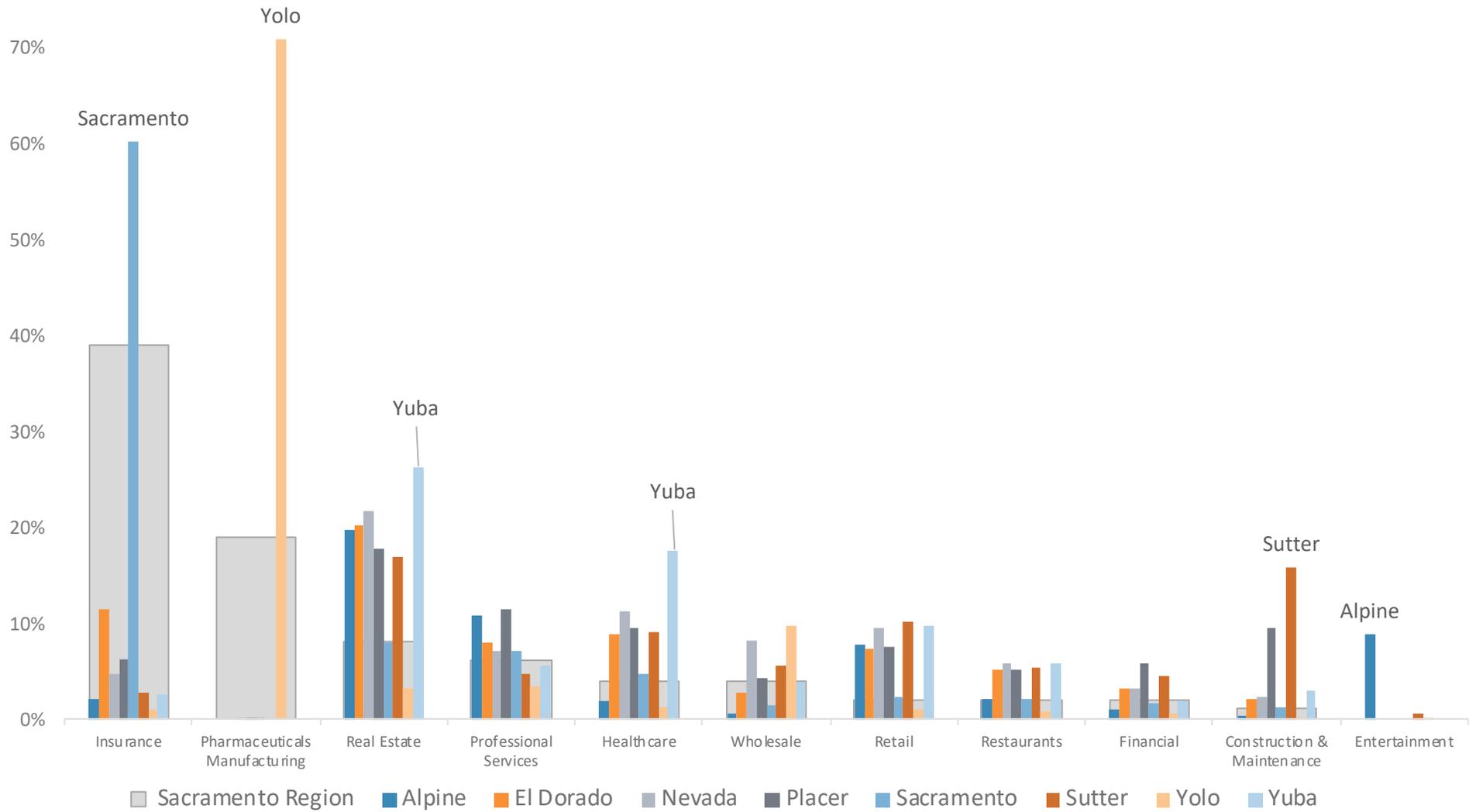


Industries Impacted

Insurance, pharmaceutical manufacturing and real estate produced the most output in the region based on national security activity. Insurance is concentrated in Sacramento County while pharmaceutical manufacturing is concentrated in Yolo County.

Real estate and other leading sectors, including professional services, healthcare, wholesale and retail were more broadly distributed.

Figure 67: Top Industries as a Percentage of Total County Output - Sacramento Region





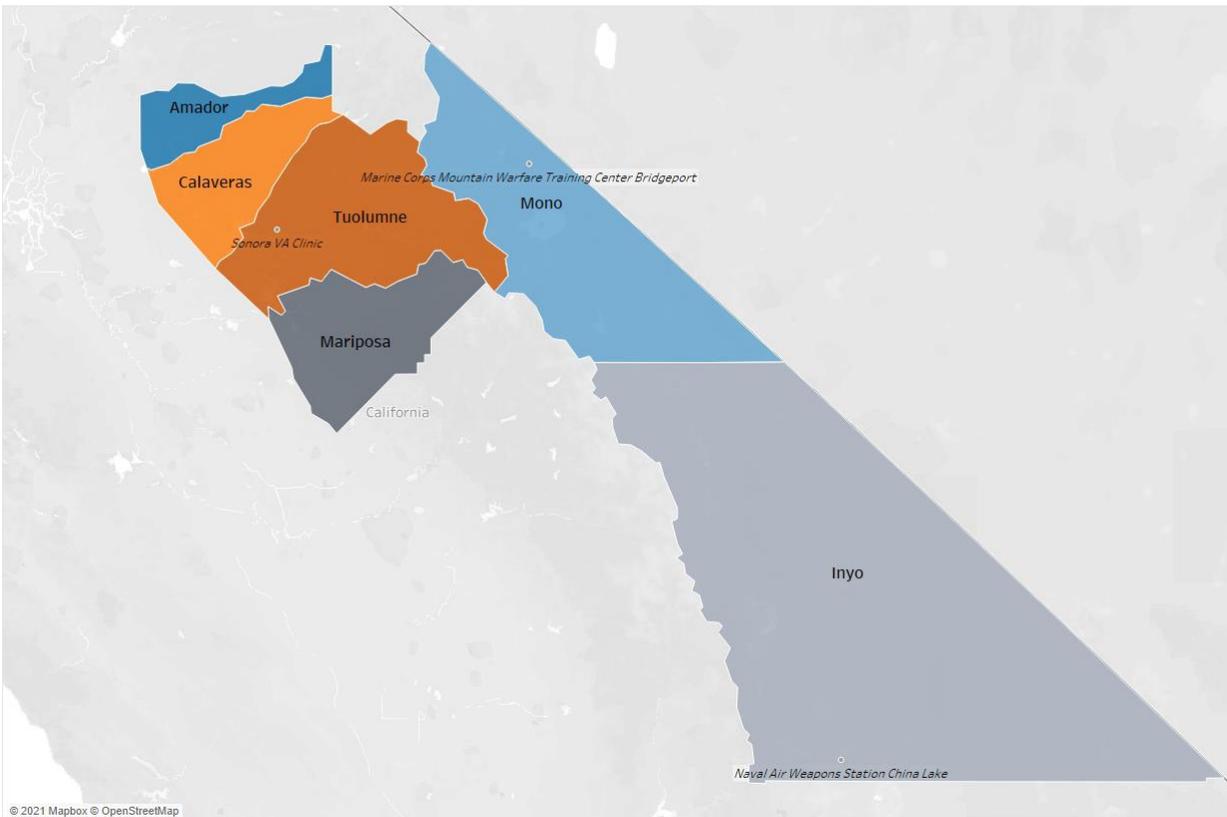
U.S. Marines practice skiing skills during a basic mobility exercise at Marine Corps Mountain Warfare Training Center (MCMWTC), Bridgeport, 2015.

Mountain Region

The Mountain region covers the eastern-central border of the state and includes six counties: Amador, Calaveras, Inyo, Mariposa, Mono and Tuolumne. The region accounts for 0.5% of the state’s total population and 11.9% of its land area.

The Mountain region is home to two military bases: The Marine Corps Mountain Warfare Training Center in Mono County and Naval Air Weapons Station China Lake includes unoccupied land in Inyo County. The training center is one of the Marine Corps’ most isolated and remote posts with a mission of providing mountain warfare training to all military services. The only Veterans Affairs site in the region, a healthcare facility, is in Tuolumne County.

Figure 68: Counties in the Mountain Region



Direct Activity

The Mountain region ranked last in both direct spending and direct employment with \$92.4 million in total spending and 300 direct employees (130 military and 170 civilian). Adjusted for population, it ranks 10th in spending and 11th in direct employment.

Direct Employment

Of the 300 military and civilian employees in the region, about 100 resided in Mono County, home to Mountain Warfare Training Center. Tuolumne and Calaveras counties had 100 direct employees split between them. Amador County, Inyo County and Mariposa County had fewer than 50 direct employees each.

Figure 69: Direct Employment – Mountain Region

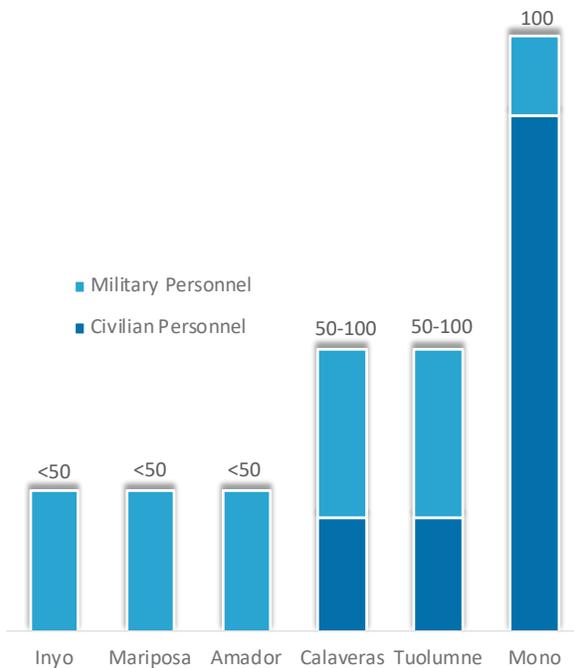
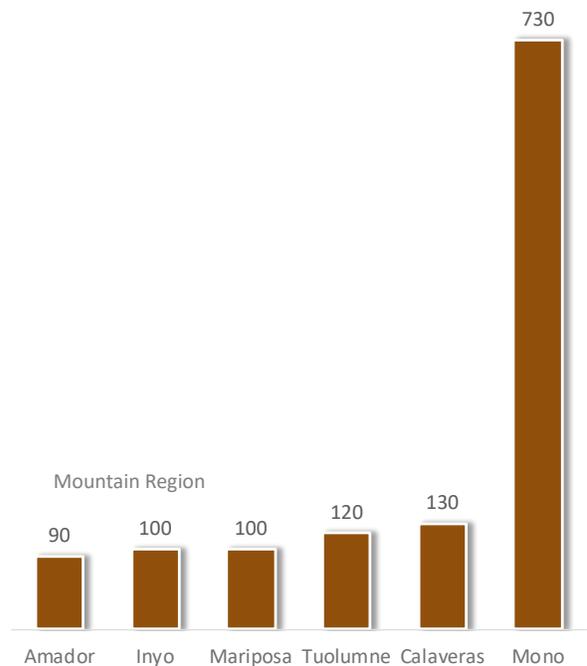


Figure 70: Direct Employment per 100k – Mountain



Direct Spending

The largest share of the region’s \$92.4 million in direct spending occurred in Tuolumne, Calaveras and Amador counties, totaling \$31.0 million, \$25.5 million and \$18.8 million, respectively.

The largest amount of spending on a single industry was on construction of non-residential structures in Tuolumne County. In Amador County, aircraft parts and auxiliary equipment manufacturing was the primary recipient of national security spending. In both Calaveras and Tuolumne counties, a large amount of spending also went toward other local government enterprises.

Adjusted for population, most counties in the region received between \$40 million and \$60 million per 100,000 residents.

Figure 71: Direct Spending – Mountain Region

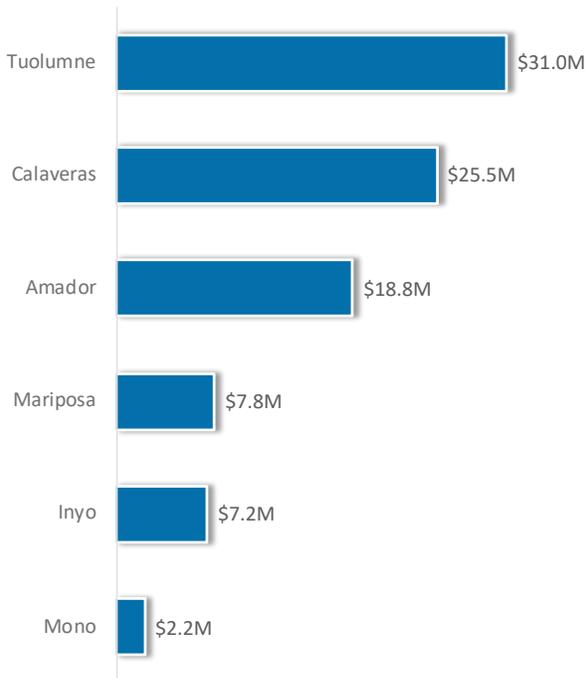
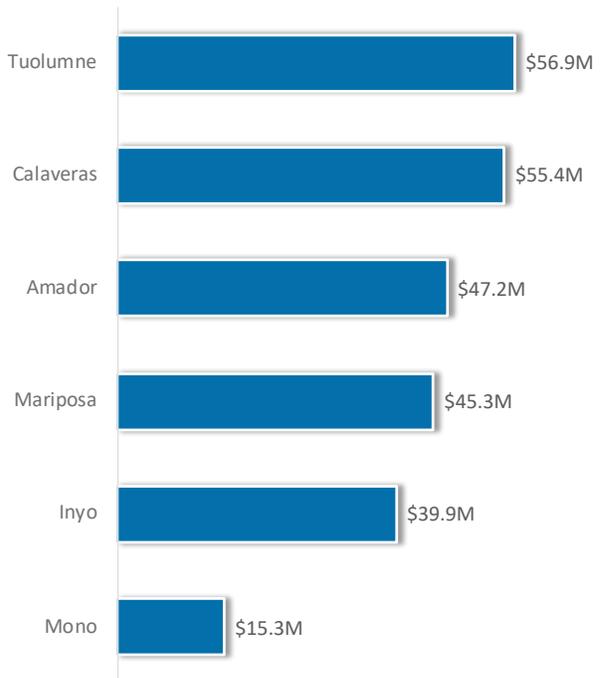


Figure 72: Direct Spending per 100k Residents – Mountain Region



Economic Impacts

The Mountain region ranked last with \$135.8 million in total output and 1,000 FTEs. It also ranked last relative to population.

Total Output

Output in the Mountain region totaled \$135.8 million. Tuolumne and Calaveras counties made up the largest portion of economic activity in the region, with \$42.7 million and \$30.5 million, respectively. Mono and Amador counties followed with \$23.9 million and \$22.1 million in total output, respectively.

Relative to population, Mono County saw more total output than any county in the region.

Figure 73: Total Output – Mountain Region

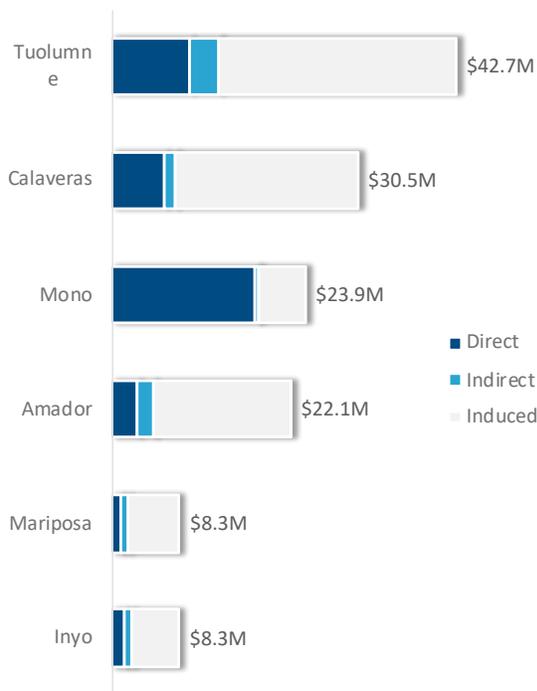
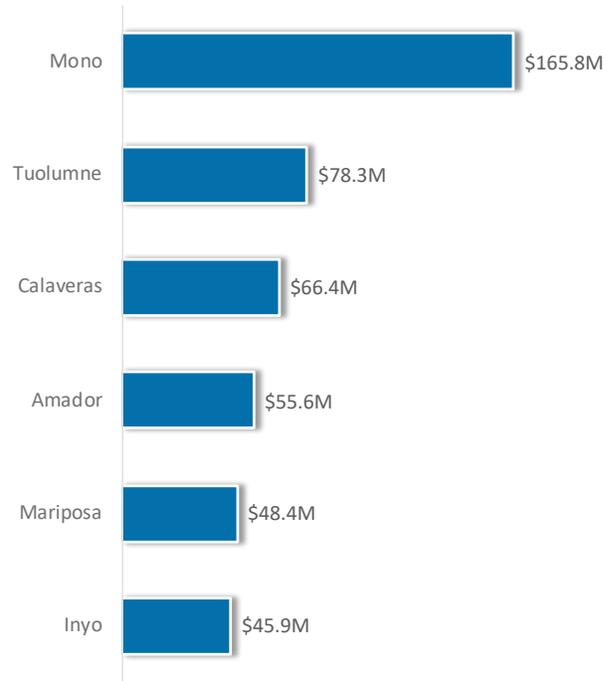


Figure 74: Total Output per 100k residents– Mountain Region



Total Employment

Almost 1,000 FTEs were supported by national security activity in the Mountain region. The largest share, about 320 FTEs, were in Tuolumne County. Calaveras, Amador and Mono counties followed with 230, 160 and 140 FTEs, respectively.

Adjusted for population, Mono County saw the highest number of FTEs per resident.

Just 1.2% of jobs in the Mountain region were supported by national security activity. This figure is highest in Mono and Tuolumne counties, where 1.7% and 1.6% of jobs, respectively, were supported by national security activity.

Figure 75: Total Employment (FTEs) – Mountain Region

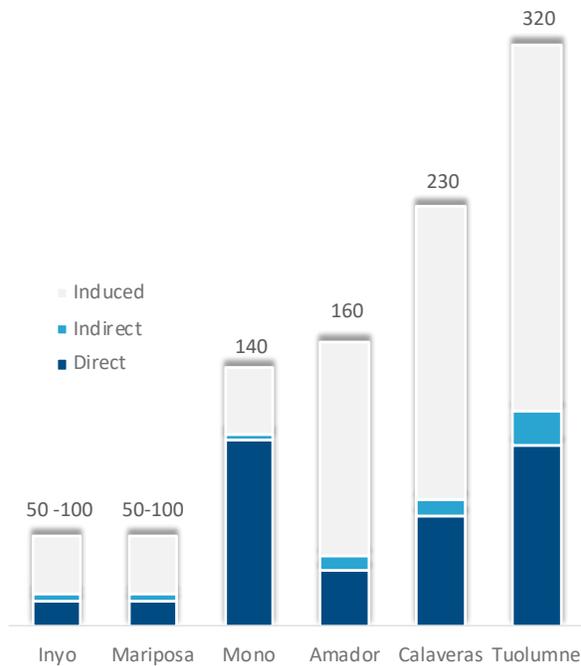
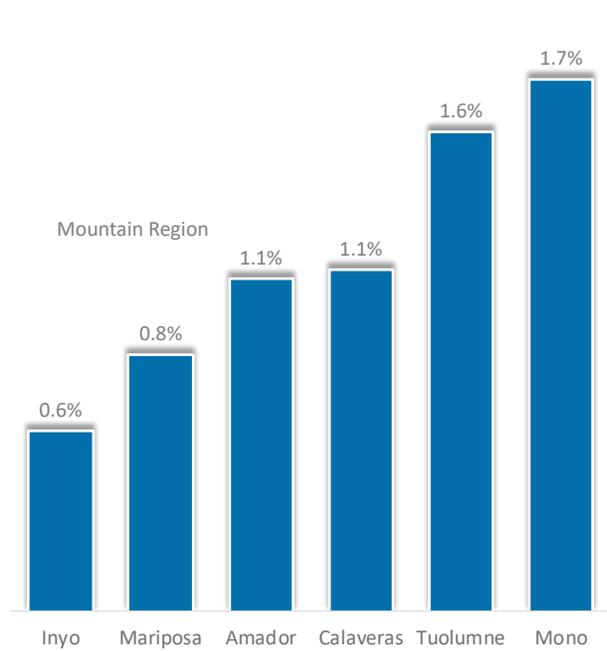


Figure 76: Total Employment as Percentage of County’s Employment – Mountain Region



Government Revenue

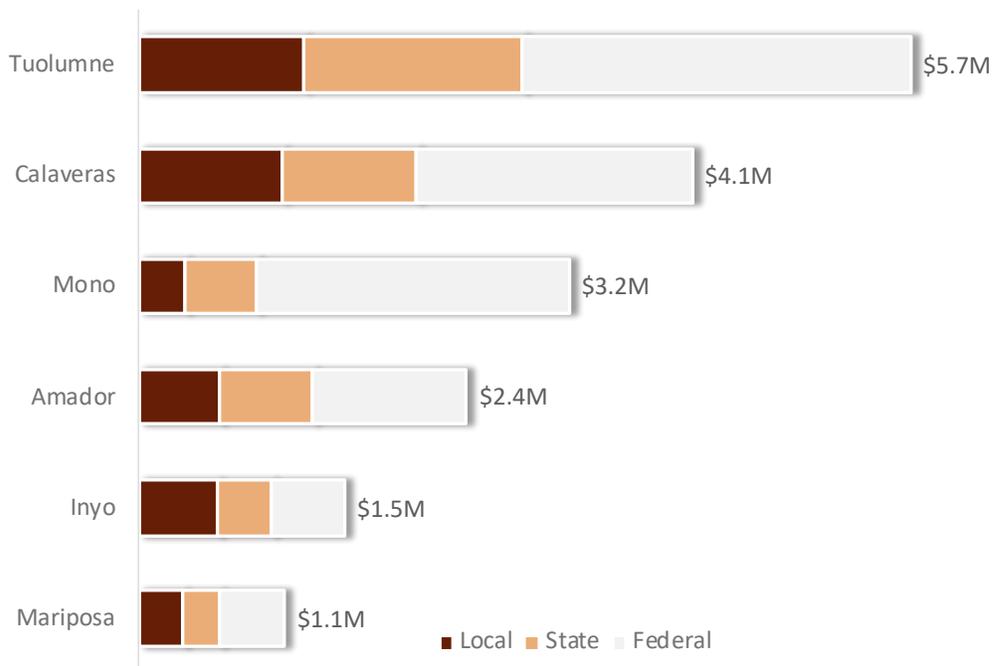
National security activity in the Mountain region generated \$4.1 million in local government revenue, \$4.5 million in state revenue and \$9.4 million in federal revenue, totaling \$18.0 million in combined government revenue.

Tuolumne and Calaveras counties make up the largest portion, generating \$5.7 million (\$1.2 million local, \$1.6 million state and \$2.9 million federal) and \$4.1 million (\$1.1 million local, \$1.0 million state and \$2.1 million federal), respectively.

Mono and Amador counties generated \$3.2 million and \$2.4 million in revenue, respectively.

Regionally, local and state government revenue made up about a quarter of total government revenue, each, and federal revenue made up about half.

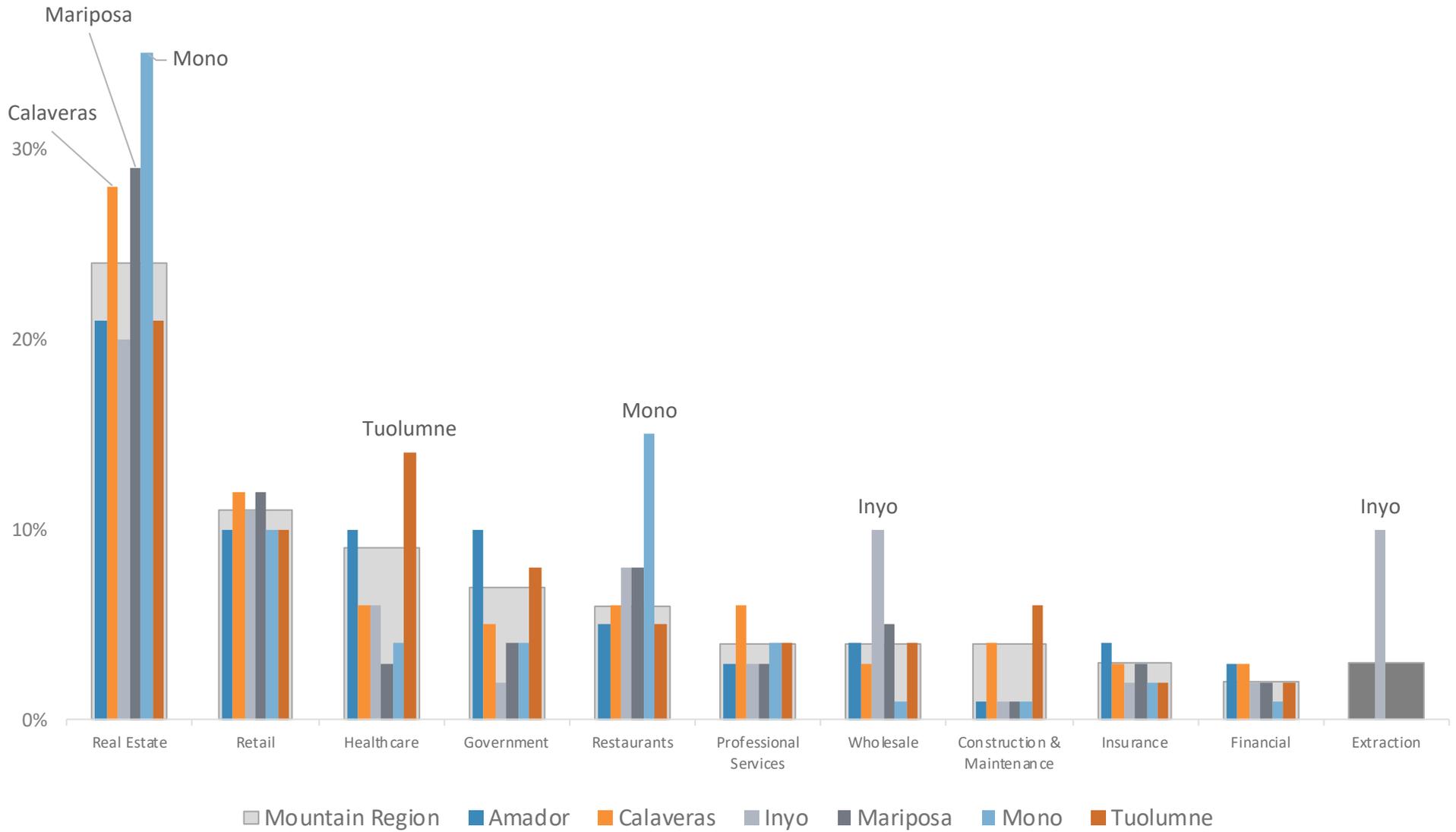
Figure 77: Government Revenue - Mountain Region



Impacted Industries

Real estate, retail and healthcare led the region in national security supported output. Healthcare was concentrated in Tuolumne County while real estate and retail were more evenly distributed. Inyo County has a significant concentration in extraction, particularly oil and gas extraction, as well as stone mining and quarrying.

Figure 78: Top Industries as a Percentage of Total County Output - Mountain Region





Tests of aircraft acceleration and vibration exposure while flying in receiver formation at various speeds and altitudes, Edwards Air Force Base.

Valley Region

The Valley region spans the center of the state and includes eight counties: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare. The Valley makes up 10.8% of the state’s population and 17.5% of the state’s land area.

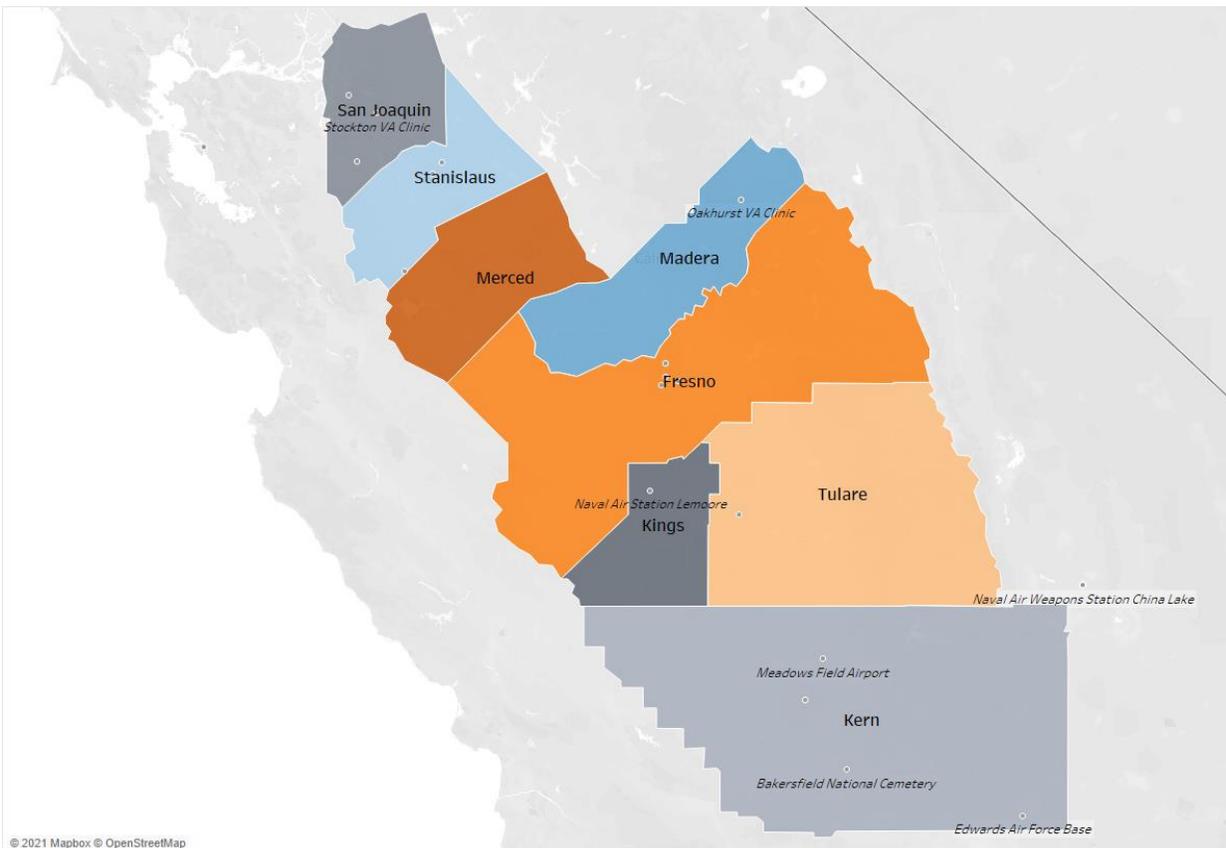
The region has four military bases:

Naval Air Weapons Station China Lake is located at the intersection of Kern County, San Bernardino County and Inyo County, with developed facilities in Kern County. Naval Air Station Lemoore lies along the border of Kings County and Fresno County, with the entrance and most of the facility in Kings County.

- Kern County – Edwards Air Force Base
- San Joaquin County – Defense Distribution Depot San Joaquin

The region has 14 Veterans Affairs healthcare and service facilities, as well as three Homeland Security sites affiliated with regional air and sea ports.

Figure 79: Counties in the Valley Region



Direct Activity

The Valley region ranked eighth of the 11 regions with \$1.5 billion in direct spending and fifth with 23,000 direct employees (12,000 civilian and 11,000 military). Adjusted for population, it ranks last in direct spending and fifth in direct employment.

Direct Employment

Kern County led the region with 11,000 of the region’s 23,000 direct employees (8,000 civilian and 3,000 military). Kings County followed with 6,000 employees (810 civilian and 6,000 civilian). Fresno and San Joaquin counties had 3,000 (2,000 civilian and 1,000 military) and 2,000 (1,000 civilian and 460 military) employees, respectively.

Kings County ranked fourth in terms of direct employment relative to population.

Figure 80: Direct Employment – Valley Region

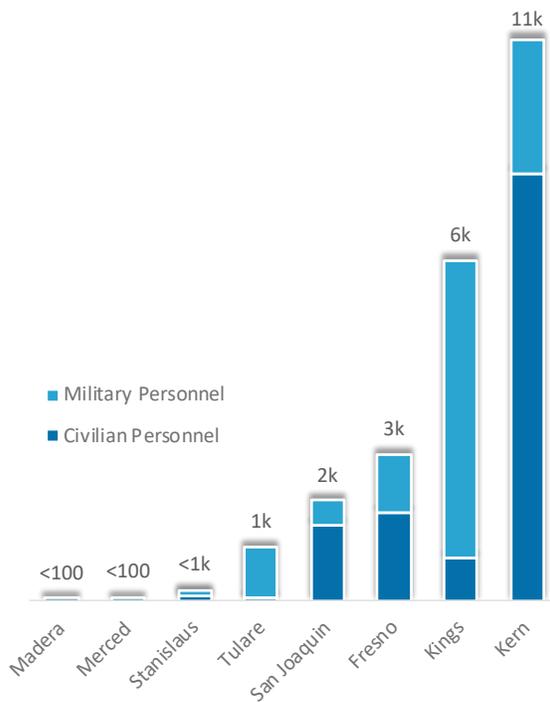
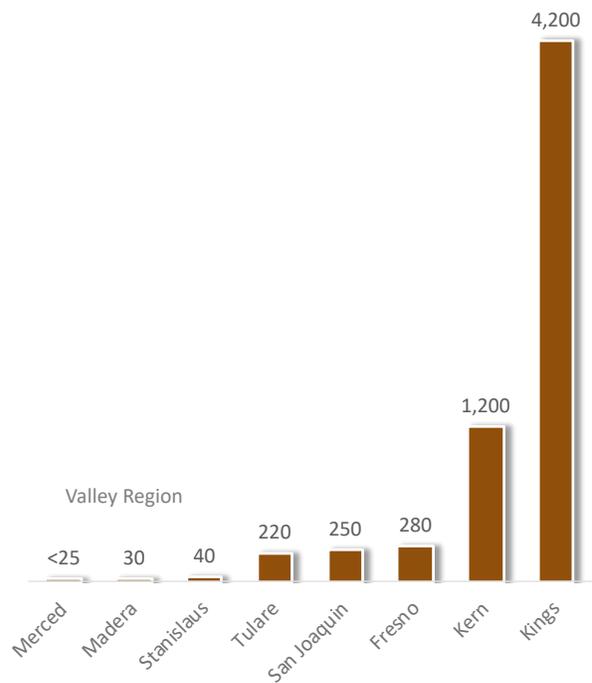


Figure 81: Direct Employment per 100k Residents – Valley Region



Direct Spending

The largest share of the region’s \$1.5 billion in direct spending occurred in Kern, Fresno and San Joaquin counties, totaling \$371.8 million, \$314.9 million and \$305.2 million, respectively. Stanislaus and Tulare counties followed, receiving \$188.0 million and \$131.1 million, respectively.

In Kern County, scientific research and development was the top recipient of direct spending. Bread and bakery product manufacturing in San Joaquin County received the highest amount of national security spending of any industry in the region. Construction machinery manufacturing in Stanislaus County followed.

Kings County leads the region in spending relative to population.

Figure 82: Direct Spending – Valley Region

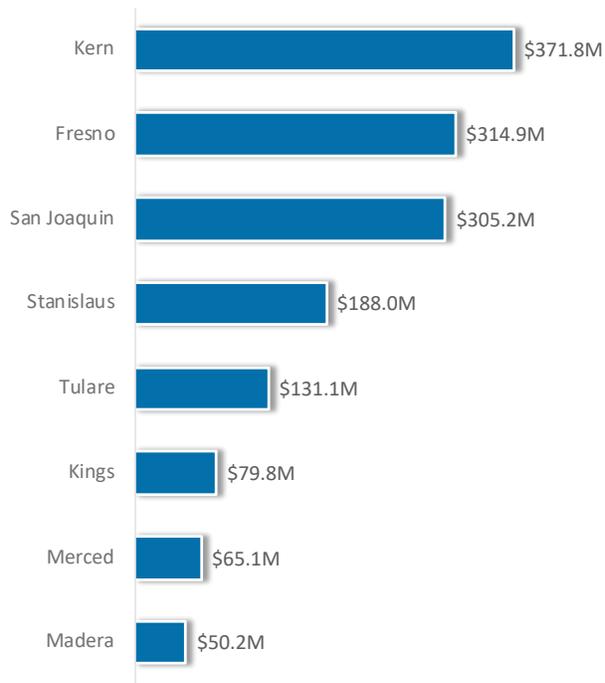
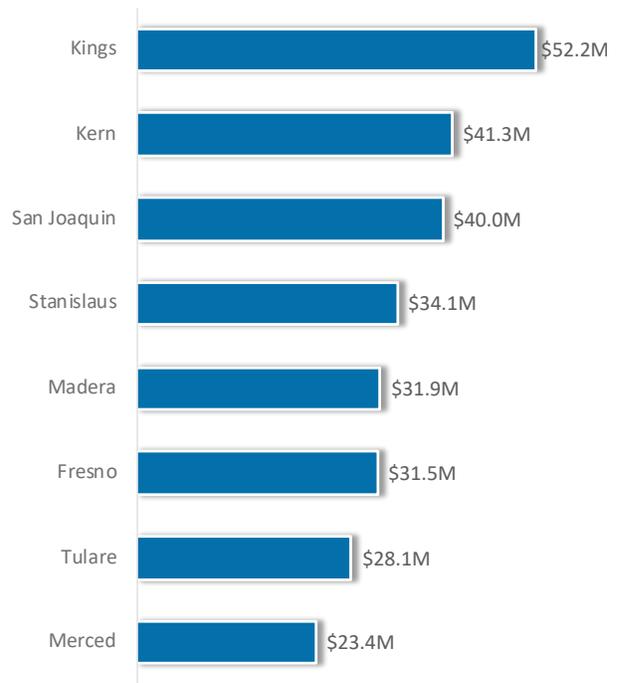


Figure 83: Direct Spending per 100k Residents – Valley Region



Economic Impacts

The Valley region ranked eighth of the 11 regions with \$8.2 billion in total output. It ranked seventh in terms of direct employment with 45,000 total FTEs. Adjusted for population, it ranked ninth by both measures.

Total Output

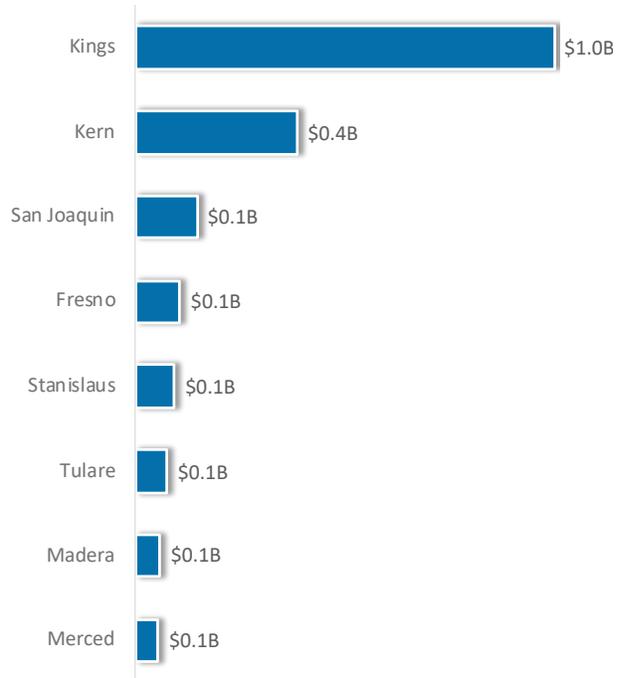
Total output in Kern County totaled \$3.4 billion, the largest share of the region’s \$8.2 billion in total output. Kings, San Joaquin and Fresno counties each generated over \$1 billion in economic output.

Kings County ranked fifth statewide in total output relative to population.

Figure 84: Total Output – Valley Region



Figure 85: Total Output per 100k residents– Valley Region



Total Employment

45,000 FTEs were supported by national security activity in the Valley region. Kern County accounted for 18,000 FTEs and Kings County 7,000 FTEs. Fresno and San Joaquin counties both accounted for 7,000 FTEs.

National security-supported FTEs accounted for 2.6% of all job employment in the region, close to the state average. In Kings County, national security-supported FTEs accounted for 13.5% of jobs in the county, ranking fourth in the state. In Kern County, they accounted for 5.0%.

Figure 86: Total Employment (FTEs) – Valley Region

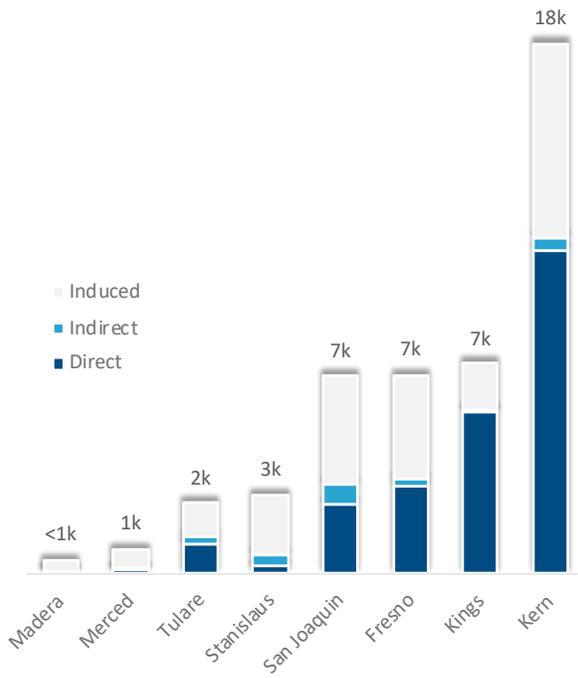
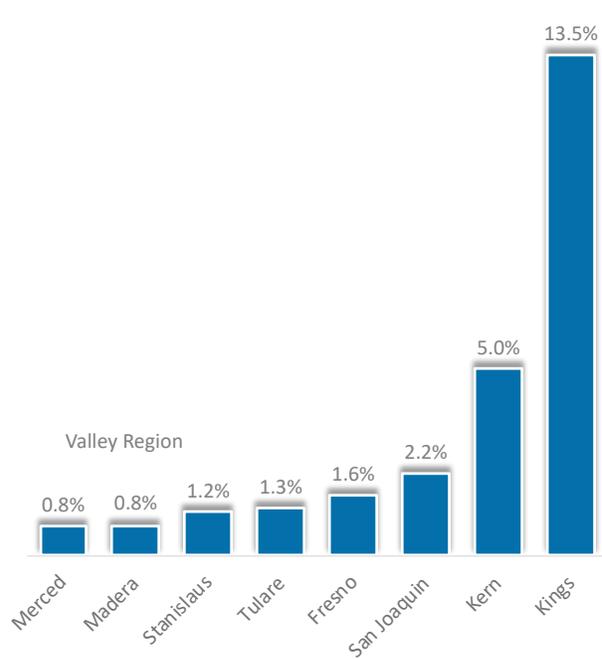


Figure 87: Total Employment as Percentage of County's Employment – Valley Region



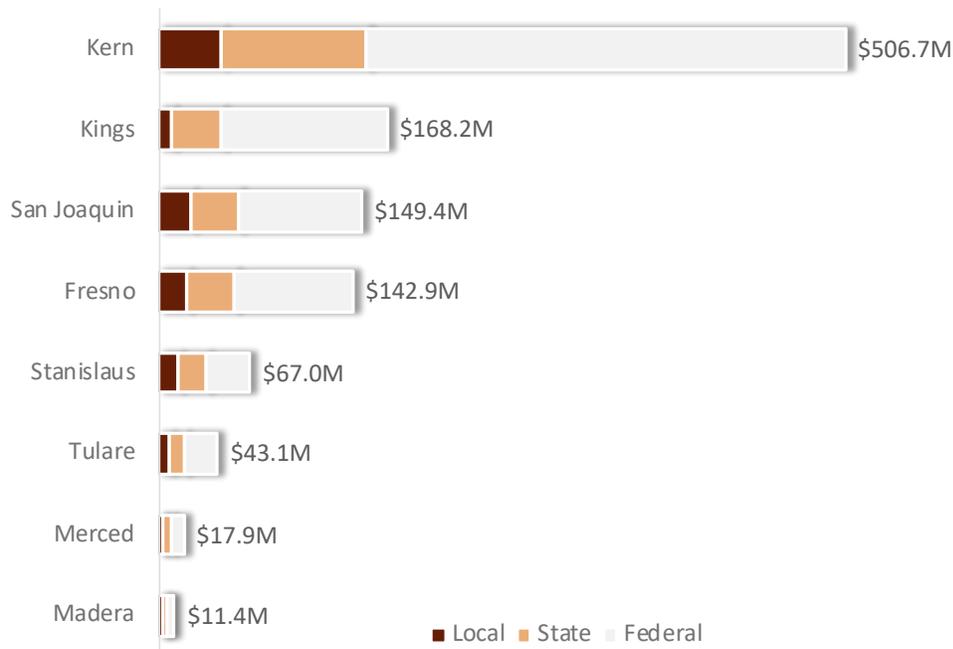
Government Revenue

National security activity in the Valley region generated \$126.9 million in local revenue, \$253.3 million in state revenue and \$726.5 in federal revenue, totaling \$1.1 billion in combined revenue.

Revenue generated in Kern County represents half of regional revenue, totaling \$506.7 (\$46.2 million local, \$106.7 million state and \$353.8 million federal). Kings, San Joaquin and Fresno counties generated \$168.2 million, \$150.4 million and \$142.9 million in combined revenue, respectively.

Regionally, 11.5%, 22.9% and 65.6% of government revenue went toward local, state and federal government, respectively. Local revenue made up the least amount of total revenue in Kings County, only 5.6%. Conversely, Madera County had the most local revenue, which totaled nearly one-quarter of the county’s government revenue.

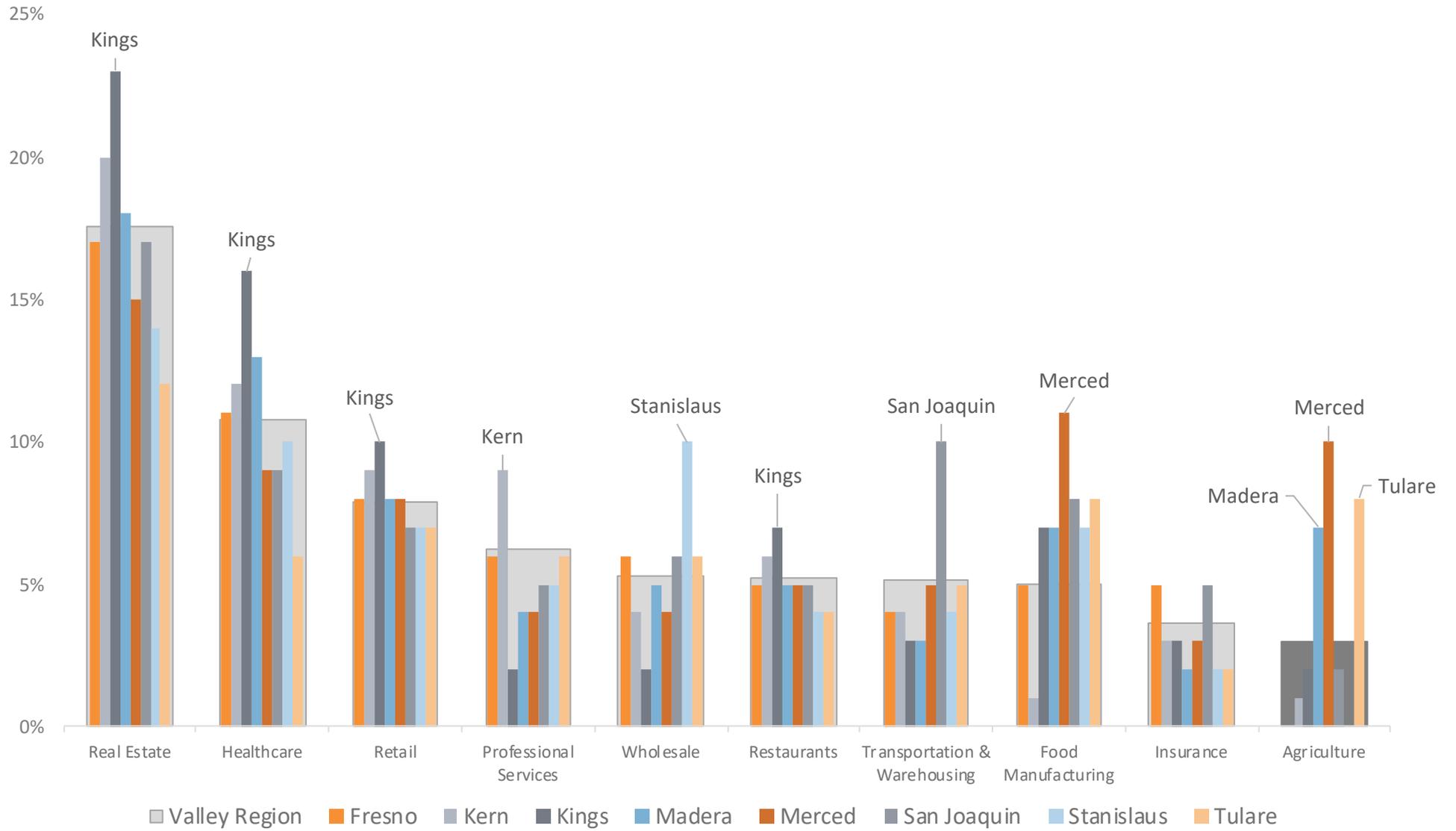
Figure 88: Government Revenue - Valley Region



Industries Impacted

Real estate, healthcare and retail produced the most output in the region. Each were spread relatively evenly across the counties. Transportation & warehousing, food manufacturing and agriculture also had major concentrations in several counties.

Figure 89: Top Industries as a Percentage of Total County Output - Valley Region





A Helicopter Sea Combat (HSC) squadron provides firefighting support in response to wildfires at Naval Base Ventura County (NBVC) Point Mugu.

Coastal Region

The Coastal region stretches along California’s central coasts between the major population centers in Southern California and the Bay Area. It included six counties: Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz and Ventura. The region accounts for 5.9% of the state’s population and 8.4% of its land area.

The region is home to seven military bases:

- Monterey County – Monterey Presidio, Naval Support Activity Monterey and Fort Hunter Liggett
- San Luis Obispo County – Camp Roberts and Camp San Luis Obispo
- Santa Barbara County – Vandenberg Air Force Base
- Ventura County – Naval Base Ventura County

The region also includes seven Veterans Affairs healthcare facilities and four Homeland Security facilities affiliated with sea ports and traffic navigation.

Figure 90: Counties in the Coastal Region



Direct Activity

The Coastal region ranked seventh of the 11 regions with \$1.9 billion in direct spending. It ranked fourth in direct employment with 32,000 direct employees (11,000 civilian and 20,000 military). Adjusted for population, it ranked sixth in spending and second in direct employment.

Direct Employment

Monterey and Ventura counties had the largest share of the region’s 32,000 total military and civilian employees with 12,000 (4,000 civilian and 8,000 military) and 12,000 (5,000 civilian and 6,000 military), respectively. Santa Barbara and San Luis Obispo had 4,000 employees (1,000 civilian and 3,000 military) and 3,000 employees (less than 50 civilian and 3,000 military), respectively.

Figure 91: Direct Employment – Coastal Region

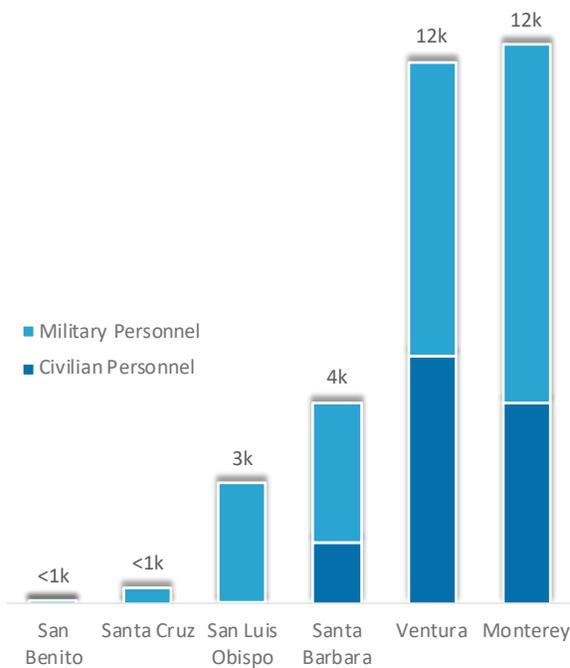
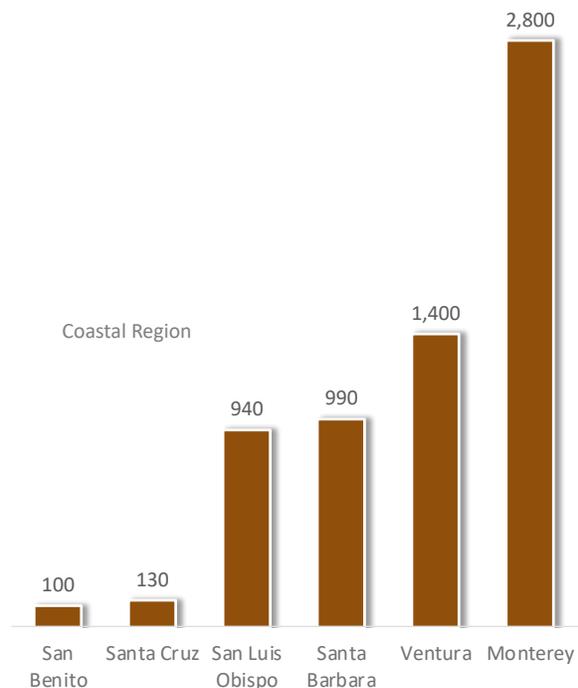


Figure 92: Direct Employment per 100k Residents – Coastal Region



Direct Spending

Ventura and Santa Barbara counties account for a majority of the region’s \$1.9 billion in total national security spending, with \$741.1 million and \$641.6 million, respectively. In Ventura County, architectural and engineering services as well as other computer related services made up a bulk of the spending, while search, detection and navigation instruments manufacturing as well as scientific research and development services were the primary recipients of spending in Santa Barbara County. Monterey, Santa Cruz and San Luis Obispo counties totaled \$159.2 million, \$142.8 million and \$137.2 million, respectively.

Figure 93: Direct Spending – Coastal Region

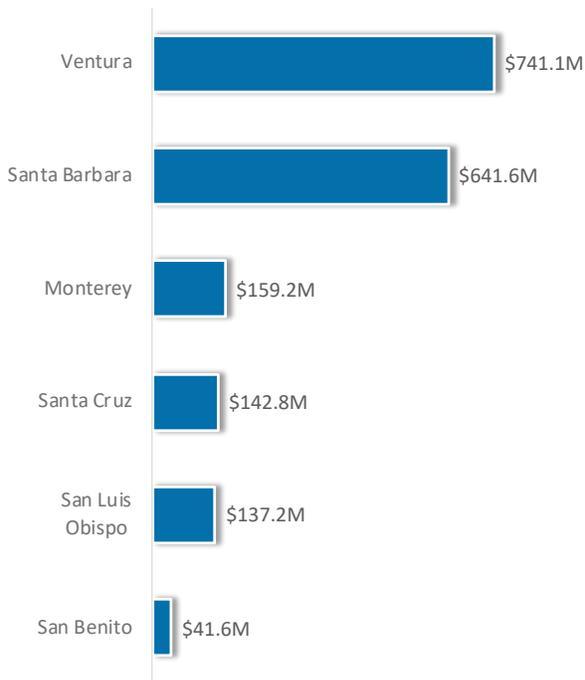
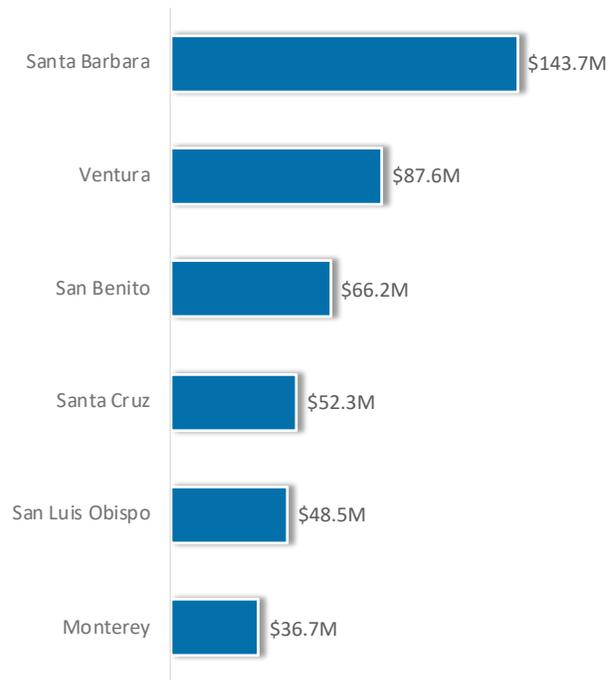


Figure 94: Direct Spending per 100k Residents – Coastal Region



Economic Impacts

The Coastal region also ranked seventh of the 11 regions with \$11.1 billion in output. It ranks fifth in FTE output with 57,000 FTEs. Adjusted for population, the region ranked third in output and second in employment.

Total Output

Ventura County accounted for the largest share of regional output, \$4.7 billion, ranking eighth in the state. Monterey and Santa Barbara counties generated \$3.3 billion and \$2.1 billion, respectively. Monterey County ranked seventh in the state in output relative to population and Ventura County ranks ninth.

Figure 95: Total Output – Coastal Region

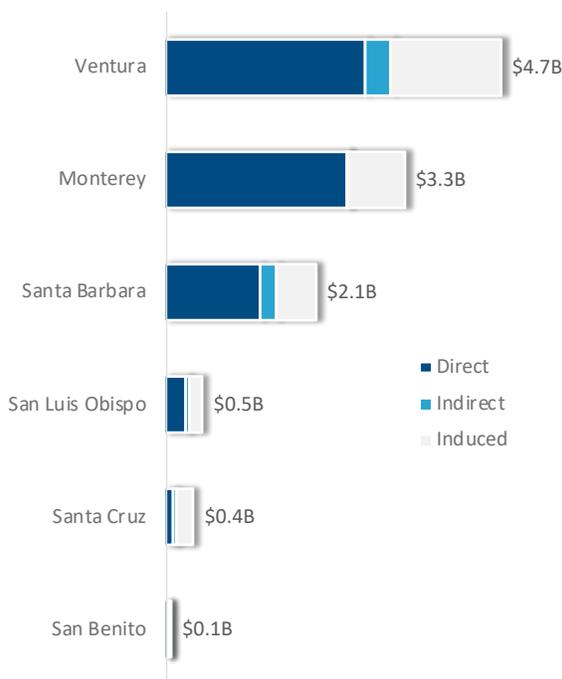
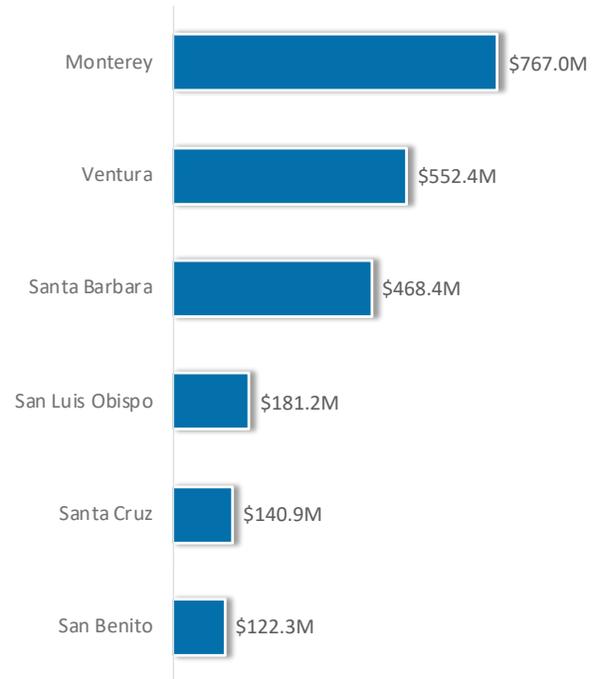


Figure 96: Total Output per 100k residents – Coastal Region



Total Employment

National security activity supported about 57,000 FTEs in the Coastal region in fiscal year 2019. Ventura County had the largest share with 24,000 FTEs, ranking eighth in the state. Some 16,000 FTEs were supported in Monterey County and 10,000 FTEs were supported in Santa Barbara County.

National security supported FTEs made up 5.1% of the jobs in the region. Some 7.6% and 6.0% of jobs in Monterey and Ventura counties, respectively, were supported by national security activity, ranking fifth and eighth.

Figure 97: Total Employment (FTEs) – Coastal Region

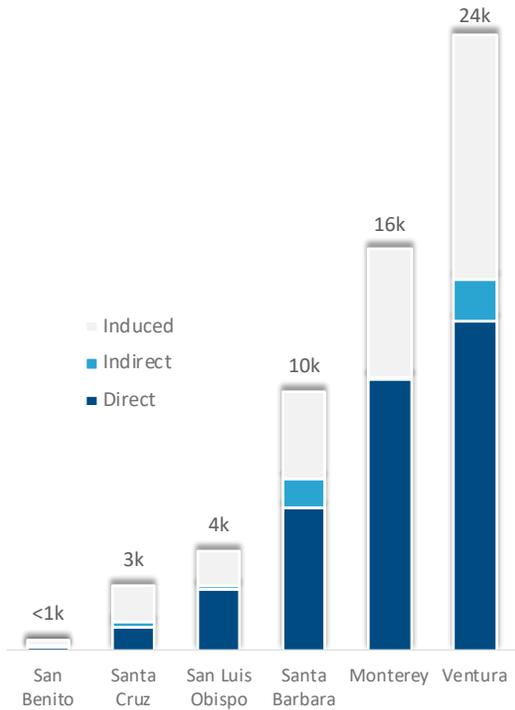
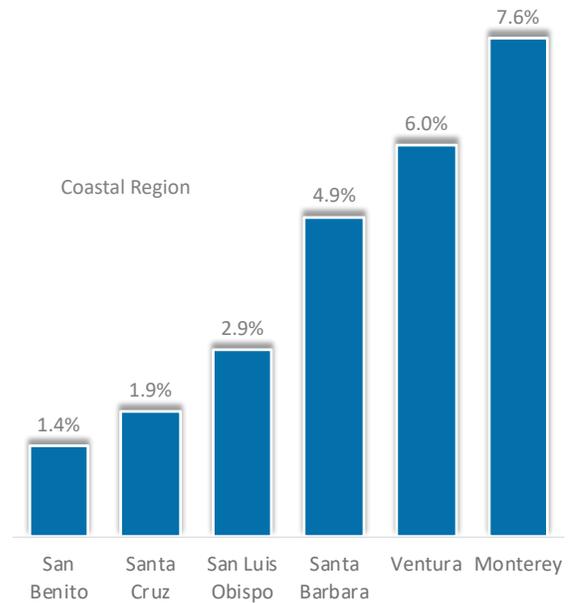


Figure 98: Total Employment as Percentage of County’s Employment – Coastal Region



Government Revenue

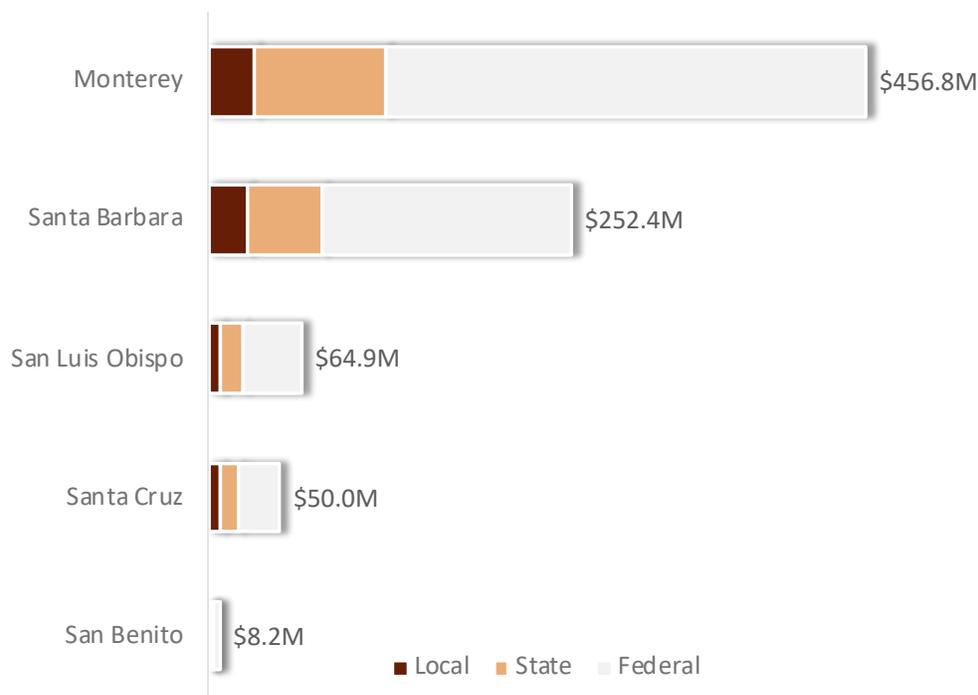
National security activity in Coastal region generated \$32.3 million in local revenue, \$91.8 million in state revenue and \$332.7 million in federal revenue, totaling \$1.5 billion combined.

Ventura County had the largest share with \$633.7 million in combined revenue (\$60.1 million local, \$138.5 million state and \$435.1 million federal).

Monterey and Santa Barbara counties followed with \$456.8 million (\$32.3 million local, \$91.8 million state and \$332.7 million federal) and \$252.4 million (\$27.5 million local, \$52.4 million state and \$172.5 million federal) in combined revenue.

As a region, 9.5%, 21.3% and 69.2% of government revenue went to local, state and federal governments, respectively. In San Benito County, 28.9% of local revenue came from national security activity, the highest in the region.

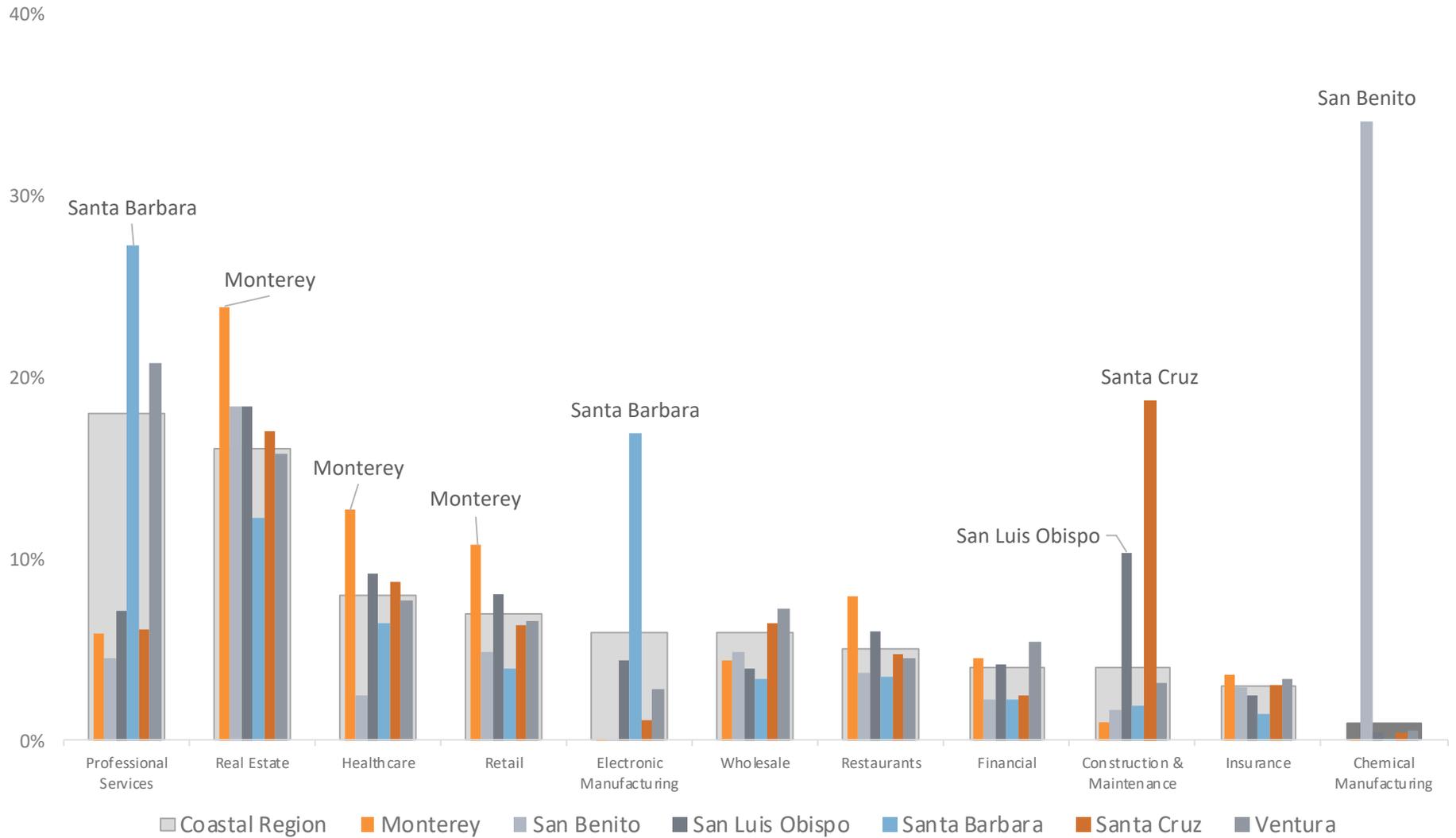
Figure 99 Government Revenue - Coastal Region



Impacted Industries

Real estate and professional services produced the most economic output supported by national security activities in the Coastal region. Professional services is concentrated in Santa Barbara and Ventura counties, while real estate is distributed more evenly. Electronic manufacturing has a major concentration in Santa Barbara County, construction & maintenance in San Luis Obispo and Santa Cruz counties and chemical manufacturing in San Benito County.

Figure 100: Top Industries as a Percentage of Total County Output - Coastal Region



Inside view of the Mission Control Center at the Jet Propulsion Laboratory (JPL)



Southern California Area

The Southern California area includes three regions: San Diego, Los Angeles and Other Southern Counties. The San Diego and Los Angeles regions each contain only one county, while the Other Southern Counties is comprised of four counties: Imperial, Orange, Riverside and San Bernardino. In order to better illustrate economic activity in the context of the state, these three regions are analyzed comparatively in the first part of this section. Following is an overview of the Other Southern Counties region.

Los Angeles, San Diego and Other Southern Counties Regions

The Los Angeles region includes Los Angeles County. It accounts for a quarter of all Californians, the most populous region in the state, and nearly 3% of the land area.

The San Diego region includes San Diego County. It accounts for 8.4% of the state's population and nearly 3% of the land area.

The Other Southern Counties region covers California's southern, inland areas as well as Orange County. The region accounts for 20.3% of the state's population and 20.7% of its land area.

Los Angeles is home to one military base, Los Angeles Air Force Base and three federally funded research and development sites: Jet Propulsion Laboratory, Aerospace Corporation and RAND Corporation. Los Angeles has 16 Veterans Affairs family housing, healthcare and service sites. There are also 15 Homeland Security facilities, primarily affiliated with air and sea ports in the region. The Department of Defense has two offices in the county for operations and public affairs services.

San Diego is home to eight bases: Marine Corps Air Station Miramar, Marine Corps Base Camp Pendleton, Marine Corps Recruit Depot San Diego, Naval Base Coronado, Naval Base Point Loma, Naval Base San Diego, Naval Information Warfare Systems Command and Naval Ammunition Depot Fallbrook. There are 14 Veterans Affairs healthcare and service facilities in the region, as well as over 30 Homeland Security facilities used for education, navigation and traffic aids and border security. The Naval Medical Center San Diego is also in the region and is operated by the Department of Defense.

The Other Southern Counties region is home to eight military bases:

- San Bernardino County – Fort Irwin, Marine Corps Air Ground Combat Center Twentynine Palms and the Marine Corps Logistics Base Barstow
- Riverside County – March Air Force Reserve Base and Detachment Norco
- Orange County – Joint Forces Training Base Los Alamitos and the Naval Weapons Station Seal Beach
- Imperial County – Naval Air Facility El Centro

The region has 18 Veterans Affairs healthcare and service facilities as well as over 30 Homeland Security sites affiliated with regional air and sea ports and border crossings. At least one Department of Defense office is housed in Orange County's Santa Ana Federal Building.

Figure 101: Counties in the Other Southern Counties Region

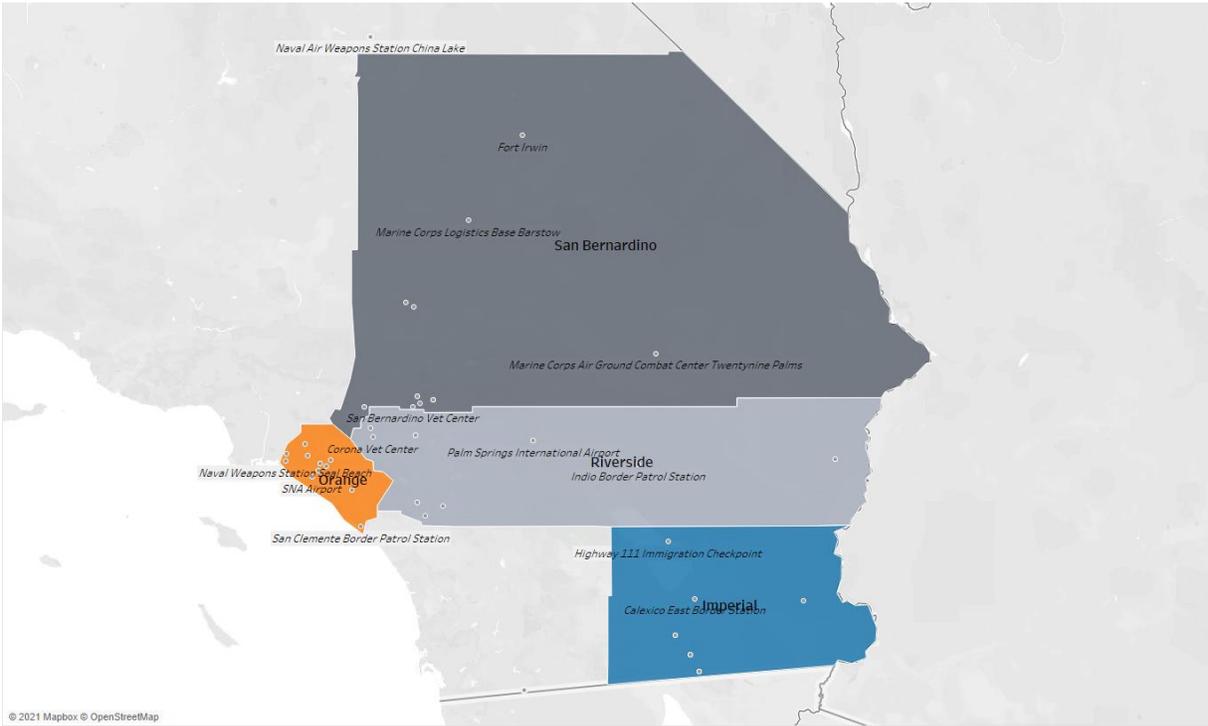


Figure 102: The San Diego Region

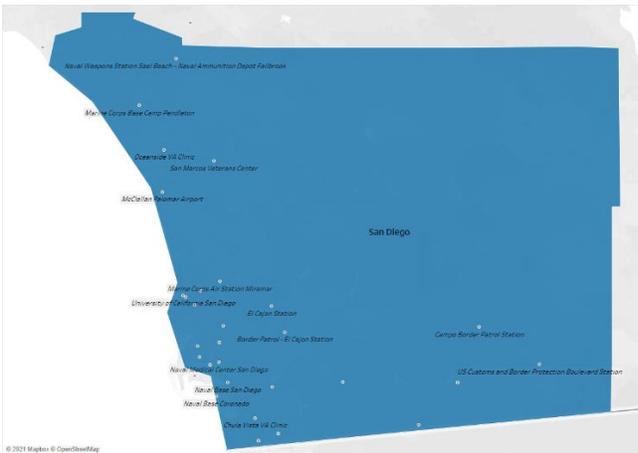


Figure 103: The Los Angeles Region



Direct Activity

Direct Employment

The San Diego, Other Southern Counties and Los Angeles regions ranked first, second and third in direct employment, respectively. Adjusted for population, San Diego ranks first out of the 11 regions, the Other Southern Counties region ranks fourth and Los Angeles ranks seventh in direct employment.

With 165,000 employees (34,000 civilian and 131,000 military), San Diego had the most direct employees in the state. The Other Southern Counties region was home to 44,000 direct employees (15,000 civilian and 29,000 military). Los Angeles had 32,000 employees (26,000 civilian and 7,000 military).

Figure 104: Direct Employment – Southern California Area

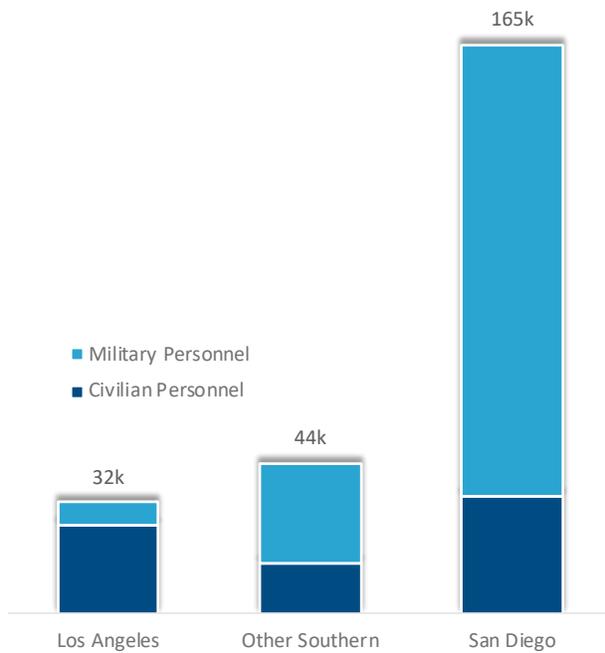
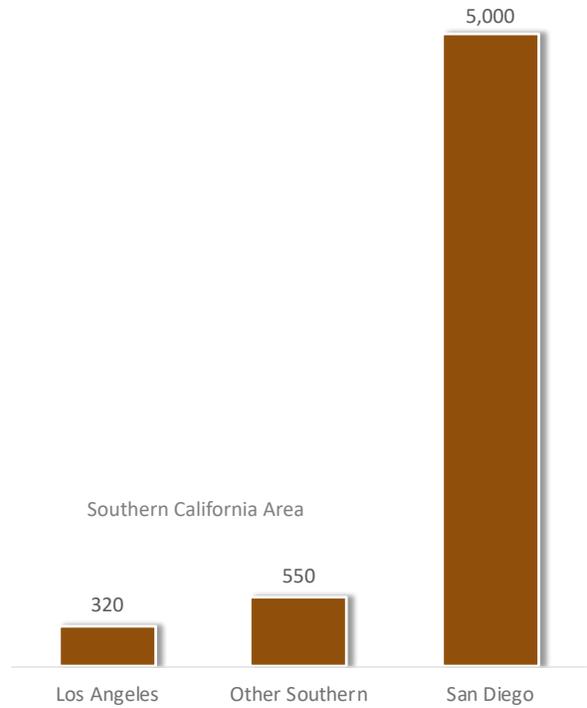


Figure 105: Direct Employment per 100k Residents – Southern California Area



Direct Spending

The San Diego and Los Angeles regions rank first and second in spending, respectively. San Diego received \$13.0 billion in national security spending. Los Angeles followed with \$9.8 billion in spending. The Other Southern Counties region ranks fifth in direct spending with \$6.0 billion. Adjusted for population, San Diego also ranks first of the 11 regions in direct spending, Los Angeles ranks fifth and the Other Southern Counties region ranks seventh.

In all three regions, aircraft manufacturing was a top industry in terms of national security spending. In San Diego County, ship building and repairing was the second most significant recipient of spending. In Los Angeles, the greatest amount of spending went toward scientific research and development services. In the Other Southern Counties region, a large portion of spending went toward search, detection and navigation instrument manufacturing.

Figure 106: Direct Spending – Southern California Area

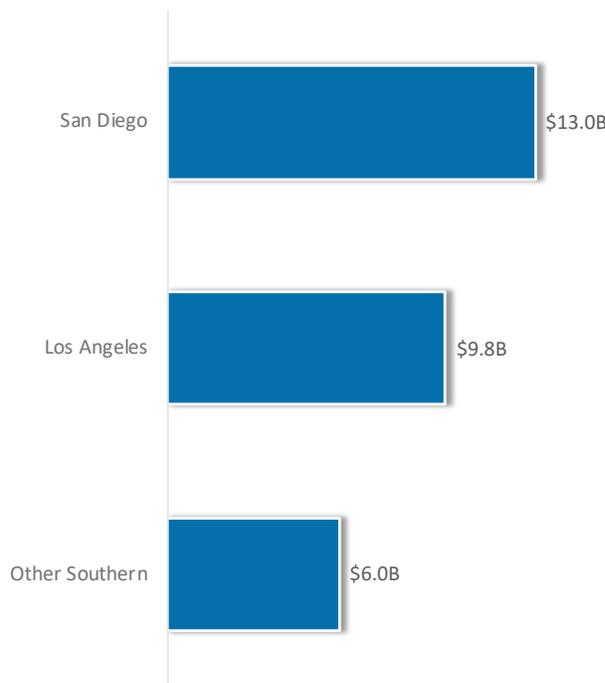
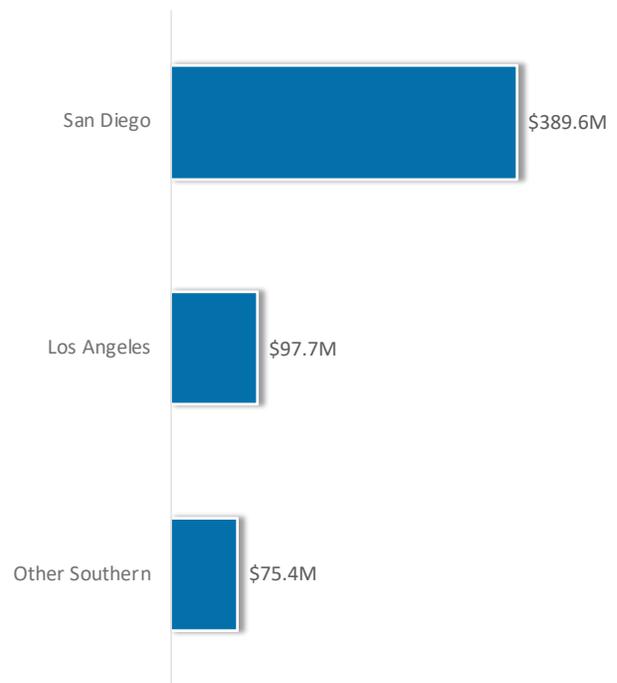


Figure 107: Direct Spending per 100k Residents – Southern California Area



Economic Impacts

Total Output

In fiscal year 2019, national security activity generated \$60.1 billion in economic output in the San Diego region, \$29.6 billion in the Los Angeles region and \$20.7 billion in the Other Southern Counties region.

The San Diego, Los Angeles and the Other Southern Counties regions ranked first, second and third of the 11 regions, respectively, in economic output. Adjusted for population, San Diego ranked first while Los Angeles and the Other Southern Counties region ranked sixth and seventh, respectively.

Figure 108: Total Output – Southern California Area

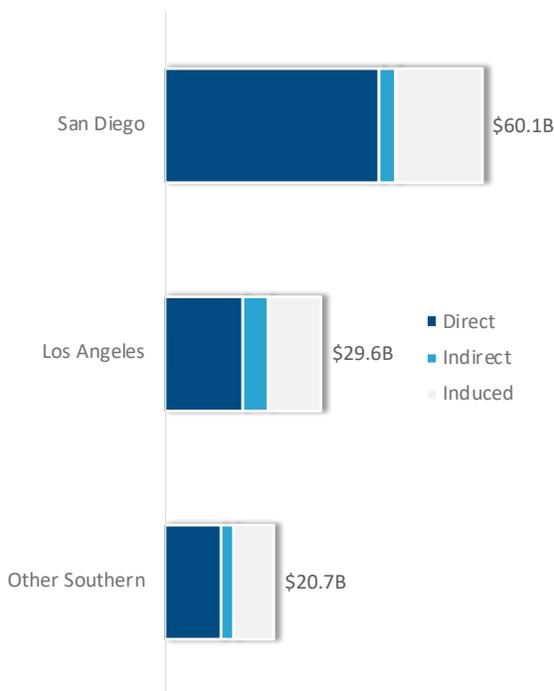
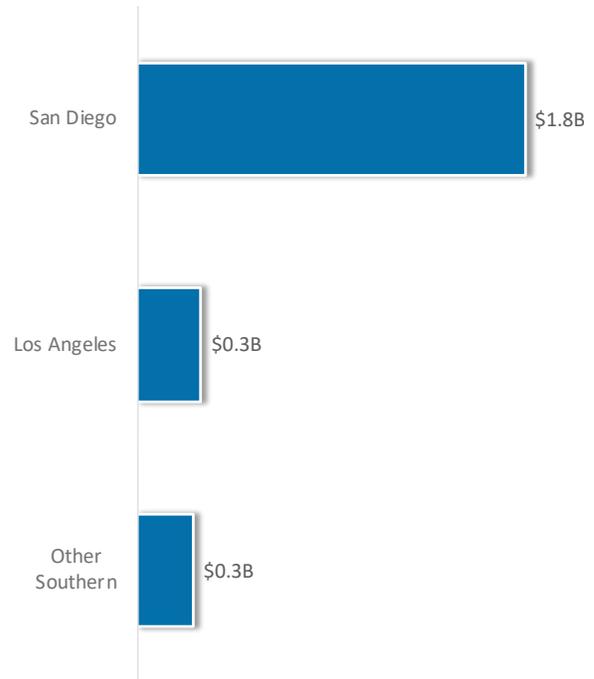


Figure 109: Total Output per 100k residents – Southern California Area



Employment Output

The San Diego, Los Angeles and the Other Southern Counties regions also ranked first, second and third in FTEs. Relative to population, San Diego ranked first, Other Southern Counties ranked fourth and Los Angeles ranked sixth of the 11 regions.

In fiscal year 2019, 292,000 FTEs were supported by national security activity in San Diego, accounting for 18.9% of all employment in the region. Some 135,000 FTEs and 109,000 FTEs were supported by spending in Los Angeles and the Other Southern Counties region, respectively. In both the Los Angeles and Other Southern Counties regions, these FTEs accounted for about 3% of all employment, close to the state average.

Figure 110: Total Employment (FTEs) – Southern California Area

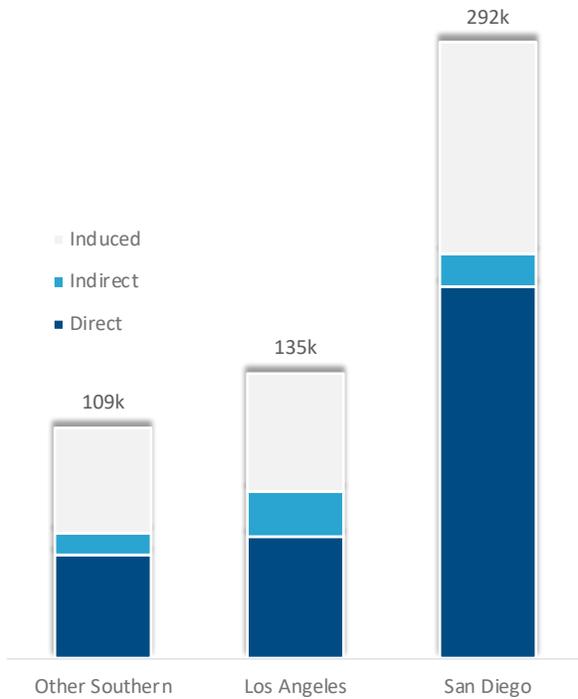
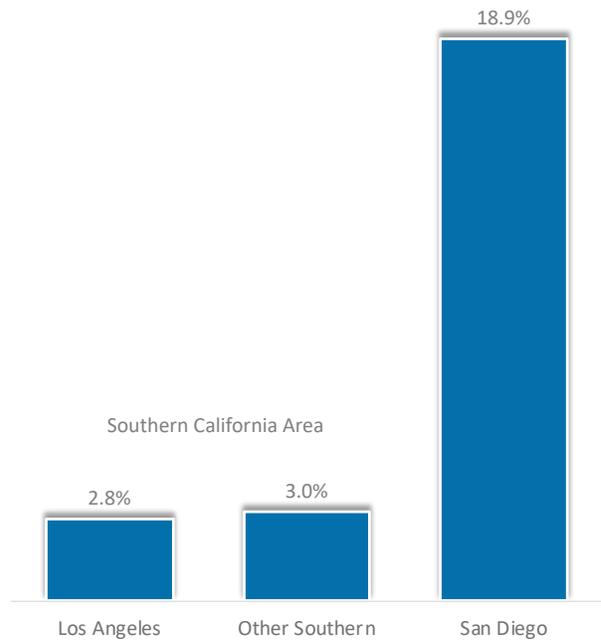


Figure 111: Total Employment as Percentage of County’s Employment – Southern California Area



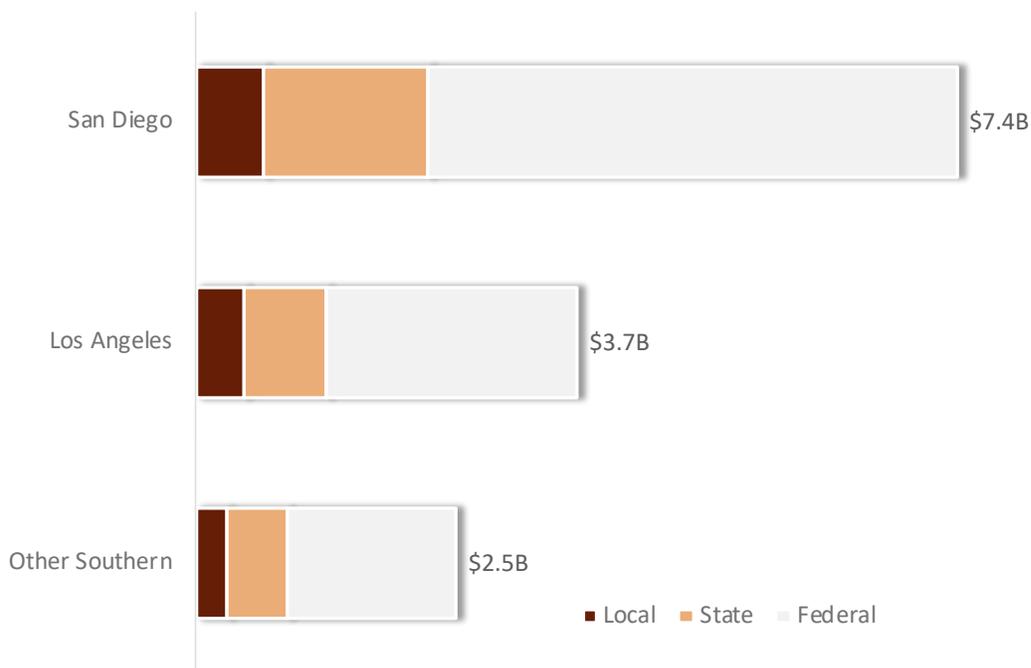
Government Revenue

National security activity in the San Diego region generated \$654.6 million in local government revenue, \$1.6 billion in state revenue and \$5.2 billion in federal revenue, totaling \$7.4 billion in combined revenue.

In Los Angeles County it generated \$455.7 million in local revenue, \$808.2 million in state revenue and \$2.4 billion in federal revenue, totaling \$3.7 billion in combined revenue.

In the Other Southern Counties, national security activity generated \$306.3 million in local revenue, \$575.4 million in state revenue and \$1.6 billion in federal revenue, totaling \$2.5 billion in combined revenue.

Figure 112: Government Revenue - Southern California Area

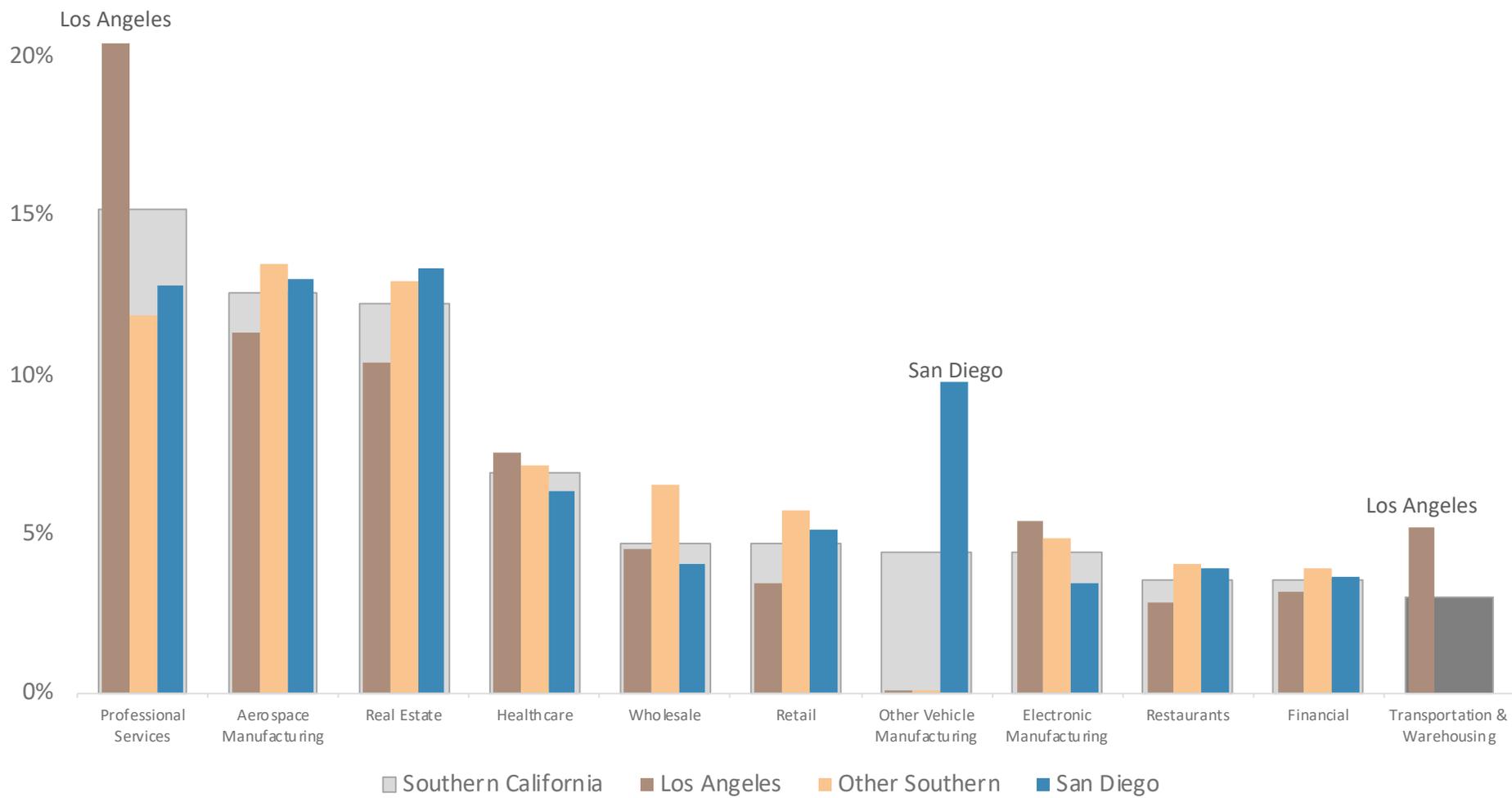


Impacted Industries

Professional services, aerospace manufacturing, real estate and healthcare produced the most output across Southern California. Output was broadly distributed across the regions.

Other vehicle manufacturing had a major concentration in San Diego.

Figure 113: Top Industries as a Percentage of Total Regional Output - Southern California Area



Other Southern Counties Region

Direct Activity

Direct Employment

The Other Southern Counties region was home to 44,000 direct employees (15,000 civilian and 29,000 military). San Bernardino County had 24,000 employees (6,000 civilian and 18,000 military), Riverside County followed, with 12,000 employees (4,000 civilian and 8,000 military). Orange and Imperial counties had 4,000 employees (2,000 civilian and 2,000 military) and 3,000 employees (3,000 civilian and 550 military), respectively.

Figure 114: Direct Employment – Other Southern Counties Region

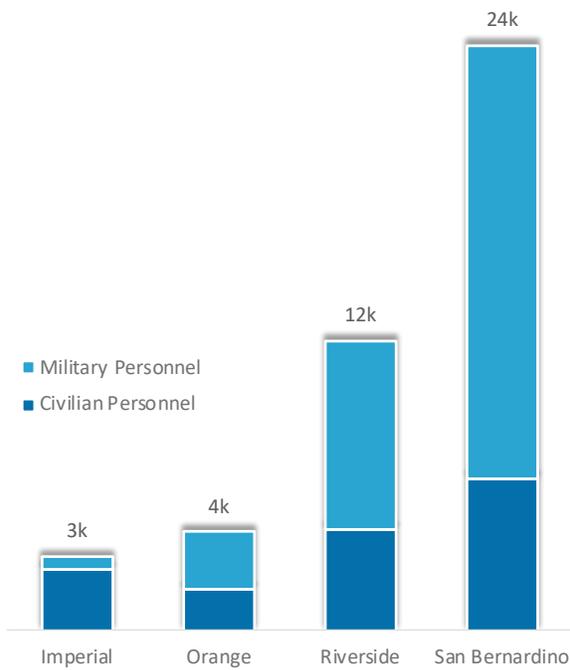
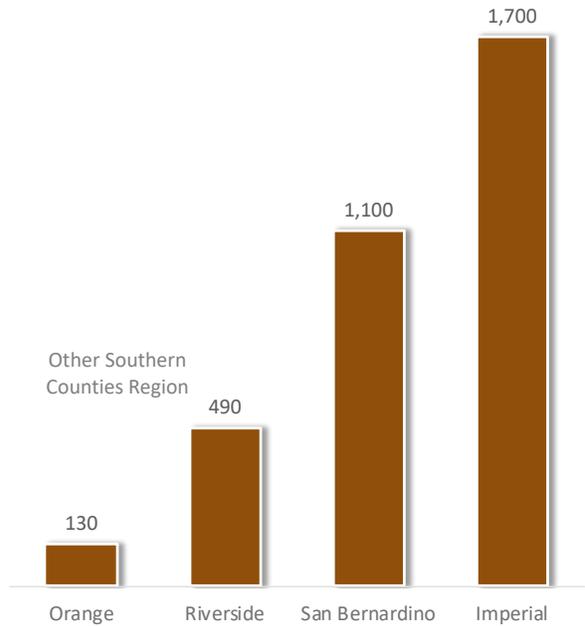


Figure 115: Direct Employment per 100k Residents – Other Southern Counties Region



Direct Spending

Over half of the region’s \$6.0 billion in direct spending was in Orange County, nearly \$3.8 billion. Spending in Orange County was driven by aircraft manufacturing and search, detection and navigation instruments manufacturing. Riverside and San Bernardino counties followed with \$1.3 billion and \$929.9 million, respectively. In Riverside County, construction of both new manufacturing structures and new highways and streets were the biggest recipients of spending. In San Bernardino County, outpatient care centers and software publishers received a bulk of the spending.

Figure 116: Direct Spending – Other Southern Counties Region

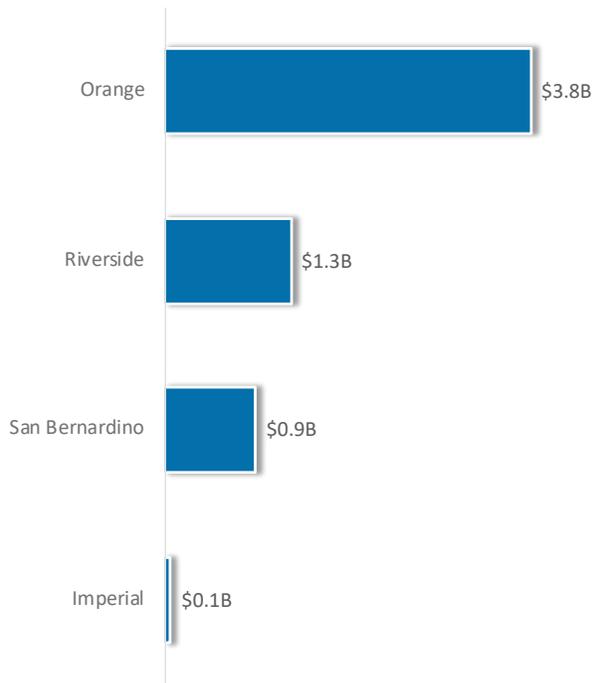
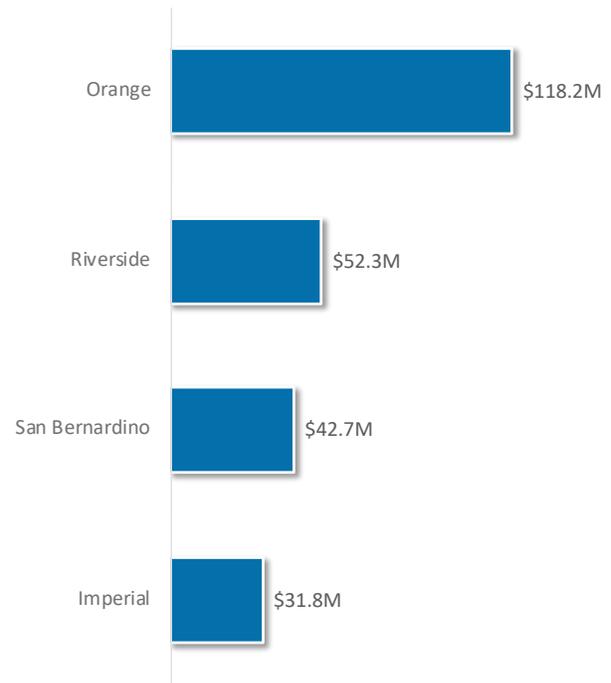


Figure 117: Direct Spending per 100k Residents – Other Southern Counties Region



Economic Impacts

Total Output

National security activity generated \$20.7 billion in economic output in the Other Southern Counties region. Orange County accounted for the largest share with \$8.9 billion in output. San Bernardino and Riverside counties followed with \$6.7 billion and \$4.1 billion in output, respectively.

Figure 118: Total Output – Other Southern Counties Region

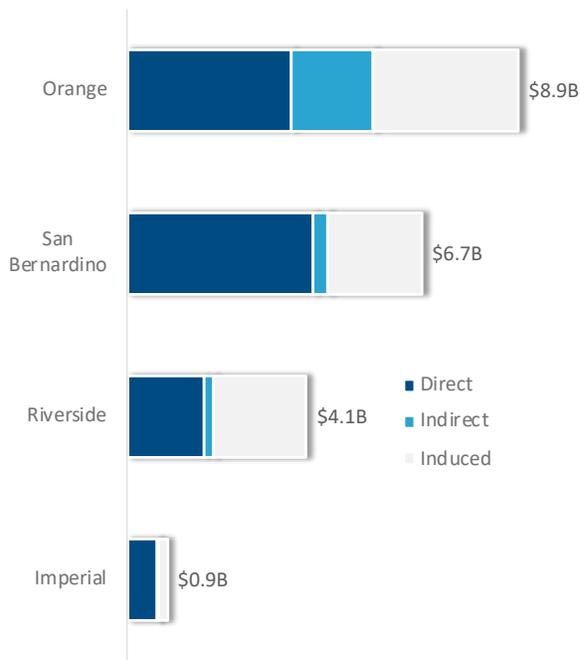
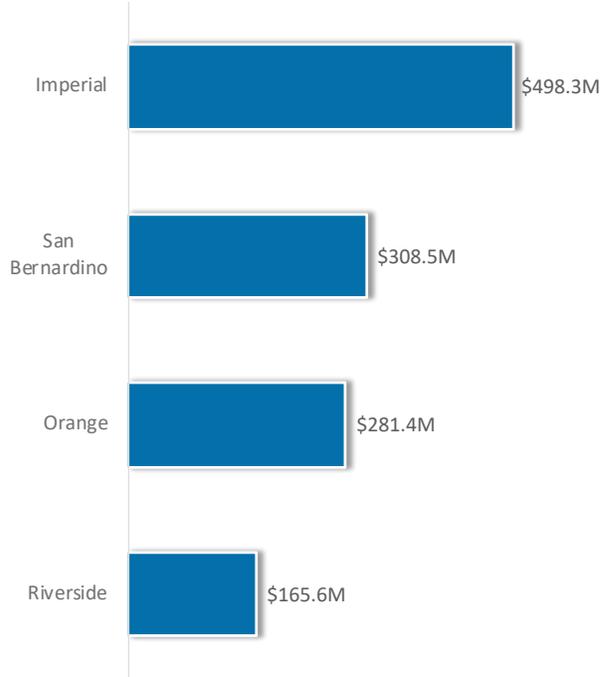


Figure 119: Total Output per 100k residents— Other Southern Counties Region



Total Employment

National security activity supported over 109,000 FTEs in the region. Orange and San Bernardino counties both accounted for just over a third of employment, totaling about 39,000 and 38,000 FTEs, respectively, followed by Riverside County with 28,000 FTEs and Imperial County with 4,000 FTEs.

National security-supported jobs account for 3.0% of all jobs in the Other Southern Counties region, close to the state average. In Imperial County, 7.5% of jobs are supported by national security activity, followed by San Bernardino, at 4.1%.

Figure 120: Total Employment (FTEs) – Other Southern Counties Region

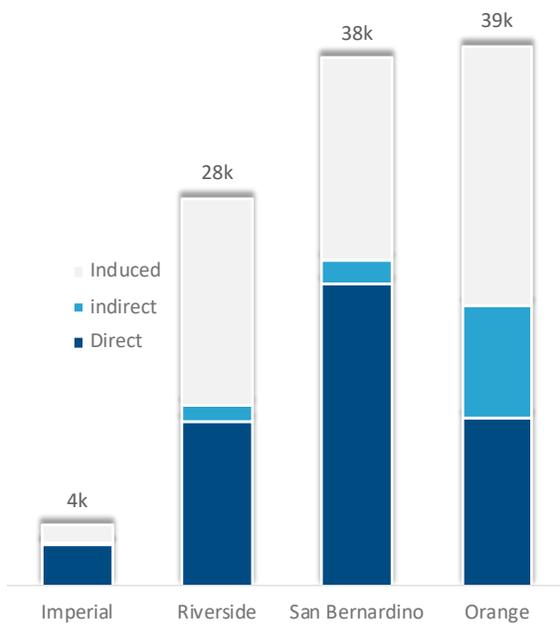
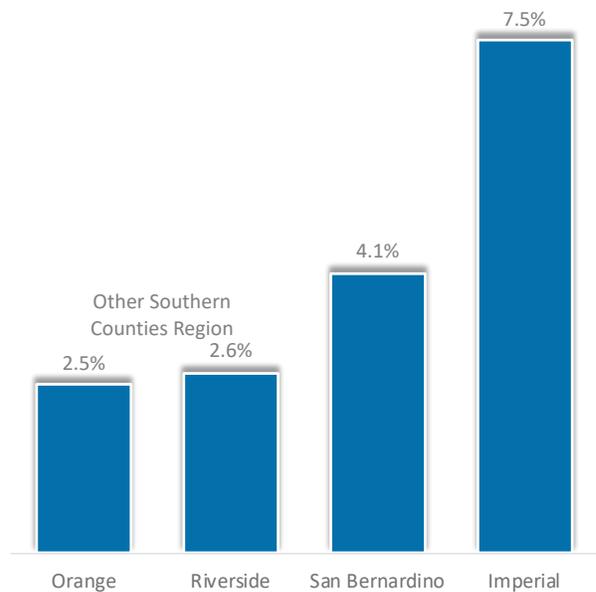


Figure 121: Total Employment as Percentage of County's Employment – Other Southern Counties Region



Government Revenue

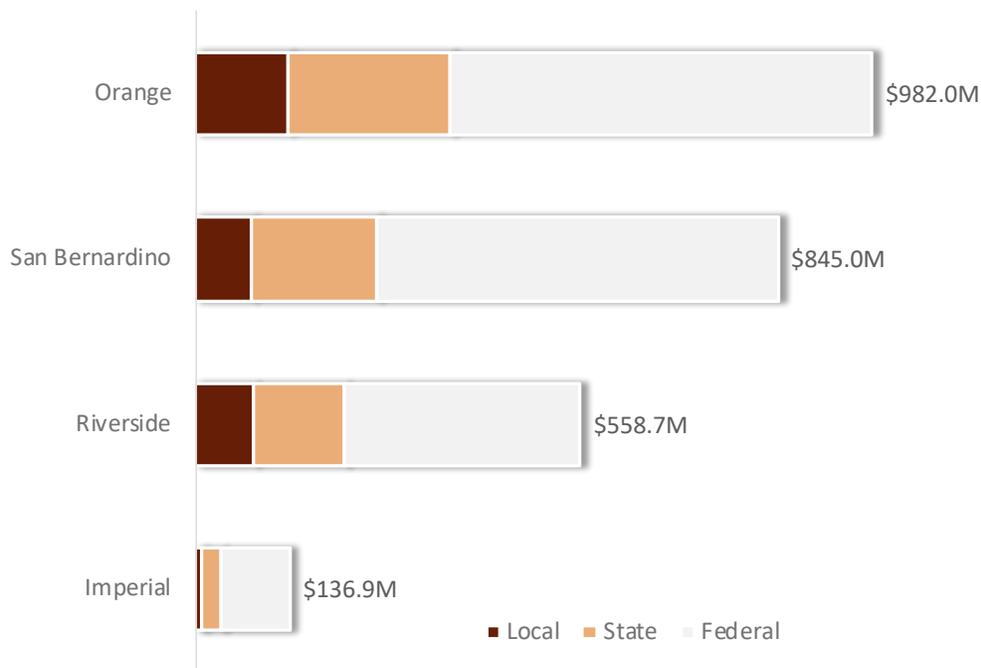
National security activity in the Other Southern Counties region generated \$306.3 million in local revenue, \$575.4 million in state revenue and \$1.6 billion in federal revenue, totaling about \$2.5 billion in combined revenue.

Orange County made up the largest portion with \$982.0 million (\$135.3 million local, \$232.7 million state and \$613.9 federal).

San Bernardino County followed with \$845.0 million in combined revenue (\$79.8 million local, \$183.2 million state and \$582.0 million federal).

On average, local, state and federal revenue accounted for 12.1%, 22.8% and 65.0% of regional government revenue, respectively. The breakdown varies significantly in Imperial County, where local revenue accounts for just 5.6% of the total.

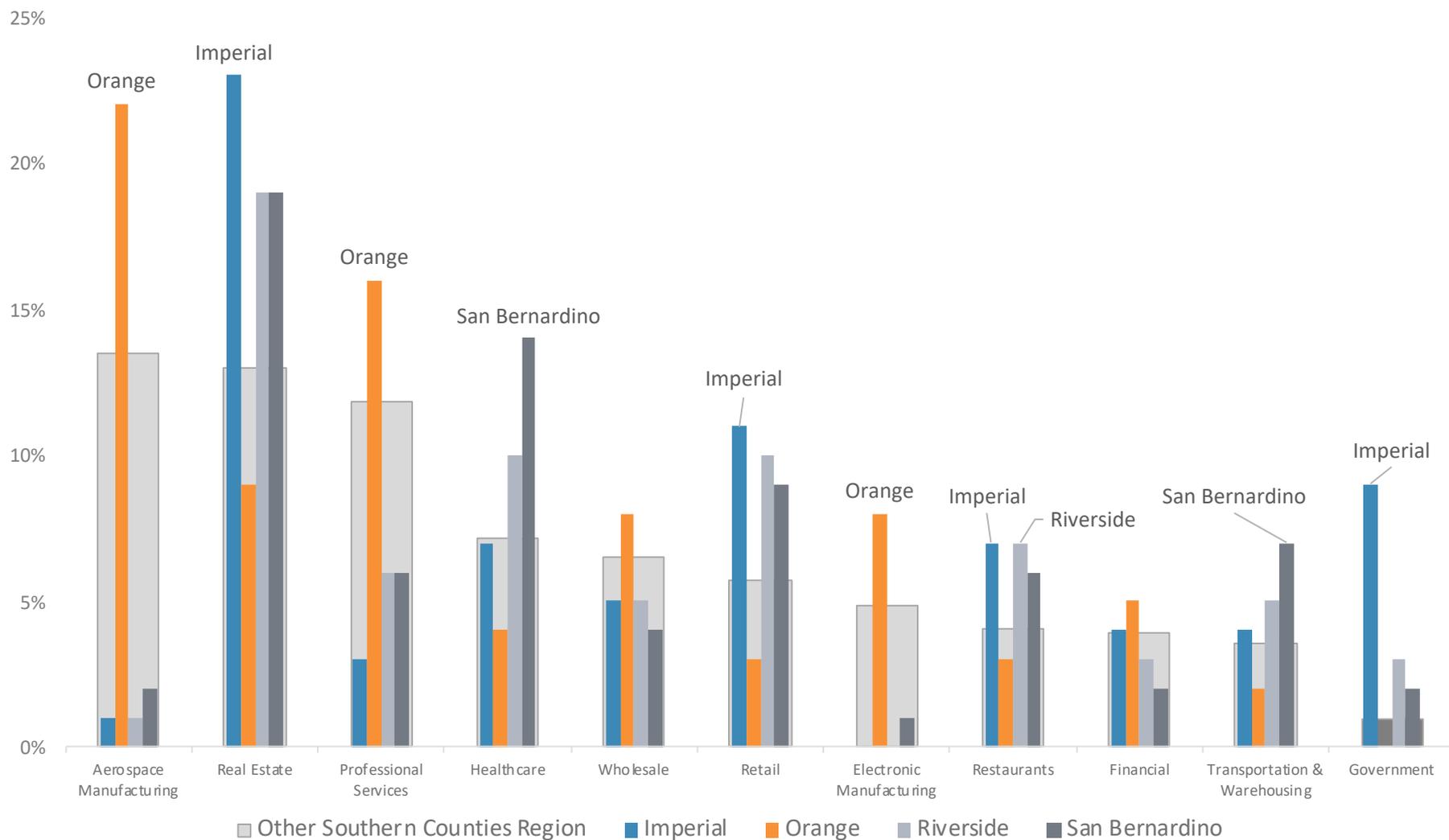
Figure 122: Government Revenue - Other Southern Counties Region



Impacted Industries

Aerospace manufacturing, real estate and professional services generated the most output from national security activity across the region. Aerospace manufacturing and professional services were concentrated in Orange County, while real estate was more broadly distributed.

Figure 123: Top Industries as a Percentage of Total County Output - Other Southern Counties Region





The Thunderbirds perform at
The Great Pacific Airshow in
Huntington Beach, 2019.

Appendix I: Methodology – County Analysis

This report models economic impacts using IMPLAN software, based on standard input-output methodology. The purpose of the study is to estimate the impacts of existing spending, rather than modeling any policy changes or other counterfactuals. As a result, the analysis estimates gross benefits and does not account for alternate federal spending or other use of resources that might occur in California in the absence of national security spending and employment.

The IMPLAN (IMPact Analysis for PLANning) I-O economic model was selected for this analysis based on its reputation and the resources available. IMPLAN was developed by the U.S. Department of Agriculture Forest Service in the 1970s to fulfill the requirements of the Rural Development Act of 1972 to estimate the impacts of alternate uses for U.S. public forest resources.

For a full discussion of the overarching methodology and IMPLAN’s input-output model, refer to the Methodology and Data section in the [2020 Statewide National Security Economic Impacts Study](#). This supplement builds on the analysis in the aforementioned study.

As in prior versions of the report, this supplement analyzes the localized impacts. It follows the same methodology as the 2019 report,¹⁵ but provides expanded detail, estimating results for each of California’s 58 counties. A forthcoming separate supplement provides estimates for California’s 53 congressional districts. These supplements use a two-model approach to estimate the impacts for local areas. This accounts for the fact that a traditional, single-model approach would understate the impacts occurring within a given geographic area, omitting spillover effects from spending in other counties.

Traditional models estimate the impact of spending and employment that happens within a given county has within that same county. For example, it would capture most of the economic impacts associated with the employment of a government worker who both works and lives in Sacramento County. The large majority of the induced economic activity from her employment, spending on housing, shopping, healthcare, etc., would likely occur within the county because she both lives and works there. While it would account for most of the economic activity resulting from her employment, it would miss some aspects. For example, if she went to a restaurant in neighboring Yolo County or went on vacation to Disneyland in Orange County, the resulting economic activity would be omitted. The Sacramento model would miss it because the spending occurs outside of Sacramento and the Orange/Yolo models would miss it because they would not include the original employment data that led to that induced activity because it occurred outside the county.

Still more economic activity is missed when economic relationships occur across counties. For example, if a Los Angeles company contracted with an Orange County law firm, the resulting indirect and induced economic impact would be missed altogether. Because the contractor is outside Los Angeles, the Los Angeles model would not include it and because the initial

¹⁵ Lavelle, DM (2020) [California Statewide National Security Economic Impacts, 2020 Update. CRB.](#)

spending occurred outside of Orange County, the Orange County model would not account for it. Moreover, simply including the Los Angeles data in the Orange County model is not viable, because it would then over count economic activity associated with that spending that is actually occurring within Los Angeles County.

Economic activity omitted from a traditional model approach is significant in aggregate. In this case, such a methodology would overlook approximately 14% of total state output. This is larger than reported in the 2019 report because of the larger number of geographic entities included (counties instead of regions). Because there are more geographic entities, each covering less area, there is more spillover between them. It can also distort county information significantly. For example, 80% of economic activity in Tuolumne County would be excluded by a traditional model. These impacts appear most significant in counties with large tourist economies and counties that are home to a large number of commuters from nearby counties.

This supplement uses the same two-model approach as the 2019 report. This is refined and streamlined from the original three-model approach used in the 2018 report with the assistance of IMPLAN's Multi-Regional Input-Output (MRIO) tool. This tool estimates the impacts that spending within a given geography has on other selected geographies. "MRIO expands backward supply linkages beyond the boundaries of a single-region Study Area. MRIO analyses utilize interregional commodity trade and commuting flows to quantify the demand changes across many regions stemming from a change in production and/or income in another region. This powerful analytical method allows analysts to go beyond a single study region, measuring the economic interdependence of regions. In an MRIO analysis, the Direct Effect in one region, Region A, can trigger Indirect and Induced Effects in linked regions, capturing some of what would have been a leakage in a traditional I-O model."¹⁶

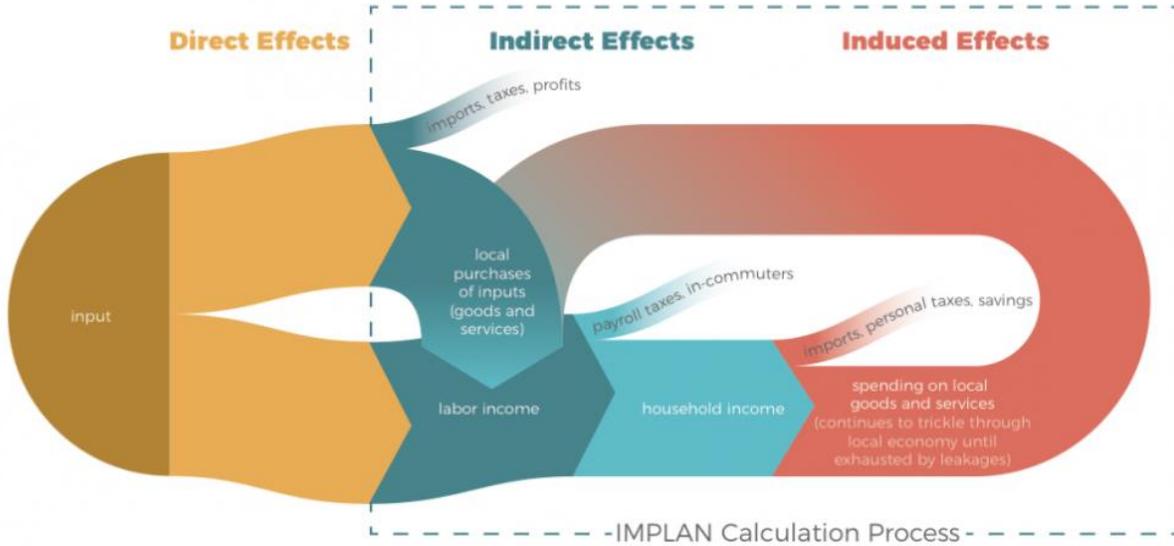
Because of the complexity of these models, however, IMPLAN is only able to analyze seven geographies within the MRIO tool. This prevents us from simply running a single MRIO model for each county.

Instead of using the MRIO tool to estimate all of the spillover resulting from spending in a county, we use it in reverse to calculate all of the spillover it receives resulting from spending in other counties. First, we run a standard model for each county using spending and employment within that county. We then set up a second MRIO-based model. This model uses a custom region that is composed of all of the counties in the state, except the county from the first model. Similarly, the input data for the analysis is the spending and employment from those 57 counties, omitting the spending and employment that was included in the first model. The county from the first model is then used as the secondary region within the MRIO framework. By doing so, the MRIO tool estimates the indirect and induced activity that occurs within that county as a result of spillover from spending and employment that occurs within the other 57 counties. These outputs are then added to the outputs from the first model to calculate the total outputs for that county. This approach, combining the economic activity resulting from

¹⁶ Clouse, C. (2019) [MRIO: Introduction to Multi-Regional Input-Output Analysis](#)

direct inputs as well as spillover from outside the county, more fully accounts for the localized impacts within the state without impacting the statewide estimates.

Figure 124: IMPLAN Model¹⁷

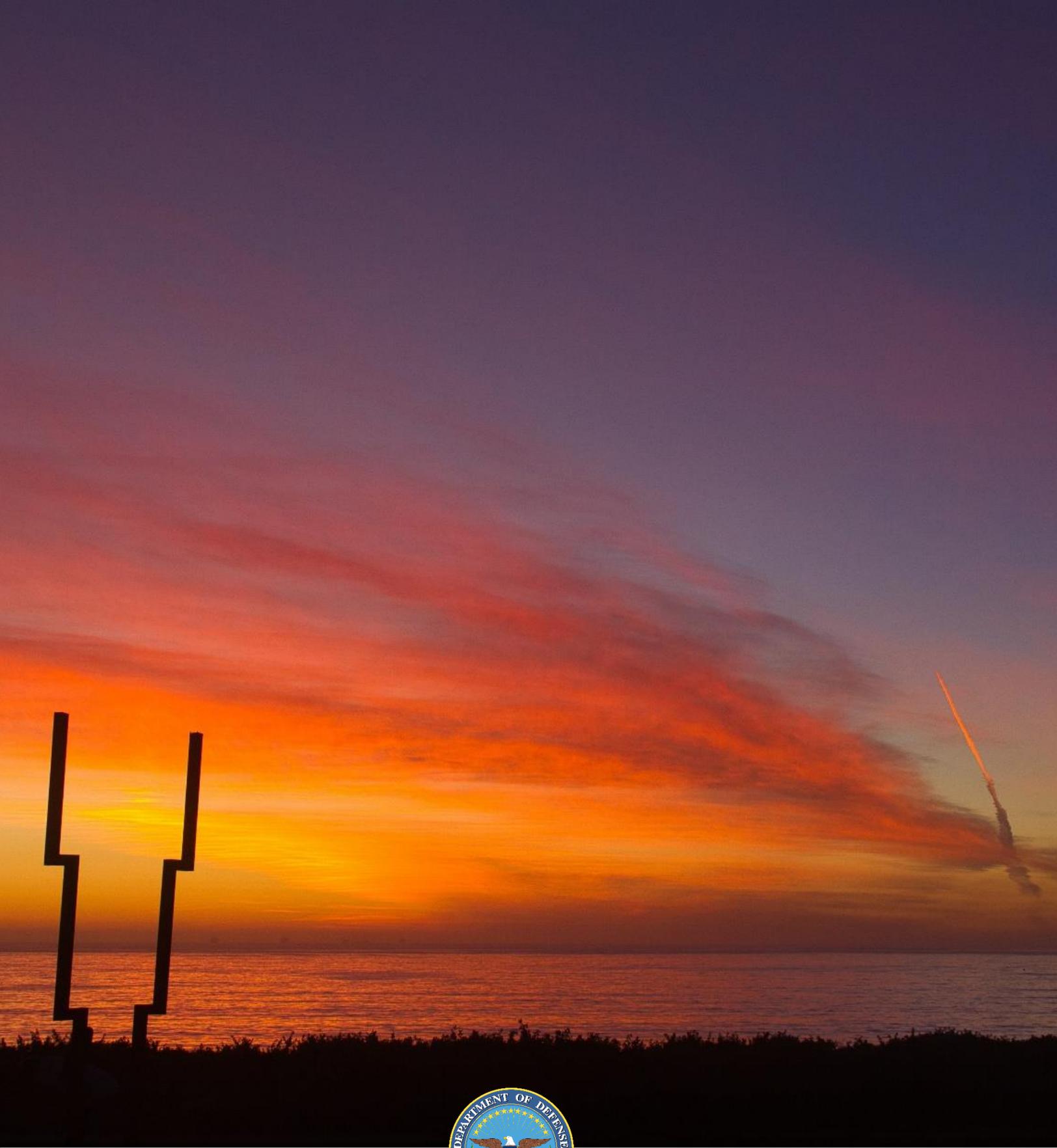


¹⁷ IMPLAN. [Assisted Economy](#).

Appendix II: County Factsheets

Economic impacts are detailed for all 58 California counties in a separate appendix which can be found on the Governor's Military Council homepage at MilitaryCouncil.ca.gov.





Produced with grant funding



from the Department of Defense

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