Economic Impact Analysis of the SONGS Decommissioning Project

A Local, State, and National Analysis, Years 2013-2026

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Introduction

San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 were retired from service in June 2013. Southern California Edison and the co-participants/owners of San Onofre are proceeding with prompt decommissioning of the facility before returning the site to the Department of the Navy for unrestricted use. U.S. Nuclear Regulatory Commission rules allow for up to 60 years to decommission a nuclear plant; SCE expects to complete major decommissioning work within 20 years.

SCE, as majority owner of San Onofre, has established the principles of safety, stewardship and engagement to guide the decommissioning process. In addition, SCE created an 18-member Community Engagement Panel to advise the owners during decommissioning. SCE estimates that the trust funds established to pay for the $4.4 billion decommissioning are fully funded.

Preliminary projects to prepare for decommissioning have been underway since 2013. Major dismantlement work is expected to begin in late 2016 or early 2017, and be completed by 2026. The disposition of used nuclear fuel currently stored on site will extend for many years – until there's a licensed off-site storage facility for such fuel. This study assesses the economic impact of the decommissioning tasks that are expected to be completed by the end of 2026.

Executive Summary

Beacon Economics is pleased to present this study of the economic benefits of decommissioning the San Onofre Nuclear Generating Station. The decommissioning project is forecast to generate an estimated $9 billion in economic output in the United States through 2026. About $4.1 billion of that will be in the state of California, with the single greatest impact of $1.2 billion in Orange County, closely followed by San Diego and Los Angeles counties.

Figure 1: Estimated Economic Impact of SONGS Decommissioning, 2013-2026

Area	Employment (FTE Jobs)	Labor Income ($ Millions)	Output ($ Millions)
United States	45,415	2,807.7	9,022.7
California	20,720	1,384.3	4,105.8
San Diego County	6,572	408.6	1,180.1
Orange County	6,330	435.5	1,238.8
Los Angeles County	4,334	299.3	941.9
Riverside County	984	58.7	176.3
San Bernardino County	883	58.3	178.4
Rest of California	1,618	124.0	390.2
Out of State	24,695	1,423.4	4,916.9

Note: All figures in this report are estimates in 2014 dollars.

Beacon identified $1.4 billion in labor income in California as a result of the nuclear plant decommissioning work. The project is expected to create more than 20,000 jobs in California, with almost of half those jobs supported through spending at business in the supply chain and spending by workers hired for the project.

Beyond the positive economic impact in southern California, the San Onofre decommissioning project is forecast to generate $4.9 billion in economic output elsewhere in the United States. The project will support jobs in waste management and radiation remediation, utilities and real estate.

San Onofre, located near San Clemente, CA., was permanently retired in 2013. Since that time, the majority owner, Southern California Edison (SCE), has been preparing the site for decommissioning. This analysis covers the period from 2013-2026, with the major dismantlement work planned for 2017-2026. This study was requested by the utilities responsible for decommissioning. These co-participants are: SCE, San Diego Gas & Electric, the city of Anaheim, and the city of Riverside.

Beacon Economics, an independent research and consulting firm based in Los Angeles, is dedicated to accurate, insightful and objectively-based economic analysis.

Highlights: Economic Impact of SONGS decommissioning

- The project is estimated to generate $185 million in local and state tax revenue in California.
- Top California counties that reap jobs, labor income and economic output are: San Diego, Orange, Los Angeles, Riverside and San Bernardino counties.
- Decommissioning spending will generate $2.2 billion in direct economic activity in California; that spending, in turn, generates another $1.9 billion in through secondary effects.
- Decommissioning spending will benefit a range of economic sectors including: waste management/remediation; construction; architectural/engineering services; security services; advertising; and environmental/consulting services.
- Outside of California, the project will generate $1.4 billion in wages and earnings and support almost 25,000 full-time equivalent jobs.
- Almost one third of the economic output generated by the San Onofre decommissioning -- $2.8 billion -- will be through wages and earnings for works down the supply chain. Direct hiring accounts for $1.1 billion of that, and secondary effects, $1.7 billion.

Methodology

Southern California Edison provided Beacon Economics with information on expenditures for the decommissioning of the San Onofre nuclear generating station from 2013 to 2026 for the counties of San Diego, Orange, Los Angeles, Riverside, and San Bernardino, the rest of the state of California, and in areas of the United States outside of California.[1]

The end result of the decommissioning will be to return the site to its natural state.

The expenditures, which were categorized into a broad array of products and services, totaled $3.3 billion. Beacon Economics used those expenditures to estimate the economic impact of the decommissioning from 2013 to 2026 for the following areas: San Diego County, Orange County, Los Angeles County, Riverside County, San Bernardino County, the rest of California, the state overall, and the United States overall.

Beacon Economics estimated the employment, output, wages and earnings, and tax effects of those expenditures. To do this, we employed the IMPLAN[2] modeling system. The IMPLAN system is an input/output model that can be used to estimate the short-run impact of changes in the economy through the use of multipliers.

[1]Beacon Economics omitted expenditures that reflect net transfers (such as fees paid to federal agencies) because they do not contribute to economic output through multiplying effects.
[2] "IMpact analysis for PLANning."

The IMPLAN modeling system combines the U.S. Bureau of Economic Analysis's Input-Output Benchmarks with other data to construct quantitative models of trade flow relationships between businesses, and between businesses and final consumers. From this basis, we could examine the effects of a change in either one or several economic activities to predict the effect on a specific state, regional, or local economy (impact analysis). The IMPLAN input-output accounts capture all monetary market transactions for consumption in a given time period. The IMPLAN input-output accounts are based on industry survey data collected periodically by the U.S. Bureau of Economic Analysis and follow a balanced account format recommended by the United Nations.

IMPLAN's Regional Economic Accounts and the Social Accounting Matrices are used to construct multipliers that describe the response of the relevant economy to a change in demand or production as a result of the expenditures for the decommissioning project. Each industry that produces goods or services generates demand for other goods and services, and this demand is multiplied through a particular economy until it dissipates through "leakage" to economies outside the specified area. IMPLAN models discern and calculate leakage from local, regional, state, and national economic areas based on workforce configuration, the inputs required by specific types of businesses, and the availability of inputs in the economic area. Consequently, economic impacts that accrue to other regions, states, or countries as a consequence of a change in demand are not counted as impacts within the economic area.

The model accounts for substitution and displacement effects by deflating industry-specific multipliers to levels well below those recommended by the U.S. Bureau of Economic Analysis. In addition, multipliers are applied only to personal disposable income to obtain a more realistic estimate of the multiplier effects from increased demand. IMPLAN's Regional Economic Accounts exclude imports to an economic area so the calculation of economic impacts identifies only those impacts specific to the economic impact area, in this case as determined and defined by SONGS. IMPLAN calculates this distinction by applying the area's economic characteristics described in terms of actual trade flows within the area.

Impact studies operate under the basic assumption that any increase in spending has three effects. First, there is a direct effect on that industry itself. For example, the removal of structures at the San Onofre nuclear generating station will require some commitment of in-house labor and resources to the project. Second, there is a chain of indirect effects on all the industries whose outputs are used by the industry under observation. For a project like the decommissioning of the San Onofre nuclear generating station, indirect effects would include the demand and employment that is stimulated at firms that provide goods and services to this project, such as architectural or engineering services. Third, there are induced effects that arise when employment increases and household spending patterns are expanded. These induced effects arise because suppliers will pay out wages to their employees associated with the decommissioning project, and those wages will then be spent in the local economy on household items such as food, gas, cars, and housing.

It is also important to note that expenditures made on different types of goods and services can lead to different multipliers. Similarly, expenditures made within the same industry in different regions can generate different economic impacts. Why do multiplier effects differ across industries? An expenditure can have a large multiplier if it induces economic activity in industries whose employees have a high propensity to spend from take-home pay. Also, if the industry does not import many materials from abroad or from out of state, then its multiplier effect on the local economy will be high. In essence, some of the spending in the local economy may "leak out" into other states and countries.

This is why multipliers even for the same industry can fluctuate from region to region, depending on the local availability of inputs to that production process. If these inputs need to be more heavily imported into one region than another region due to the structure of those regions' economies, then a similar expenditure into this industry would generate smaller overall economic impacts, as a larger portion of these investments into the local industry will result in a greater degree of economic activity leaking outside of the region. For instance, spending in telecommunications in Los Angeles County will likely generate a larger total impact than spending in telecommunications in Alpine County, as Los Angeles County already has a larger base of businesses in which to provide the goods and services that go into telecommunications than Alpine County, given that the economy of Alpine County is primarily focused on agriculture. The same is true if a California business buys inputs from firms in different states.

Every component of the site will undergo dismantlement and possible decontamination.

In sum, our analysis using input-output accounts was based on three important assumptions. First, there are constant returns to scale. This means that a 10% increase in spending will be ten times as positive—across every sector in the economy—as a 1% increase. Second, there are no supply constraints. This means that any marginal increase in output can be produced without having to worry about bottlenecks in labor markets, commodity markets, or necessary imports. This assumption is quite realistic in a free-market economy like California's where there is some unemployment. Third, the flow of commodities between industries is fixed. This means that it is not possible to substitute in the short-run the many different inputs that go into the target industry.

Thus, our analysis covered the primary areas of economic impact that will accrue due to expenditures on the decommissioning of the San Onofre nuclear generating station between 2013 and 2026. First, we estimated the direct employment, labor income, output, and tax effects for each of our areas after accounting for "leakage" out of each area. Second, we estimated the indirect effects on all the industries whose outputs are generated by project expenditures, as well as the induced effects arising when employment increases and household spending patterns are expanded.

Total Decommissioning Project Expenditures

Figure 2: SONGS Decommissioning Project Expenditures, 2013-2026

NAICS Code	Sector	Amount ($ Millions)	Percentage of Total Expenditures
562	Waste Management and Remediation Services	1,004.2	30.68
2211/2212/2213	Utilities	735.1	22.46
238	Construction of Other New Nonresidential Structures	654.5	20.00
5413	Architectural, Engineering, and Related Services	451.2	13.78
5616	Investigation and Security Services	273.7	8.36
5241	Insurance Carriers	40.3	1.23
424120	Wholesale Trade	32.9	1.01
5418	Advertising and Related Services	29.5	0.90
54169	Environmental and Other Technical Consulting Services	19.5	0.60
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	16.5	0.50
531190	Real Estate	10.6	0.33
334	Electronic Computer Manufacturing	3.9	0.12
517	Telecommunications	1.6	0.05
	Total	3,273.4	100.00

Expenditures from 2013 to 2026 will span businesses across dozens of industries, but five categories consistently receive the most spending. Expenditures will fall heavily in Waste Management and Remediation, because of the need to eliminate the radioactive material from the site, and thus it is unsurprising that the Waste Management and Remediation Services category will receive the greatest amount of spending. Expenditures in this category represent roughly 31% of all expenditures related to the decommissioning project through 2026. Utilities will receive a sizeable percentage of total spending as well. Expenditures in this category represent roughly 22% of all expenditures related to the decommissioning project through 2026. Construction of Other New Nonresidential Structures will receive 20% of total spending, as the project will include the removal of the vast number of structures at the plant. Architectural, Engineering, and Related Services will receive roughly 14% of all spending, as the decommissioning project will require a

substantial amount of logistical and highly technical planning and preparation. Investigation and Security Services will receive roughly 8% of all spending for the employment of a substantial amount of security to ensure the safety and security of the plant.

Decommissioning the nuclear plant will require hiring many workers in high-skilled sectors.

Expenditures in all other categories represent less than $50 million, or less than 1.5% of total spending, from 2013 to 2026. These expenditures will include telecommunications support, marketing (Advertising and Related Services), and heavy machinery rental (Commercial and Industrial Machinery and Equipment Rental and Leasing). In all, expenditures will total an estimated $3.3 billion (in 2014 dollars) between 2013 and 2026 on goods and services that will generate a multiplying effect on economic activity in the local, state, and national economy.

Figure 3: San Diego County Economic Impacts			
Impact Type	Employment (FTE Jobs)	Labor Income ($ Millions)	Output ($ Millions)
Direct Effect	3,757	253.9	710.0
Indirect Effect	1,158	73.6	216.4
Induced Effect	1,657	81.1	253.7
Total Effect	6,572	408.6	1,180.1

Figure 4: Orange County Economic Impacts			
Impact Type	Employment (FTE Jobs)	Labor Income ($ Millions)	Output ($ Millions)
Direct Effect	3,990	293.1	799.5
Indirect Effect	1,249	83.8	251.5
Induced Effect	1,091	58.6	187.9
Total Effect	6,330	435.5	1,238.8

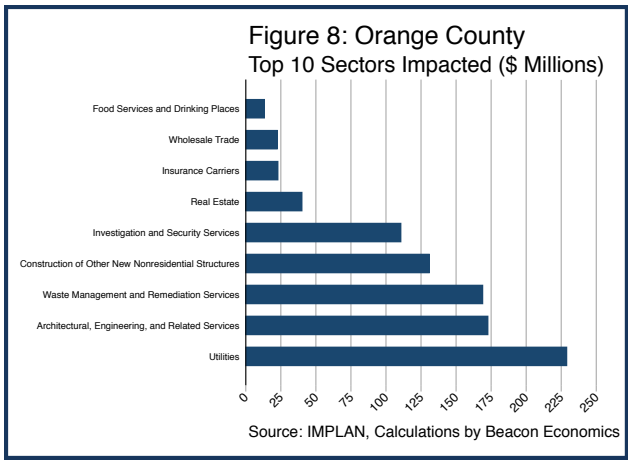
Figure 5: Los Angeles County Economic Impacts			
Impact Type	Employment (FTE Jobs)	Labor Income ($ Millions)	Output ($ Millions)
Direct Effect	1,653	117.2	324.1
Indirect Effect	1,579	118.1	415.8
Induced Effect	1,102	64.0	202.0
Total Effect	4,334	299.3	941.9

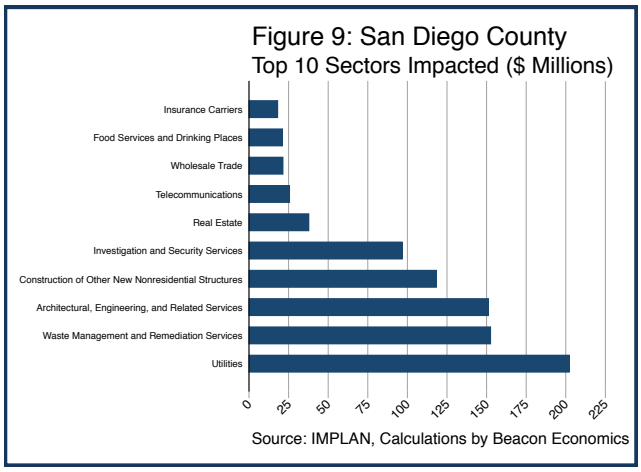
Figure 6: Riverside County Economic Impacts			
Impact Type	Employment (FTE Jobs)	Labor Income ($ Millions)	Output ($ Millions)
Direct Effect	608	40.2	117.3
Indirect Effect	242	12.8	40.4
Induced Effect	133	5.7	18.6
Total Effect	984	58.7	176.3

Figure 7: San Bernardino County Economic Impacts			
Impact Type	Employment (FTE Jobs)	Labor Income ($ Millions)	Output ($ Millions)
Direct Effect	582	40.7	117.3
Indirect Effect	250	14.8	51.9
Induced Effect	51	2.8	9.3
Total Effect	883	58.3	178.4

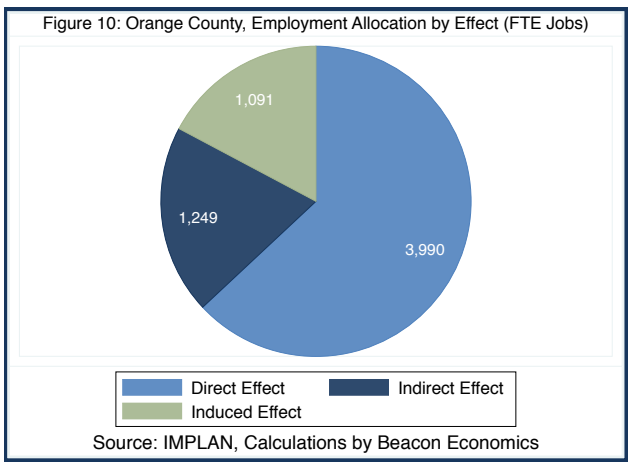
A. Comparing Southern California Counties: Unique Local Features Drive Impacts

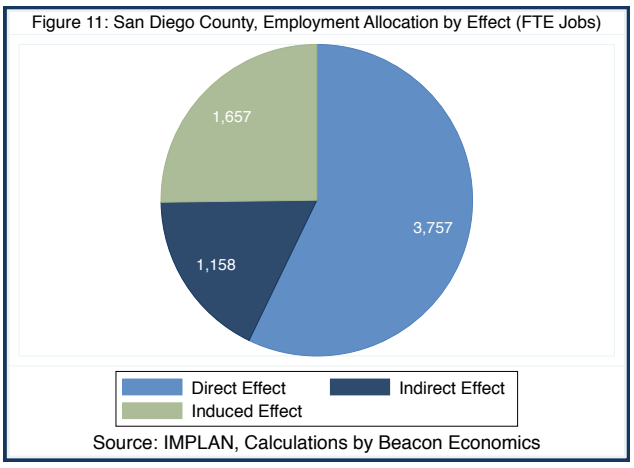
The tables above show, in order of the impact on county employment, the total economic impacts for the five counties in Southern California where most of the expenditures in the decommissioning project from 2013 to 2026 will be concentrated. Tables showing the industries affected the most in terms of output and employment, as well as tables showing the state and local tax revenues generated in each of these counties, can be found in the Appendix.





The largest amount of direct spending on the decommissioning project will occur in Orange County ($799.5 million), and as a result Orange County will receive the largest overall impact on economic output ($1.2 billion). But more jobs will be supported in San Diego County than in any other county in Southern California: 6,572 full-time equivalent jobs, compared to 6,330 jobs in Orange County, 4,334 jobs in Los Angeles County, 984 jobs in Riverside County, and 883 jobs in San Bernardino County.





Yet even though more jobs will be supported as a result of the decommissioning project in San Diego County than in any other county, the project will generate more labor income in Orange County. Why might this be so?

B. Low-Wage versus High-Wage Workers

The disparity in labor income occurs because expenditures in Orange County will support more high-wage workers than expenditures in San Diego County. That is, the spending will support more workers in Architecture, Engineering, and Related Services, a high-wage industry, in Orange County (807 jobs) than in San Diego County (733 jobs). Similarly, that spending will support more workers in Orange County than in San Diego County in Utilities (352 jobs versus 326 jobs) and in Waste Management and Remediation Services (656 jobs versus 591 jobs), both of which provide relatively high wages for workers—particularly the Utilities industry.

The decommissioning project will support workers in high-wage and low-wage sectors alike.

In turn, the spending will support more workers in lower-wage industries in San Diego County than in Orange County. For instance, that spending will support an estimated 285 full-time equivalent jobs in Food Services and Drinking Places in San Diego County, compared to 175 full-time equivalent jobs in that industry in Orange County. The decommissioning project will thus support a substantial number of jobs in both San Diego County and Orange County, though on average the jobs are likely to be in higher-wage positions in Orange County than in San Diego County.

C. Business and Labor Concentration: A Multiplying Effect

Much of the spending will be concentrated in San Diego County and Orange County, but the total effect on economic output in Los Angeles County will be nearly equivalent: $941.9 million in Los Angeles County versus $1.18 billion in San Diego County and $1.24 billion in Orange County. Indeed, the economic impact multiplier in Los Angeles County is substantially higher for Los Angeles County than for any other county. Every dollar of spending in Los Angeles County will generate roughly 2.91 dollars in economic output, compared to 1.66 dollars in economic output in San Diego County, 1.55 dollars in economic output in Orange County, 1.50 dollars in economic output in Riverside County, and 1.52 dollars in economic output in San Bernardino County.

Los Angeles County: Top 10 Sectors Impacted ($ Millions)

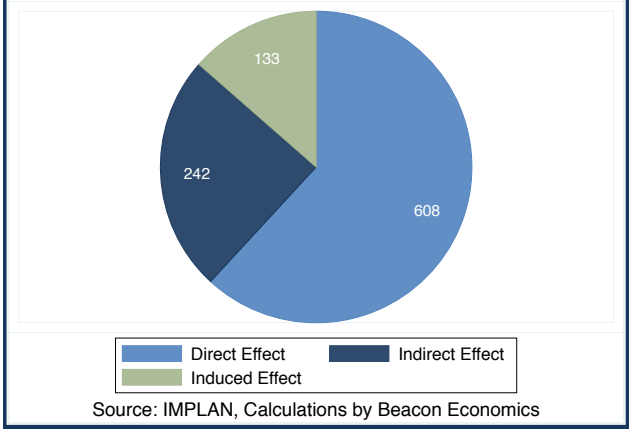
Figure 12: Los Angeles County, Top 10 Sectors Impacted ($ Millions)

NAICS Code	Sector	Direct	Indirect	Induced	Total
2211/2212/2213	Utilities	91.1	0.5	0.5	92.1
562	Waste Management and Remediation Services	65.6	14.4	0.5	80.5
5413	Architectural, Engineering, and Related Services	57.6	19.3	0.9	77.8
32411	Petroleum Refineries	0.0	55.1	6.6	61.8
238	Construction of Other New Nonresidential Structures	57.3	0.0	0.0	57.3
5616	Investigation and Security Services	40.9	1.7	0.5	43.1
211	Extraction of Oil and Natural Gas	0.0	38.9	2.3	41.3
531190	Real Estate	0.6	10.6	9.1	20.3
424120	Wholesale Trade	2.0	10.1	7.5	19.6
5241	Insurance Carriers	2.4	7.6	6.4	16.4

The secondary effects of spending in Los Angeles County will be significantly higher for some industries than the secondary effects of spending in the same industries in other counties. For instance, in Los Angeles County, every dollar of spending in Waste Management and Remediation Services will generate 1.23 dollars of total economic output, compared to 1.08 dollars in San Diego County and 1.06 dollars in Orange County. Likewise, in Los Angeles County, every dollar of spending in Architectural, Engineering, and Related Services will generate 1.35 dollars in total economic output, compared to 1.14 dollars in San Diego County and 1.15 dollars in Orange County. With the spending so heavily concentrated in these industries, it is easy to see why total economic output generated in Los Angeles County will be nearly equal to that of San Diego County and Orange County, despite significantly less spending in Los Angeles County.

Los Angeles County not only has substantially greater overall economic activity than San Diego County or Orange County, it also has more firms that serve as suppliers of businesses in industries such as Waste Management and Remediation Services and a larger base of workers from which to draw locally. This leads to significantly less "leakage"—the spending that flows to businesses outside the local economy. Many of the businesses in San Diego County or Orange County likely buy goods or services and hire workers from Los Angeles County.

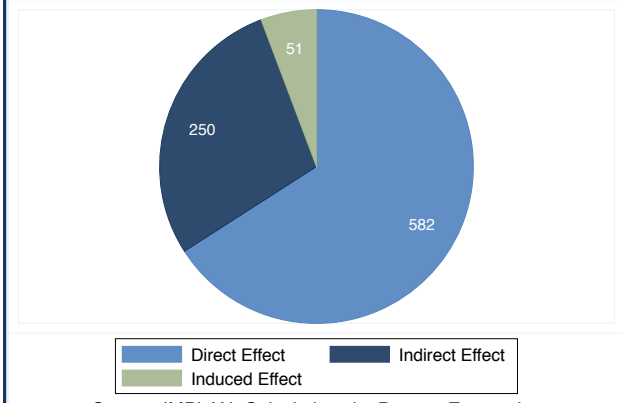
Figure 13: Riverside County, Employment Allocation by Effect (FTE Jobs)



Source: IMPLAN, Calculations by Beacon Economics

Consequently, spending tends to stay more concentrated in Los Angeles County while flowing from the former counties into Los Angeles County. Indeed, for every job directly supported in Los Angeles County in Waste Management and Remediation Services by the decommissioning expenditures, 1.43 jobs will be supported through secondary effects, compared to 1.09 jobs in San Diego County and 1.07 jobs in Orange County. Thus Los Angeles County will benefit disproportionately from the spending throughout the region.

Figure 14: San Bernardino County: Employment Allocation by Effect (FTE Jobs)



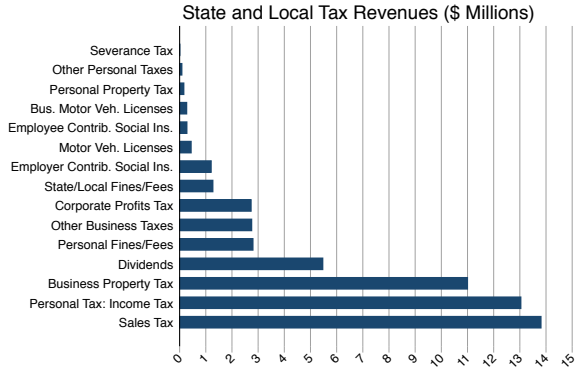
Source: IMPLAN, Calculations by Beacon Economics

In Riverside and San Bernardino Counties, the disparity in multiplier effects for output and employment are strong as well. From 2013 to 2026, expenditures in the two counties will be equal, at $117.3 million. Likewise, the total economic output generated by that spending will be nearly identical, at $176.3 million in Riverside County and $178.4 million in San Bernardino County. That spending will generate roughly $58 million in total labor income in each county. However, the spending will support 101 more full-time equivalent jobs in Riverside County than in San Bernardino County. Once again, the spending supports more jobs in lower-wage industries in Riverside County than in San Bernardino County. For instance, that spending will support 36 jobs in Food Services and Drinking Places in Riverside County, compared to 18 jobs in that industry in San Bernardino County. The spending will support 241 jobs in Riverside County in Investigation and Security Services, a relatively lower-wage industry, compared to 214 jobs in that industry in San Bernardino County. Clearly, the economic impacts of the spending will vary widely depending on the categories of expenditures and the counties in which they will be located.

D. State and Local Tax Revenues: Types of Industries and California Law

The economic impacts of spending will also vary with regard to the effects on state and local tax revenues. Direct output in Orange County will be 12.6% higher than in San Diego County and 146.7% higher than in Los Angeles County, but the impact of that direct output on state and local tax revenues will be 2.2% lower in Orange County than in San Diego County and only 26.9% higher in Orange County than in Los Angeles County.

Figure 15: San Diego County
State and Local Tax Revenues ($ Millions)



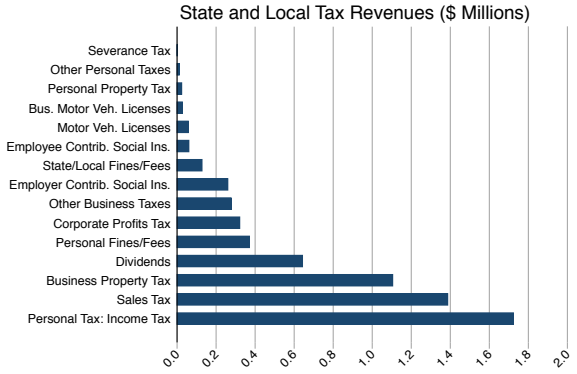
Source: IMPLAN, Calculations by Beacon Economics

Estimated sales tax generated by the spending will be slightly higher in San Diego County ($13.8 million) than in Orange County ($12.5 million) and Los Angeles County ($10.9 million). Services in California are not taxed, while some goods are taxed at different rates than others. For this reason, an equal amount of spending across counties may generate substantially different levels of sales tax; different levels of spending could further increase any disparities.

The property tax structure in California might also lead to very different property tax revenues for these different counties. Property tax revenues from businesses will total $11.0 million in San Diego County, $10.0 million in Orange County, and $8.7 million in Los Angeles County. Property tax revenues are based on a unique assessment process set forth in Proposition 13. Property taxes are calculated using the assessed value at the time of sale. (If the properties have been owned since 1976, then 1975 is used as the base year value.) In addition, property taxes can increase by at most 2% per year and can reflect no more than 1% of a property's value.

Counties with fewer establishments will produce less revenue. Moreover, counties that have experienced significant price increases in real estate but have many properties that have not changed ownership for decades will likely generate less property tax revenue for a given amount of square footage. In the case of the decommissioning project, substantially less spending in Los Angeles County will nonetheless generate a fairly high amount of commercial property taxes relative to spending in neighboring counties to the south. Spending in Los Angeles County may be going to businesses in industries with particularly high-value establishments relative to businesses in other counties, increasing the total property tax revenues generated.

Figure 16: San Bernardino County
State and Local Tax Revenues ($ Millions)



Source: IMPLAN, Calculations by Beacon Economics

It is factors such as these that lead to significantly varied state and local tax revenues from county to county. In San Bernardino, personal income tax revenues ($1.7 million) are expected to exceed revenues from any other form of tax. The economy of San Bernardino County comprises a large proportion of labor-intensive industries, such as Warehousing and Storage, compared to the economies of some of its neighbors. At the same time, the project's spending will likely generate impacts at more labor-intensive businesses. As a result, dollar-for-dollar spending in San Bernardino County will be generating higher amounts of personal income tax from workers than, say, property taxes from more capital-intensive businesses. The same is true in Riverside County, where total spending from 2013 to 2026 will be equal to that of San Bernardino County.

In all, the economic and fiscal impacts of the decommissioning of the San Onofre nuclear generating station will be heavily concentrated in Southern California, particularly in the counties of San Diego, Orange, and Los Angeles, though because of the disparities in business and worker concentration (particularly in industries that receive substantial amounts of spending), the impacts will vary widely across the counties for each dollar of spending.

Economic and Fiscal Impacts of the Decommissioning Project: Rest of California

Figure 17: Rest of California Economic Impacts			
Impact Type	Employment (FTE Jobs)	Labor Income ($ Millions)	Output ($ Millions)
Direct Effect	592	54.6	167.3
Indirect Effect	500	39.4	126.3
Induced Effect	525	30.0	96.6
Total Effect	1,618	124.0	390.2

A. Economic Output Impacts: Rest of California

The impacts of expenditures in areas of California outside of the counties of San Diego, Orange, Los Angeles, Riverside, and San Bernardino will be comparatively smaller than in most of those counties but not insignificant. A total of $167.3 million in direct output generates $222.9 million in secondary effects, for a total effect on economic output of $390.2 million.

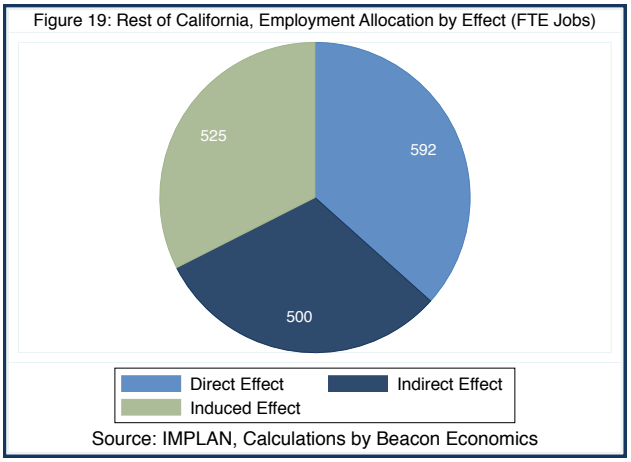
Figure 18: Rest of California, Top 10 Sectors Impacted ($ Millions)					
NAICS Code	Sector	Direct	Indirect	Induced	Total
238	Construction of Other New Nonresidential Structures	60.0	-	-	60.0
2211/2212/2213	Utilities	42.7	0.2	0.2	43.1
562	Waste Management and Remediation Services	30.4	7.7	0.4	38.5
5413	Architectural, Engineering, and Related Services	8.9	7.0	0.4	16.3
32411	Petroleum Refineries	-	11.7	2.1	13.8
424120	Wholesale Trade	6.6	3.6	3.4	13.5
5241	Insurance Carriers	8.1	2.1	2.8	13.0
531190	Real Estate	2.1	4.1	5.9	12.1
211	Extraction of Oil and Natural Gas	-	7.9	0.6	8.5
517	Telecommunications	0.3	3.0	2.3	5.5

The greatest economic impacts will arise primarily through direct spending. For instance, in Construction of Other New Nonresidential Structures, where more economic output is generated than in any other industry, none of the impact will come from secondary effects. However, this is not true of all industries. For instance, businesses in the Petroleum Refineries ($13.8 million) and Extraction of Oil and Natural Gas ($8.5 million) industries will generate all of their economic output from secondary effects, primarily through indirect effects on businesses down the supply chain. Energy-related expenditures, especially in areas such as the Central Valley, will likely generate significant impacts on oil production and refining.

B. Employment Impacts: Rest of California

Expenditures in the rest of California will support an estimated 1,618 full-time equivalent jobs. The number of jobs supported through secondary effects will be nearly double the number of jobs supported through direct spending. Jobs in Construction of Other New Nonresidential Structures, Waste Management and Remediation Services, and Utilities will come almost exclusively through direct hiring, but 73 jobs in Food Services and Drinking Places will be supported exclusively through secondary effects. Indeed, 52 of those jobs will be supported through the spending of workers connected to the decommissioning project directly or indirectly. An estimated 44 jobs will be supported by spending in the Employment Services industry outside of Southern California. These jobs will come primarily through spending by businesses down the supply chain, as they enlist the services of hiring agencies to help expand their payrolls.

Figure 19: Rest of California, Employment Allocation by Effect (FTE Jobs)



Source: IMPLAN, Calculations by Beacon Economics

Figure 20: Rest of California, Top 10 Sectors Impacted (FTE Jobs)

NAICS Code	Sector	Direct	Indirect	Induced	Total
238	Construction of Other New Nonresidential Structures	276	-	-	276
562	Waste Management and Remediation Services	114	32	2	147
5413	Architectural, Engineering, and Related Services	50	40	2	92
722	Food Services and Drinking Places	-	21	52	73
2211/2212/2213	Utilities	70	-	-	71
424120	Wholesale Trade	28	16	15	60
531190	Real Estate	9	20	28	57
5613	Employment Services	-	34	10	44
5241	Insurance Carriers	17	5	7	28
6211	Offices of Physicians, Dentists, and Other Health Practitioners	-	-	24	24

Although direct spending should lead to a small number of hires in Real Estate, spending by businesses and workers down the supply chain will support an additional 48 jobs at commercial and residential real estate businesses outside of Southern California. Spending across California will support a total of 24 jobs in Offices of Physicians, Dentists, and Other Health Practitioners in areas outside of Southern California.

C. State and Local Tax Revenue Impacts: Rest of California

The state and local tax revenues generated by the project's spending in the rest of Southern California will be greater than those generated in the Inland Empire per each dollar of spending. In Riverside County, each dollar of direct spending is expected to generate roughly 0.06 dollars of state and local tax revenues, while each dollar in San Bernardino County is expected to generate roughly 0.05 dollars of state and local tax revenues. In contrast, each dollar spent outside of the five major counties of Southern California is expected to generate roughly 0.11 dollars of state and local tax revenues.

Figure 21: Rest of California, State and Local Tax Revenue

Category	Amount ($ Millions)
Tax on Production and Imports: Severance Tax	0.003
Personal Tax: Other Tax	0.029
Personal Tax: Property Taxes	0.047
Tax on Production and Imports: Motor Vehicle Lic	0.101
Social Ins Tax- Employee Contribution	0.107
Personal Tax: Motor Vehicle License	0.135
Social Ins Tax- Employer Contribution	0.461
Tax on Production and Imports: S/L NonTaxes	0.473
Personal Tax: NonTaxes (Fines/Fees)	0.849
Corporate Profits Tax	0.862
Tax on Production and Imports: Other Taxes	1.023
Dividends	1.726
Personal Tax: Income Tax	3.995
Tax on Production and Imports: Property Tax	4.085
Tax on Production and Imports: Sales Tax	5.127
Total State and Local Tax	19.024

As noted above, the uniquely labor-intensive nature of the Inland Empire economy will likely generate higher personal income tax revenues relative to business tax revenues than in the rest of California. Indeed, in the rest of California, personal income tax revenue ($4.0 million) is lower than both sales tax ($5.1 million) and business property tax revenues ($4.1 million).

State and local tax revenues in the rest of California will fall below those in San Diego County or Orange County in the aggregate, but somewhat ahead of San Diego County (0.08, on a per-dollar-of-spending basis) and Orange County (0.07) on a per-dollar-of-spending basis. However, on any basis, the revenues in the rest of California will fall well below those in the County of Los Angeles (0.13), which is not surprising since Los Angeles County is the driving force of economic activity statewide.

Ultimately, spending in the rest of California will generate a fairly large amount of state and local tax revenue through the same types of retail goods, real estate investments, and worker wages that will drive tax revenue growth in the counties of Southern California.

Economic and Fiscal Impacts of the Decommissioning Project: State of California

Figure 22: State of California Economic Impacts			
Impact Type	Employment (FTE Jobs)	Labor Income ($ Millions)	Output ($ Millions)
Direct Effect	11,184	799.7	2,235.5
Indirect Effect	4,979	342.6	1,102.2
Induced Effect	4,558	242.1	768.1
Total Effect	20,720	1,384.3	4,105.8

A. Economic Output Impacts: State of California

Decommissioning expenditures will generate $2.2 billion in economic activity in the state of California directly, but those expenditures will generate a substantial amount of secondary economic activity statewide as well. As the expenditures make their way from business to business or from worker to business, that spending will generate a total of $1.9 billion in economic output through secondary effects: $1.1 billion through indirect effects of businesses down the supply chain and $768.1 million through induced effects of workers at businesses throughout California.

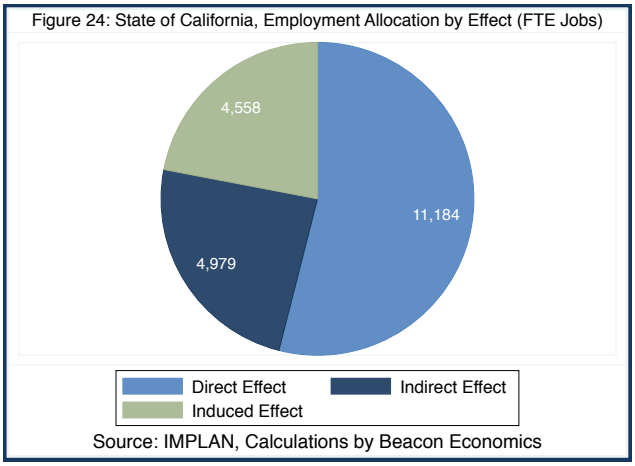
Figure 23: State of California, Top 10 Sectors Impacted ($ Millions)					
NAICS Code	Sector	Direct	Indirect	Induced	Total
2211/2212/2213	Utilities	628.4	1.7	1.8	632.0
562	Waste Management and Remediation Services	444.9	47.2	2.0	494.1
5413	Architectural, Engineering, and Related Services	388.2	69.8	3.1	461.1
238	Construction of Other New Nonresidential Structures	411.1	-	-	411.1
5616	Investigation and Security Services	272.8	4.5	1.4	278.7
531190	Real Estate	5.3	53.9	55.7	115.0
32411	Petroleum Refineries	-	84.1	11.1	95.2
424120	Wholesale Trade	16.5	33.7	33.1	83.2
5241	Insurance Carriers	20.1	26.9	27.7	74.8
517	Telecommunications	0.8	41.0	21.0	62.8

Of the $4.1 billion in total economic output that will be generated in the State of California, much of it will be concentrated in Utilities; Waste Management and Remediation Services; Architectural, Engineering, and Related Services; and Construction of Other New Nonresidential Constructions. Petroleum Refineries will be one of the top beneficiaries of total spending, generating $95.2 million in economic output, entirely through secondary effects. However, the impacts on categories such as Extraction of Oil and Natural Gas are outweighed by impacts in categories such as Telecommunications, where just $0.8 million in direct spending will generate an estimated $62.8 million in total output.

B. Employment Impacts: State of California

Spending on the decommissioning project will generate a total of $1.4 billion in wages and earnings for California workers, of which $584.6 million comes through indirect and induced effects. Much of this labor income will come in the form of new hiring. The decommissioning project will support an estimated 20,720 jobs in California. Indirect and induced effects will nearly double the impact of direct hiring. Hiring is expected to be especially strong in industries such as Investigation and Security Services (4,640 full-time equivalent jobs supported) and Architectural, Engineering, and Related Services (2,224 full-time equivalent jobs supported), but labor-intensive industries will see a substantial benefit through secondary effects. The decommissioning project will support a total of 793 jobs in Food Services and Drinking Places and 673 jobs in Employment Services in California.

Figure 24: State of California, Employment Allocation by Effect (FTE Jobs)



Source: IMPLAN, Calculations by Beacon Economics

Figure 25: State of California, Top 10 Sectors Impacted (FTE Jobs)

NAICS Code	Sector	Direct	Indirect	Induced	Total
5616	Investigation and Security Services	4,534	81	25	4,640
5413	Arch., Engineering, and Related Svcs	1,813	394	18	2,224
562	Waste Mgmt. and Remediation Svcs	1,708	200	8	1,917
238	Constr. of Other New Nonres. Structures	1,777	-	-	1,777
2211/2212/2213	Utilities	995	2	3	1,000
722	Food Services and Drinking Places	-	333	460	793
5613	Employment Services	-	572	102	673
531190	Real Estate	22	241	253	517
424120	Wholesale Trade	75	163	156	394
6211	Ofcs of Phys., Dentists, Other Health Prac.	-	-	243	243

C. State and Local Tax Revenue Impacts: State of California

The decommissioning project's expenditures will also produce a substantial amount of state and local tax revenue in the state of California, $185.0 million in all. A total of approximately $5.2 million of these taxes will be employee compensation taxes—payroll taxes, such as employee and employer contributions to unemployment insurance or other social insurance programs. The majority of these tax revenues will fall into the category of taxes on production and imports, which include sales taxes ($45.5 million) and property taxes ($36.2 million) that will be generated as a result of economic activity stimulated through the project's expenditures. Household taxes such as personal property taxes ($0.5 million), income taxes ($44.2 million), and vehicle license fees ($1.5 million) will represent a sizeable proportion of state and local taxes as well. Corporate income taxes and taxes on dividends will represent a moderate portion of total tax revenues, at roughly $28.0 million. In all, the project's expenditures will serve as an important source for government revenues for state and local governments in California.

Figure 26: State of California, State and Local Tax Revenue

Category	Amount ($ Millions)
Tax on Production and Imports: Severance Tax	-
Personal Tax: Other Tax	0.3
Personal Tax: Property Taxes	0.5
Tax on Production and Imports: Motor Vehicle Lic	0.9
Social Ins Tax - Employee Contribution	1.0
Personal Tax: Motor Vehicle License	1.5
Social Ins Tax - Employer Contribution	4.2
Tax on Production and Imports: S/L NonTaxes	4.2
Tax on Production and Imports: Other Taxes	9.1
Corporate Profits Tax	9.3
Personal Tax: NonTaxes (Fines/Fees)	9.5
Dividends	18.7
Tax on Production and Imports: Property Tax	36.2
Personal Tax: Income Tax	44.2
Tax on Production and Imports: Sales Tax	45.5
Total State and Local Tax	185.0

Economic Impacts of the Decommissioning Project: Outside of California

Figure 27: Outside of California Economic Impacts			
Impact Type	Employment (FTE Jobs)	Labor Income ($ Millions)	Output ($ Millions)
Direct Effect	4,378	271.7	1,037.9
Indirect Effect	6,278	440.4	1,465.8
Induced Effect	14,038	711.3	2,413.1
Total Effect	24,695	1,423.4	4,916.9

A. Economic Output Impacts: Outside of California

Direct spending of over $1 billion in states outside of California from 2013 to 2026 on the decommissioning project will generate total economic output of $4.9 billion. In fact, both the indirect and induced effects of that output will be larger than the direct expenditures (with induced expenditures more than twice as large), suggesting that the direct spending will generate impacts far down the supply chain at businesses nationwide. Nearly half of the impact will come from workers whose spending will reverberate throughout the economy.

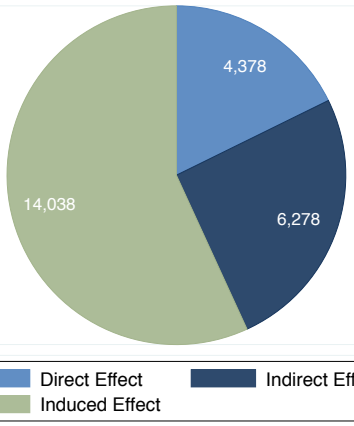
Figure 28: Outside of California, Top 10 Sectors Impacted ($ Millions)					
NAICS Code	Sector	Direct	Indirect	Induced	Total
562	Waste Management and Remediation Services	559.2	72.1	7.0	638.4
238	Construction of Other New Nonresidential Structures	245.8	-	-	245.8
531190	Real Estate	5.3	38.7	130.2	174.2
2121	Mining Coal	-	152.9	3.0	155.9
424120	Wholesale Trade	14.1	40.3	92.4	146.9
5241	Insurance Carriers	20.1	36.0	78.3	134.4
211	Extraction of Oil and Natural Gas	-	85.1	29.2	114.3
2211/2212/2213	Utilities	106.7	1.4	3.6	111.7
5413	Architectural, Engineering, and Related Services	45.7	51.0	10.2	106.9
722	Food Services and Drinking Places	-	17.7	78.2	95.9

The impact on Waste Management and Remediation Services and Construction of Other New Nonresidential Structures will come almost entirely from direct spending. In contrast, the impact on Real Estate will stem almost entirely from spending by businesses and workers who will receive money indirectly as a result of the decommissioning project. The Insurance Carriers sector will generate roughly $134.4 million in economic output; not only will the decommissioning project require its own insurance, but businesses will also purchase insurance for new or existing establishments, while individuals will purchase insurance in response to new jobs or income. Indeed, health insurance is likely a big beneficiary, as workers are added to payrolls and given new health insurance plans. Production of fossil fuels will receive a big uptick. In all, nine industries will each generate $100 million or more in economic output in states other than California as a result of spending on the decommissioning project.

B. Employment Impacts: Outside of California

Workers in states other than California will benefit substantially from the decommissioning project. The project will generate a total of $1.4 billion in wages and earnings for workers, of which $271.7 million represents direct labor spending. The project will support an estimated 24,695 full-time equivalent jobs outside of California, a large majority of which will come from secondary effects of the spending by businesses and workers connected to the project.

Figure 29: Outside of California, Employment Allocation by Effect (FTE Jobs)



Source: IMPLAN, Calculations by Beacon Economics

Many of the industries with the greatest increases in economic output as a result of spending on the project will experience the greatest increases in the number of jobs supported by the project outside of California. Health Care will be a substantial beneficiary, with 595 jobs supported through induced effects in Private Hospitals and 511 jobs supported through induced effects in Offices of Physicians, Dentists, and Other Health Practitioners. Food Services and Drinking Places will benefit from secondary effects more than any other industry, with 293 jobs supported through indirect effects and 1,190 jobs supported through induced effects.

Figure 30: Outside of California, Top 10 Sectors Impacted (FTE Jobs)

NAICS Code	Sector	Direct	Indirect	Induced	Total
562	Waste Management and Remediation Services	2,112	312	30	2,454
238	Construction of Other New Nonresidential Structures	1,492	-	-	1,492
722	Food Services and Drinking Places	-	292	1,190	1,482
531190	Real Estate	25	220	673	917
5613	Employment Services	-	481	336	818
424120	Wholesale Trade	69	202	464	735
5413	Architectural, Engineering, and Related Services	317	329	62	708
622	Private Hospitals	-	-	595	595
6211	Offices of Physicians, Dentists, and Other Health Practitioners	-	-	511	511
2121	Mining Coal	-	396	8	404

C. Note Regarding Tax Revenues Outside of California

Beacon Economics will not elaborate on the federal, state, or local tax impacts generated outside of California. The discussion of federal tax revenues generated at the subnational level provides less value than a discussion of total federal tax revenues generated across the United States. At the same time, data on expenditures outside of California are not separated into individual states. Consequently, IMPLAN's estimates of state and local tax revenues may miss some of the niceties of state and local taxes that could affect the estimates. For example, if spending were particularly concentrated in states with no income tax, IMPLAN might overestimate revenues, assuming more spending would occur in states with an income tax. On the other hand, if spending were particularly concentrated in states with high income tax, IMPLAN might underestimate revenues.

Economic and Fiscal Impacts of the Decommissioning Project: United States

Figure 31: United States Economic Impacts

Impact Type	Employment (FTE Jobs)	Labor Income ($ Millions)	Output ($ Millions)
Direct Effect	15,561	1,071.4	3,273.4
Indirect Effect	11,257	782.9	2,568.0
Induced Effect	18,596	953.4	3,181.3
Total Effect	45,415	2,807.7	9,022.7

A. Economic Output Impacts: United States

As shown in the table above, roughly $3.3 billion in spending between 2013 and 2026 will generate fairly substantial indirect and induced impacts throughout the United States totaling $9.0 billion. The $3.3 billion in expenditures will generate an additional $2.6 billion in indirect impacts, through revenues to direct suppliers and other businesses down the supply chain. The direct expenditures will also generate $3.2 billion in induced impacts, through economic activity from, among other activities, spending by workers whose wages and earnings increase as a result of the expenditures. Thus, the total value of economic output throughout the United States supported by the decommissioning of the San Onofre nuclear generating station between 2013 and 2026 is $9.0 billion. This substantial amount of demand for goods and services at businesses is attributable to the decommissioning of the single nuclear plant over the course of just over a decade.

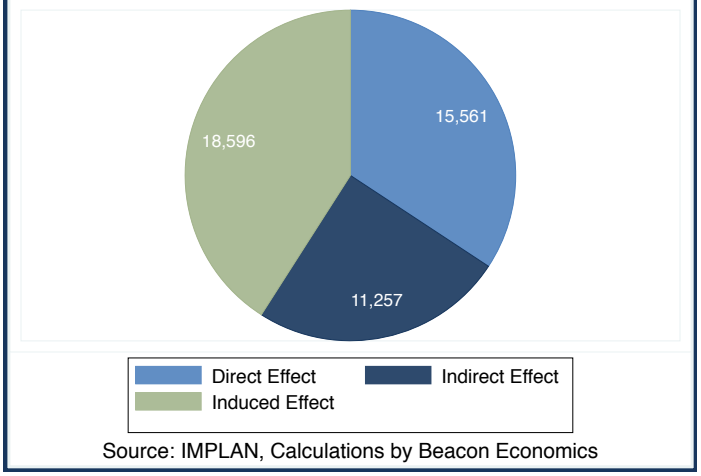
Figure 32: United States, Top 10 Sectors Impacted ($ Millions)					
NAICS Code	Sector	Direct	Indirect	Induced	Total
562	Waste Mgmt. and Remediation Svcs	1,004.2	119.3	9.0	1,132.4
2211/2212/2213	Utilities	735.1	3.1	5.5	743.7
238	Constr. of Other New Nonres. Structures	656.9	-	-	656.9
5413	Arch., Engineering, and Related Svcs	433.9	120.7	13.4	568.1
531190	Real Estate	10.6	92.6	185.9	289.1
5616	Investigation and Security Services	273.7	7.7	5.2	286.6
424120	Wholesale Trade	30.6	74.0	125.5	230.1
5241	Insurance Carriers	40.3	62.9	106.0	209.2
32411	Petroleum Refineries	-	126.4	57.1	183.5
211	Extraction of Oil and Natural Gas	-	140.3	32.5	172.8

Much of the output generated nationwide will be in Waste Management and Remediation Services, Utilities, and Construction of Other New Nonresidential Structures, which is where much of the direct spending on the decommissioning project will take place. However, expenditures will generate a substantial amount of secondary effects on sectors such as Real Estate and Wholesale Trade. This is because businesses that earn revenue and workers who earn income as a result of the decommissioning project will invest in new properties and new goods, such as vehicles. In addition, Petroleum Refineries and Extraction of Oil and Natural Gas will be big beneficiaries from the decommissioning project through secondary effects. Much of the energy that goes into the decommissioning project will be coming from oil and natural gas. At the same time, workers will also be spending more on gasoline as a result of the income they receive from the project, to the benefit of the oil and gas industry throughout the United States.

B. Employment Impacts: United States

Spending on the project not only will create additional economic output but also support a large amount of wages and earnings for workers, as well as new employment opportunities at businesses throughout the country. Of the over $9 billion in economic output generated by the decommissioning project, over $2.8 billion will come in the form of wages and earnings for workers down the supply chain. Direct hiring will represent roughly $1.1 billion of this total, while workers nationwide will receive over $1.7 billion in wages and earnings through secondary effects.

Figure 33: United States, Employment Allocation by Effect (FTE Jobs)



Source: IMPLAN, Calculations by Beacon Economics

In addition, the decommissioning project will support an estimated 45,415 full-time equivalent jobs in the United States. Many of these jobs will come from spending on security and waste management and remediation, but the spending will also generate thousands of jobs nationwide in the categories of Food and Drinking Places and Employment Services. The revenue at businesses

down the supply chain and the spending by workers connected to the decommissioning project will lead to substantial amounts of spending at restaurants and bars as well as real estate firms, supporting thousands of jobs. The spending will also benefit the Health Care sector, with the decommissioning project supporting over 750 jobs in the Health Practitioners category through induced effects.

Figure 34: United States, Top 10 Sectors Impacted (FTE Jobs)

NAICS Code	Sector	Direct	Indirect	Induced	Total
5616	Investigation and Security Services	4,376	134	90	4,601
562	Waste Mgmt. and Remediation Svcs	3,820	512	38	4,370
238	Constr. of Other New Nonres. Structures	3,268	-	-	3,268
5413	Arch., Engineering, and Related Svcs	2,130	723	80	2,933
722	Food Services and Drinking Places	-	625	1,650	2,275
5613	Employment Services	-	1,053	437	1,490
531190	Real Estate	47	461	926	1,434
2211/2212/2213	Utilities	1,310	6	10	1,326
424120	Wholesale Trade	144	365	620	1,129
6211	Offices of Phys., Dentists, Other Health Prac.	-	-	754	754

Although much of the spending will be concentrated in high-growth industries such as Architectural, Engineering, or Related Services, a great deal of that spending will also go to industries with comparatively slower growth, such as Real Estate. The spending will come as a benefit to the many workers in that industry, since lower levels of post-recessionary spending in places like California have meant that fewer jobs have been added to this industry relative to others, such as Architectural, Engineering, or Related Services. The decommissioning project is helping to speed up some of the economic growth we will continue to see by providing demand for jobs and paying wages to workers in industries that have been slower to grow during the economic recovery of the past several years.

C. Federal Tax Revenue Impacts: United States

The decommissioning project will contribute substantially to the United States tax revenue base through its expenditures. Estimated federal tax revenues as a result of those expenditures from 2013 to 2026 are $611.5 million, primarily in the form of social security contributions from employees and employers, personal income tax, and corporate profits tax. With over $2.8 billion in wages and earnings and over $9 billion in economic output generated by the decommissioning project, the business revenues and labor income alone will have a tremendous impact. But the project will also generate millions of additional federal revenues in the form of small taxes on production and imports, to the tune of just under $40 million. In all, the project will contribute to a substantial volume of tax revenues for the United States federal government.

Figure 35: United States Federal Tax Revenue

Category	Amount ($ Millions)
Tax on Production and Imports: Custom Duty	8.0
Tax on Production and Imports: Fed NonTaxes	13.2
Tax on Production and Imports: Excise Taxes	17.2
Corporate Profits Tax	61.8
Social Ins Tax - Employer Contribution	134.8
Social Ins Tax - Employee Contribution	157.5
Personal Tax: Income Tax	219.0
Total Federal Tax	611.5

Property Value Impacts of the Decommissioning Project: Cities Near the Facility

A. Assumptions

There is some debate regarding the effects of the removal of a nuclear plant on residential property values and rents in nearby cities. Some studies have claimed that there is no statistically significant impact within as little as 10 miles from a nuclear plant.[3,4] Others have found that the opening of a plant reduces housing values and rents by up to 7% for buildings within a few miles of large plants.[5] A 2011 study of existing economic literature finds that nuclear sites reduce residential property values on average by 6.37%.[6]

In the case of the decommissioning of the San Onofre nuclear generating station, some of the potential positive impact on residential property values and rents in nearby cities must be balanced against the possible decreases in property value as former employees at the plant may be forced to move away from those cities and find other work. Because the plant is situated between two major metropolitan areas, however, the relocation effect is likely fairly minimal.

The decommissioning project will continue to support long-run economic growth by helping to increase nearby property values.

[3]H. B. Gamble and R. H. Downing (1986), "A reply to 'Nuclear power plants and residential property values: a comment on short-run and long-run considerations,'" Journal of Regional Science, Vol. 26, pp. 807–808.
[4]D. E. Clark, L. Michelbrink, T. Allison, and W. Metz (1997), "Nuclear power plants and residential housing prices," Growth and Change, Vol. 28, pp. 496–519.
[5]Lucas W. Davis (2011), "The effect of power plants on local housing values and rents," MIT Press: Review of Economics and Statistics, Vol. 93, pp. 1391–1402.
[6]J. B. Braden, X. Feng, and D. Won (2011), "Waste sites and property values: A meta-analysis," Environmental and Resource Economics, Vol. 50, pp. 175–201.

In the case of the decommissioning efforts, Beacon Economics assumed that residential properties in cities near the San Onofre nuclear generating station will increase in value by 6.37%, the estimate found in the study mentioned above, all else equal. This represents an upper bound on the possible impact of the decommissioning project on property values.

Existing research assumes that a nuclear plant would only impact the value of residential properties within a 25-mile radius of the site at most, and, indeed, much of that literature narrows the focus of study to within 10 miles or less. Beacon Economics assumed that the decommissioning of the San Onofre nuclear generating station will impact values of residential properties and rents within a 10-mile radius of the plant. This, too, reflects an upper bound on the range of the impact, as some studies claim that the impact diminishes within less than a five-mile radius.

Consequently, Beacon Economics found that North San Diego County is unlikely to experience an impact on residential property values and rents as a result of the decommissioning project. Indeed, only San Clemente, Dana Point, and San Juan Capistrano in South Orange County may experience that impact—with San Clemente being the most likely of the three cities to see an effect.

B. Estimates of Property Value Impacts

To establish an upper bound on possible impacts, Beacon Economics assumed that property values and rents in each of the three cities will increase by 6.37% as a result of the decommissioning project. The Orange County Auditor-Controller Office publishes assessed valuations for each city in Orange County.[7] In fiscal year 2014–15, the three cities in South Orange County had the following total assessed valuations:

- City of Dana Point - $9,787,132,000
- City of San Clemente - $13,666,851,000
- City of San Juan Capistrano - $6,443,224,000

Assessed valuations were not separated between residential and other forms of property for the three cities. As a result, Beacon Economics applied the proportion of residential assessed valuations to total assessed valuations for the County of Orange in the most recent available year, fiscal year 2013–14, or 72.3%.[8] Beacon Economics generated the following estimates of residential assessed valuations:

- City of Dana Point - $7,077,109,000
- City of San Clemente - $9,882,548,000
- City of San Juan Capistrano - $4,659,118,000

[7]"Assessed Valuations," Orange County Auditor-Controller Office, 2015. http://acapps.ocgov.com/txfdr_eGov/av/AssessedValuations1_egov.asp?title=0280.
[8]"Assessed Value of Taxable Property, Last Ten Fiscal Years," County of Orange Comprehensive Financial Report, 2014. http://ac.ocgov.com/civicax/filebank/blobdload.aspx?BlobID=41017.

Applying the assumed 6.37% in increased property values and rents to these estimates generated the following high-bound estimated increase in residential property values:

- City of Dana Point - $450,812,000
- City of San Clemente - $629,518,000
- City of San Juan Capistrano - $296,786,000

Ultimately, under these assumptions, the decommissioning of the San Onofre nuclear generating station would have a small but not insignificant impact on residential property values and, consequently, apartment rents in nearby cities. Of the three cities, San Clemente would likely experience the greatest impact, due to its proximity to the plant.

The increase in residential property values in the cities would also result in an increase in property tax revenues for Orange County and municipal governments. As noted above, however, Proposition 13 puts limits on the assessed valuations of residential property and increases in property taxes each year. Homes have assessed valuations that increase by 2% per year at most, using a base value generated in the year of sale (or by a base value from 1975 if the homes have been owned since then). As a result, some homes are currently assessed at decades-old or otherwise state-mandated low valuations, far below market rate, and are thus paying exceptionally low property taxes. A 6.37% increase in property values for these homes would have little impact on property tax revenues for the county or municipal governments.

Over the long run, though, after the homes in the three cities eventually change ownership and are thus reassessed at market rate, the impact of the 6.37% increase in property values would be fully captured in property tax revenues. Orange County would levy a property tax of 1% (as capped by Proposition 13) of the value of homes in the three cities upon reassessment. The tax could capture 1% of the 6.37% increase in property value due to the decommissioning project. Information from the Orange County Auditor-Controller Office provides an indication of how this tax revenue would be divided among the county, cities, schools, and other agencies.[9]

The allocations change over time, but roughly speaking, 50% of property tax revenue generated would be allocated to the school district, 20% would be allocated to the city, 10% would be allocated to Orange County, and 20% would be allocated to special districts and funds. Consequently, over the long run, the decommissioning project could generate the following property tax revenues for each of the municipal governments:

- City of Dana Point - $902,000
- City of San Clemente - $1,259,000
- City of San Juan Capistrano - $594,000

[9]"Where the Typical Property Tax Dollar Went in FY 2014/2015," Orange County Auditor-Controller Office, 2015. http://ttc.ocgov.com/civicax/filebank/blobdload.aspx?BlobID=32113.

Likewise, the decommissioning project could provide up to $1,377,000 for Orange County and add up to $6,886,000 to the Capistrano Unified School District.

Of course, these are very rough estimates relying on several assumptions. They nonetheless suggest that over the long run, the decommissioning of the San Onofre nuclear generating station may have a positive impact on nearby communities beyond the impacts of direct expenditures, benefiting residential property owners through a potential increase in home values and rents, and benefiting municipal governments and schools in the form of indirect property tax revenues.

Conclusion

In all, the stages of the decommissioning of the San Onofre nuclear generating station that began in 2013 and will continue through 2026 will generate an estimated $9.0 billion in economic output throughout the United States, with $4.1 billion of that output concentrated in the state of California and $4.9 billion generated elsewhere across the country. Within California, the impact on economic output will be strongest in Orange County, at $1.2 billion, which is where the project's spending will be the highest ($799.5 million), though San Diego County and Los Angeles County will also experience an increase in economic output at or near $1 billion.

Figure 36: Estimated Economic Impact of SONGS Decommissioning, 2013-2026

Area	Employment (FTE Jobs)	Labor Income ($ Millions)	Output ($ Millions)
United States	45,415	2,807.7	9,022.7
California	20,720	1,384.3	4,105.8
San Diego County	6,572	408.6	1,180.1
Orange County	6,330	435.5	1,238.8
Los Angeles County	4,334	299.3	941.9
Riverside County	984	58.7	176.3
San Bernardino County	883	58.3	178.4
Rest of California	1,618	124.0	390.2
Out of State	24,695	1,423.4	4,916.9

Workers throughout the country will benefit, as wages and earnings will represent a substantial amount of the overall increase in economic output. The decommissioning project is expected to generate $2.8 billion in labor income nationwide, including $1.4 billion for workers throughout the state of California. This labor income will benefit existing workers at businesses far down the supply chain, but it will also go toward new payrolls connected with the decommissioning project. In all, the decommissioning project will support an estimated 45,415 full-time equivalent jobs nationwide, including 20,720 within the state of California. Of this 20,720, over 9,000 jobs will be supported through the spending at businesses down the supply chain and the spending of workers who receive income as a result of the decommissioning project.

Figure 37: Federal Tax Revenue Generated by SONGS Decommissioning, 2013-2026	
Category	Amount ($ Millions)
Tax on Production and Imports: Custom Duty	8.0
Tax on Production and Imports: Fed NonTaxes	13.2
Tax on Production and Imports: Excise Taxes	17.2
Corporate Profits Tax	61.8
Social Ins Tax - Employer Contribution	134.8
Social Ins Tax - Employee Contribution	157.5
Personal Tax: Income Tax	219.0
Total Federal Tax	611.5

The spending will also have a significant fiscal effect, not only for municipal governments in California and the state government but also for the federal government of the United States. The decommissioning project will generate an estimated $611.5 million in federal tax revenue, much of which will come in the form of personal income taxes ($219.0 million) and social insurance taxes paid by employees ($157.5 million) and employers ($134.8 million). The decommissioning project will generate an estimated $185.0 million in state and local taxes in California, primarily in the form of state personal income taxes ($44.2 million), sales taxes ($45.5 million), and business property taxes ($36.2 million).

Beyond the substantial economic and social impacts that the decommissioning project will generate at the national, state, and local levels, the project may also generate an indirect impact on tax revenues for cities near the nuclear plant, Orange County, and the Capistrano Unified School District. The removal of the plant may mean that residential property values and rents rise over the long run.

Figure 38: State and Local Tax Revenue Generated by SONGS Decommissioning, 2013-2026	
Category	Amount ($ Millions)
Tax on Production and Imports: Severance Tax	-
Personal Tax: Other Tax	0.3
Personal Tax: Property Taxes	0.5
Tax on Production and Imports: Motor Vehicle Lic	0.9
Social Ins Tax - Employee Contribution	1.0
Personal Tax: Motor Vehicle License	1.5
Social Ins Tax - Employer Contribution	4.2
Tax on Production and Imports: S/L NonTaxes	4.2
Tax on Production and Imports: Other Taxes	9.1
Corporate Profits Tax	9.3
Personal Tax: NonTaxes (Fines/Fees)	9.5
Dividends	18.7
Tax on Production and Imports: Property Tax	36.2
Personal Tax: Income Tax	44.2
Tax on Production and Imports: Sales Tax	45.5
Total State and Local Tax	185.0

Although the expenditures made over the course of the 13-year period of the decommissioning project will be vast, their impact on the U.S. economy in the form of jobs, business revenues, and fiscal revenues will be much greater, most of all in the communities of Southern California.

Appendix

A. Tables

Output

Figure A-1: San Diego County, Top 10 Sectors Impacted ($ Millions)

NAICS Code	Sector	Direct	Indirect	Induced	Total
2211/2212/2213	Utilities	201.8	0.2	0.3	202.3
562	Waste Management and Remediation Services	141.6	10.2	0.6	152.4
5413	Architectural, Engineering, and Related Services	132.1	18.0	0.9	151.1
238	Construction of Other New Nonresidential Structures	118.2	-	-	118.2
5616	Investigation and Security Services	95.5	0.8	0.3	96.6
531190	Real Estate	1.0	15.5	21.3	37.7
517	Telecommunications	0.1	16.4	9.1	25.6
424120	Wholesale Trade	3.0	7.1	11.3	21.4
722	Food Services and Drinking Places	-	7.3	13.8	21.2
5241	Insurance Carriers	3.6	6.1	8.4	18.1

Figure A-2: Orange County, Top 10 Sectors Impacted ($ Millions)

NAICS Code	Sector	Direct	Indirect	Induced	Total
2211/2212/2213	Utilities	227.9	0.5	0.6	229.0
5413	Architectural, Engineering, and Related Services	150.4	21.7	0.8	172.9
562	Waste Management and Remediation Services	158.9	9.9	0.4	169.2
238	Construction of Other New Nonresidential Structures	131.1	-	-	131.1
5616	Investigation and Security Services	109.1	1.3	0.4	110.8
531190	Real Estate	1.0	21.1	18.0	40.1
5241	Insurance Carriers	3.6	9.7	9.7	23.0
424120	Wholesale Trade	3.0	9.8	9.7	22.5
722	Food Services and Drinking Places	-	5.6	7.7	13.3

Figure A-3: Los Angeles County, Top 10 Sectors Impacted ($ Millions)

NAICS Code	Sector	Direct	Indirect	Induced	Total
2211/2212/2213	Utilities	91.1	0.5	0.5	92.1
562	Waste Management and Remediation Services	65.6	14.4	0.5	80.5
5413	Architectural, Engineering, and Related Services	57.6	19.3	0.9	77.8
32411	Petroleum Refineries	0.0	55.1	6.6	61.8
238	Construction of Other New Nonresidential Structures	57.3	0.0	0.0	57.3
5616	Investigation and Security Services	40.9	1.7	0.5	43.1
211	Extraction of Oil and Natural Gas	0.0	38.9	2.3	41.3
531190	Real Estate	0.6	10.6	9.1	20.3
424120	Wholesale Trade	2.0	10.1	7.5	19.6
5241	Insurance Carriers	2.4	7.6	6.4	16.4

Figure A-4: Riverside County, Top 10 Sectors Impacted ($ Millions)

NAICS Code	Sector	Direct	Indirect	Induced	Total
2211/2212/2213	Utilities	32.5	0.3	0.2	32.9
562	Waste Management and Remediation Services	24.2	2.5	0.1	26.8
238	Construction of Other New Nonresidential Structures	22.2	-	-	22.2
5413	Architectural, Engineering, and Related Services	19.6	1.9	0.1	21.6
5616	Investigation and Security Services	13.6	0.2	-	13.9
424120	Wholesale Trade	1.0	1.4	0.8	3.2
531190	Real Estate	0.3	1.4	1.0	2.8
722	Food Services and Drinking Places	-	1.5	1.1	2.6
5241	Insurance Carriers	1.2	0.6	0.3	2.2
521	Monetary Authorities and Depository Credit Intermediation Activities	-	1.1	0.5	1.6

Figure A-5: San Bernardino County, Top 10 Sectors Impacted ($ Millions)

NAICS Code	Sector	Direct	Indirect	Induced	Total
2211/2212/2213	Utilities	32.5	0.1	-	32.6
562	Waste Management and Remediation Services	24.2	2.4	0.1	26.6
238	Construction of Other New Nonresidential Structures	22.2	-	-	22.2
5413	Architectural, Engineering, and Related Services	19.6	1.8	-	21.5
5616	Investigation and Security Services	13.6	0.2	-	13.9
32411	Petroleum Refineries	-	5.3	0.4	5.6
424120	Wholesale Trade	1.0	1.6	0.4	3.0
484	Transport by Truck	-	2.1	0.5	2.6
5241	Insurance Carriers	1.2	0.8	0.2	2.2
5613	Employment Services	-	1.7	0.3	1.9

Employment

Figure A-6: San Diego County, Top 10 Sectors Impacted (FTE Jobs)

NAICS Code	Sector	Direct	Indirect	Induced	Total
5616	Investigation and Security Services	1,668	15	6	1,689
5413	Architectural, Engineering, and Related Services	624	104	5	733
562	Waste Management and Remediation Services	544	44	2	590
238	Construction of Other New Nonresidential Structures	507	-	-	507
2211/2212/2213	Utilities	326	-	1	326
722	Food Services and Drinking Places	-	98	186	284
531190	Real Estate	4	76	104	184
5613	Employment Services	-	148	30	178
424120	Wholesale Trade	13	34	53	100
6211	Offices of Physicians, Dentists, and Other Health Practitioners	-	-	96	96

Figure A-7: Orange County, Top 10 Sectors Impacted (FTE Jobs)

NAICS Code	Sector	Direct	Indirect	Induced	Total
5616	Investigation and Security Services	1,711	22	6	1,739
5413	Architectural, Engineering, and Related Services	682	120	5	807
562	Waste Management and Remediation Services	612	42	2	656
238	Construction of Other New Nonresidential Structures	541	-	-	541
2211/2212/2213	Utilities	350	1	1	352
5613	Employment Services	-	188	28	217
722	Food Services and Drinking Places	-	74	101	175
531190	Real Estate	4	87	74	165
424120	Wholesale Trade	12	41	40	93
5617	Services to Buildings and Dwellings	-	52	20	72

Figure A-8: Los Angeles County, Top 10 Sectors Impacted (FTE Jobs)

NAICS Code	Sector	Direct	Indirect	Induced	Total
5616	Investigation and Security Services	709	32	9	750
5413	Architectural, Engineering, and Related Services	259	106	5	370
562	Waste Management and Remediation Services	251	61	2	314
238	Construction of Other New Nonresidential Structures	249	-	-	249
722	Food Services and Drinking Places	-	104	103	207
5613	Employment Services	-	135	25	160
2211/2212/2213	Utilities	140	1	1	141
424120	Wholesale Trade	10	54	40	104
531190	Real Estate	2	45	39	86
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	-	58	15	74

Figure A-9: Riverside County, Top 10 Sectors Impacted (FTE Jobs)

NAICS Code	Sector	Direct	Indirect	Induced	Total
5616	Investigation and Security Services	236	4	1	241
5413	Architectural, Engineering, and Related Services	100	12	-	112
238	Construction of Other New Nonresidential Structures	103	-	-	103
562	Waste Management and Remediation Services	91	10	-	102
2211/2212/2213	Utilities	56	-	-	56
722	Food Services and Drinking Places	-	20	16	36
5613	Employment Services	-	28	2	30
424120	Wholesale Trade	6	8	5	19
5617	Services to Buildings and Dwellings	-	14	3	17
531190	Real Estate	2	8	5	15

Figure A-10: San Bernardino County, Top 10 Sectors Impacted (FTE Jobs)

NAICS Code	Sector	Direct	Indirect	Induced	Total
5616	Investigation and Security Services	210	3	-	214
5413	Architectural, Engineering, and Related Services	99	11	-	110
562	Waste Management and Remediation Services	96	11	-	107
238	Construction of Other New Nonresidential Structures	100	-	-	100
2211/2212/2213	Utilities	53	-	-	54
5613	Employment Services	-	39	6	45
424120	Wholesale Trade	6	10	2	18
722	Food Services and Drinking Places	-	15	2	18
484	Transport by Truck	-	13	3	16
531190	Real Estate	2	6	2	10

State and Local Tax Revenues

Figure A-11: San Diego County State and Local Tax Revenue	
Category	Amount ($ Millions)
Tax on Production and Imports: Severance Tax	-
Personal Tax: Other Tax	0.1
Personal Tax: Property Taxes	0.2
Social Ins Tax - Employee Contribution	0.3
Tax on Production and Imports: Motor Vehicle Lic	0.3
Personal Tax: Motor Vehicle License	0.4
Social Ins Tax - Employer Contribution	1.2
Tax on Production and Imports: S/L NonTaxes	1.3
Corporate Profits Tax	2.7
Tax on Production and Imports: Other Taxes	2.8
Personal Tax: NonTaxes (Fines/Fees)	2.8
Dividends	5.5
Tax on Production and Imports: Property Tax	11.0
Personal Tax: Income Tax	13.0
Tax on Production and Imports: Sales Tax	13.8
Total State and Local Tax	55.4

Figure A-12: Orange County State and Local Tax Revenue	
Category	Amount ($ Millions)
Tax on Production and Imports: Severance Tax	-
Personal Tax: Other Tax	0.1
Social Ins Tax - Employee Contribution	0.2
Tax on Production and Imports: Motor Vehicle Lic	0.2
Personal Tax: Property Taxes	0.2
Personal Tax: Motor Vehicle License	0.5
Social Ins Tax - Employer Contribution	1.0
Tax on Production and Imports: S/L NonTaxes	1.2
Tax on Production and Imports: Other Taxes	2.5
Corporate Profits Tax	2.8
Personal Tax: NonTaxes (Fines/Fees)	3.0
Dividends	5.6
Tax on Production and Imports: Property Tax	10.0
Tax on Production and Imports: Sales Tax	12.5
Personal Tax: Income Tax	14.4
Total State and Local Tax	54.2

Figure A-13: Los Angeles County State and Local Tax Revenue	
Category	Amount ($ Millions)
Tax on Production and Imports: Severance Tax	-
Personal Tax: Property Taxes	0.1
Personal Tax: Other Tax	0.1
Social Ins Tax - Employee Contribution	0.2
Tax on Production and Imports: Motor Vehicle Lic	0.2
Personal Tax: Motor Vehicle License	0.3
Social Ins Tax - Employer Contribution	0.9
Tax on Production and Imports: S/L NonTaxes	1.0
Personal Tax: NonTaxes (Fines/Fees)	2.0
Tax on Production and Imports: Other Taxes	2.2
Corporate Profits Tax	2.3
Dividends	4.6
Tax on Production and Imports: Property Tax	8.7
Personal Tax: Income Tax	9.2
Tax on Production and Imports: Sales Tax	10.9
Total State and Local Tax	42.7

Figure A-14: Riverside County State and Local Tax Revenue	
Category	Amount ($ Millions)
Tax on Production and Imports: Motor Vehicle Lic	-
Tax on Production and Imports: Severance Tax	-
Personal Tax: Property Taxes	-
Personal Tax: Other Tax	-
Social Ins Tax - Employee Contribution	0.1
Personal Tax: Motor Vehicle License	0.1
Tax on Production and Imports: S/L NonTaxes	0.2
Social Ins Tax - Employer Contribution	0.3
Tax on Production and Imports: Other Taxes	0.3
Corporate Profits Tax	0.3
Personal Tax: NonTaxes (Fines/Fees)	0.4
Dividends	0.7
Tax on Production and Imports: Property Tax	1.4
Tax on Production and Imports: Sales Tax	1.7
Personal Tax: Income Tax	1.8
Total State and Local Tax	7.2

Figure A-15: San Bernardino County State and Local Tax Revenue	
Category	Amount ($ Millions)
Tax on Production and Imports: Motor Vehicle Lic	-
Tax on Production and Imports: Severance Tax	-
Personal Tax: Property Taxes	-
Personal Tax: Other Tax	-
Social Ins Tax - Employee Contribution	0.1
Tax on Production and Imports: S/L NonTaxes	0.1
Personal Tax: Motor Vehicle License	0.1
Social Ins Tax - Employer Contribution	0.3
Tax on Production and Imports: Other Taxes	0.3
Corporate Profits Tax	0.3
Personal Tax: NonTaxes (Fines/Fees)	0.4
Dividends	0.6
Tax on Production and Imports: Property Tax	1.1
Tax on Production and Imports: Sales Tax	1.4
Personal Tax: Income Tax	1.7
Total State and Local Tax	6.4

B. Charts

Output

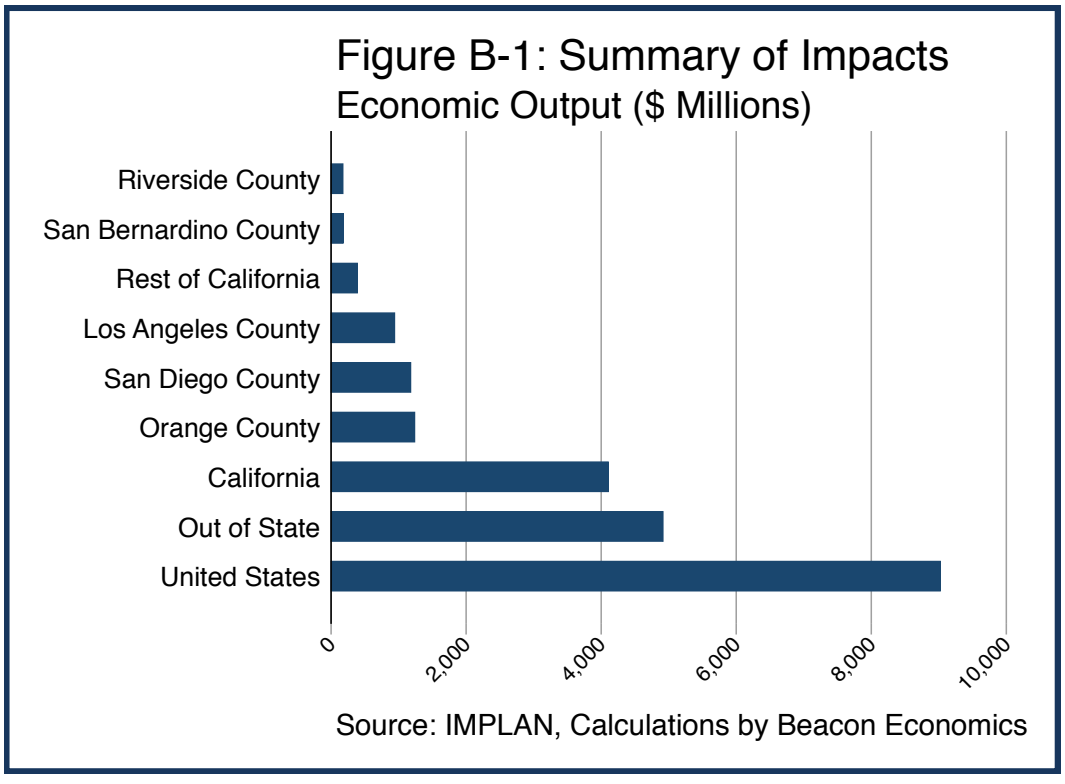
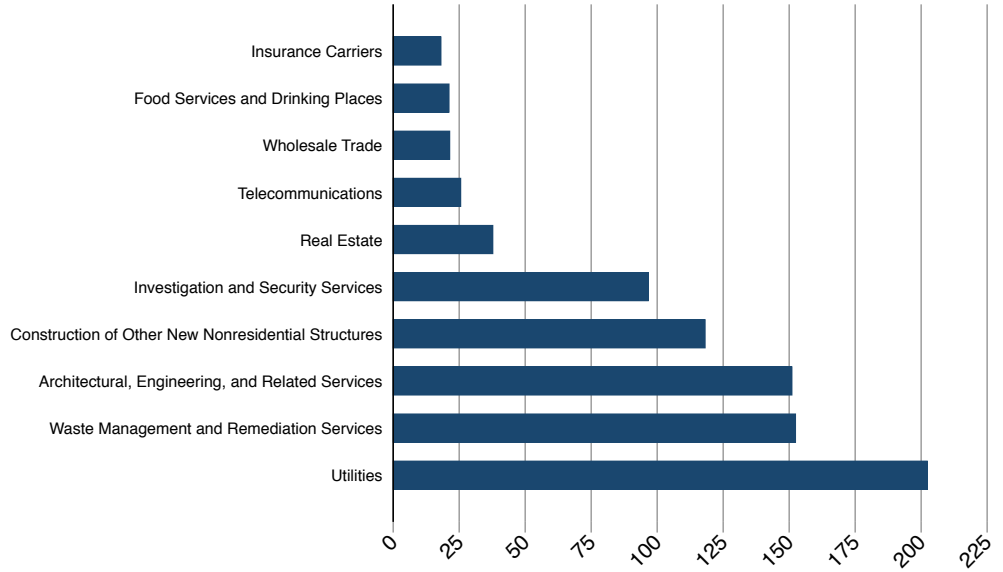
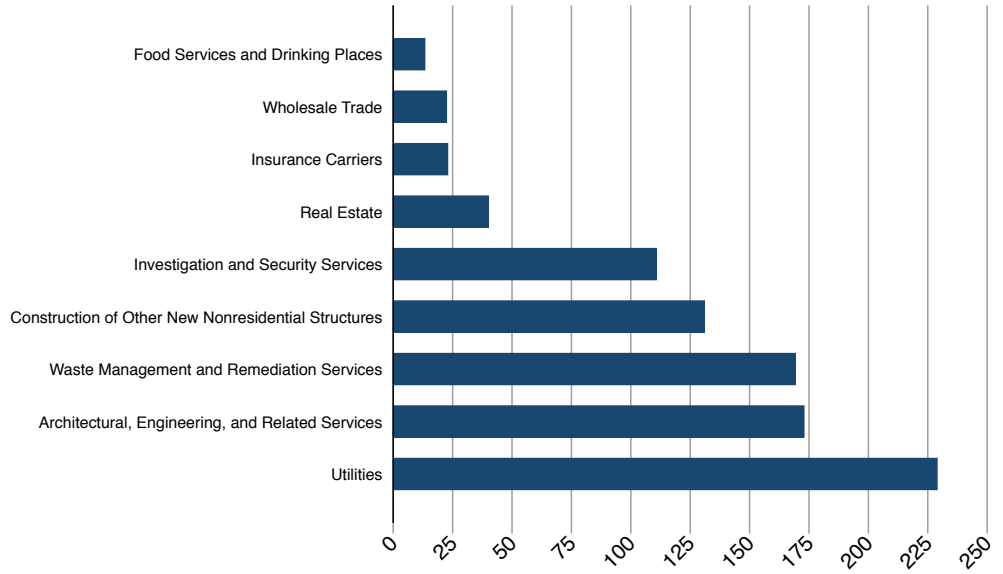


Figure B-2: San Diego County
Top 10 Sectors Impacted ($ Millions)



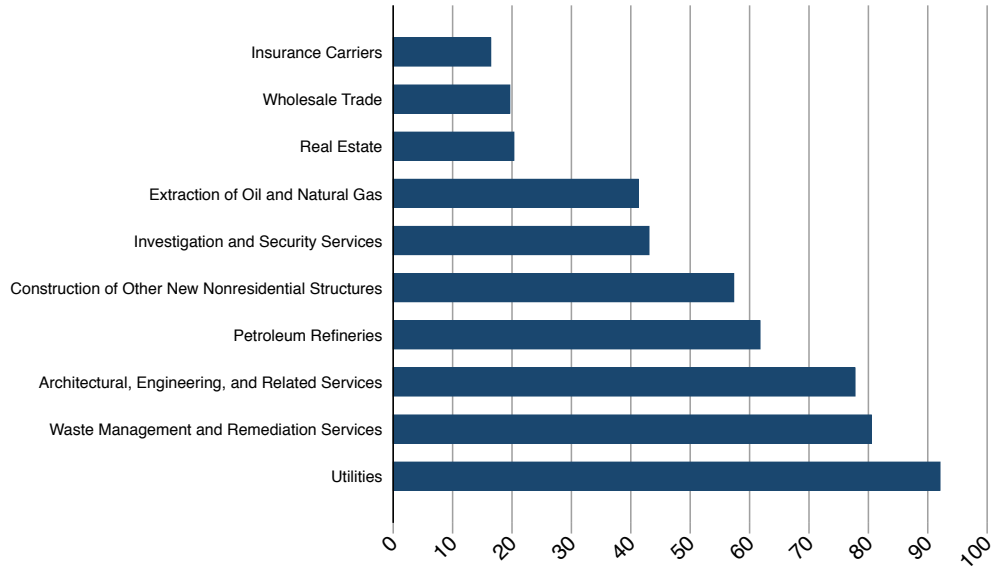
Source: IMPLAN, Calculations by Beacon Economics

Figure B-3: Orange County
Top 10 Sectors Impacted ($ Millions)



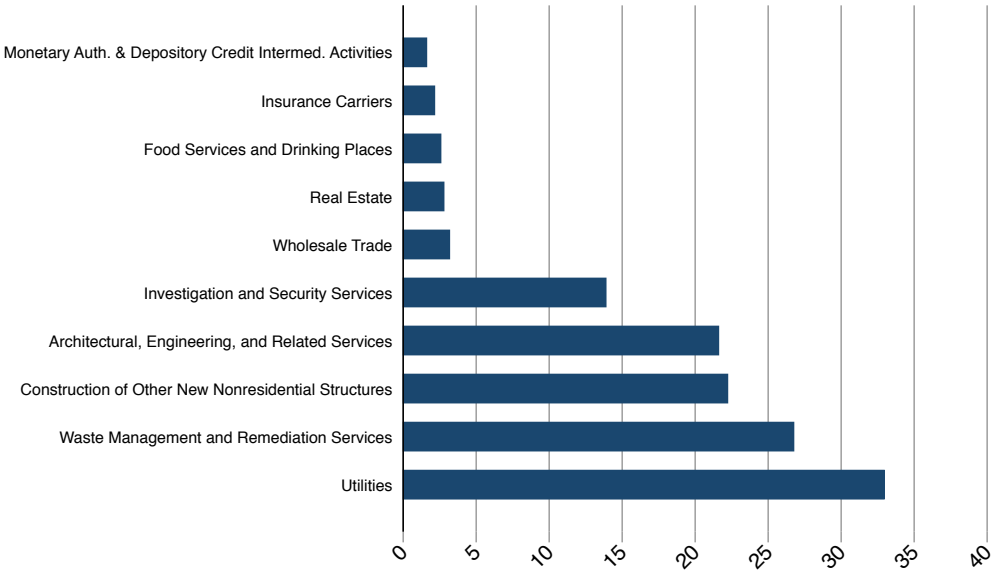
Source: IMPLAN, Calculations by Beacon Economics

Figure B-4: Los Angeles County
Top 10 Sectors Impacted ($ Millions)



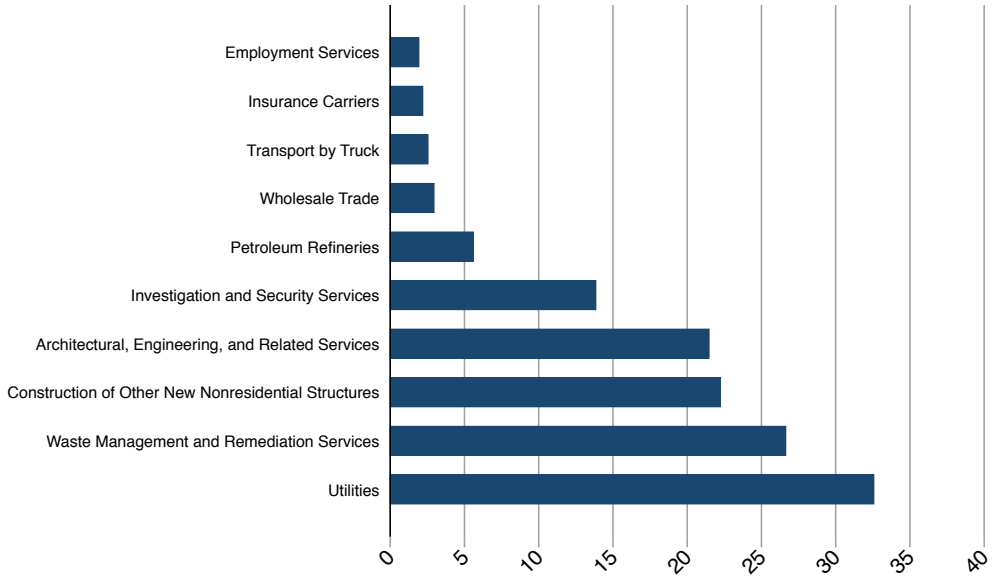
Source: IMPLAN, Calculations by Beacon Economics

Figure B-5: Riverside County
Top 10 Sectors Impacted ($ Millions)



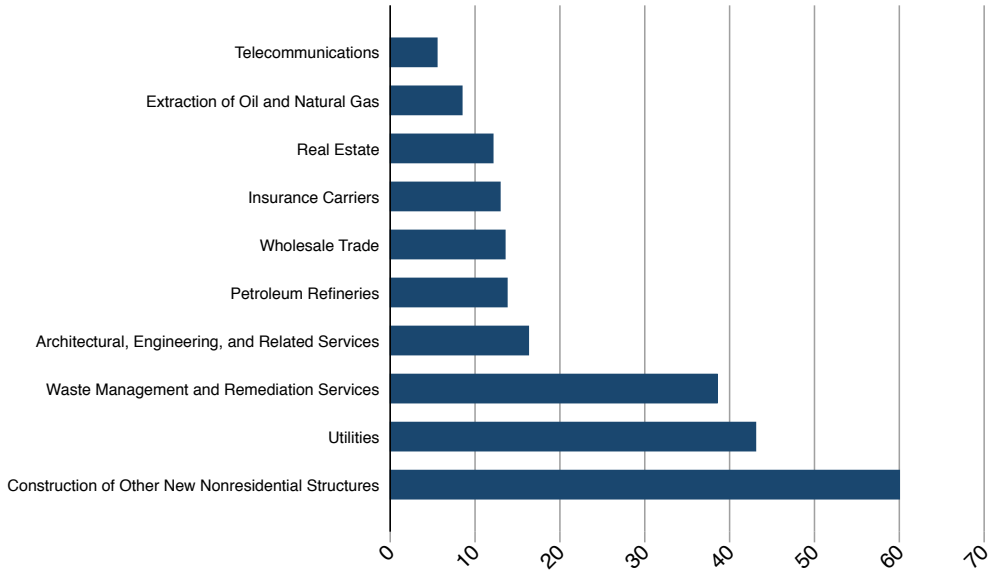
Source: IMPLAN, Calculations by Beacon Economics

Figure B-6: San Bernardino County
Top 10 Sectors Impacted ($ Millions)



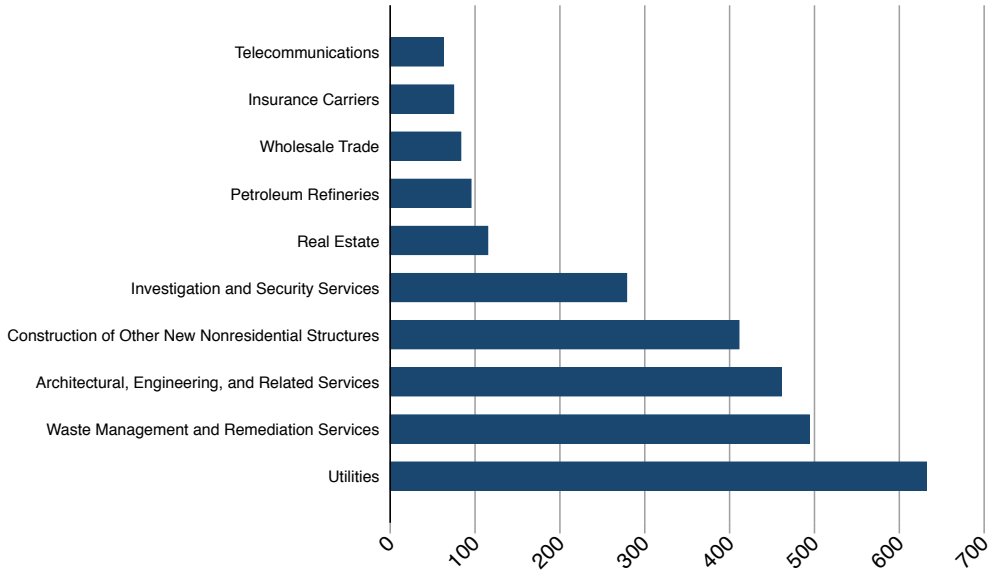
Source: IMPLAN, Calculations by Beacon Economics

Figure B-7: Rest of California
Top 10 Sectors Impacted ($ Millions)



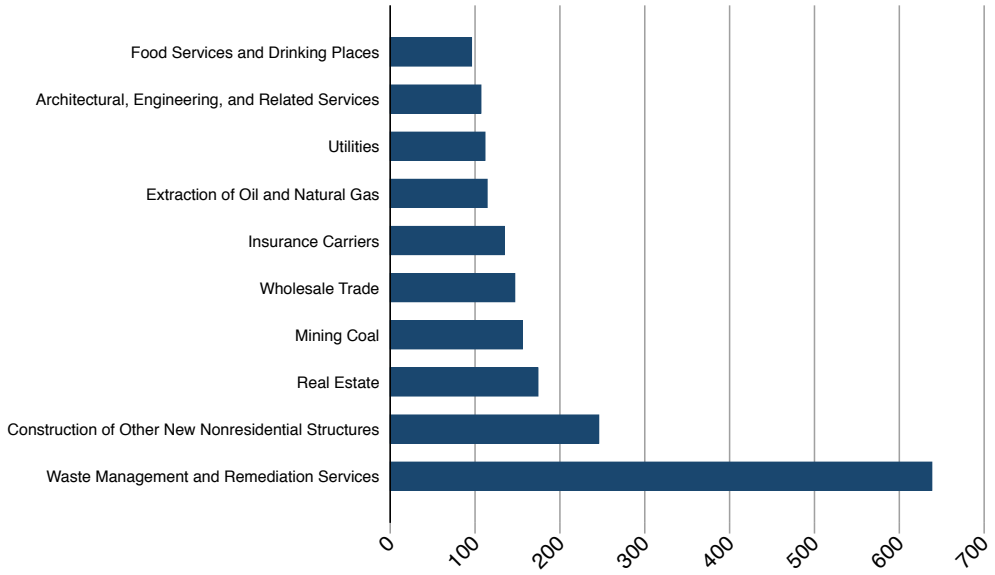
Source: IMPLAN, Calculations by Beacon Economics

Figure B-8: State of California
Top 10 Sectors Impacted ($ Millions)



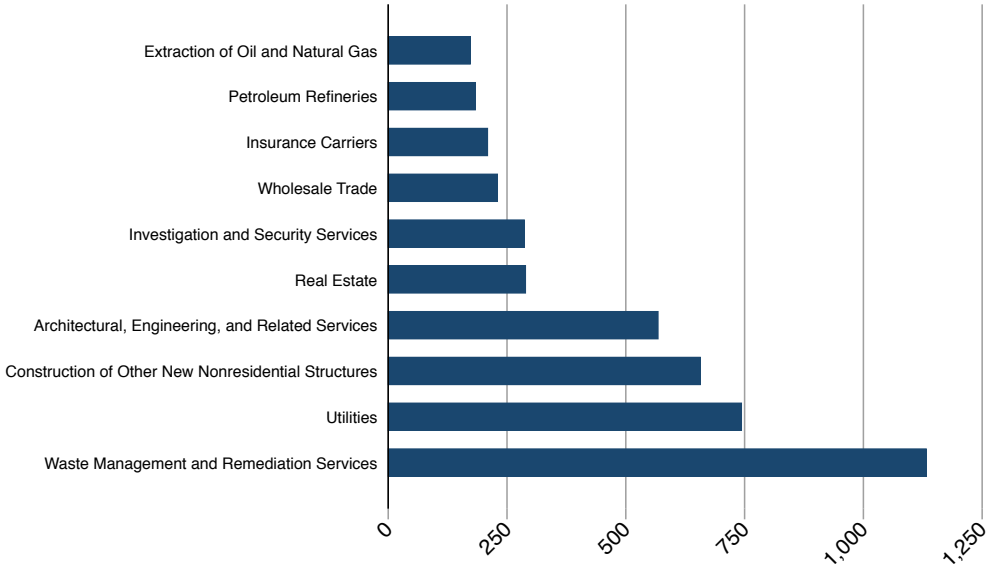
Source: IMPLAN, Calculations by Beacon Economics

Figure B-9: Outside of California
Top 10 Sectors Impacted ($ Millions)



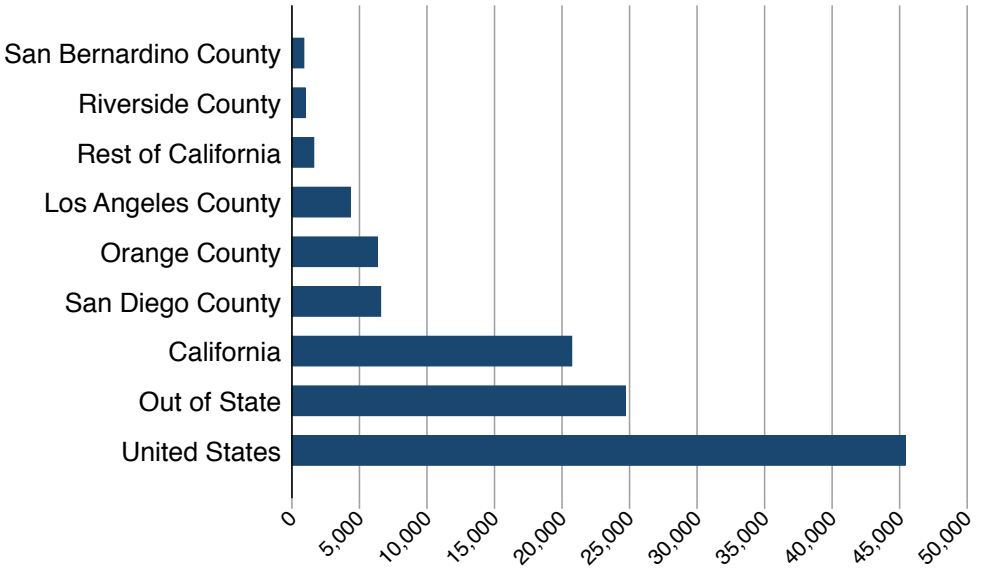
Source: IMPLAN, Calculations by Beacon Economics

Figure B-10: United States
Top 10 Sectors Impacted ($ Millions)



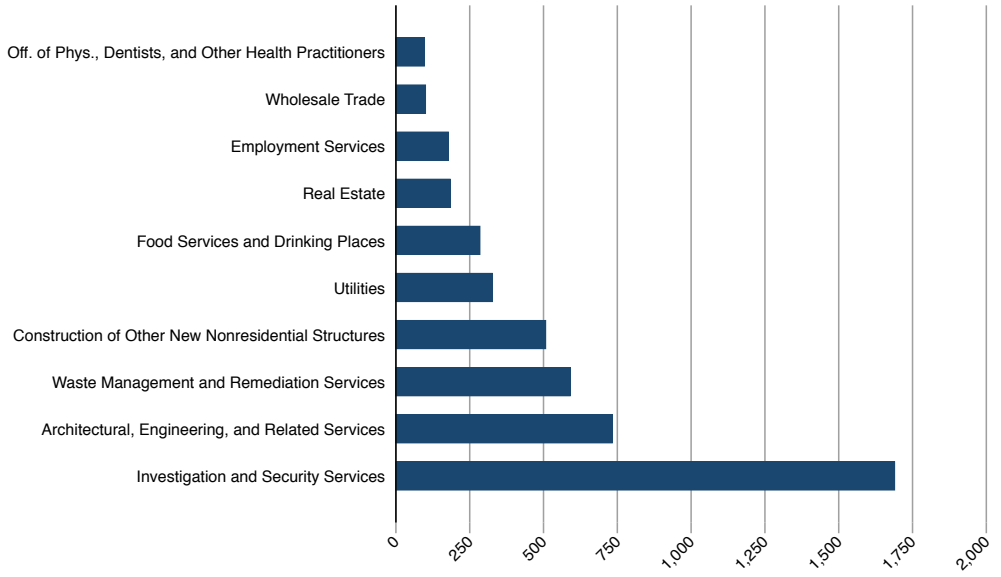
Source: IMPLAN, Calculations by Beacon Economics

Figure B-11: Summary of Impacts
Employment (FTE Jobs)



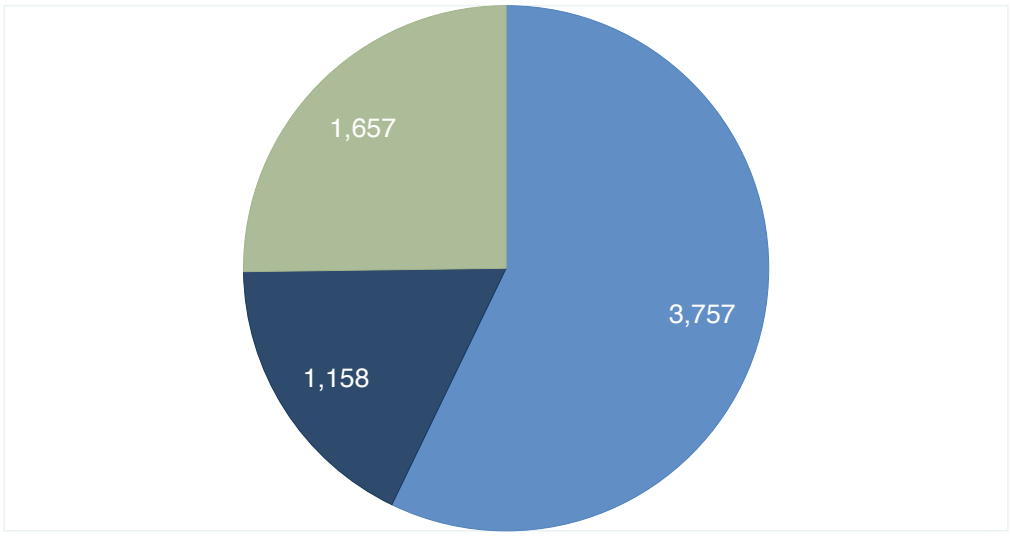
Source: IMPLAN, Calculations by Beacon Economics

Figure B-12: San Diego County
Top 10 Sectors Impacted (FTE Jobs)



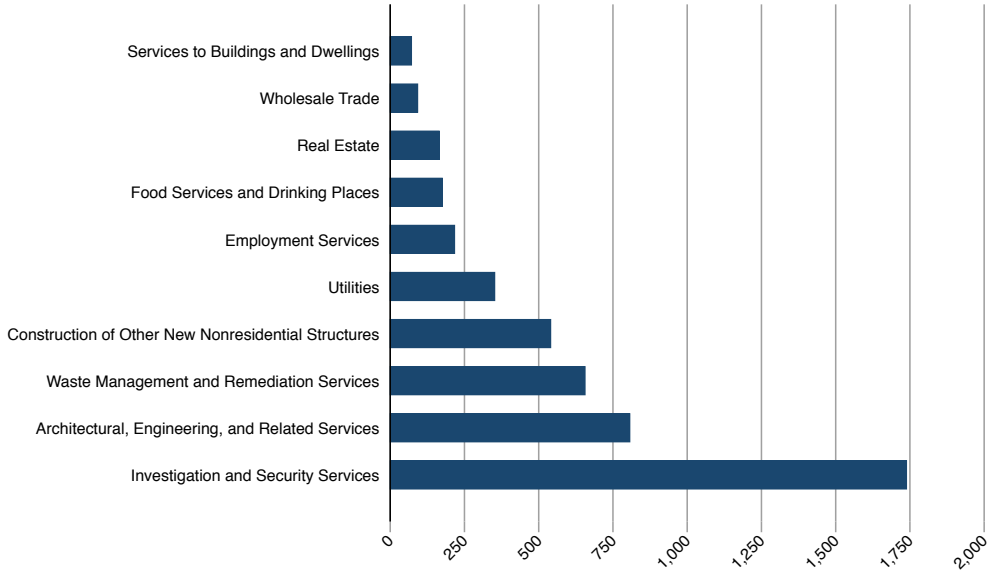
Source: IMPLAN, Calculations by Beacon Economics

Figure B-13: San Diego County, Employment Allocation by Effect (FTE Jobs)



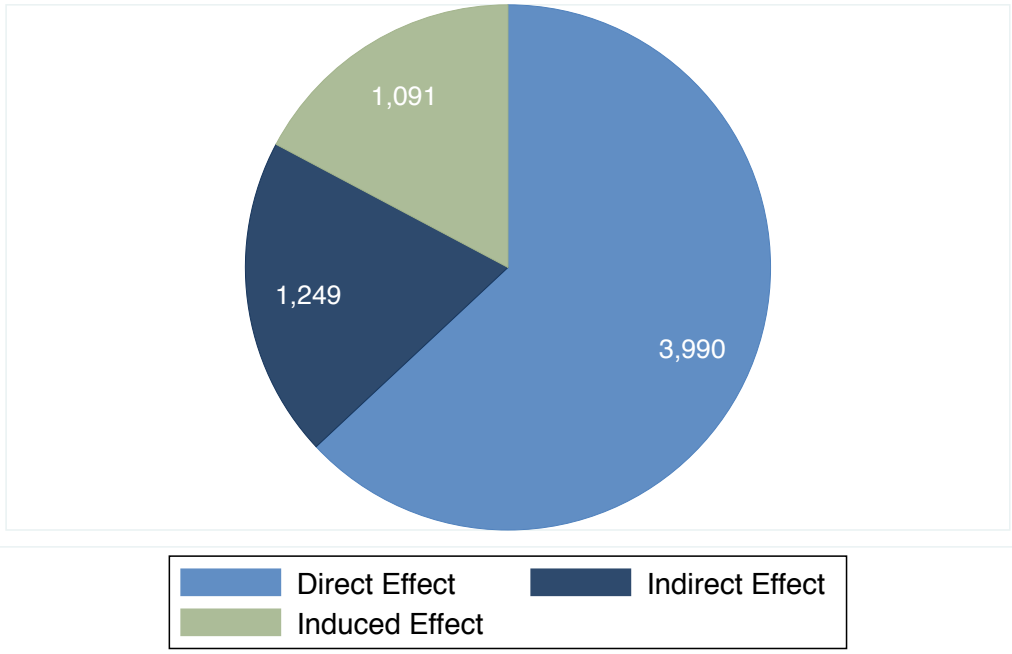
Source: IMPLAN, Calculations by Beacon Economics

Figure B-14: Orange County
Top 10 Sectors Impacted (FTE Jobs)



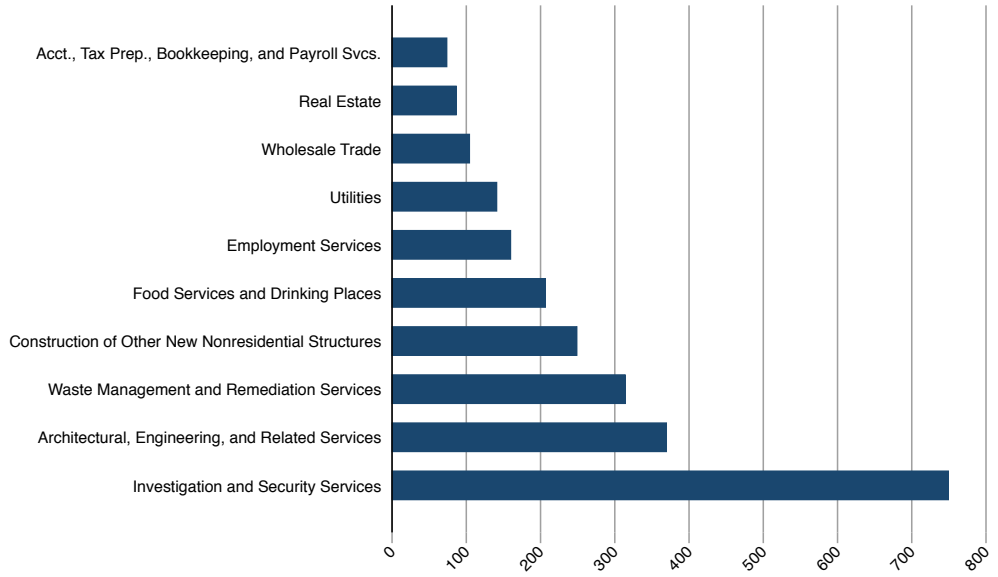
Source: IMPLAN, Calculations by Beacon Economics

Figure B-15: Orange County, Employment Allocation by Effect (FTE Jobs)



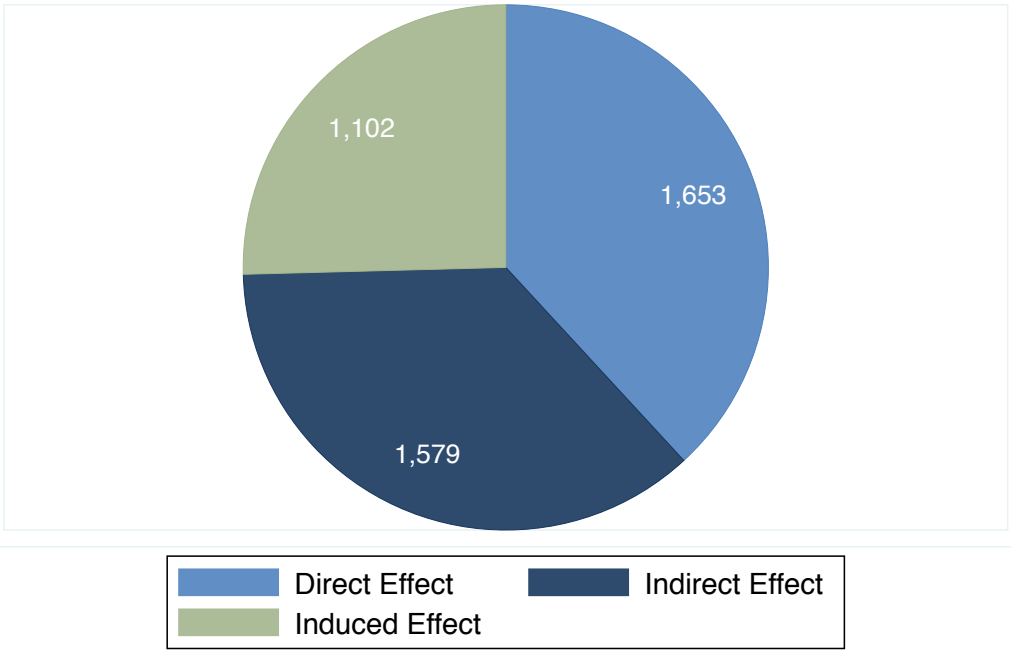
Source: IMPLAN, Calculations by Beacon Economics

Figure B-16: Los Angeles County
Top 10 Sectors Impacted (FTE Jobs)



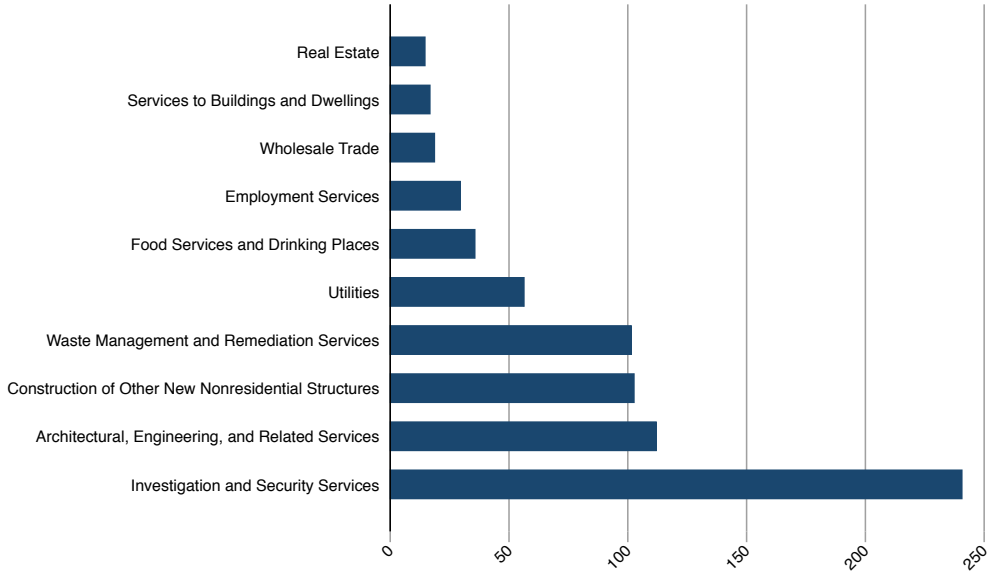
Source: IMPLAN, Calculations by Beacon Economics

Figure B-17: Los Angeles County, Employment Allocation by Effect (FTE Jobs)



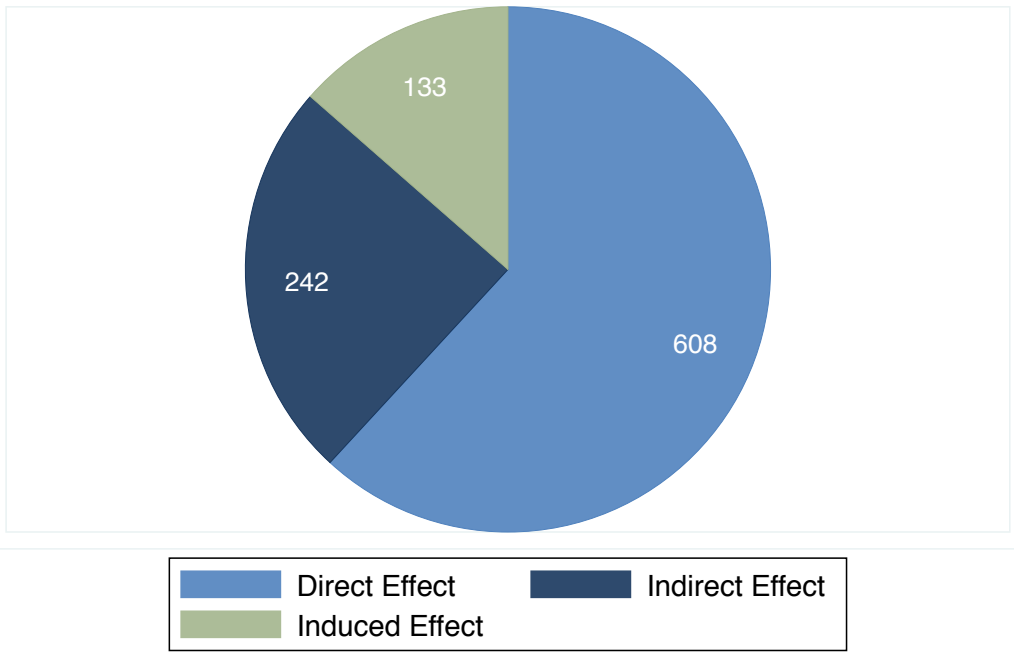
Source: IMPLAN, Calculations by Beacon Economics

Figure B-18: Riverside County
Top 10 Sectors Impacted (FTE Jobs)



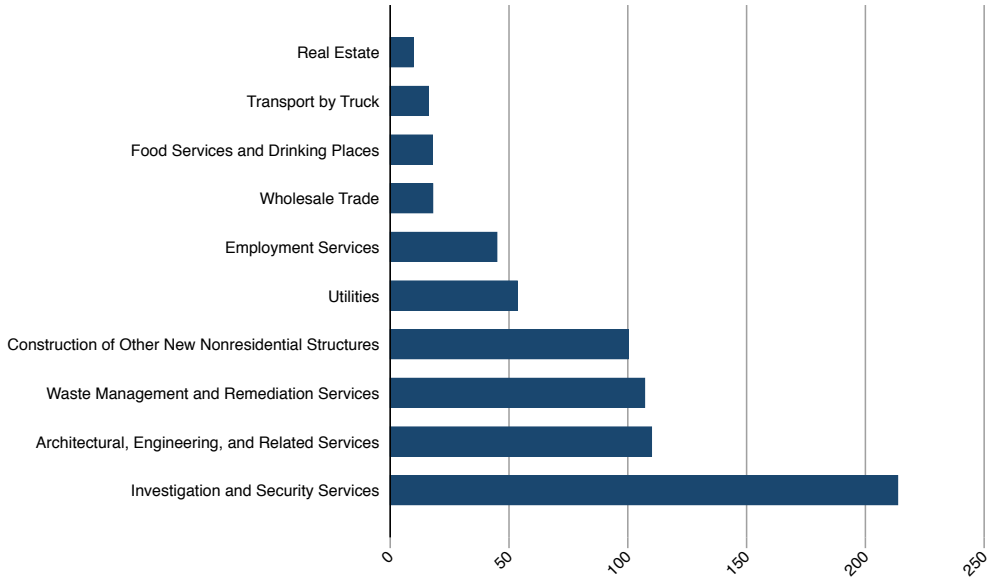
Source: IMPLAN, Calculations by Beacon Economics

Figure B-19: Riverside County, Employment Allocation by Effect (FTE Jobs)



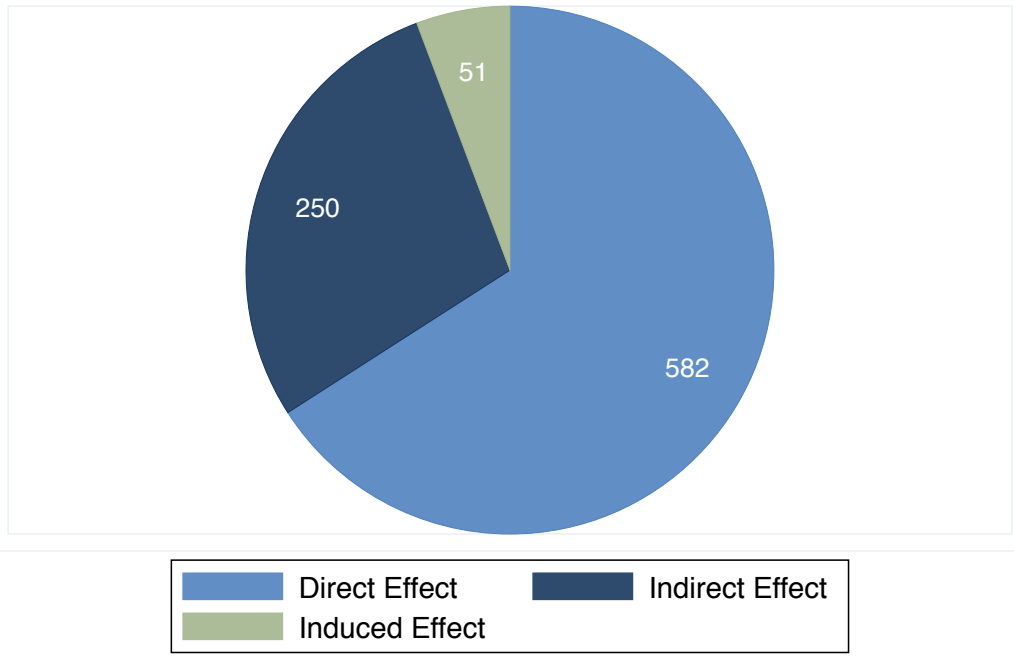
Source: IMPLAN, Calculations by Beacon Economics

Figure B-20: San Bernardino County
Top 10 Sectors Impacted (FTE Jobs)



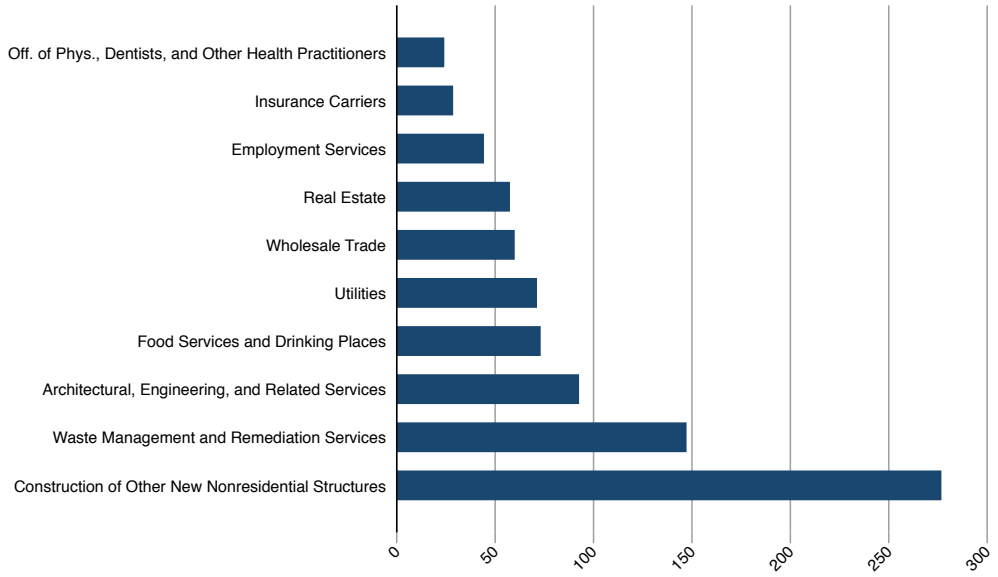
Source: IMPLAN, Calculations by Beacon Economics

Figure B-21: San Bernardino County, Employment Allocation by Effect (FTE Jobs)



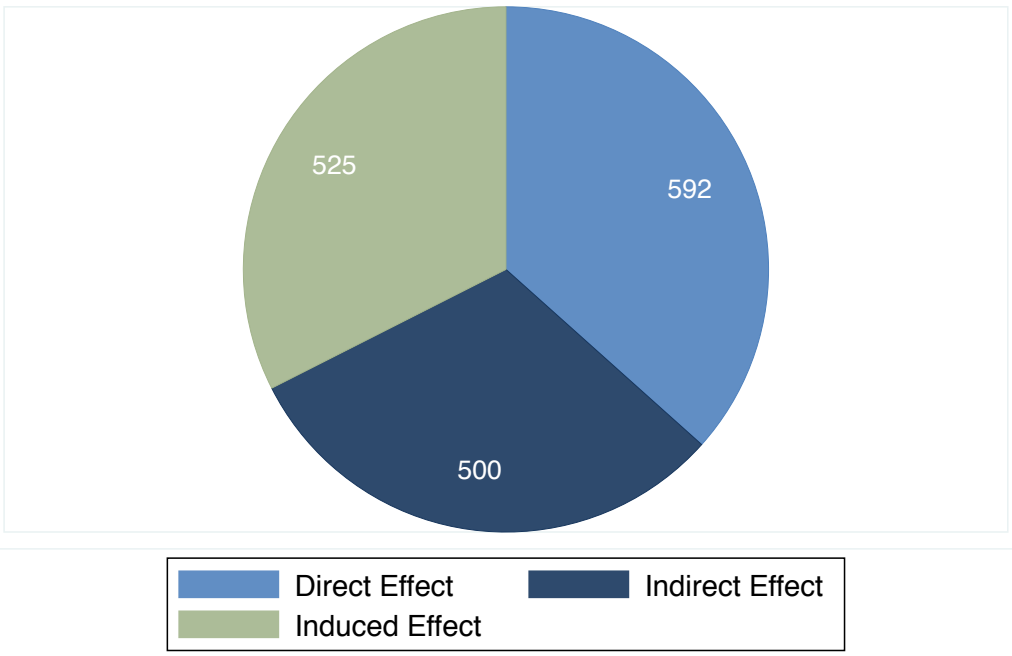
Source: IMPLAN, Calculations by Beacon Economics

Figure B-22: Rest of California
Top 10 Sectors Impacted (FTE Jobs)



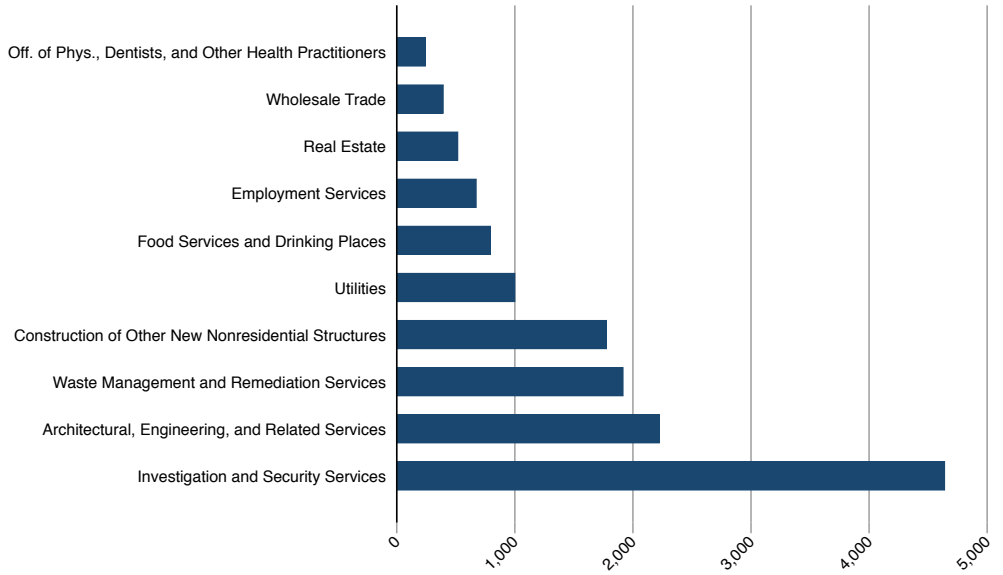
Source: IMPLAN, Calculations by Beacon Economics

Figure B-23: Rest of California, Employment Allocation by Effect (FTE Jobs)



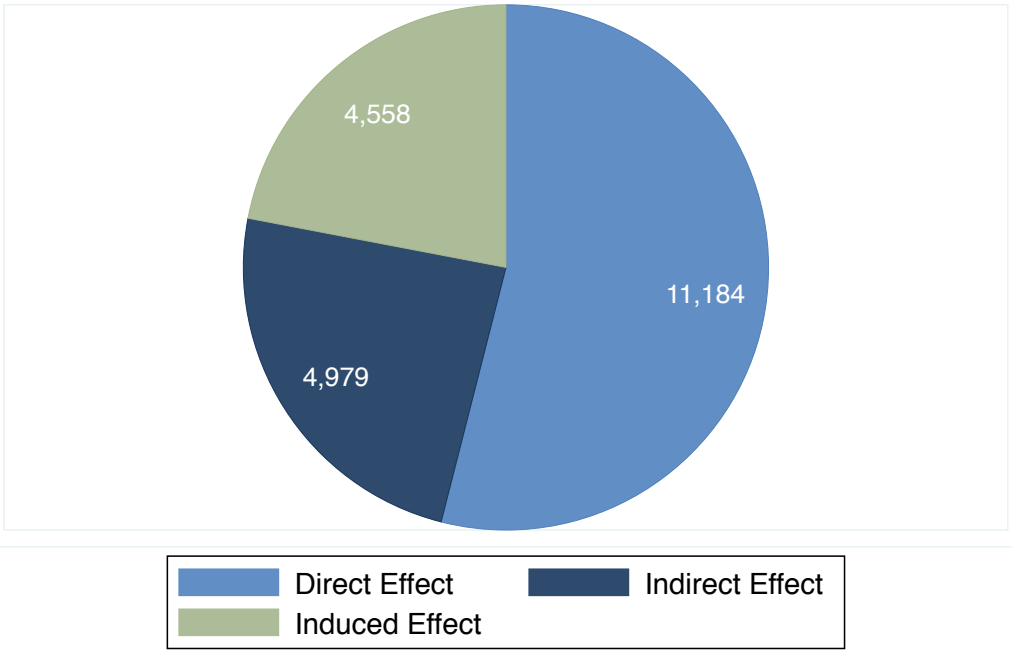
Source: IMPLAN, Calculations by Beacon Economics

Figure B-24: State of California
Top 10 Sectors Impacted (FTE Jobs)



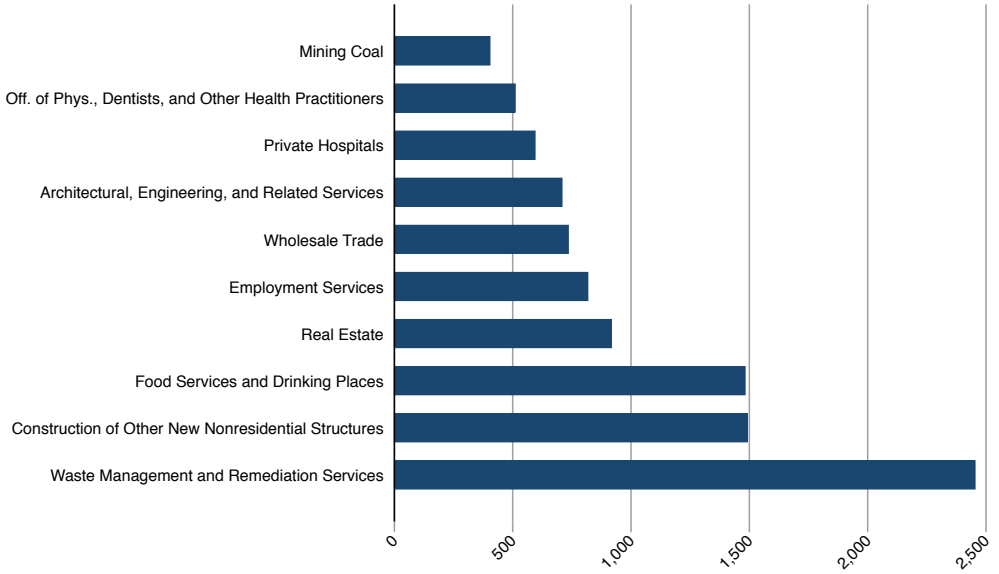
Source: IMPLAN, Calculations by Beacon Economics

Figure B-25: State of California, Employment Allocation by Effect (FTE Jobs)



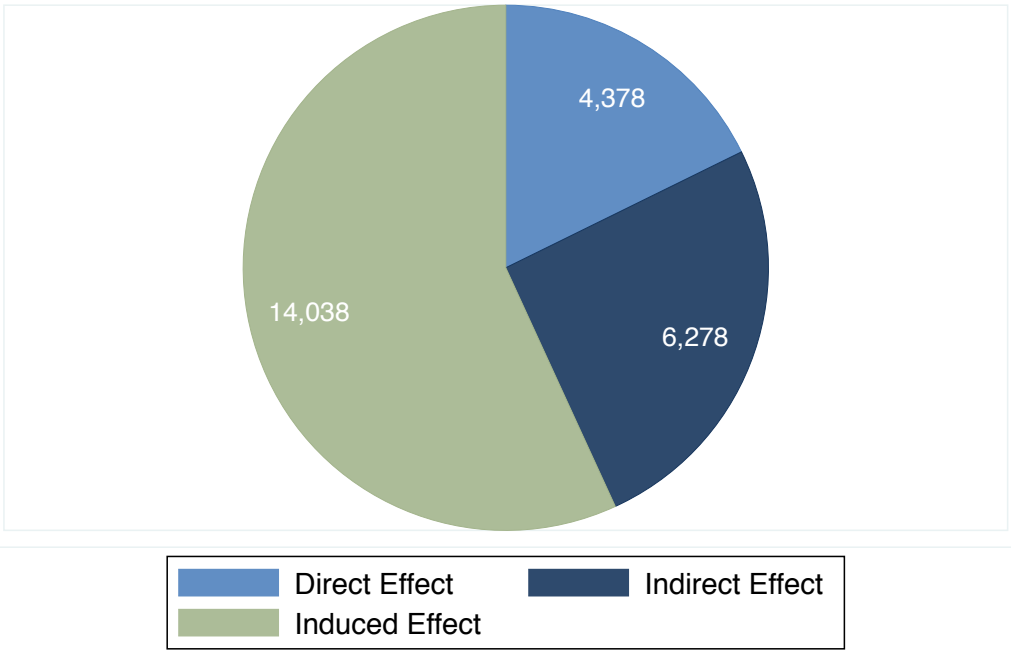
Source: IMPLAN, Calculations by Beacon Economics

Figure B-26: Outside of California
Top 10 Sectors Impacted (FTE Jobs)



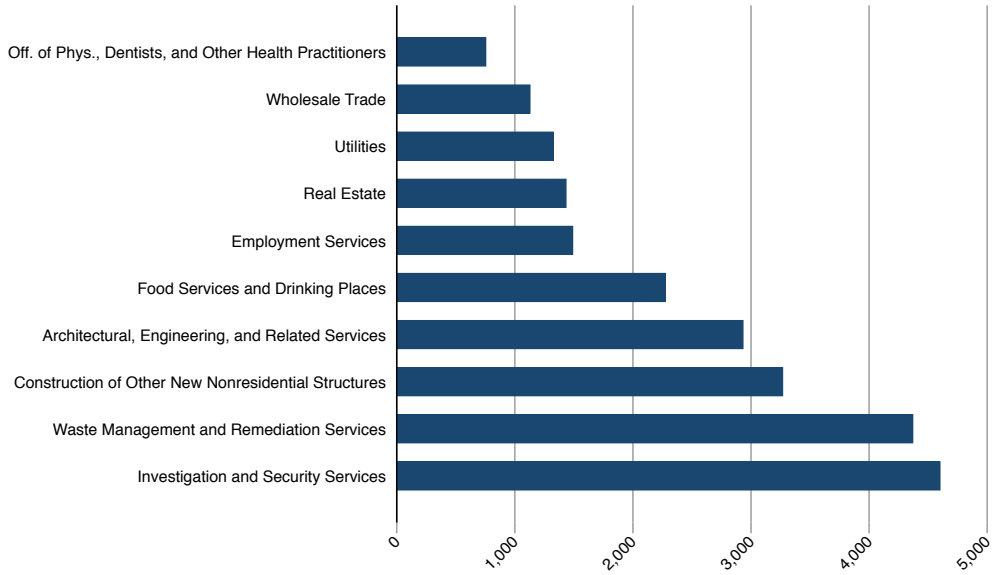
Source: IMPLAN, Calculations by Beacon Economics

Figure B-27: Outside of California, Employment Allocation by Effect (FTE Jobs)



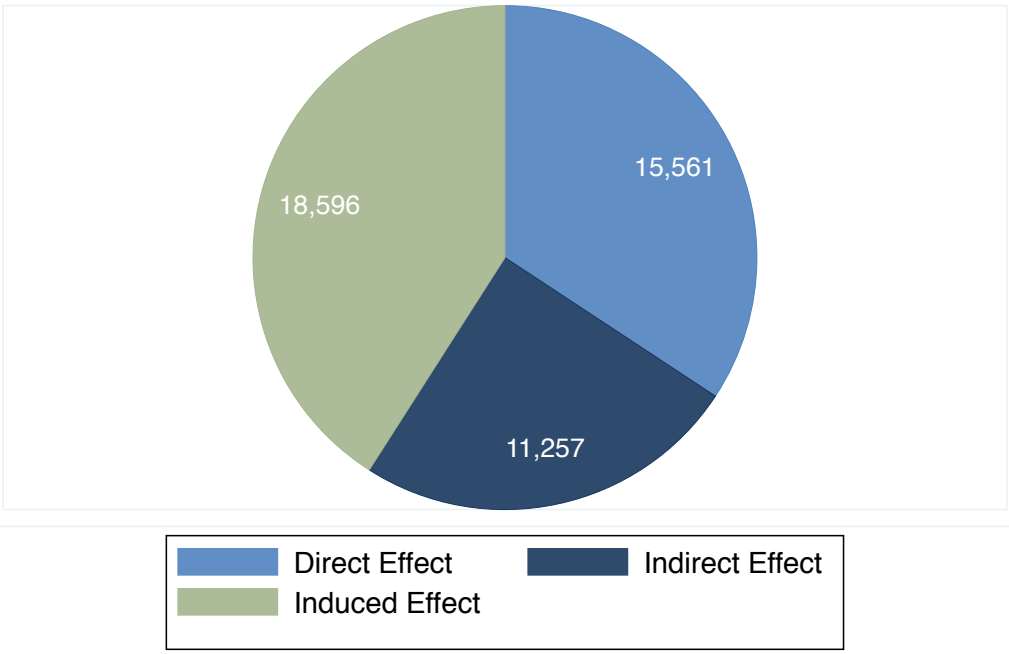
Source: IMPLAN, Calculations by Beacon Economics

Figure B-28: United States
Top 10 Sectors Impacted (FTE Jobs)



Source: IMPLAN, Calculations by Beacon Economics

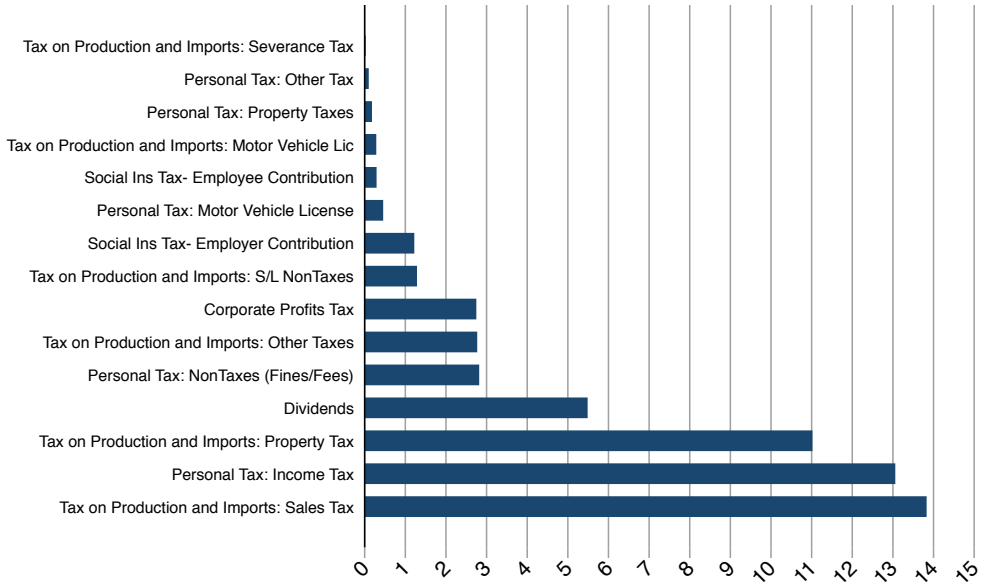
Figure B-29: United States, Employment Allocation by Effect (FTE Jobs)



Source: IMPLAN, Calculations by Beacon Economics

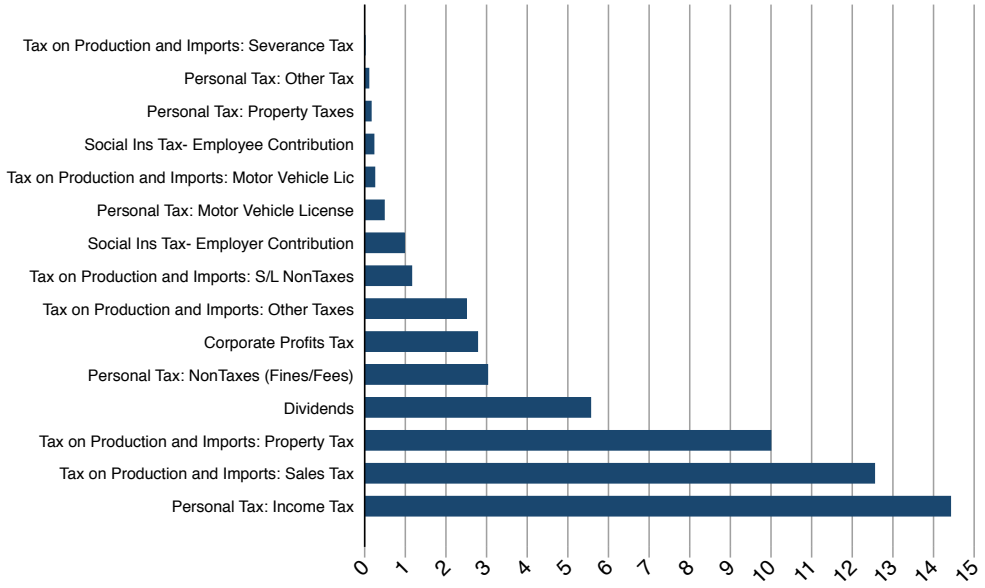
Tax Revenues

Figure B-30: San Diego County
State and Local Tax Revenues ($ Millions)



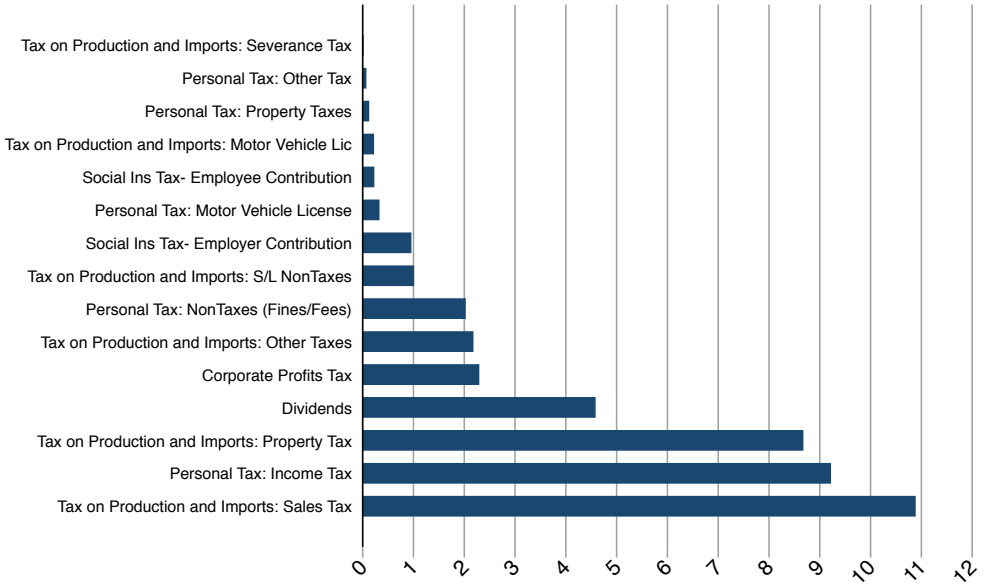
Source: IMPLAN, Calculations by Beacon Economics

Figure B-31: Orange County
State and Local Tax Revenues ($ Millions)



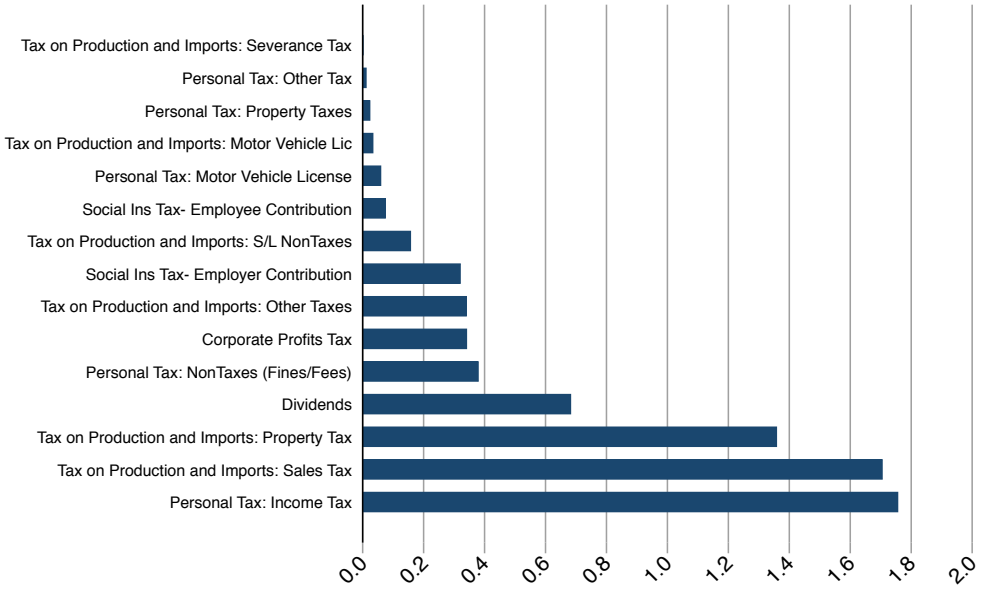
Source: IMPLAN, Calculations by Beacon Economics

Figure B-32: Los Angeles County
State and Local Tax Revenues ($ Millions)



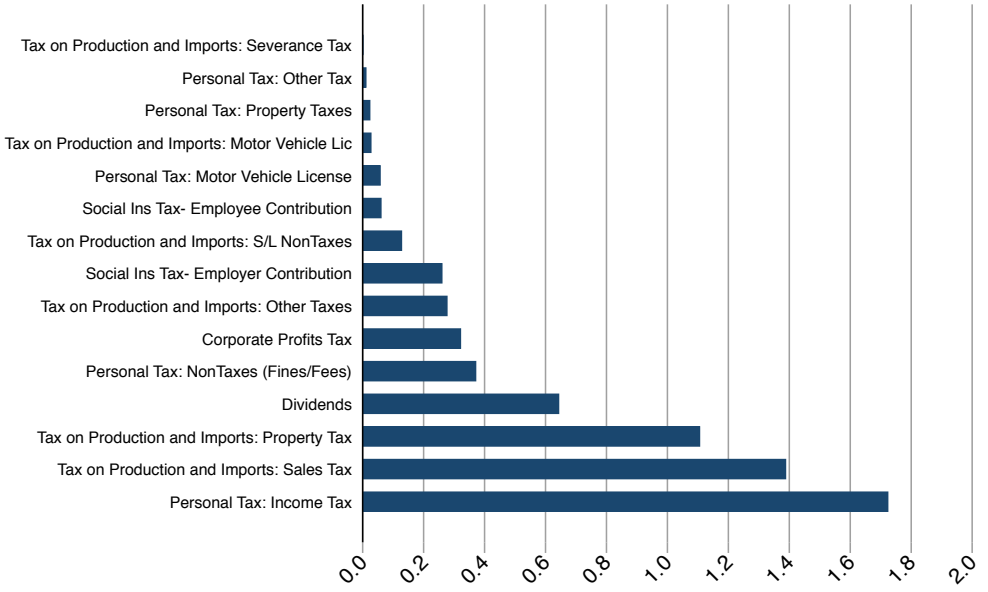
Source: IMPLAN, Calculations by Beacon Economics

Figure B-33: Riverside County
State and Local Tax Revenues ($ Millions)



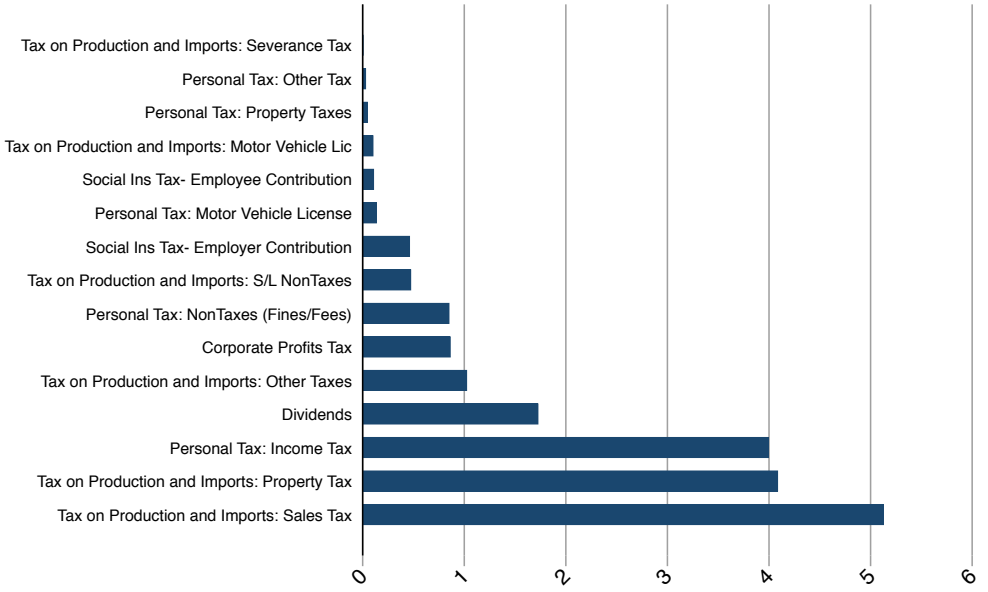
Source: IMPLAN, Calculations by Beacon Economics

Figure B-34: San Bernardino County State and Local Tax Revenues ($ Millions)



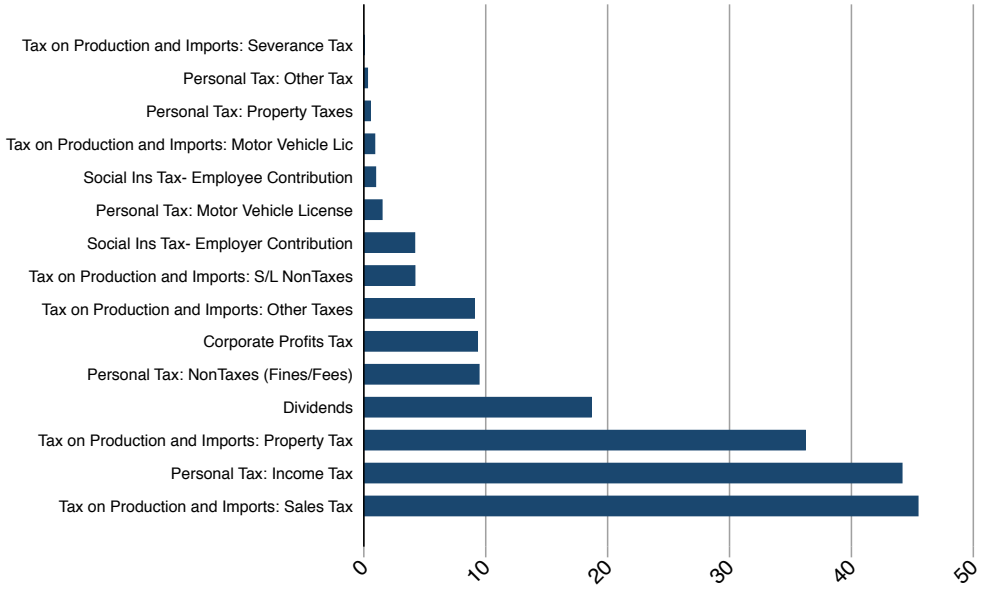
Source: IMPLAN, Calculations by Beacon Economics

Figure B-35: Rest of California State and Local Tax Revenues ($ Millions)



Source: IMPLAN, Calculations by Beacon Economics

Figure B-36: State of California
State and Local Tax Revenues ($ Millions)



Source: IMPLAN, Calculations by Beacon Economics