

# The Economic Benefits of Housing in California

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## Executive Summary

New housing construction is one of the most visible and widely dispersed industries in California. Taking into account the full range of economic impacts, new housing construction contributes over \$20.7 billion per year to the California economy and supports nearly 123,000 jobs statewide on an annual basis, based on 2011 new housing unit permit numbers. Almost one-half of the economic output (about \$9.6 billion) is directly the result of new housing construction. The balance (nearly \$11.1 billion) is generated by those sectors which supply goods and services to the residential construction industry as well as the spending activities of the employees of the construction industry and its supplier sectors. Every dollar spent on new housing construction in California generates another \$1.20 in total economic activity, while each job created through residential construction supports an additional 1.4 jobs.

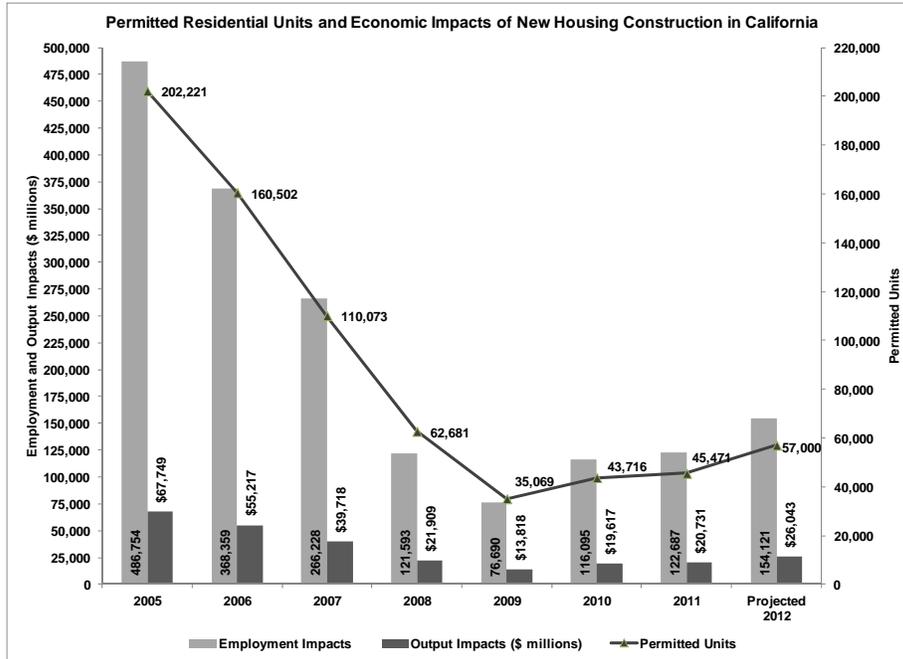
### New housing construction:

- Contributes over \$20.7 billion to the California economy
- Supports over 122,000 jobs per year
- Constitutes 0.3 percent of the state's output

New housing construction is an important industry for the state's economy, accounting for 0.3 percent of California's total output and ranking among the top 15 percent of all industries. While new housing construction remains a key contributor to the California economy, its potential economic benefits are much greater. According to the California Department of Housing and Community Development, the expected population growth and household formation in California demands housing unit production levels around 220,000 per annum. New housing construction has lagged behind the estimated demand since the late 1990s and permit levels have fallen well short in recent years. An annual production level closer to the statewide need would significantly increase the economic benefits of new housing construction in California.

With a drop in residential permit activity of close to 78 percent between 2005 and 2011, the economic benefits of new housing construction in California have decreased considerably. In 2005, a period around the most recent peak, permit levels topped 202,000 units, generating an economic impact of over \$67.7 billion and nearly 487,000 jobs. At that time, building levels were much closer to the anticipated annual demand and the full range of economic benefits of new housing construction accounted for close to three percent of the state's total output. Housing construction declined each year from 2005 until bottoming out in 2009 at \$13.8 billion of output and 76,000 jobs. The number of building permits issued increased in the years 2010 and 2011 which led to greater total employment and output impacts. From 2009 to 2011, output and employment impacts increased about 50 percent and 60 percent, respectively. Thus, while the economic downturn has had a dramatic effect on the contributions of new housing construction over the last few years, the current trend suggests that with the increase in building activity, 2012 impacts could potentially reach over 154,000 jobs and \$26 billion of output. However, the forecast for 2012 still shows new housing activity well below the long-term average. Overall, the declines in new housing construction's contribution to the state's economy are considerable and the impacts affect a wide range of linked sectors.

## EXECUTIVE SUMMARY



In all of the state’s counties, new housing construction is an important economic contributor with total output benefits capturing a notable portion of overall output. Los Angeles, San Diego, and Orange Counties have seen the greatest economic benefits from new housing construction, based on 2011 new housing unit construction data each with total impacts measuring between around \$1.4 and \$4 billion of output and 8,000 and 25,000 jobs.

**The entire housing industry:**

- Generates close to \$328.5 billion of output
- Supports about 922,000 jobs
- Accounts for 10 percent of all economic activity in California

The larger picture of the housing industry’s influence in California includes not only the construction of new housing units, but also a wide range of related activities such as remodeling, repair, brokerage, property management, and financing. Accounting for all facets of the housing industry shows that it generates over \$328.5 billion of output and supports about 922,000 jobs throughout the

state. Around 10 percent of California’s total economic output is encompassed within the entire housing industry, ranking it first among the state’s leading industries in terms of output. Even when accounting for the front end of the housing downturn, the industry’s output places ahead of some of the state’s most notable sectors including Wholesale & Retail Trade; Finance and Insurance; and Professional, Scientific, & Technical Services.

The entire housing industry creates a notable contribution to all of the state’s counties. The economic benefits of the housing industry are highest in California’s largest and most mature counties where the accumulation of housing assets over many years, along with ongoing construction, has resulted in a large inventory with high value. The highest levels of output fall within Los Angeles, Orange, and San Diego Counties where the housing industry encompasses between about \$30.7 and \$82.4 billion of output and 91,000 and 228,000 jobs.

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## Introduction

The housing industry is one of California's most visible and far-reaching industries. On the most basic level, the state's housing stock provides shelter for its current and future residents and offers a variety of real estate ownership and investment options, while construction of new housing units supports jobs and expands the housing stock. The general public typically recognizes these basic benefits, but the full economic impacts of new housing construction and the housing industry in its entirety are not readily apparent. The complete influence of housing in the California economy includes not only the construction of new single- and multi-family units, but also a wide range of related activities such as remodeling, repair, brokerage, property management, and financing. Despite the recent downturn in the housing market, the industry is still an important sector and contributor to the state's economy.

## Study Background

In order to fully understand and keep track of the economic benefits of California's housing industry, the California Homebuilding Foundation commissioned the Center for Strategic Economic Research (CSER), formerly known as the Sacramento Regional Research Institute (SRRI), to generate a fifth update to the 2003 report also titled *The Economic Benefits of Housing in California*.

This study is designed to provide an economic perspective of the housing industry on California's economy and its individual counties. The report presents two views of the importance of housing in terms of economic activity and job creation:

1. The full range of economic impacts of new housing construction, including the support industries and consumption expenditures, which are generated through the multiplier or "ripple" effect.
2. The greater importance of the entire housing industry, broadly defined, to include residential real estate and financing, maintenance and repair, additions and alterations, construction, homeowner expenditures, property management, and all other aspects of the entire stock of owner- and renter-occupied housing.

This report employs similar methodology as the 2008 and 2010 updates and analyzes the most recent residential construction data for 2010 and 2011 by means of the newest database and structural matrices for the econometric model utilized to calculate economic impacts. This update continues to demonstrate the effects of the housing downturn and provide a more comprehensive accounting of county-level activities. At the statewide level, this update examines forecasts for 2012 from the Construction Industry Research Board (CIRB) *California Construction Review* report series and provides historical information on new housing construction back to 2005.

The report is presented in two main sections. The first section examines the economic contributions of California's housing industry including new housing construction and the broader housing industry. This section also touches on the untapped potential of residential construction based on projected demand. The second section analyzes the economic contributions of new housing construction and the entire housing industry within the state's 58 counties. In addition to the two main sections, three appendices are provided—Appendix A presents detailed sector impacts of new housing construction, Appendix B shows sub-sector detail for California's leading industries, and Appendix C shows a map of the county population distribution in the state.

### Research Methodology

Data for residential permit activity in 2010 and 2011 were gathered from the U.S. Census Bureau Building Permit series, which covers privately-owned housing units authorized by building permit for new residential construction. Information on the number of single- and multi-family buildings and units are available in this series along with valuation, which is an estimate of the cost of construction including materials, labor, profit, architecture/engineering, and other overhead costs. CIRB provides 2012 forecasts for similar measures in the *California Construction Review*—the May 2012 version was used in this analysis. Construction valuation was used as the primary determinant of the direct impacts of new housing construction.

The IMPLAN input-output model was used to further define the direct impacts of new housing construction as well as the indirect and induced impacts. This model is widely used in economic analysis to estimate multiplier effects and quantify the full range of economic impacts. Input-output models, including IMPLAN, evaluate the effects of industries on each other based on final demand for goods and services. Most typical measures of economic activity examine only the total output or employment of an industry or the amount of final consumption demand provided by a given industry. The use of an input-output model provides a much more comprehensive view of the inter-related economic impacts. Specifically, new housing construction directly creates output and employment throughout California's economy; however, the economic benefits do not end with these general construction activities. The multiplier or "ripple" effect generates further benefits through the purchase of goods and services in addition to employee consumption activities.

The full range of economic impacts produced by new housing construction includes direct, indirect, and induced benefits.

- *Direct Benefits* consist of economic activity related exclusively to new housing construction. This includes all employees who work for homebuilders and all expenditures made by those companies in the state. These are often the most visible and recognizable activities of new housing construction.

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- *Indirect Benefits* define the creation of additional economic activity that results from linked businesses, suppliers of goods and services, and provision of operating inputs. Examples of indirect activity include wholesale trade where builders purchase lumber, roofing, electrical, and plumbing materials; motor freight services that deliver materials to the wholesaler and construction sites; and engineering and architectural services which participate in the design and planning of housing units and subdivisions.
- *Induced Benefits* measure the consumption expenditures of direct and indirect sector employees. Examples of induced benefits include employees' expenditures on items such as retail purchases, housing, medical services, banking, and insurance.

These benefits also illustrate the multiplier effect that quantifies the incremental indirect and induced impact of each additional direct job or dollar of output related to new housing construction within the state.

In this analysis, the total direct, indirect, and induced benefits are presented in two ways:

- *Employment* demonstrates the number of jobs generated on an annual basis.
- *Output* accounts for total revenues including all sources of income; the total value of production generated by an industry for a given time period; or the total value of contributions to the overall supply of a specific service or creation of a good. This is the best overall measure of business and economic activity because it is the measure most establishments use to determine current activity levels.

All economic activities within the IMPLAN model contain data on study area employment and output (value of production) among many other factors. This background information was used to derive output per employee ratios for the residential construction industry. The IMPLAN model was then used to quantify the indirect and induced effects of the construction valuation and related jobs. Models for the state and each county were created and calibrated using 2010 data parameters and imports and leakages were accounted for using study area boundaries and regional purchasing coefficients. For the county-level analysis, each county's individual economic attributes (productivity, structure, output, etc.) are captured in the modeling with limited comparisons and linkages to other counties. As such, housing's economic activities and related relationships stop at each county's border. Depending on the related attributes, larger areas like a metropolitan statistical area or state capture other interrelated economic activity. This occurrence contributes to discrepancies between the sum of all 58 counties' economic impacts and the total statewide impacts. While the analysis of the economic impacts associated with new housing construction in this update is based on IMPLAN's 2010 snapshot of the economy containing unique economic activity, industry structure, and sector relationships, general comparisons are applicable between this report and the previous updates, making allowances for the model differences.

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In order to create an accounting of the entire housing industry, employment and output data for detailed economic activities from the most recent IMPLAN were allocated into broad categories based on similarity of activities as well as reviews of construction, brokerage, and labor market data. One particular area of interest in this analysis was the Real Estate sector, which captures both residential and non-residential activity. In order to disaggregate this sector and allocate the residential portion to the housing industry, CSER reviewed detailed employment data, major real estate brokerage activities, and residential and commercial valuation measures. This review showed that, on average at the statewide level, 70 percent of the Real Estate sector's employment and output is focused on residential property transactions, management, and leasing while the remaining 30 percent is related to commercial property. A similar approach was employed for all 58 counties in the state (focusing on the average mix from 2001-2010)—a more complete set of information was generally available for the larger counties while only a few data points were used for the smaller counties. This estimation methodology creates the small variation between the sum of the entire housing industry in all counties and the statewide total. It is important to note that the Real Estate sector was not included in the county-level estimates for the entire housing industry presented in earlier reports, which eliminates the ability to compare across updates.

By taking into account the multiplier effect, direct, indirect, and induced benefits, and other housing-related activities, this study provides a measurement of the full range of economic impacts and offers insight into how the housing sector, beginning with new housing construction, produces a wide range of economic benefits to the California economy.

## Economic Contributions of California's Housing Industry

The housing industry, one of California's largest and important industries, is comprised of activities related to new home construction, remodeling, repair, brokerage, property management, and financing. A detailed look at the impacts of new housing construction and a discussion on the untapped potential of residential construction will be provided within this section, followed by an examination of the broader housing industry's economic contributions to California.

### New Housing Construction

According to the United States Census Bureau residential building permit data, as shown in Figure 1 (on the following page), authorization was provided for about 44,000 and 45,000 new privately-owned housing units throughout California in 2010 and 2011, respectively. Construction Industry Research Board (CIRB) forecasts for 2012 reflect an uptick to 57,000 permitted in the state. Single-family units accounted for approximately 59 percent of the permits granted in 2010 with the remaining 41 percent for multi-family construction. In 2011, the proportion shifted by 11 percent with 48 percent of permits for single-family units and 52 percent issued for multi-family units. The 2012 forecast shows a slight decrease in the percentage of single-family units, as the percentage of single-family units is projected to be 45 percent. Construction costs for the housing units permitted amounted to around \$9.1 billion in 2010 and \$9.6 billion in 2011—these costs account for labor, materials, profits, and other related expenses. This equates to an average construction valuation per unit of nearly \$209,000 in 2010 and \$212,000 in 2011. Valuation is forecast at over \$12.1 billion for 2012 with an average cost per unit to remain relatively consistent at approximately \$212,000.

In general, permits activity in California has dropped off substantially with the housing market downturn and ongoing recession. In 2005, around the most recent peak, permits were issued for over 200,000 units and construction costs were valued at approximately \$37 billion. However, while the most current levels remain well below the recent peak period and less than half the state's long-term annual average, the current levels do suggest a trend of slow recovery as the past two years saw increases in the number of permitted units. There was a 25 percent increase in the number of permitted units and 2011 saw a year over year increase of approximately 4 percent. Permitted units are forecast to increase 25 percent in 2012.

**FIGURE 1**  
**RESIDENTIAL BUILDING**  
**PERMITS IN CALIFORNIA**  
**(VALUATION IN THOUSANDS)**

| <i>Year</i>    | <i>Units</i> | <i>Valuation</i> |
|----------------|--------------|------------------|
| Projected 2012 | 57,000       | \$12,108,000     |
| 2011           | 45,471       | \$9,638,517      |
| 2010           | 43,716       | \$9,120,591      |
| 2009           | 35,069       | \$7,758,484      |
| 2008           | 62,681       | \$12,301,095     |
| 2007           | 110,073      | \$21,335,308     |
| 2006           | 160,502      | \$29,614,392     |
| 2005           | 202,221      | \$37,158,906     |

Center for Strategic Economic Research, June 2012  
 Data Source: U.S. Census Bureau and Construction  
 Industry Research Board

The benefits of new residential construction to the state's economy do not end with those activities directly related to building housing units. New housing construction produces a ripple effect in California's economy as a result of the linkages that occur between construction activities, suppliers of goods and services, and employee spending. As shown in Figure 2 (on the following page), overall, based on 2011 values, the economic benefits of new housing construction in California equate to over \$20.7 billion of output and close to 123,000 jobs on an annual basis. These total economic impacts are a result of the following three effects: 1) new housing construction *directly* provides about \$9.6 billion of output and 50,000 jobs to the state's economy, 2) housing construction *indirectly* supports nearly \$4.9 billion of output and 31,000 employees through its demand on suppliers of goods and services, and 3) spending activities of those employed directly and indirectly through new home construction generate an *induced* impact of approximately \$6.2 billion of output and 42,000 jobs.

As residential permit levels have dropped since the recent peak, the economic benefits of new housing construction have also decreased substantially. In 2005, economic impacts of residential construction reached nearly \$68 billion of output and 487,000 jobs—economic benefits have fallen every year following before bottoming out in 2009 with output impacts at about 20 percent of the 2005 level and employment impacts falling to close to 16 percent of this value. However, from 2009 to 2010 output and employment impact levels increased by 42 percent and 51 percent, respectively, then increased again in 2011, and is forecast to increase further in 2012 to impacts that could potentially reach over 154,000 jobs and \$26 billion of output. In terms of contribution to the state's

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economy, the full range of economic activities associated with the construction of new privately-owned housing units has dropped from nearly three percent of California's total output in 2005 to about 0.3 percent of state output in 2011. Nonetheless, at over \$20.7 billion, the 2011 contribution is still a notable value for one specific economic activity in the state, ranking among the top 15 percent of sectors in California in terms of output.

**FIGURE 2**  
**TOTAL ECONOMIC IMPACTS OF NEW**  
**HOUSING CONSTRUCTION IN CALIFORNIA**  
**(OUTPUT IN THOUSANDS)**

| <i>Year/Impact</i>        | <i>Direct</i> | <i>Indirect</i> | <i>Induced</i> | <i>Total</i> | <i>Yr. % Change</i> |
|---------------------------|---------------|-----------------|----------------|--------------|---------------------|
| Projected 2012 Employment | 63,330        | 38,399          | 52,393         | 154,121      | 25.6%               |
| Projected 2012 Output     | \$12,108,000  | \$6,153,836     | \$7,781,227    | \$26,043,062 | 25.6%               |
| 2011 Employment           | 50,413        | 30,567          | 41,707         | 122,687      | 5.7%                |
| 2011 Output               | \$9,638,517   | \$4,898,731     | \$6,194,209    | \$20,731,456 | 5.7%                |
| 2010 Employment           | 47,704        | 28,925          | 39,466         | 116,095      | 51.4%               |
| 2010 Output               | \$9,120,591   | \$4,635,498     | \$5,861,361    | \$19,617,450 | 42.0%               |
| 2009 Employment           | 35,041        | 23,484          | 18,164         | 76,690       | -36.9%              |
| 2009 Output               | \$7,758,484   | \$3,442,435     | \$2,617,364    | \$13,818,284 | -36.9%              |
| 2008 Employment           | 55,558        | 37,236          | 28,799         | 121,593      | -54.3%              |
| 2008 Output               | \$12,301,095  | \$5,457,990     | \$4,149,837    | \$21,908,922 | -44.8%              |
| 2007 Employment           | 130,556       | 63,084          | 72,588         | 266,228      | -27.7%              |
| 2007 Output               | \$21,335,308  | \$8,537,544     | \$9,845,384    | \$39,718,236 | -28.1%              |
| 2006 Employment           | 179,294       | 88,717          | 100,348        | 368,359      | -24.3%              |
| 2006 Output               | \$29,614,392  | \$11,992,084    | \$13,610,057   | \$55,216,532 | -18.5%              |
| 2005 Employment           | 219,884       | 129,360         | 137,510        | 486,754      | 3.0%                |
| 2005 Output               | \$37,158,906  | \$15,115,100    | \$15,475,289   | \$67,749,296 | 3.0%                |

Center for Strategic Economic Research, June 2012

Data Source: IMPLAN, years 2010-2012 based on 2010 Coefficients, years 2008-2009 based on 2007 Coefficients, years 2006-2007 based on 2006 Coefficients, year 2005 based on 2003 Coefficients, United State Census Bureau, Construction Industry Research Board

Note: Differences due to rounding.

The multiplier effect of new housing construction shows that, on average, for each additional dollar of construction valuation, the state will see another \$1.20 of output and for every employee created directly as a result of constructing new housing units, California will gain another 1.4 jobs through indirect and induced activity. The economic multiplier effect pertaining to output did shift significantly in 2010 and 2011 from its previous yearly average of approximately \$0.80. Total economic impacts of new housing construction have varied on an annual basis mainly as a result of residential permit levels, the mix of single- and multi-family units authorized, and the associated construction costs. In both the peak and current downturn periods, California's economy has been able to internalize construction activity as well as a notable amount of supplier activities and worker spending.

Figure 3 (on the following page) illustrates, that in addition to housing construction activities, the Wholesale Trade; Monetary Authorities & Depository Credit Intermediation Activities; and Architectural, Engineering, & Related Services sectors benefit the most from the total output impacts created through new housing construction (based on the 2011 economic impact values). The largest indirect output gains are concentrated in the Architectural, Engineering, & Related Services; Wholesale Trade; and Petroleum Refineries sectors as a result of their role as linked and service-providing sectors. Aside from the owner-occupied dwelling activities (capturing the expenses of homeownership), the Real Estate Establishments; Food Services & Drinking Places; and Offices of Physicians, Dentists, & Other Health Practitioners see the greatest induced impacts due to the direct and indirect employees' spending within these sectors. Appendix A provides additional details on the output impacts of new housing construction on the full range of sectors within California's economy.

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**FIGURE 3**  
**DETAILED OUTPUT IMPACTS OF NEW HOUSING CONSTRUCTION IN CALIFORNIA (IN THOUSANDS)**

| Sector   | Direct      | Indirect  | Induced   | Total       |
|--|-------------|-----------|-----------|-------------|
| Construction of new residential permanent site single- and multi-family structures | \$9,638,517 | -         | -         | \$9,638,517 |
| Imputed rental activity for owner-occupied dwellings                               | -           | -         | \$645,386 | \$645,386   |
| Real estate establishments   | -           | \$153,254 | \$361,683 | \$514,938   |
| Wholesale trade businesses   | -           | \$260,765 | \$241,016 | \$501,781   |
| Monetary authorities and depository credit intermediation activities               | -           | \$154,250 | \$209,825 | \$364,074   |
| Architectural, engineering, and related services                                   | -           | \$308,592 | \$18,450  | \$327,043   |
| Petroleum refineries   | -           | \$189,591 | \$135,260 | \$324,851   |
| Food services and drinking places  | -           | \$42,878  | \$270,678 | \$313,556   |
| Telecommunications   | -           | \$147,053 | \$145,693 | \$292,746   |
| Offices of physicians, dentists, and other health practitioners                    | -           | -         | \$267,380 | \$267,380   |
| Securities, commodity contracts, investments, and related activities               | -           | \$70,279  | \$182,477 | \$252,756   |
| Private hospitals  | -           | \$1       | \$232,058 | \$232,059   |
| Transport by truck   | -           | \$183,365 | \$44,050  | \$227,415   |
| Nondepository credit intermediation and related activities                         | -           | \$60,178  | \$161,919 | \$222,097   |
| Legal services   | -           | \$120,923 | \$93,177  | \$214,101   |
| Ready-mix concrete manufacturing   | -           | \$183,697 | \$1,207   | \$184,904   |
| Retail Stores - Motor vehicle and parts  | -           | \$111,810 | \$72,751  | \$184,561   |
| Insurance carriers   | -           | \$26,265  | \$156,724 | \$182,989   |
| Retail Stores - Food and beverage  | -           | \$82,930  | \$90,465  | \$173,395   |
| Retail Stores - General merchandise  | -           | \$64,983  | \$71,371  | \$136,354   |
| Accounting, tax preparation, bookkeeping, and payroll services                     | -           | \$84,957  | \$41,723  | \$126,679   |
| Management of companies and enterprises  | -           | \$65,644  | \$54,444  | \$120,088   |
| Services to buildings and dwellings  | -           | \$60,154  | \$42,662  | \$102,816   |
| Medical and diagnostic labs and outpatient and other ambulatory care services      | -           | \$30      | \$101,843 | \$101,873   |
| Ornamental and architectural metal products manufacturing                          | -           | \$99,395  | \$2,207   | \$101,603   |
| Retail Stores - Building material and garden supply                                | -           | \$67,432  | \$30,840  | \$98,272    |
| Other state and local government enterprises                                       | -           | \$15,053  | \$79,823  | \$94,876    |
| Pharmaceutical preparation manufacturing   | -           | \$148     | \$90,061  | \$90,208    |
| Employment services  | -           | \$51,216  | \$34,620  | \$85,836    |
| Retail Stores - Clothing and clothing accessories                                  | -           | \$38,521  | \$45,845  | \$84,367    |
| Civic, social, professional, and similar organizations                             | -           | \$35,423  | \$45,778  | \$81,201    |
| Retail Stores - Health and personal care   | -           | \$38,985  | \$41,742  | \$80,727    |
| Electric power generation, transmission, and distribution                          | -           | \$31,182  | \$47,670  | \$78,852    |
| Retail Nonstores - Direct and electronic sales                                     | -           | \$32,498  | \$44,162  | \$76,660    |
| Automotive repair and maintenance, except car washes                               | -           | \$34,355  | \$40,639  | \$74,994    |
| Management, scientific, and technical consulting services                          | -           | \$37,410  | \$36,416  | \$73,825    |
| Natural gas distribution   | -           | \$31,343  | \$40,703  | \$72,046    |
| Funds, trusts, and other financial vehicles  | -           | \$1,636   | \$69,054  | \$70,690    |
| Retail Stores - Miscellaneous  | -           | \$33,046  | \$37,637  | \$70,684    |
| Maintenance and repair construction of nonresidential structures                   | -           | \$35,953  | \$34,035  | \$69,988    |
| Insurance agencies, brokerages, and related activities                             | -           | \$13,714  | \$53,296  | \$67,011    |
| Retail Stores - Gasoline stations  | -           | \$36,115  | \$30,785  | \$66,900    |
| Advertising and related services   | -           | \$32,082  | \$33,648  | \$65,729    |
| Nursing and residential care facilities  | -           | -         | \$64,817  | \$64,817    |
| All other miscellaneous professional, scientific, and technical services           | -           | \$47,429  | \$17,347  | \$64,776    |
| Wood windows and doors and millwork manufacturing                                  | -           | \$63,062  | \$1,296   | \$64,359    |
| Other plastics product manufacturing   | -           | \$56,877  | \$6,234   | \$63,111    |
| Wood kitchen cabinet and countertop manufacturing                                  | -           | \$58,889  | \$1,489   | \$60,378    |
| Commercial and industrial machinery and equipment rental and leasing               | -           | \$52,393  | \$7,798   | \$60,191    |
| Private junior colleges, colleges, universities, and professional schools          | -           | \$1,303   | \$57,666  | \$58,969    |

Center for Strategic Economic Research, June 2012

Data Source: IMPLAN, 2010 Coefficients based on United States Census Bureau information

Notes: Figure only includes the 50 sectors with the largest total impacts based on the 2011 impact values.  
Differences due to rounding.

As Figure 4 (on the next page) demonstrates, Food Services & Drinking Places; Wholesale Trade; and Food & Beverage Retail Stores are the non-housing-related sectors that capture the largest employment gains in the state resulting from new housing construction (using the 2011 economic impact values). The Architectural, Engineering, & Related Services; Wholesale Trade; and Transport by Truck sectors experience the largest indirect gains because of their linkages to new housing construction activities. Additionally, the Food Services & Drinking Places; Offices of Physicians, Dentists, & Other Health Practitioners; and Real Estate Establishments sectors see the greatest induced benefits, demonstrating the demand for goods and services from these sectors that are generated by spending activity from the direct and indirect employees. Additional sector-level details for new housing construction's employment impacts are provided in Appendix A.

**CALIFORNIA'S HOUSING INDUSTRY**

**FIGURE 4  
DETAILED EMPLOYMENT IMPACTS OF NEW  
HOUSING CONSTRUCTION IN CALIFORNIA**

| <i>Sector</i>  | <i>Direct</i> | <i>Indirect</i> | <i>Induced</i> | <i>Total</i> |
|--|---------------|-----------------|----------------|--------------|
| Construction of new residential permanent site single- and multi-family structures | 50,413        | -               | -              | 50,413       |
| Food services and drinking places  | -             | 675             | 4,263          | 4,938        |
| Wholesale trade businesses   | -             | 1,537           | 1,421          | 2,958        |
| Real estate establishments   | -             | 776             | 1,831          | 2,607        |
| Retail Stores - Food and beverage  | -             | 1,212           | 1,322          | 2,533        |
| Architectural, engineering, and related services                                   | -             | 2,242           | 134            | 2,377        |
| Retail Stores - General merchandise  | -             | 1,058           | 1,162          | 2,219        |
| Offices of physicians, dentists, and other health practitioners                    | -             | -               | 2,113          | 2,113        |
| Securities, commodity contracts, investments, and related activities               | -             | 571             | 1,482          | 2,052        |
| Employment services  | -             | 1,199           | 810            | 2,010        |
| Transport by truck   | -             | 1,475           | 354            | 1,830        |
| Retail Stores - Motor vehicle and parts  | -             | 1,075           | 700            | 1,775        |
| Services to buildings and dwellings  | -             | 897             | 636            | 1,533        |
| Private hospitals  | -             | -               | 1,453          | 1,453        |
| Private household operations   | -             | -               | 1,395          | 1,395        |
| Nondepository credit intermediation and related activities                         | -             | 378             | 1,017          | 1,395        |
| Retail Stores - Clothing and clothing accessories                                  | -             | 601             | 715            | 1,316        |
| Retail Nonstores - Direct and electronic sales                                     | -             | 502             | 682            | 1,183        |
| Retail Stores - Miscellaneous  | -             | 543             | 618            | 1,161        |
| Legal services   | -             | 647             | 499            | 1,146        |
| Retail Stores - Building material and garden supply                                | -             | 774             | 354            | 1,128        |
| Accounting, tax preparation, bookkeeping, and payroll services                     | -             | 705             | 346            | 1,051        |
| Nursing and residential care facilities  | -             | -               | 1,030          | 1,030        |
| Retail Stores - Health and personal care   | -             | 452             | 484            | 936          |
| Civic, social, professional, and similar organizations                             | -             | 382             | 493            | 875          |
| Monetary authorities and depository credit intermediation activities               | -             | 347             | 472            | 819          |
| Individual and family services   | -             | -               | 764            | 764          |
| Automotive repair and maintenance, except car washes                               | -             | 338             | 399            | 737          |
| Ready-mix concrete manufacturing   | -             | 637             | 4              | 641          |
| Retail Stores - Sporting goods, hobby, book and music                              | -             | 283             | 331            | 613          |
| Management of companies and enterprises  | -             | 318             | 264            | 582          |
| Medical and diagnostic labs and outpatient and other ambulatory care services      | -             | -               | 570            | 570          |
| Telecommunications   | -             | 285             | 282            | 567          |
| Other private educational services   | -             | 14              | 545            | 559          |
| Private junior colleges, colleges, universities, and professional schools          | -             | 12              | 530            | 542          |
| Management, scientific, and technical consulting services                          | -             | 272             | 265            | 536          |
| Insurance carriers   | -             | 76              | 451            | 527          |
| Investigation and security services  | -             | 278             | 238            | 516          |
| Ornamental and architectural metal products manufacturing                          | -             | 499             | 11             | 510          |
| Wood kitchen cabinet and countertop manufacturing                                  | -             | 472             | 12             | 484          |
| Insurance agencies, brokerages, and related activities                             | -             | 93              | 363            | 456          |
| Maintenance and repair construction of nonresidential structures                   | -             | 233             | 221            | 454          |
| Private elementary and secondary schools   | -             | -               | 452            | 452          |
| Child day care services  | -             | -               | 441            | 441          |
| Advertising and related services   | -             | 209             | 219            | 428          |
| Retail Stores - Gasoline stations  | -             | 228             | 194            | 422          |
| Personal care services   | -             | -               | 422            | 422          |
| Retail Stores - Electronics and appliances   | -             | 191             | 214            | 406          |
| Retail Stores - Furniture and home furnishings                                     | -             | 170             | 231            | 401          |
| Wood window s and doors and millwork manufacturing                                 | -             | 380             | 8              | 387          |

Center for Strategic Economic Research, June 2012

Data Source: IMPLAN, 2010 Coefficients based on United States Census Bureau information

Notes: Figure only includes the 50 sectors with the largest total impacts based on the 2011 impact values.

Differences due to rounding.

## New Housing Construction's Untapped Potential

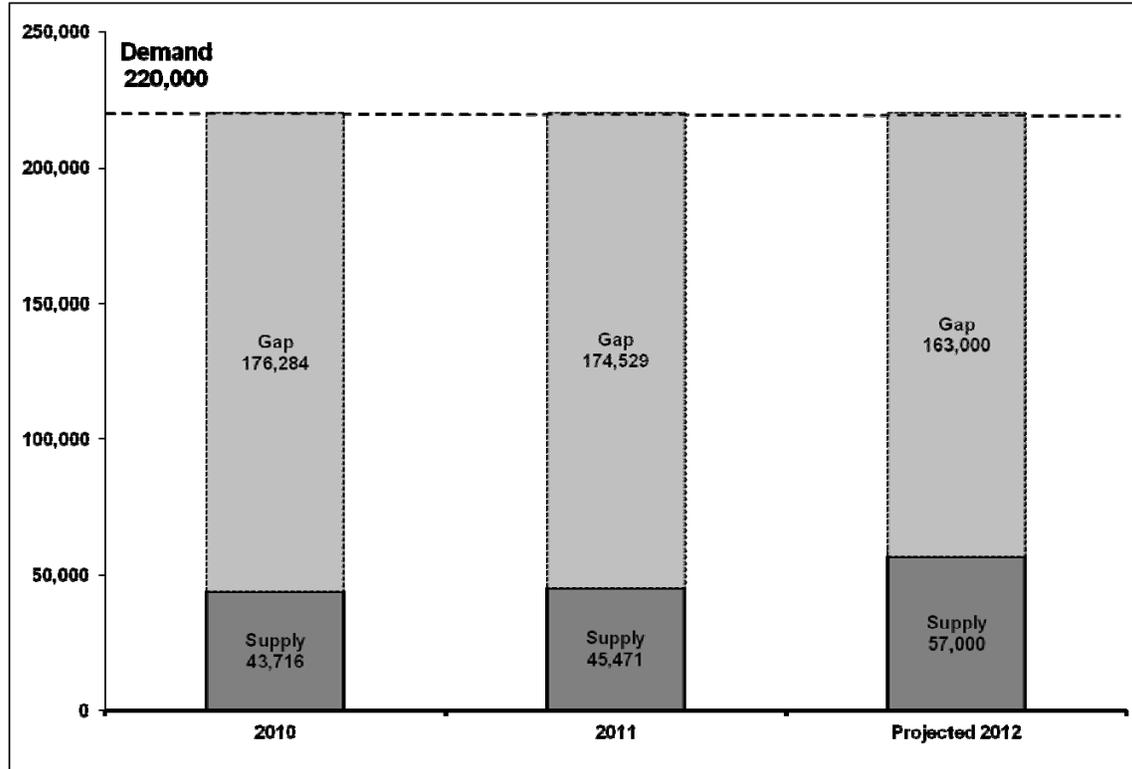
As overall housing production has declined since 2005, the gap between supply and projected demand has expanded in recent years. Based on California Department of Housing and Community Development analysis, California's housing stock would have to expand by 220,000 units every year between 1997 and 2020 to meet the needs of the expected population growth and household formation in the state.<sup>1</sup> The Department's assessment shows that new home construction has been lagging behind the projected demand since the late 1990s. Even with the relatively high production levels seen in 2004 and 2005, the supply of housing did not reach the projected demand. As shown in Figure 5 (on the following page), supply fell short of demand by over 176,000 units in 2010 with the gap shrinking only slightly to about 175,000 in 2011 (only about 21 percent of the projected need was permitted). Permit level forecasts for 2012 expect a difference of 163,000 units between supply and estimated demand.

While the economic downturn has taken the state further off pace, an annual production level closer to the projected demand would significantly increase the economic benefits of new housing construction in California. If the residential permit level in 2011 met the estimated 220,000 housing need, the state would see an incremental increase in the total output impact of another \$79.6 billion and an additional employment impact of over 471,000 jobs. This reflects the difference in economic impact created by the actual 2011 construction of approximately 45,000 units and projected demand. Similarly, if housing construction in 2010 reached the 220,000-unit demand rather than the approximately 44,000 permitted, California would have seen an additional economic benefit of about \$79.1 billion of output and nearly 469,000 jobs including direct, indirect, and induced impacts. The gap in the 2012 permit projection and estimated demand shows a potential incremental economic impact increase of around \$74.5 billion of output and 440,000 jobs if the additional 163,000 demanded units were authorized.

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<sup>1</sup> *Raising the Roof—California Housing Development Projections and Constraints 1997-2020*

FIGURE 5  
HOUSING SUPPLY AND DEMAND



Center for Strategic Economic Research, June 2012

Data Sources: United States Census Bureau and California Department of Housing and Community Development

### Entire Housing Industry

The housing industry's influence in California includes a wide range of activities such as remodeling, repair, brokerage, property management, and financing, in addition to the construction of new housing units. The industry is driven by building and selling housing units as well as activities related directly to home ownership, which tend to increase as the housing stock grows. As described within the Research Methodology section of this report, 70 percent of the Real Estate sector's employment and output is allocated to the housing industry grouping to account for residential real estate activities.

Figure 6 (on the following page) shows that, overall, the housing industry generates over \$328.5 billion in output and supports about 920,000 jobs throughout the state. This reflects a minimal decrease over the previous estimate. There are a few pieces of the industry that kept the sector from shrinking substantially with the housing market downturn and recession. These include general escalations in output values and costs over time (across the activities encompassed in the housing industry and other sectors) as well as increases in the housing stock and associated ownership (leading to a greater aggregate of homeownership costs and linked expenditures).

## CALIFORNIA'S HOUSING INDUSTRY

A comparison of the economic contributions of the housing industry with other leading sectors in the state demonstrates the importance of housing in California's economy. With over 10 percent of total state output, housing is California's leading industry, ranking above some of the state's most recognized industries. The top three industries following housing in the ranking include Wholesale & Retail Trade (\$267 billion of output); Finance and Insurance (\$263.4 billion of output); and Professional, Scientific, & Technical Services (\$242.6 billion of output). Additional sector-level details for California's leading industry groupings are provided in Appendix B.

**FIGURE 6**  
**COMPARISON OF CALIFORNIA'S LEADING INDUSTRIES**  
**(OUTPUT IN THOUSANDS)**

| <i>Leading Industry Sectors</i>                  | <i>Output</i>          | <i>Employment</i> | <i>% of Total<br/>Output</i> |
|--|------------------------|-------------------|------------------------------|
| Housing*   | \$328,549,056          | 922,317           | 10.3%                        |
| Wholesale and Retail Trade                       | \$266,972,904          | 2,585,476         | 8.4%                         |
| Finance and Insurance                            | \$263,423,755          | 1,259,757         | 8.3%                         |
| Professional, Scientific, and Technical Services | \$242,592,580          | 1,745,733         | 7.6%                         |
| State and Local Government                       | \$199,301,271          | 2,218,818         | 6.3%                         |
| Information                                      | \$197,379,561          | 501,719           | 6.2%                         |
| Health Care and Social Assistance                | \$188,602,063          | 1,846,821         | 5.9%                         |
| Computer and Electronic Product Manufacturing    | \$184,607,279          | 256,778           | 5.8%                         |
| Agriculture and Food Processing                  | \$151,882,300          | 599,223           | 4.8%                         |
| Non-Residential Construction*                    | \$141,409,121          | 876,426           | 4.5%                         |
| Leisure and Hospitality                          | \$133,614,707          | 1,883,849         | 4.2%                         |
| Management and Support                           | \$114,711,974          | 1,389,776         | 3.6%                         |
| Other Services                                   | \$85,133,448           | 1,192,029         | 2.7%                         |
| Transportation and Warehousing                   | \$78,478,504           | 622,234           | 2.5%                         |
| Medical Manufacturing                            | \$75,273,761           | 111,668           | 2.4%                         |
| Federal Government                               | \$66,023,196           | 466,420           | 2.1%                         |
| Utilities  | \$55,640,630           | 59,132            | 1.8%                         |
| Transportation Equipment Manufacturing           | \$48,610,304           | 105,357           | 1.5%                         |
| <b>California Total</b>                          | <b>\$3,176,523,531</b> | <b>19,821,474</b> | <b>-</b>                     |

Center for Strategic Economic Research, June 2012

Data Source: CSER estimates based on IMPLAN, 2010 coefficients

\* Housing industry includes an allocation of 70 percent of the Real Estate sector; Non-Residential Real Estate Activities includes 30 percent of the Real Estate sector.

## **County-Level Economic Contributions of the Housing Industry**

Each of California's 58 counties is characterized by unique economic trends and development patterns. The counties range from very small, such as Alpine and Sierra Counties with respective populations of approximately 1,100 to 3,200 people, to very large, in particular, Los Angeles with around 9.8 million residents and San Diego and Orange Counties, each with populations of around 3 million people. Some counties are within metropolitan areas that have been experiencing significant population and related housing gains in the past decade, namely, Riverside-San Bernardino-Ontario, Los Angeles-Long Beach-Glendale, San Diego-Carlsbad-San Marcos, Sacramento-Arden Arcade-Roseville, and Santa Ana-Anaheim-Irvine. Appendix C includes of a map of California and its counties shaded by population size.

This section will cover the impacts of new housing construction within all of California's counties in addition to each county's entire housing industry output and employment.

### **New Housing Construction**

As shown in Figure 7 (on the following page), in both 2010 and 2011, the largest number of residential units permitted and highest construction valuations (based on data from the United States Census Bureau) were generally in the southern portion of the state. Los Angeles, Riverside, San Diego, and Orange counties comprised about 42 percent (2010) and 50 percent (2011) of total units permitted statewide and 45 percent (2010) and 49 percent (2011) of total construction valuation. Counties in Southern California have topped the list of units permitted in the state for a number of years, primarily as a result of market size and regional growth.

COUNTY-LEVEL HOUSING INDUSTRY

**FIGURE 7**  
**RESIDENTIAL BUILDING PERMITS IN**  
**CALIFORNIA'S COUNTIES**  
**(VALUATION IN THOUSANDS)**

| County          | Units |       | Valuation   |             |
|-----------------|-------|-------|-------------|-------------|
|                 | 2010  | 2011  | 2010        | 2011        |
| Alameda         | 922   | 862   | \$397,633   | \$516,026   |
| Alpine          | 4     | 3     | \$1,237     | \$1,625     |
| Amador          | 29    | 80    | \$4,114     | \$11,316    |
| Butte           | 512   | 240   | \$61,182    | \$42,692    |
| Calaveras       | 45    | 29    | \$13,648    | \$8,640     |
| Colusa          | 19    | 14    | \$5,004     | \$2,849     |
| Contra Costa    | 1,676 | 861   | \$304,359   | \$191,488   |
| Del Norte       | 29    | 89    | \$6,419     | \$10,257    |
| El Dorado       | 120   | 141   | \$47,090    | \$54,457    |
| Fresno          | 2,248 | 1,622 | \$398,560   | \$278,260   |
| Glenn           | 45    | 26    | \$7,348     | \$4,662     |
| Humboldt        | 191   | 263   | \$23,379    | \$29,410    |
| Imperial        | 102   | 257   | \$17,870    | \$37,648    |
| Inyo            | 8     | 6     | \$2,177     | \$2,901     |
| Kern            | 1,656 | 969   | \$256,977   | \$150,696   |
| Kings           | 265   | 222   | \$39,838    | \$28,528    |
| Lake            | 46    | 43    | \$8,943     | \$7,104     |
| Lassen          | 13    | 21    | \$2,352     | \$3,886     |
| Los Angeles     | 7,260 | 9,895 | \$1,689,660 | \$2,177,034 |
| Madera          | 192   | 291   | \$24,379    | \$31,281    |
| Marin           | 186   | 181   | \$64,281    | \$57,542    |
| Mariposa        | 45    | 28    | \$9,917     | \$6,571     |
| Mendocino       | 157   | 106   | \$21,586    | \$13,054    |
| Merced          | 106   | 157   | \$22,930    | \$29,805    |
| Modoc           | 16    | 11    | \$1,968     | \$1,809     |
| Mono            | 22    | 15    | \$9,771     | \$5,916     |
| Monterey        | 279   | 156   | \$67,126    | \$38,140    |
| Napa            | 110   | 154   | \$61,077    | \$55,850    |
| Nevada          | 142   | 91    | \$24,324    | \$22,201    |
| Orange          | 3,134 | 4,352 | \$691,582   | \$820,241   |
| Placer          | 1,166 | 812   | \$299,008   | \$236,223   |
| Plumas          | 35    | 42    | \$5,891     | \$6,524     |
| Riverside       | 4,547 | 3,264 | \$947,867   | \$650,619   |
| Sacramento      | 1,162 | 1,286 | \$225,023   | \$250,737   |
| San Benito      | 47    | 32    | \$10,071    | \$9,030     |
| San Bernardino  | 1,789 | 1,472 | \$282,842   | \$264,133   |
| San Diego       | 3,494 | 5,370 | \$772,067   | \$1,089,286 |
| San Francisco   | 779   | 1,818 | \$194,472   | \$481,144   |
| San Joaquin     | 813   | 933   | \$166,494   | \$182,054   |
| San Luis Obispo | 468   | 306   | \$114,809   | \$92,274    |
| San Mateo       | 253   | 751   | \$193,565   | \$288,782   |
| Santa Barbara   | 400   | 231   | \$138,930   | \$80,063    |
| Santa Clara     | 4,132 | 3,065 | \$745,489   | \$700,940   |
| Santa Cruz      | 158   | 208   | \$37,720    | \$35,096    |
| Shasta          | 253   | 138   | \$42,773    | \$23,168    |
| Sierra          | 7     | 6     | \$2,381     | \$1,211     |
| Siskiyou        | 58    | 52    | \$10,617    | \$10,726    |
| Solano          | 467   | 387   | \$103,818   | \$81,456    |
| Sonoma          | 477   | 632   | \$87,520    | \$131,369   |
| Stanislaus      | 292   | 164   | \$40,531    | \$28,290    |
| Sutter          | 88    | 77    | \$16,631    | \$12,258    |
| Tehama          | 77    | 48    | \$13,360    | \$8,673     |
| Trinity         | 40    | 25    | \$6,442     | \$3,355     |
| Tulare          | 1,367 | 922   | \$199,679   | \$135,666   |
| Tuolumne        | 57    | 46    | \$11,430    | \$9,114     |
| Ventura         | 590   | 568   | \$110,971   | \$116,433   |
| Yolo            | 254   | 252   | \$44,432    | \$58,393    |
| Yuba            | 62    | 69    | \$9,028     | \$9,612     |

Center for Strategic Economic Research, June 2012  
 Data Source: United States Census Bureau

Like at the statewide level, the local benefits of new housing construction extend well beyond the economic activities directly related to building new single- and multi-family housing units. Throughout each county, the multiplier effect generates additional output and jobs within linked suppliers of goods and services and sectors that support employees' consumption activities within the county boundaries. As a result, housing construction provides considerable economic benefits to virtually every county in the state, even those counties which do not have significant levels of economic activities in manufacturing, financial services, or other high value sectors.

Figures 8 and 9 (on pages 18 through 21) demonstrate that the largest economic impacts in 2011 occurred within the counties with the highest levels of units permitted and construction valuation—Los Angeles, San Diego, and Orange. Based on 2011 values and including direct, indirect and induced impacts, the economic contributions of new housing construction in Los Angeles County reach over \$4 billion of output and almost 25,000 jobs; around \$1.9 billion of output and 12,000 jobs in San Diego County; and about \$1.5 billion of output and 8,000 jobs in Orange County. New housing construction is important even in the state's smallest counties like Alpine, Sierra, and Modoc where 2011 residential building activities generated a total of between approximately \$1.4 and \$2.3 million of output and 10 and 16 jobs.

**COUNTY-LEVEL HOUSING INDUSTRY**

**FIGURE 8**  
**TOTAL OUTPUT IMPACTS OF NEW HOUSING CONSTRUCTION IN**  
**CALIFORNIA'S COUNTIES**  
**(IN THOUSANDS)**

| County          | 2010        |           |           |             | 2011        |           |             |             |
|-----------------|-------------|-----------|-----------|-------------|-------------|-----------|-------------|-------------|
|                 | Direct      | Indirect  | Induced   | Total       | Direct      | Indirect  | Induced     | Total       |
| Alameda         | \$397,610   | \$120,375 | \$177,390 | \$695,374   | \$515,996   | \$156,216 | \$230,207   | \$902,419   |
| Alpine          | \$1,164     | \$94      | \$85      | \$1,343     | \$1,530     | \$124     | \$111       | \$1,765     |
| Amador          | \$4,110     | \$782     | \$744     | \$5,636     | \$11,305    | \$2,152   | \$2,047     | \$15,504    |
| Butte           | \$61,181    | \$18,622  | \$20,925  | \$100,728   | \$42,691    | \$12,994  | \$14,601    | \$70,286    |
| Calaveras       | \$13,646    | \$2,817   | \$2,364   | \$18,827    | \$8,639     | \$1,784   | \$1,496     | \$11,919    |
| Colusa          | \$5,002     | \$625     | \$714     | \$6,342     | \$2,849     | \$356     | \$407       | \$3,611     |
| Contra Costa    | \$304,322   | \$80,707  | \$117,157 | \$502,186   | \$191,465   | \$50,777  | \$73,709    | \$315,951   |
| Del Norte       | \$6,409     | \$1,114   | \$1,266   | \$8,790     | \$10,240    | \$1,781   | \$2,023     | \$14,044    |
| El Dorado       | \$47,085    | \$10,078  | \$12,193  | \$69,355    | \$54,451    | \$11,654  | \$14,100    | \$80,206    |
| Fresno          | \$398,554   | \$108,134 | \$145,532 | \$652,220   | \$278,256   | \$75,495  | \$101,605   | \$455,356   |
| Glenn           | \$7,347     | \$1,488   | \$933     | \$9,769     | \$4,661     | \$944     | \$592       | \$6,198     |
| Humboldt        | \$23,379    | \$7,902   | \$6,481   | \$37,762    | \$29,410    | \$9,940   | \$8,152     | \$47,503    |
| Imperial        | \$16,292    | \$3,258   | \$2,617   | \$22,167    | \$34,324    | \$6,863   | \$5,514     | \$46,700    |
| Inyo            | \$2,168     | \$401     | \$341     | \$2,910     | \$2,889     | \$535     | \$454       | \$3,878     |
| Kern            | \$256,911   | \$64,288  | \$67,404  | \$388,603   | \$150,658   | \$37,700  | \$39,527    | \$227,885   |
| Kings           | \$36,494    | \$5,213   | \$7,305   | \$49,012    | \$26,133    | \$3,733   | \$5,231     | \$35,097    |
| Lake            | \$8,936     | \$1,723   | \$1,551   | \$12,210    | \$7,098     | \$1,369   | \$1,232     | \$9,699     |
| Lassen          | \$2,174     | \$434     | \$321     | \$2,929     | \$3,593     | \$716     | \$530       | \$4,839     |
| Los Angeles     | \$1,689,582 | \$652,751 | \$804,070 | \$3,146,403 | \$2,176,934 | \$841,033 | \$1,036,000 | \$4,053,968 |
| Madera          | \$24,369    | \$4,572   | \$5,113   | \$34,055    | \$31,268    | \$5,867   | \$6,561     | \$43,696    |
| Marin           | \$64,270    | \$14,562  | \$18,375  | \$97,208    | \$57,531    | \$13,036  | \$16,449    | \$87,016    |
| Mariposa        | \$9,912     | \$1,538   | \$1,240   | \$12,690    | \$6,568     | \$1,019   | \$822       | \$8,409     |
| Mendocino       | \$21,582    | \$6,207   | \$5,155   | \$32,944    | \$13,052    | \$3,754   | \$3,117     | \$19,923    |
| Merced          | \$22,925    | \$4,042   | \$5,463   | \$32,430    | \$29,797    | \$5,254   | \$7,100     | \$42,152    |
| Modoc           | \$1,946     | \$326     | \$227     | \$2,498     | \$1,789     | \$299     | \$209       | \$2,297     |
| Mono            | \$9,770     | \$1,356   | \$1,354   | \$12,480    | \$5,915     | \$821     | \$820       | \$7,556     |
| Monterey        | \$67,066    | \$16,047  | \$18,534  | \$101,646   | \$38,105    | \$9,118   | \$10,531    | \$57,754    |
| Napa            | \$61,072    | \$14,355  | \$19,646  | \$95,073    | \$55,845    | \$13,127  | \$17,965    | \$86,936    |
| Nevada          | \$24,320    | \$6,320   | \$5,482   | \$36,122    | \$22,196    | \$5,769   | \$5,003     | \$32,968    |
| Orange          | \$691,520   | \$206,491 | \$339,199 | \$1,237,210 | \$820,166   | \$244,906 | \$402,302   | \$1,467,375 |
| Placer          | \$298,998   | \$85,058  | \$118,528 | \$502,585   | \$236,216   | \$67,198  | \$93,640    | \$397,054   |
| Plumas          | \$5,890     | \$1,134   | \$962     | \$7,986     | \$6,524     | \$1,255   | \$1,066     | \$8,845     |
| Riverside       | \$947,841   | \$284,853 | \$295,953 | \$1,528,647 | \$650,600   | \$195,523 | \$203,143   | \$1,049,267 |
| Sacramento      | \$224,960   | \$80,494  | \$87,614  | \$393,067   | \$250,667   | \$89,692  | \$97,626    | \$437,985   |
| San Benito      | \$10,068    | \$1,808   | \$1,498   | \$13,374    | \$9,028     | \$1,621   | \$1,343     | \$11,992    |
| San Bernardino  | \$282,599   | \$64,286  | \$87,766  | \$434,652   | \$263,906   | \$60,034  | \$81,961    | \$405,901   |
| San Diego       | \$771,350   | \$246,607 | \$323,354 | \$1,341,311 | \$1,088,275 | \$347,930 | \$456,211   | \$1,892,416 |
| San Francisco   | \$194,445   | \$48,804  | \$60,843  | \$304,092   | \$481,077   | \$120,747 | \$150,531   | \$752,355   |
| San Joaquin     | \$166,477   | \$45,924  | \$62,664  | \$275,066   | \$182,036   | \$50,216  | \$68,521    | \$300,773   |
| San Luis Obispo | \$114,802   | \$36,234  | \$36,868  | \$187,903   | \$92,269    | \$29,122  | \$29,631    | \$151,022   |
| San Mateo       | \$193,531   | \$38,766  | \$59,685  | \$291,981   | \$288,732   | \$57,835  | \$89,045    | \$435,612   |
| Santa Barbara   | \$138,919   | \$41,275  | \$44,373  | \$224,567   | \$80,056    | \$23,786  | \$25,571    | \$129,413   |
| Santa Clara     | \$745,455   | \$197,921 | \$231,243 | \$1,174,619 | \$700,908   | \$186,094 | \$217,425   | \$1,104,427 |
| Santa Cruz      | \$37,709    | \$8,302   | \$12,180  | \$58,190    | \$35,086    | \$7,724   | \$11,333    | \$54,143    |
| Shasta          | \$42,773    | \$14,600  | \$15,409  | \$72,781    | \$23,168    | \$7,908   | \$8,346     | \$39,422    |
| Sierra          | \$2,363     | \$225     | \$135     | \$2,723     | \$1,201     | \$114     | \$69        | \$1,384     |
| Siskiyou        | \$10,615    | \$2,547   | \$2,053   | \$15,215    | \$10,724    | \$2,573   | \$2,074     | \$15,372    |
| Solano          | \$103,804   | \$24,057  | \$31,187  | \$159,048   | \$81,445    | \$18,875  | \$24,470    | \$124,790   |
| Sonoma          | \$87,517    | \$24,704  | \$30,691  | \$142,912   | \$131,364   | \$37,080  | \$46,068    | \$214,512   |
| Stanislaus      | \$40,528    | \$11,973  | \$13,120  | \$65,621    | \$28,288    | \$8,357   | \$9,157     | \$45,802    |

COUNTY-LEVEL HOUSING INDUSTRY

FIGURE 8—CONTINUED  
 TOTAL OUTPUT IMPACTS OF NEW HOUSING CONSTRUCTION IN  
 CALIFORNIA'S COUNTIES  
 (IN THOUSANDS)

| County   | 2010      |          |          |           | 2011      |          |          |           |
|----------|-----------|----------|----------|-----------|-----------|----------|----------|-----------|
|          | Direct    | Indirect | Induced  | Total     | Direct    | Indirect | Induced  | Total     |
| Sutter   | \$16,631  | \$4,727  | \$4,608  | \$25,967  | \$12,257  | \$3,484  | \$3,396  | \$19,138  |
| Tehama   | \$13,358  | \$2,506  | \$2,351  | \$18,216  | \$8,671   | \$1,627  | \$1,526  | \$11,824  |
| Trinity  | \$6,429   | \$1,202  | \$671    | \$8,302   | \$3,349   | \$626    | \$350    | \$4,324   |
| Tulare   | \$199,652 | \$42,768 | \$43,889 | \$286,309 | \$135,647 | \$29,058 | \$29,819 | \$194,524 |
| Tuolumne | \$11,428  | \$2,450  | \$2,515  | \$16,393  | \$9,112   | \$1,953  | \$2,005  | \$13,071  |
| Ventura  | \$110,903 | \$35,902 | \$37,076 | \$183,881 | \$116,361 | \$37,669 | \$38,901 | \$192,932 |
| Yolo     | \$44,425  | \$12,157 | \$11,476 | \$68,059  | \$58,384  | \$15,977 | \$15,082 | \$89,442  |
| Yuba     | \$8,714   | \$1,760  | \$1,554  | \$12,028  | \$9,278   | \$1,874  | \$1,654  | \$12,806  |

Center for Strategic Economic Research, June 2012

Data Source: IMPLAN, 2010 Coefficients based on United States Census Bureau information

Note: Differences due to rounding.

**COUNTY-LEVEL HOUSING INDUSTRY**

**FIGURE 9  
TOTAL EMPLOYMENT IMPACTS OF NEW HOUSING  
CONSTRUCTION IN CALIFORNIA'S COUNTIES**

| County          | 2010   |          |         |        | 2011   |          |         |        |
|-----------------|--------|----------|---------|--------|--------|----------|---------|--------|
|                 | Direct | Indirect | Induced | Total  | Direct | Indirect | Induced | Total  |
| Alameda         | 1,987  | 860      | 1,272   | 4,119  | 2,578  | 1,117    | 1,651   | 5,345  |
| Alpine          | 7      | 1        | 1       | 8      | 9      | 1        | 1       | 11     |
| Amador          | 24     | 8        | 6       | 38     | 67     | 21       | 17      | 104    |
| Butte           | 343    | 171      | 179     | 692    | 239    | 119      | 125     | 483    |
| Calaveras       | 78     | 28       | 21      | 127    | 50     | 18       | 13      | 80     |
| Colusa          | 26     | 6        | 6       | 37     | 15     | 3        | 4       | 21     |
| Contra Costa    | 1,458  | 548      | 788     | 2,794  | 917    | 345      | 496     | 1,758  |
| Del Norte       | 38     | 11       | 11      | 60     | 60     | 18       | 17      | 96     |
| El Dorado       | 252    | 95       | 101     | 449    | 291    | 110      | 117     | 519    |
| Fresno          | 2,159  | 954      | 1,177   | 4,290  | 1,507  | 666      | 822     | 2,995  |
| Glenn           | 45     | 13       | 8       | 67     | 29     | 8        | 5       | 43     |
| Humboldt        | 142    | 73       | 58      | 272    | 178    | 91       | 73      | 342    |
| Imperial        | 94     | 32       | 24      | 150    | 198    | 68       | 51      | 316    |
| Inyo            | 13     | 4        | 3       | 20     | 17     | 5        | 4       | 27     |
| Kern            | 1,431  | 581      | 567     | 2,580  | 839    | 341      | 333     | 1,513  |
| Kings           | 198    | 52       | 61      | 311    | 142    | 37       | 44      | 223    |
| Lake            | 55     | 17       | 13      | 85     | 44     | 14       | 10      | 68     |
| Lassen          | 14     | 5        | 3       | 21     | 23     | 8        | 5       | 35     |
| Los Angeles     | 9,204  | 4,342    | 5,682   | 19,228 | 11,858 | 5,594    | 7,322   | 24,774 |
| Madera          | 135    | 43       | 41      | 218    | 173    | 55       | 52      | 280    |
| Marin           | 330    | 106      | 131     | 566    | 295    | 95       | 117     | 507    |
| Mariposa        | 59     | 16       | 11      | 86     | 39     | 11       | 7       | 57     |
| Mendocino       | 130    | 55       | 45      | 230    | 79     | 33       | 27      | 139    |
| Merced          | 119    | 40       | 46      | 206    | 155    | 52       | 60      | 268    |
| Modoc           | 12     | 4        | 2       | 17     | 11     | 3        | 2       | 16     |
| Mono            | 54     | 14       | 12      | 80     | 33     | 8        | 7       | 48     |
| Monterey        | 355    | 129      | 150     | 633    | 201    | 73       | 85      | 360    |
| Napa            | 308    | 119      | 154     | 581    | 281    | 109      | 141     | 531    |
| Nevada          | 141    | 61       | 49      | 250    | 128    | 56       | 44      | 228    |
| Orange          | 3,271  | 1,439    | 2,411   | 7,121  | 3,879  | 1,706    | 2,860   | 8,445  |
| Placer          | 1,502  | 679      | 899     | 3,080  | 1,187  | 536      | 710     | 2,433  |
| Plumas          | 34     | 11       | 8       | 54     | 38     | 12       | 9       | 59     |
| Riverside       | 5,253  | 2,482    | 2,543   | 10,277 | 3,606  | 1,703    | 1,745   | 7,054  |
| Sacramento      | 1,210  | 611      | 672     | 2,494  | 1,348  | 681      | 749     | 2,778  |
| San Benito      | 59     | 19       | 13      | 91     | 53     | 17       | 11      | 81     |
| San Bernardino  | 1,548  | 606      | 758     | 2,912  | 1,445  | 566      | 708     | 2,719  |
| San Diego       | 3,959  | 1,815    | 2,442   | 8,216  | 5,586  | 2,561    | 3,445   | 11,591 |
| San Francisco   | 938    | 296      | 382     | 1,617  | 2,321  | 732      | 946     | 4,000  |
| San Joaquin     | 834    | 372      | 500     | 1,705  | 912    | 406      | 546     | 1,864  |
| San Luis Obispo | 607    | 283      | 296     | 1,186  | 487    | 228      | 238     | 953    |
| San Mateo       | 966    | 269      | 388     | 1,623  | 1,441  | 401      | 579     | 2,421  |
| Santa Barbara   | 747    | 318      | 354     | 1,419  | 430    | 183      | 204     | 818    |
| Santa Clara     | 3,759  | 1,269    | 1,529   | 6,557  | 3,534  | 1,193    | 1,437   | 6,165  |
| Santa Cruz      | 183    | 71       | 101     | 356    | 170    | 67       | 94      | 331    |
| Shasta          | 237    | 124      | 128     | 489    | 129    | 67       | 69      | 265    |
| Sierra          | 16     | 2        | 1       | 19     | 8      | 1        | 1       | 10     |
| Siskiyou        | 66     | 25       | 18      | 109    | 67     | 25       | 18      | 111    |
| Solano          | 541    | 199      | 245     | 985    | 425    | 156      | 192     | 773    |
| Sonoma          | 455    | 203      | 253     | 911    | 683    | 305      | 379     | 1,368  |
| Stanislaus      | 226    | 105      | 108     | 439    | 158    | 73       | 75      | 306    |

**COUNTY-LEVEL HOUSING INDUSTRY**

**FIGURE 9—CONTINUED**  
**TOTAL EMPLOYMENT IMPACTS OF NEW HOUSING**  
**CONSTRUCTION IN CALIFORNIA’S COUNTIES**

| County   | 2010   |          |         |       | 2011   |          |         |       |
|----------|--------|----------|---------|-------|--------|----------|---------|-------|
|          | Direct | Indirect | Induced | Total | Direct | Indirect | Induced | Total |
| Sutter   | 95     | 44       | 40      | 179   | 70     | 33       | 30      | 132   |
| Tehama   | 80     | 25       | 21      | 126   | 52     | 16       | 14      | 82    |
| Trinity  | 41     | 11       | 7       | 59    | 21     | 6        | 3       | 31    |
| Tulare   | 1,094  | 417      | 381     | 1,892 | 744    | 283      | 259     | 1,286 |
| Tuolumne | 68     | 24       | 22      | 114   | 54     | 19       | 17      | 91    |
| Ventura  | 622    | 281      | 286     | 1,189 | 653    | 295      | 300     | 1,248 |
| Yolo     | 233    | 99       | 91      | 423   | 306    | 130      | 120     | 556   |
| Yuba     | 49     | 14       | 13      | 76    | 52     | 15       | 13      | 80    |

Center for Strategic Economic Research, June 2012

Data Source: IMPLAN, 2010 Coefficients based on United States Census Bureau information

Note: Differences due to rounding.

New housing construction makes a notable contribution to the local economy within each of the state’s 58 counties as total output impacts associated with residential building activities generally account for a similar or greater proportion of total economic output compared to the statewide level. Total output impacts measure in the hundreds of millions or billions for 21 counties in the state and job creation reaches in the thousands for 18 counties.

In general, the industry sectors in each of California’s counties experience a similar distribution of benefits of new home construction as the statewide average due to existing inter-industry linkages. In addition to homebuilding-related sectors, the Real Estate; Wholesale Trade; Monetary Authorities & Depository Credit Intermediation Activities; and Architectural, Engineering, & Related Services sectors benefit the most from the total output impacts created through new housing construction while the Food Services & Drinking Places; Wholesale Trade; Real Estate; and Food & Beverage Retail Stores sectors capture the largest employment gains.

### **Entire Housing Industry**

The broader housing industry is a considerable factor in the local economies within California’s counties. The industry measures in the tens of billions of dollars of output and at least tens of thousands of total jobs in 11 of California’s counties. Even the smaller counties see at least \$14 million of output and 55 jobs from the entire housing industry. Figure 10 (on pages 22 and 23) displays the housing industry’s output and employment within these local economies. Similar to the statewide totals, these figures represent activities of the broader definition of the housing industry which also includes residential real estate sales, financing, brokerage, repairs, and the maintenance and operation of existing housing units, in addition to new home construction.

The economic contributions of the entire housing industry are highest in California’s largest and most mature areas of Los Angeles, Orange, and San Diego Counties, with respective outputs of about \$82.4, \$35.5, and \$30.7 billion (a combined total of about 46

## COUNTY-LEVEL HOUSING INDUSTRY

percent of the state's total housing industry output). Other areas with relatively large housing industry output totals include Santa Clara, Riverside, and Alameda Counties, all contributing between \$13.9 and \$19.5 billion of output. In these leading counties, employment related to the entire housing industry ranges from nearly 36,000 to 228,000 (larger than the entire economy of many individual counties in the state).

**FIGURE 10**  
**ENTIRE HOUSING INDUSTRY**  
**TOTAL OUTPUT AND**  
**EMPLOYMENT IN CALIFORNIA'S**  
**COUNTIES**  
**(OUTPUT IN THOUSANDS)**

| <i>County</i>   | <i>Output</i> | <i>Employment</i> |
|-----------------|---------------|-------------------|
| Alameda         | \$13,917,554  | 36,291            |
| Alpine          | \$15,651      | 66                |
| Amador          | \$292,594     | 959               |
| Butte           | \$1,547,741   | 4,867             |
| Calaveras       | \$431,059     | 1,714             |
| Colusa          | \$130,265     | 249               |
| Contra Costa    | \$12,181,468  | 32,142            |
| Del Norte       | \$142,963     | 390               |
| El Dorado       | \$2,384,194   | 9,008             |
| Fresno          | \$5,556,801   | 16,190            |
| Glenn           | \$141,813     | 362               |
| Humboldt        | \$894,701     | 3,039             |
| Imperial        | \$648,345     | 1,229             |
| Inyo            | \$95,883      | 209               |
| Kern            | \$4,448,189   | 12,823            |
| Kings           | \$594,128     | 1,211             |
| Lake            | \$458,981     | 1,545             |
| Lassen          | \$163,179     | 475               |
| Los Angeles     | \$82,393,814  | 228,130           |
| Madera          | \$777,469     | 2,237             |
| Marin           | \$4,693,734   | 11,523            |
| Mariposa        | \$135,452     | 460               |
| Mendocino       | \$693,836     | 2,436             |
| Merced          | \$1,180,906   | 2,907             |
| Modoc           | \$44,361      | 99                |
| Mono            | \$202,367     | 824               |
| Monterey        | \$3,260,572   | 8,762             |
| Napa            | \$1,320,067   | 3,452             |
| Nevada          | \$1,338,585   | 5,301             |
| Orange          | \$35,511,221  | 103,056           |
| Placer          | \$3,999,063   | 13,132            |
| Plumas          | \$182,236     | 673               |
| Riverside       | \$14,361,587  | 48,101            |
| Sacramento      | \$10,102,343  | 27,415            |
| San Benito      | \$374,393     | 1,117             |
| San Bernardino  | \$11,504,740  | 32,970            |
| San Diego       | \$30,722,940  | 91,062            |
| San Francisco   | \$10,801,021  | 23,575            |
| San Joaquin     | \$3,983,290   | 10,746            |
| San Luis Obispo | \$2,677,651   | 9,103             |
| San Mateo       | \$10,129,538  | 22,041            |
| Santa Barbara   | \$4,013,579   | 11,530            |
| Santa Clara     | \$19,544,327  | 45,663            |
| Santa Cruz      | \$2,700,424   | 7,561             |
| Shasta          | \$1,314,347   | 4,250             |
| Sierra          | \$14,065      | 55                |
| Siskiyou        | \$292,411     | 922               |
| Solano          | \$2,903,472   | 7,281             |
| Sonoma          | \$4,673,633   | 14,247            |
| Stanislaus      | \$3,184,970   | 9,440             |

COUNTY-LEVEL HOUSING INDUSTRY

FIGURE 10—CONTINUED  
COUNTY-LEVEL ECONOMIC  
OUTPUT AND EMPLOYMENT OF  
THE HOUSING INDUSTRY  
(OUTPUT IN THOUSANDS)

| <i>County</i> | <i>Output</i> | <i>Employment</i> |
|---------------|---------------|-------------------|
| Sutter        | \$708,859     | 2,319             |
| Tehama        | \$290,632     | 816               |
| Trinity       | \$67,627      | 230               |
| Tulare        | \$2,097,018   | 5,366             |
| Tuolumne      | \$461,775     | 1,674             |
| Ventura       | \$7,124,676   | 19,199            |
| Yolo          | \$1,378,360   | 3,748             |
| Yuba          | \$304,077     | 701               |

Center for Strategic Economic Research, June 2012  
Data Source: CSER estimates based on IMPLAN,  
2010 Coefficients

APPENDIX A—DETAILED CALIFORNIA IMPACTS

## Appendix A—2011 Detailed Economic Impacts of New Housing Construction in California

| Sector Name  | Output Impacts (in thousands) |             |             |              | Employment Impacts |          |         |         |
|--|-------------------------------|-------------|-------------|--------------|--------------------|----------|---------|---------|
|  | Direct                        | Indirect    | Induced     | Total        | Direct             | Indirect | Induced | Total   |
| California Total Impacts   | \$9,638,517                   | \$4,898,733 | \$6,194,208 | \$20,731,458 | 50,413             | 30,567   | 41,707  | 122,687 |
| Construction of new residential permanent site single- and multi-family structures | \$9,638,517                   | -           | -           | \$9,638,517  | 50,413             | -        | -       | 50,413  |
| Imputed rental activity for owner-occupied dwellings                               | -                             | -           | \$645,386   | \$645,386    | -                  | -        | -       | -       |
| Real estate establishments   | -                             | \$153,254   | \$361,683   | \$514,938    | -                  | 776      | 1,831   | 2,607   |
| Wholesale trade businesses   | -                             | \$260,765   | \$241,016   | \$501,781    | -                  | 1,537    | 1,421   | 2,958   |
| Monetary authorities and depository credit intermediation activities               | -                             | \$154,250   | \$209,825   | \$364,074    | -                  | 347      | 472     | 819     |
| Architectural, engineering, and related services                                   | -                             | \$308,592   | \$18,450    | \$327,043    | -                  | 2,242    | 134     | 2,377   |
| Petroleum refineries   | -                             | \$189,591   | \$135,260   | \$324,851    | -                  | 24       | 17      | 41      |
| Food services and drinking places  | -                             | \$42,878    | \$270,678   | \$313,556    | -                  | 675      | 4,263   | 4,938   |
| Telecommunications   | -                             | \$147,053   | \$145,693   | \$292,746    | -                  | 285      | 282     | 567     |
| Offices of physicians, dentists, and other health practitioners                    | -                             | -           | \$267,380   | \$267,380    | -                  | -        | 2,113   | 2,113   |
| Securities, commodity contracts, investments, and related activities               | -                             | \$70,279    | \$182,477   | \$252,756    | -                  | 571      | 1,482   | 2,052   |
| Private hospitals  | -                             | \$1         | \$232,058   | \$232,059    | -                  | -        | 1,453   | 1,453   |
| Transport by truck   | -                             | \$183,365   | \$44,050    | \$227,415    | -                  | 1,475    | 354     | 1,830   |
| Nondepository credit intermediation and related activities                         | -                             | \$60,178    | \$161,919   | \$222,097    | -                  | 378      | 1,017   | 1,395   |
| Legal services   | -                             | \$120,923   | \$93,177    | \$214,101    | -                  | 647      | 499     | 1,146   |
| Ready-mix concrete manufacturing   | -                             | \$183,697   | \$1,207     | \$184,904    | -                  | 637      | 4       | 641     |
| Retail Stores - Motor vehicle and parts  | -                             | \$111,810   | \$72,751    | \$184,561    | -                  | 1,075    | 700     | 1,775   |
| Insurance carriers   | -                             | \$26,265    | \$156,724   | \$182,989    | -                  | 76       | 451     | 527     |
| Retail Stores - Food and beverage  | -                             | \$82,930    | \$90,465    | \$173,395    | -                  | 1,212    | 1,322   | 2,533   |
| Retail Stores - General merchandise  | -                             | \$64,983    | \$71,371    | \$136,354    | -                  | 1,058    | 1,162   | 2,219   |
| Accounting, tax preparation, bookkeeping, and payroll services                     | -                             | \$84,957    | \$41,723    | \$126,679    | -                  | 705      | 346     | 1,051   |
| Management of companies and enterprises  | -                             | \$65,644    | \$54,444    | \$120,088    | -                  | 318      | 264     | 582     |
| Services to buildings and dwellings  | -                             | \$60,154    | \$42,662    | \$102,816    | -                  | 897      | 636     | 1,533   |
| Medical and diagnostic labs and outpatient and other ambulatory care services      | -                             | \$30        | \$101,843   | \$101,873    | -                  | -        | 570     | 570     |
| Ornamental and architectural metal products manufacturing                          | -                             | \$99,395    | \$2,207     | \$101,603    | -                  | 499      | 11      | 510     |
| Retail Stores - Building material and garden supply                                | -                             | \$67,432    | \$30,840    | \$98,272     | -                  | 774      | 354     | 1,128   |
| Other state and local government enterprises                                       | -                             | \$15,053    | \$79,823    | \$94,876     | -                  | 49       | 261     | 310     |
| Pharmaceutical preparation manufacturing   | -                             | \$148       | \$90,061    | \$90,208     | -                  | -        | 60      | 60      |
| Employment services  | -                             | \$51,216    | \$34,620    | \$85,836     | -                  | 1,199    | 810     | 2,010   |
| Retail Stores - Clothing and clothing accessories                                  | -                             | \$38,521    | \$45,845    | \$84,367     | -                  | 601      | 715     | 1,316   |
| Civic, social, professional, and similar organizations                             | -                             | \$35,423    | \$45,778    | \$81,201     | -                  | 382      | 493     | 875     |
| Retail Stores - Health and personal care   | -                             | \$38,985    | \$41,742    | \$80,727     | -                  | 452      | 484     | 936     |
| Electric power generation, transmission, and distribution                          | -                             | \$31,182    | \$47,670    | \$78,852     | -                  | 39       | 59      | 98      |
| Retail Nonstores - Direct and electronic sales                                     | -                             | \$32,498    | \$44,162    | \$76,660     | -                  | 502      | 682     | 1,183   |
| Automotive repair and maintenance, except car washes                               | -                             | \$34,355    | \$40,639    | \$74,994     | -                  | 338      | 399     | 737     |
| Management, scientific, and technical consulting services                          | -                             | \$37,410    | \$36,416    | \$73,825     | -                  | 272      | 265     | 536     |
| Natural gas distribution   | -                             | \$31,343    | \$40,703    | \$72,046     | -                  | 25       | 33      | 58      |

**APPENDIX A—DETAILED CALIFORNIA IMPACTS**

| Sector Name   | Output Impacts (in thousands) |          |          |          | Employment Impacts |          |         |       |
|---|-------------------------------|----------|----------|----------|--------------------|----------|---------|-------|
|   | Direct                        | Indirect | Induced  | Total    | Direct             | Indirect | Induced | Total |
| Funds, trusts, and other financial vehicles                                     | -                             | \$1,636  | \$69,054 | \$70,690 | -                  | 4        | 178     | 182   |
| Retail Stores - Miscellaneous   | -                             | \$33,046 | \$37,637 | \$70,684 | -                  | 543      | 618     | 1,161 |
| Maintenance and repair construction of nonresidential structures                | -                             | \$35,953 | \$34,035 | \$69,988 | -                  | 233      | 221     | 454   |
| Insurance agencies, brokerages, and related activities                          | -                             | \$13,714 | \$53,296 | \$67,011 | -                  | 93       | 363     | 456   |
| Retail Stores - Gasoline stations   | -                             | \$36,115 | \$30,785 | \$66,900 | -                  | 228      | 194     | 422   |
| Advertising and related services  | -                             | \$32,082 | \$33,648 | \$65,729 | -                  | 209      | 219     | 428   |
| Nursing and residential care facilities   | -                             | -        | \$64,817 | \$64,817 | -                  | -        | 1,030   | 1,030 |
| All other miscellaneous professional, scientific, and technical services        | -                             | \$47,429 | \$17,347 | \$64,776 | -                  | 193      | 71      | 264   |
| Wood windows and doors and millwork manufacturing                               | -                             | \$63,062 | \$1,296  | \$64,359 | -                  | 380      | 8       | 387   |
| Other plastics product manufacturing  | -                             | \$56,877 | \$6,234  | \$63,111 | -                  | 239      | 26      | 265   |
| Wood kitchen cabinet and countertop manufacturing                               | -                             | \$58,889 | \$1,489  | \$60,378 | -                  | 472      | 12      | 484   |
| Commercial and industrial machinery and equipment rental and leasing            | -                             | \$52,393 | \$7,798  | \$60,191 | -                  | 170      | 25      | 195   |
| Private junior colleges, colleges, universities, and professional schools       | -                             | \$1,303  | \$57,666 | \$58,969 | -                  | 12       | 530     | 542   |
| Retail Stores - Electronics and appliances                                      | -                             | \$26,788 | \$30,008 | \$56,795 | -                  | 191      | 214     | 406   |
| Lessors of nonfinancial intangible assets                                       | -                             | \$33,458 | \$21,331 | \$54,789 | -                  | 15       | 10      | 25    |
| Saw mills and wood preservation   | -                             | \$53,529 | \$994    | \$54,523 | -                  | 221      | 4       | 225   |
| Paint and coating manufacturing   | -                             | \$48,749 | \$1,556  | \$50,305 | -                  | 80       | 3       | 83    |
| Scenic and sightseeing transportation and support activities for transportation | -                             | \$30,281 | \$17,646 | \$47,927 | -                  | 222      | 129     | 352   |
| Mineral wool manufacturing  | -                             | \$46,899 | \$230    | \$47,129 | -                  | 141      | 1       | 142   |
| Waste management and remediation services                                       | -                             | \$24,891 | \$21,452 | \$46,343 | -                  | 117      | 101     | 218   |
| Transport by air  | -                             | \$11,833 | \$30,485 | \$42,318 | -                  | 39       | 101     | 140   |
| Data processing, hosting, ISP, web search portals and related services          | -                             | \$11,492 | \$29,122 | \$40,614 | -                  | 27       | 69      | 96    |
| Retail Stores - Furniture and home furnishings                                  | -                             | \$16,979 | \$23,052 | \$40,031 | -                  | 170      | 231     | 401   |
| Mining and quarrying sand, gravel, clay, and ceramic and refractory minerals    | -                             | \$39,078 | \$301    | \$39,378 | -                  | 278      | 2       | 280   |
| Grantmaking, giving, and social advocacy organizations                          | -                             | \$25     | \$39,349 | \$39,375 | -                  | -        | 366     | 367   |
| Office administrative services  | -                             | \$24,670 | \$14,397 | \$39,067 | -                  | 201      | 117     | 318   |
| Motion picture and video industries   | -                             | \$11,828 | \$27,037 | \$38,865 | -                  | 35       | 80      | 115   |
| Warehousing and storage   | -                             | \$20,805 | \$17,286 | \$38,091 | -                  | 206      | 172     | 378   |
| Amusement parks, arcades, and gambling industries                               | -                             | \$16     | \$37,964 | \$37,980 | -                  | -        | 363     | 363   |
| Commercial and industrial machinery and equipment repair and maintenance        | -                             | \$29,299 | \$7,767  | \$37,066 | -                  | 242      | 64      | 306   |
| Retail Stores - Sporting goods, hobby, book and music                           | -                             | \$16,705 | \$19,553 | \$36,258 | -                  | 283      | 331     | 613   |
| Religious organizations   | -                             | -        | \$33,777 | \$33,777 | -                  | -        | 241     | 241   |
| Couriers and messengers   | -                             | \$18,000 | \$15,436 | \$33,435 | -                  | 181      | 156     | 337   |
| Soft drink and ice manufacturing  | -                             | \$348    | \$32,797 | \$33,145 | -                  | -        | 43      | 44    |
| Cable and other subscription programming  | -                             | \$15,216 | \$17,837 | \$33,053 | -                  | 39       | 46      | 85    |
| US Postal Service   | -                             | \$13,837 | \$18,865 | \$32,702 | -                  | 130      | 177     | 307   |
| Scientific research and development services                                    | -                             | \$13,968 | \$18,251 | \$32,218 | -                  | 69       | 91      | 160   |
| Other private educational services  | -                             | \$801    | \$30,665 | \$31,467 | -                  | 14       | 545     | 559   |
| Other personal services   | -                             | \$1,806  | \$28,951 | \$30,757 | -                  | 11       | 184     | 195   |
| Individual and family services  | -                             | -        | \$30,522 | \$30,522 | -                  | -        | 764     | 764   |

**APPENDIX A—DETAILED CALIFORNIA IMPACTS**

| Sector Name   | Output Impacts (in thousands) |          |          |          | Employment Impacts |          |         |       |
|---|-------------------------------|----------|----------|----------|--------------------|----------|---------|-------|
|   | Direct                        | Indirect | Induced  | Total    | Direct             | Indirect | Induced | Total |
| Radio and television broadcasting   | -                             | \$14,362 | \$15,800 | \$30,162 | -                  | 53       | 58      | 111   |
| Transport by rail   | -                             | \$24,245 | \$5,527  | \$29,772 | -                  | 78       | 18      | 95    |
| Computer systems design services  | -                             | \$19,162 | \$10,427 | \$29,589 | -                  | 191      | 104     | 295   |
| Personal care services  | -                             | \$1      | \$29,426 | \$29,426 | -                  | -        | 422     | 422   |
| Extraction of oil and natural gas   | -                             | \$16,305 | \$12,751 | \$29,055 | -                  | 64       | 50      | 114   |
| Automotive equipment rental and leasing                                       | -                             | \$9,013  | \$17,929 | \$26,942 | -                  | 38       | 75      | 113   |
| Other computer related services, including facilities management              | -                             | \$18,905 | \$7,992  | \$26,897 | -                  | 57       | 24      | 81    |
| Cement manufacturing  | -                             | \$26,101 | \$284    | \$26,385 | -                  | 59       | 1       | 60    |
| Private elementary and secondary schools                                      | -                             | -        | \$26,072 | \$26,072 | -                  | -        | 452     | 452   |
| Concrete pipe, brick, and block manufacturing                                 | -                             | \$25,054 | \$506    | \$25,560 | -                  | 89       | 2       | 91    |
| Mining and quarrying stone  | -                             | \$25,064 | \$384    | \$25,448 | -                  | 91       | 1       | 93    |
| Paperboard container manufacturing  | -                             | \$13,542 | \$11,035 | \$24,577 | -                  | 34       | 28      | 62    |
| Business support services   | -                             | \$14,804 | \$9,523  | \$24,327 | -                  | 227      | 146     | 374   |
| Air conditioning, refrigeration, and warm air heating equipment manufacturing | -                             | \$23,325 | \$787    | \$24,111 | -                  | 66       | 2       | 68    |
| Motor vehicle parts manufacturing   | -                             | \$18,054 | \$6,023  | \$24,078 | -                  | 49       | 16      | 66    |
| Asphalt paving mixture and block manufacturing                                | -                             | \$23,778 | \$259    | \$24,037 | -                  | 30       | -       | 30    |
| Internet publishing and broadcasting  | -                             | \$10,019 | \$13,346 | \$23,365 | -                  | 30       | 40      | 69    |
| Software publishers   | -                             | \$10,279 | \$12,579 | \$22,858 | -                  | 19       | 24      | 43    |
| Wiring device manufacturing   | -                             | \$22,250 | \$368    | \$22,618 | -                  | 70       | 1       | 71    |
| Investigation and security services   | -                             | \$11,867 | \$10,153 | \$22,019 | -                  | 278      | 238     | 516   |
| Lime and gypsum product manufacturing   | -                             | \$21,323 | \$590    | \$21,914 | -                  | 47       | 1       | 49    |
| State and local government electric utilities                                 | -                             | \$8,611  | \$13,101 | \$21,712 | -                  | 20       | 31      | 51    |
| Specialized design services   | -                             | \$17,093 | \$4,445  | \$21,538 | -                  | 113      | 29      | 143   |
| Child day care services   | -                             | -        | \$21,080 | \$21,080 | -                  | -        | 441     | 441   |
| Printing  | -                             | \$8,432  | \$11,931 | \$20,363 | -                  | 53       | 75      | 129   |
| Lighting fixture manufacturing  | -                             | \$19,522 | \$602    | \$20,124 | -                  | 73       | 2       | 76    |
| Plastics pipe and pipe fitting manufacturing                                  | -                             | \$19,142 | \$859    | \$20,001 | -                  | 57       | 3       | 59    |
| Plumbing fixture fitting and trim manufacturing                               | -                             | \$19,358 | \$364    | \$19,722 | -                  | 40       | 1       | 41    |
| Fruit and vegetable canning, pickling, and drying                             | -                             | \$369    | \$18,941 | \$19,310 | -                  | 1        | 36      | 36    |
| Fertilizer manufacturing  | -                             | \$18,138 | \$989    | \$19,127 | -                  | 15       | 1       | 15    |
| Home health care services   | -                             | -        | \$19,074 | \$19,074 | -                  | -        | 319     | 319   |
| Soap and cleaning compound manufacturing                                      | -                             | \$1,864  | \$17,138 | \$19,003 | -                  | 1        | 12      | 13    |
| Plate work and fabricated structural product manufacturing                    | -                             | \$17,829 | \$868    | \$18,698 | -                  | 70       | 3       | 73    |
| Other concrete product manufacturing  | -                             | \$17,758 | \$870    | \$18,628 | -                  | 89       | 4       | 93    |
| Animal (except poultry) slaughtering, rendering, and processing               | -                             | \$304    | \$18,268 | \$18,572 | -                  | 1        | 41      | 41    |
| Electronic computer manufacturing   | -                             | \$2,147  | \$16,421 | \$18,569 | -                  | 2        | 12      | 14    |
| All other crop farming  | -                             | \$15,344 | \$2,127  | \$17,472 | -                  | 46       | 6       | 53    |
| Other support services  | -                             | \$9,592  | \$7,607  | \$17,198 | -                  | 84       | 67      | 151   |
| Miscellaneous nonmetallic mineral product manufacturing                       | -                             | \$16,738 | \$146    | \$16,885 | -                  | 41       | -       | 41    |
| Machine shops   | -                             | \$14,410 | \$1,987  | \$16,397 | -                  | 96       | 13      | 110   |

**APPENDIX A—DETAILED CALIFORNIA IMPACTS**

| Sector Name   | Output Impacts (in thousands) |          |          |          | Employment Impacts |          |         |       |
|---|-------------------------------|----------|----------|----------|--------------------|----------|---------|-------|
|   | Direct                        | Indirect | Induced  | Total    | Direct             | Indirect | Induced | Total |
| Hotels and motels, including casino hotels  | -                             | \$4,963  | \$10,529 | \$15,492 | -                  | 43       | 90      | 133   |
| Custom architectural woodwork and millwork manufacturing                              | -                             | \$15,412 | \$14     | \$15,426 | -                  | 108      | -       | 108   |
| Engineered wood member and truss manufacturing  | -                             | \$15,091 | \$193    | \$15,284 | -                  | 101      | 1       | 102   |
| Coating, engraving, heat treating and allied activities                               | -                             | \$13,434 | \$1,525  | \$14,958 | -                  | 74       | 8       | 82    |
| Adhesive manufacturing  | -                             | \$13,599 | \$1,193  | \$14,792 | -                  | 24       | 2       | 26    |
| Community food, housing, and other relief services, including rehabilitation services | -                             | -        | \$14,767 | \$14,767 | -                  | -        | 345     | 345   |
| Fluid milk and butter manufacturing   | -                             | \$218    | \$14,348 | \$14,566 | -                  | -        | 21      | 21    |
| Semiconductor and related device manufacturing  | -                             | \$9,255  | \$5,138  | \$14,393 | -                  | 13       | 7       | 21    |
| Other amusement and recreation industries   | -                             | \$1,453  | \$12,906 | \$14,360 | -                  | 22       | 195     | 217   |
| Transit and ground passenger transportation   | -                             | \$3,993  | \$10,338 | \$14,330 | -                  | 68       | 177     | 246   |
| Promoters of performing arts and sports and agents for public figures                 | -                             | \$2,506  | \$11,796 | \$14,302 | -                  | 37       | 173     | 209   |
| Periodical publishers   | -                             | \$4,845  | \$9,391  | \$14,236 | -                  | 16       | 30      | 46    |
| Bread and bakery product manufacturing  | -                             | \$244    | \$13,947 | \$14,192 | -                  | 1        | 80      | 81    |
| Spectator sports companies  | -                             | \$3,343  | \$10,775 | \$14,118 | -                  | 57       | 184     | 241   |
| Private household operations  | -                             | -        | \$14,110 | \$14,110 | -                  | -        | 1,395   | 1,395 |
| Commercial logging  | -                             | \$13,697 | \$336    | \$14,033 | -                  | 119      | 3       | 122   |
| Personal and household goods repair and maintenance                                   | -                             | \$6,919  | \$7,019  | \$13,939 | -                  | 41       | 42      | 83    |
| Independent artists, writers, and performers  | -                             | \$6,293  | \$7,571  | \$13,864 | -                  | 28       | 34      | 62    |
| Fabricated pipe and pipe fitting manufacturing  | -                             | \$13,584 | \$137    | \$13,721 | -                  | 54       | 1       | 55    |
| Snack food manufacturing  | -                             | \$169    | \$13,548 | \$13,717 | -                  | -        | 19      | 19    |
| Iron and steel mills and ferroalloy manufacturing                                     | -                             | \$12,476 | \$1,064  | \$13,540 | -                  | 20       | 2       | 22    |
| Travel arrangement and reservation services   | -                             | \$5,462  | \$7,959  | \$13,421 | -                  | 36       | 52      | 87    |
| Dry-cleaning and laundry services   | -                             | \$1,376  | \$11,802 | \$13,177 | -                  | 20       | 170     | 190   |
| Other Federal Government enterprises  | -                             | \$4,241  | \$8,275  | \$12,516 | -                  | 12       | 23      | 34    |
| Maintenance and repair construction of residential structures                         | -                             | \$356    | \$12,044 | \$12,400 | -                  | 2        | 69      | 71    |
| Switchgear and switchboard apparatus manufacturing                                    | -                             | \$11,749 | \$329    | \$12,078 | -                  | 37       | 1       | 38    |
| Electronic and precision equipment repair and maintenance                             | -                             | \$6,611  | \$5,308  | \$11,918 | -                  | 37       | 30      | 66    |
| General and consumer goods rental except video tapes and discs                        | -                             | \$1,377  | \$10,225 | \$11,602 | -                  | 14       | 102     | 116   |
| Cheese manufacturing  | -                             | \$458    | \$11,110 | \$11,568 | -                  | 1        | 14      | 15    |
| Fitness and recreational sports centers   | -                             | \$2,133  | \$9,290  | \$11,423 | -                  | 52       | 228     | 281   |
| Newspaper publishers  | -                             | \$3,960  | \$7,413  | \$11,373 | -                  | 30       | 55      | 85    |
| Frozen food manufacturing   | -                             | \$153    | \$11,154 | \$11,307 | -                  | -        | 33      | 34    |
| Plastics packaging materials and unlaminated film and sheet manufacturing             | -                             | \$8,029  | \$3,117  | \$11,146 | -                  | 23       | 9       | 31    |
| Communication and energy wire and cable manufacturing                                 | -                             | \$10,629 | \$447    | \$11,076 | -                  | 19       | 1       | 20    |
| Breweries   | -                             | \$102    | \$10,956 | \$11,058 | -                  | -        | 9       | 9     |
| Custom computer programming services  | -                             | \$7,105  | \$3,849  | \$10,954 | -                  | 47       | 26      | 73    |
| Asphalt shingle and coating materials manufacturing                                   | -                             | \$10,218 | \$613    | \$10,831 | -                  | 11       | 1       | 11    |
| Dairy cattle and milk production  | -                             | \$315    | \$10,223 | \$10,538 | -                  | 1        | 44      | 45    |
| Environmental and other technical consulting services                                 | -                             | \$6,342  | \$4,176  | \$10,518 | -                  | 61       | 40      | 101   |
| Steel product manufacturing from purchased steel                                      | -                             | \$9,700  | \$762    | \$10,462 | -                  | 23       | 2       | 25    |

**APPENDIX A—DETAILED CALIFORNIA IMPACTS**

| Sector Name  | Output Impacts (in thousands) |          |         |         | Employment Impacts |          |         |       |
|--|-------------------------------|----------|---------|---------|--------------------|----------|---------|-------|
|  | Direct                        | Indirect | Induced | Total   | Direct             | Indirect | Induced | Total |
| Reconstituted wood product manufacturing   | -                             | \$9,778  | \$104   | \$9,882 | -                  | 28       | -       | 29    |
| Toilet preparation manufacturing   | -                             | \$279    | \$9,486 | \$9,765 | -                  | -        | 12      | 13    |
| Greenhouse, nursery, and floriculture production                                 | -                             | \$3,057  | \$6,630 | \$9,687 | -                  | 15       | 32      | 47    |
| Sound recording industries   | -                             | \$720    | \$8,957 | \$9,677 | -                  | 1        | 7       | 8     |
| Veterinary services  | -                             | \$5      | \$9,575 | \$9,580 | -                  | -        | 153     | 153   |
| Automobile manufacturing   | -                             | \$132    | \$9,096 | \$9,228 | -                  | -        | 6       | 6     |
| Other communications equipment manufacturing                                     | -                             | \$8,001  | \$735   | \$8,736 | -                  | 19       | 2       | 21    |
| Other animal food manufacturing  | -                             | \$285    | \$8,274 | \$8,560 | -                  | -        | 7       | 8     |
| Book publishers  | -                             | \$691    | \$7,699 | \$8,390 | -                  | 2        | 22      | 24    |
| Other commercial and service industry machinery manufacturing                    | -                             | \$7,909  | \$297   | \$8,207 | -                  | 25       | 1       | 26    |
| Wineries   | -                             | \$98     | \$8,071 | \$8,169 | -                  | -        | 18      | 18    |
| Polystyrene foam product manufacturing   | -                             | \$6,657  | \$1,248 | \$7,905 | -                  | 21       | 4       | 24    |
| Carpet and rug mills   | -                             | \$6,973  | \$927   | \$7,900 | -                  | 22       | 3       | 25    |
| Surgical and medical instrument, laboratory and medical instrument manufacturing | -                             | \$5,449  | \$2,434 | \$7,883 | -                  | 14       | 6       | 21    |
| Hardware manufacturing   | -                             | \$7,297  | \$482   | \$7,780 | -                  | 25       | 2       | 27    |
| Support activities for agriculture and forestry                                  | -                             | \$3,837  | \$3,917 | \$7,754 | -                  | 100      | 103     | 203   |
| Performing arts companies  | -                             | \$876    | \$6,868 | \$7,744 | -                  | 22       | 175     | 197   |
| Other fabricated metal manufacturing   | -                             | \$6,552  | \$1,092 | \$7,644 | -                  | 32       | 5       | 37    |
| Museums, historical sites, zoos, and parks                                       | -                             | -        | \$7,639 | \$7,639 | -                  | -        | 56      | 56    |
| Fruit farming  | -                             | \$150    | \$7,427 | \$7,578 | -                  | 1        | 29      | 30    |
| Poultry processing   | -                             | \$150    | \$7,232 | \$7,382 | -                  | 1        | 30      | 31    |
| State and local government passenger transit                                     | -                             | \$1,983  | \$5,133 | \$7,116 | -                  | 37       | 95      | 132   |
| Vegetable and melon farming  | -                             | \$56     | \$6,960 | \$7,015 | -                  | -        | 23      | 23    |
| Cookie, cracker, and pasta manufacturing   | -                             | \$68     | \$6,883 | \$6,951 | -                  | -        | 15      | 15    |
| All other chemical product and preparation manufacturing                         | -                             | \$4,465  | \$2,422 | \$6,886 | -                  | 8        | 5       | 13    |
| All other food manufacturing   | -                             | \$147    | \$6,723 | \$6,870 | -                  | -        | 20      | 21    |
| Coated and laminated paper, packaging paper and plastics film manufacturing      | -                             | \$5,805  | \$1,010 | \$6,815 | -                  | 13       | 2       | 16    |
| Brick, tile, and other structural clay product manufacturing                     | -                             | \$6,482  | \$152   | \$6,634 | -                  | 34       | 1       | 35    |
| Transport by pipeline  | -                             | \$3,262  | \$3,360 | \$6,622 | -                  | 4        | 4       | 7     |
| Womens and girls cut and sew apparel manufacturing                               | -                             | \$374    | \$6,192 | \$6,566 | -                  | 1        | 21      | 22    |
| Death care services  | -                             | -        | \$6,561 | \$6,561 | -                  | -        | 58      | 58    |
| Plastics material and resin manufacturing  | -                             | \$5,225  | \$1,327 | \$6,551 | -                  | 4        | 1       | 6     |
| Prefabricated wood building manufacturing  | -                             | \$6,303  | \$46    | \$6,349 | -                  | 42       | -       | 42    |
| Directory, mailing list, and other publishers                                    | -                             | \$2,410  | \$3,841 | \$6,251 | -                  | 6        | 10      | 17    |
| Water, sewerage and other treatment and delivery systems                         | -                             | \$953    | \$5,201 | \$6,154 | -                  | 3        | 18      | 21    |
| Surgical appliance and supplies manufacturing                                    | -                             | \$415    | \$5,531 | \$5,946 | -                  | 1        | 16      | 17    |
| Veneer and plywood manufacturing   | -                             | \$5,820  | \$88    | \$5,908 | -                  | 34       | 1       | 34    |
| Cattle ranching and farming  | -                             | \$120    | \$5,746 | \$5,867 | -                  | 1        | 28      | 29    |
| Aluminum product manufacturing from purchased aluminum                           | -                             | \$3,770  | \$2,081 | \$5,852 | -                  | 7        | 4       | 10    |
| Metal can, box, and other metal container (light gauge) manufacturing            | -                             | \$1,954  | \$3,781 | \$5,735 | -                  | 3        | 6       | 9     |

**APPENDIX A—DETAILED CALIFORNIA IMPACTS**

| Sector Name  | Output Impacts (in thousands) |          |         |         | Employment Impacts |          |         |       |
|--|-------------------------------|----------|---------|---------|--------------------|----------|---------|-------|
|  | Direct                        | Indirect | Induced | Total   | Direct             | Indirect | Induced | Total |
| Petroleum lubricating oil and grease manufacturing                 | -                             | \$4,098  | \$1,577 | \$5,676 | -                  | 4        | 2       | 6     |
| Spring and wire product manufacturing                              | -                             | \$4,924  | \$558   | \$5,482 | -                  | 23       | 3       | 26    |
| Urethane and other foam product (except polystyrene) manufacturing | -                             | \$3,717  | \$1,733 | \$5,450 | -                  | 12       | 6       | 18    |
| Cut stone and stone product manufacturing                          | -                             | \$5,199  | \$220   | \$5,419 | -                  | 39       | 2       | 41    |
| Turned product and screw, nut, and bolt manufacturing              | -                             | \$4,641  | \$679   | \$5,320 | -                  | 22       | 3       | 25    |
| Forestry, forest products, and timber tract production             | -                             | \$5,016  | \$247   | \$5,263 | -                  | 25       | 1       | 27    |
| Car washes   | -                             | \$1,074  | \$4,112 | \$5,186 | -                  | 25       | 97      | 123   |
| Handtool manufacturing   | -                             | \$4,813  | \$318   | \$5,132 | -                  | 23       | 2       | 25    |
| Seasoning and dressing manufacturing                               | -                             | \$128    | \$4,848 | \$4,977 | -                  | -        | 8       | 9     |
| Dog and cat food manufacturing                                     | -                             | \$3      | \$4,862 | \$4,865 | -                  | -        | 4       | 4     |
| Flour milling and malt manufacturing                               | -                             | \$79     | \$4,776 | \$4,855 | -                  | -        | 4       | 4     |
| Flavoring syrup and concentrate manufacturing                      | -                             | \$136    | \$4,576 | \$4,712 | -                  | -        | 2       | 2     |
| Other information services   | -                             | \$1,035  | \$3,565 | \$4,601 | -                  | 1        | 5       | 6     |
| All other miscellaneous manufacturing                              | -                             | \$409    | \$4,030 | \$4,439 | -                  | 2        | 18      | 20    |
| Valve and fittings other than plumbing manufacturing               | -                             | \$3,796  | \$610   | \$4,406 | -                  | 12       | 2       | 14    |
| Upholstered household furniture manufacturing                      | -                             | \$1,021  | \$3,314 | \$4,335 | -                  | 6        | 21      | 28    |
| Other basic organic chemical manufacturing                         | -                             | \$2,454  | \$1,753 | \$4,207 | -                  | 2        | 1       | 3     |
| Metal tank (heavy gauge) manufacturing                             | -                             | \$4,048  | \$72    | \$4,120 | -                  | 18       | -       | 18    |
| Pump and pumping equipment manufacturing                           | -                             | \$3,965  | \$98    | \$4,063 | -                  | 10       | -       | 10    |
| In-vitro diagnostic substance manufacturing                        | -                             | \$837    | \$3,184 | \$4,021 | -                  | 2        | 6       | 8     |
| Motor and generator manufacturing                                  | -                             | \$3,697  | \$254   | \$3,951 | -                  | 10       | 1       | 11    |
| Copper rolling, drawing, extruding and alloying                    | -                             | \$3,658  | \$231   | \$3,889 | -                  | 5        | -       | 5     |
| Poultry and egg production   | -                             | \$49     | \$3,819 | \$3,868 | -                  | -        | 4       | 4     |
| Heating equipment (except warm air furnaces) manufacturing         | -                             | \$3,394  | \$413   | \$3,807 | -                  | 14       | 2       | 16    |
| Plastics bottle manufacturing                                      | -                             | \$1,153  | \$2,634 | \$3,787 | -                  | 3        | 7       | 10    |
| Ground or treated mineral and earth manufacturing                  | -                             | \$3,616  | \$145   | \$3,761 | -                  | 6        | -       | 6     |
| Wood container and pallet manufacturing                            | -                             | \$2,491  | \$1,262 | \$3,752 | -                  | 19       | 10      | 29    |
| Transport by water   | -                             | \$1,754  | \$1,702 | \$3,456 | -                  | 4        | 3       | 7     |
| Photographic services  | -                             | \$1,044  | \$2,321 | \$3,365 | -                  | 11       | 24      | 34    |
| Ice cream and frozen dessert manufacturing                         | -                             | \$178    | \$2,969 | \$3,147 | -                  | -        | 7       | 7     |
| Soybean and other oilseed processing                               | -                             | \$219    | \$2,873 | \$3,092 | -                  | -        | 1       | 1     |
| Facilities support services  | -                             | \$1,515  | \$1,569 | \$3,084 | -                  | 11       | 12      | 23    |
| Crown and closure manufacturing and metal stamping                 | -                             | \$2,134  | \$912   | \$3,046 | -                  | 9        | 4       | 13    |
| Show case, partition, shelving, and locker manufacturing           | -                             | \$2,594  | \$381   | \$2,975 | -                  | 16       | 2       | 18    |
| Industrial gas manufacturing                                       | -                             | \$1,335  | \$1,610 | \$2,944 | -                  | 1        | 2       | 3     |
| Dry, condensed, and evaporated dairy product manufacturing         | -                             | \$73     | \$2,815 | \$2,888 | -                  | -        | 3       | 3     |
| Clay and nonclay refractory manufacturing                          | -                             | \$2,688  | \$133   | \$2,821 | -                  | 8        | -       | 8     |
| Video tape and disc rental   | -                             | -        | \$2,788 | \$2,788 | -                  | -        | 29      | 29    |
| All other miscellaneous wood product manufacturing                 | -                             | \$2,389  | \$384   | \$2,773 | -                  | 14       | 2       | 16    |
| Electromedical and electrotherapeutic apparatus manufacturing      | -                             | \$8      | \$2,694 | \$2,702 | -                  | -        | 6       | 6     |

APPENDIX A—DETAILED CALIFORNIA IMPACTS

| Sector Name  | Output Impacts (in thousands) |          |         |         | Employment Impacts |          |         |       |
|--|-------------------------------|----------|---------|---------|--------------------|----------|---------|-------|
|  | Direct                        | Indirect | Induced | Total   | Direct             | Indirect | Induced | Total |
| Unlaminated plastics profile shape manufacturing                                       | -                             | \$2,308  | \$391   | \$2,699 | -                  | 9        | 2       | 11    |
| Confectionery manufacturing from purchased chocolate                                   | -                             | \$9      | \$2,661 | \$2,671 | -                  | -        | 7       | 7     |
| Glass product manufacturing made of purchased glass                                    | -                             | \$1,791  | \$853   | \$2,644 | -                  | 9        | 4       | 13    |
| Other rubber product manufacturing   | -                             | \$1,775  | \$836   | \$2,611 | -                  | 7        | 4       | 11    |
| Ferrous metal foundries  | -                             | \$2,294  | \$280   | \$2,574 | -                  | 11       | 1       | 12    |
| Fats and oils refining and blending  | -                             | \$73     | \$2,479 | \$2,552 | -                  | -        | 2       | 2     |
| Textile and fabric finishing mills   | -                             | \$875    | \$1,671 | \$2,546 | -                  | 5        | 9       | 13    |
| Sporting and athletic goods manufacturing  | -                             | \$346    | \$2,181 | \$2,527 | -                  | 1        | 8       | 9     |
| Coffee and tea manufacturing   | -                             | \$46     | \$2,469 | \$2,516 | -                  | -        | 4       | 4     |
| All other basic inorganic chemical manufacturing                                       | -                             | \$1,573  | \$761   | \$2,334 | -                  | 2        | 1       | 3     |
| Breakfast cereal manufacturing   | -                             | \$8      | \$2,297 | \$2,305 | -                  | -        | 2       | 2     |
| Audio and video equipment manufacturing  | -                             | \$774    | \$1,517 | \$2,292 | -                  | 2        | 3       | 5     |
| Nonferrous metal (except copper and aluminum) rolling, drawing, extruding and alloying | -                             | \$1,953  | \$307   | \$2,260 | -                  | 3        | 1       | 4     |
| Wet corn milling   | -                             | \$637    | \$1,608 | \$2,245 | -                  | -        | 1       | 1     |
| Automatic environmental control manufacturing  | -                             | \$2,057  | \$129   | \$2,185 | -                  | 7        | -       | 8     |
| Mattress manufacturing   | -                             | \$131    | \$2,039 | \$2,170 | -                  | -        | 6       | 7     |
| Cut and sew apparel contractors  | -                             | \$959    | \$1,191 | \$2,150 | -                  | 13       | 16      | 28    |
| Other electronic component manufacturing   | -                             | \$1,750  | \$397   | \$2,147 | -                  | 9        | 2       | 11    |
| All other textile product mills  | -                             | \$1,414  | \$723   | \$2,137 | -                  | 8        | 4       | 12    |
| Relay and industrial control manufacturing   | -                             | \$1,796  | \$318   | \$2,114 | -                  | 6        | 1       | 7     |
| Computer terminals and other computer peripheral equipment manufacturing               | -                             | \$728    | \$1,333 | \$2,060 | -                  | 2        | 4       | 6     |
| Nonchocolate confectionery manufacturing   | -                             | \$20     | \$2,004 | \$2,024 | -                  | 0        | 5       | 5     |
| Nonferrous metal foundries   | -                             | \$1,753  | \$258   | \$2,011 | -                  | 9        | 1       | 11    |
| Textile bag and canvas mills   | -                             | \$1,663  | \$338   | \$2,001 | -                  | 11       | 2       | 13    |
| Dental equipment and supplies manufacturing  | -                             | \$1,097  | \$899   | \$1,996 | -                  | 4        | 3       | 7     |
| Tortilla manufacturing   | -                             | \$8      | \$1,979 | \$1,987 | -                  | -        | 9       | 9     |
| Laminated plastics plate, sheet (except packaging), and shape manufacturing            | -                             | \$1,664  | \$248   | \$1,913 | -                  | 6        | 1       | 7     |
| Industrial process variable instruments manufacturing                                  | -                             | \$1,367  | \$499   | \$1,866 | -                  | 5        | 2       | 6     |
| Broom, brush, and mop manufacturing  | -                             | \$1,497  | \$362   | \$1,859 | -                  | 6        | 1       | 7     |
| Paper mills  | -                             | \$720    | \$1,138 | \$1,857 | -                  | 1        | 2       | 3     |
| All other forging, stamping, and sintering   | -                             | \$1,489  | \$347   | \$1,836 | -                  | 5        | 1       | 7     |
| Biological product (except diagnostic) manufacturing                                   | -                             | \$77     | \$1,696 | \$1,772 | -                  | -        | 2       | 2     |
| Material handling equipment manufacturing  | -                             | \$1,567  | \$196   | \$1,763 | -                  | 5        | 1       | 5     |
| Doll, toy, and game manufacturing  | -                             | \$137    | \$1,588 | \$1,725 | -                  | -        | 4       | 4     |
| Pottery, ceramics, and plumbing fixture manufacturing                                  | -                             | \$1,506  | \$193   | \$1,699 | -                  | 10       | 1       | 11    |
| Ophthalmic goods manufacturing   | -                             | \$1      | \$1,668 | \$1,670 | -                  | 0        | 6       | 6     |
| Printed circuit assembly (electronic assembly) manufacturing                           | -                             | \$1,042  | \$623   | \$1,666 | -                  | 4        | 2       | 7     |
| Other accommodations   | -                             | \$24     | \$1,619 | \$1,643 | -                  | -        | 16      | 16    |
| Paperboard Mills   | -                             | \$1,145  | \$466   | \$1,612 | -                  | 2        | 1       | 2     |
| All other paper bag and coated and treated paper manufacturing                         | -                             | \$939    | \$662   | \$1,600 | -                  | 3        | 2       | 5     |

**APPENDIX A—DETAILED CALIFORNIA IMPACTS**

| Sector Name  | Output Impacts (in thousands) |          |         |         | Employment Impacts |          |         |       |
|--|-------------------------------|----------|---------|---------|--------------------|----------|---------|-------|
|  | Direct                        | Indirect | Induced | Total   | Direct             | Indirect | Induced | Total |
| Glass container manufacturing  | -                             | \$39     | \$1,553 | \$1,592 | -                  | -        | 4       | 4     |
| Sanitary paper product manufacturing                                     | -                             | \$350    | \$1,239 | \$1,589 | -                  | -        | 1       | 2     |
| Motorcycle, bicycle, and parts manufacturing                             | -                             | \$89     | \$1,469 | \$1,558 | -                  | -        | 3       | 3     |
| Grain farming  | -                             | \$173    | \$1,362 | \$1,535 | -                  | 2        | 16      | 18    |
| Institutional furniture manufacturing                                    | -                             | \$1,498  | \$37    | \$1,535 | -                  | 7        | -       | 7     |
| Distilleries   | -                             | \$56     | \$1,462 | \$1,518 | -                  | -        | 1       | 1     |
| Nonupholstered wood household furniture manufacturing                    | -                             | \$42     | \$1,427 | \$1,469 | -                  | -        | 12      | 12    |
| Synthetic rubber manufacturing   | -                             | \$1,046  | \$397   | \$1,442 | -                  | 2        | 1       | 2     |
| Construction machinery manufacturing                                     | -                             | \$1,419  | \$12    | \$1,431 | -                  | 3        | -       | 3     |
| Sugar cane mills and refining  | -                             | \$15     | \$1,406 | \$1,421 | -                  | -        | 2       | 2     |
| Seafood product preparation and packaging                                | -                             | \$60     | \$1,312 | \$1,372 | -                  | -        | 4       | 4     |
| Mining and quarrying other nonmetallic minerals                          | -                             | \$1,135  | \$140   | \$1,275 | -                  | 5        | 1       | 6     |
| Software, audio, and video media for reproduction                        | -                             | \$476    | \$798   | \$1,274 | -                  | 1        | 2       | 3     |
| Analytical laboratory instrument manufacturing                           | -                             | \$607    | \$655   | \$1,261 | -                  | 1        | 1       | 3     |
| Dental laboratories manufacturing  | -                             | \$1      | \$1,259 | \$1,259 | -                  | -        | 15      | 15    |
| Metal and other household furniture manufacturing                        | -                             | \$208    | \$1,049 | \$1,257 | -                  | 1        | 5       | 6     |
| Animal production, except cattle and poultry and eggs                    | -                             | \$72     | \$1,180 | \$1,252 | -                  | 1        | 18      | 19    |
| Sign manufacturing   | -                             | \$703    | \$521   | \$1,224 | -                  | 6        | 4       | 10    |
| Support activities for oil and gas operations                            | -                             | \$716    | \$507   | \$1,224 | -                  | 3        | 2       | 5     |
| Electronic connector manufacturing                                       | -                             | \$1,094  | \$97    | \$1,191 | -                  | 6        | 1       | 6     |
| Pesticide and other agricultural chemical manufacturing                  | -                             | \$237    | \$940   | \$1,177 | -                  | -        | 1       | 1     |
| Tree nut farming   | -                             | \$48     | \$1,125 | \$1,173 | -                  | -        | 9       | 9     |
| Custom roll forming  | -                             | \$1,046  | \$112   | \$1,158 | -                  | 3        | -       | 3     |
| Chocolate and confectionery manufacturing from cacao beans               | -                             | \$6      | \$1,140 | \$1,146 | -                  | -        | 2       | 2     |
| Support activities for other mining                                      | -                             | \$1,129  | \$15    | \$1,144 | -                  | 3        | 0       | 3     |
| Motor vehicle body manufacturing   | -                             | \$673    | \$431   | \$1,104 | -                  | 2        | 1       | 3     |
| Synthetic dye and pigment manufacturing                                  | -                             | \$958    | \$145   | \$1,103 | -                  | 2        | -       | 2     |
| Mens and boys cut and sew apparel manufacturing                          | -                             | \$39     | \$1,054 | \$1,093 | -                  | -        | 7       | 7     |
| Curtain and linen mills  | -                             | \$47     | \$1,034 | \$1,081 | -                  | -        | 6       | 7     |
| All other miscellaneous electrical equipment and component manufacturing | -                             | \$873    | \$204   | \$1,076 | -                  | 3        | 1       | 4     |
| Computer storage device manufacturing                                    | -                             | \$238    | \$837   | \$1,075 | -                  | -        | 1       | 1     |
| Bare printed circuit board manufacturing                                 | -                             | \$774    | \$291   | \$1,064 | -                  | 5        | 2       | 6     |
| All other converted paper product manufacturing                          | -                             | \$301    | \$756   | \$1,057 | -                  | 1        | 2       | 3     |
| Medicinal and botanical manufacturing                                    | -                             | \$26     | \$1,022 | \$1,048 | -                  | -        | 2       | 2     |
| Telephone apparatus manufacturing  | -                             | \$359    | \$666   | \$1,025 | -                  | -        | 1       | 1     |
| Power, distribution, and specialty transformer manufacturing             | -                             | \$881    | \$143   | \$1,024 | -                  | 2        | -       | 3     |
| Stationery product manufacturing   | -                             | \$261    | \$759   | \$1,021 | -                  | 1        | 2       | 3     |
| Household cooking appliance manufacturing                                | -                             | \$125    | \$895   | \$1,020 | -                  | -        | 2       | 2     |
| Primary battery manufacturing  | -                             | \$39     | \$968   | \$1,006 | -                  | -        | 1       | 1     |
| Power boiler and heat exchanger manufacturing                            | -                             | \$894    | \$96    | \$990   | -                  | 3        | -       | 4     |

APPENDIX A—DETAILED CALIFORNIA IMPACTS

| Sector Name   | Output Impacts (in thousands) |          |         |       | Employment Impacts |          |         |       |
|---|-------------------------------|----------|---------|-------|--------------------|----------|---------|-------|
|   | Direct                        | Indirect | Induced | Total | Direct             | Indirect | Induced | Total |
| Storage battery manufacturing   | -                             | \$382    | \$604   | \$986 | -                  | 1        | 2       | 3     |
| Tire manufacturing  | -                             | \$520    | \$440   | \$959 | -                  | 2        | 1       | 3     |
| Support activities for printing   | -                             | \$405    | \$553   | \$957 | -                  | 4        | 5       | 9     |
| Electricity and signal testing instruments manufacturing                        | -                             | \$839    | \$109   | \$948 | -                  | 2        | -       | 2     |
| Aircraft manufacturing  | -                             | \$742    | \$186   | \$928 | -                  | 1        | -       | 1     |
| Small electrical appliance manufacturing  | -                             | \$723    | \$186   | \$909 | -                  | 2        | 1       | 2     |
| Broadcast and wireless communications equipment manufacturing                   | -                             | \$150    | \$747   | \$896 | -                  | -        | 1       | 2     |
| Blind and shade manufacturing   | -                             | \$406    | \$483   | \$888 | -                  | 3        | 3       | 6     |
| Watch, clock, and other measuring and controlling device manufacturing          | -                             | \$319    | \$552   | \$871 | -                  | 1        | 2       | 3     |
| Office Furniture  | -                             | \$33     | \$831   | \$864 | -                  | -        | 3       | 4     |
| Secondary smelting and alloying of aluminum                                     | -                             | \$619    | \$237   | \$856 | -                  | 1        | -       | 1     |
| Abrasive product manufacturing  | -                             | \$801    | \$53    | \$854 | -                  | 3        | -       | 3     |
| Fluid power process machinery manufacturing                                     | -                             | \$691    | \$152   | \$843 | -                  | 2        | 1       | 3     |
| Propulsion units and parts for space vehicles and guided missiles manufacturing | -                             | \$733    | \$88    | \$821 | -                  | 3        | -       | 3     |
| All other petroleum and coal products manufacturing                             | -                             | \$608    | \$212   | \$820 | -                  | 1        | -       | 1     |
| Printing ink manufacturing  | -                             | \$466    | \$316   | \$783 | -                  | 1        | 1       | 2     |
| Flat glass manufacturing  | -                             | \$708    | \$72    | \$780 | -                  | 2        | -       | 3     |
| Apparel knitting mills  | -                             | \$22     | \$755   | \$776 | -                  | -        | 5       | 5     |
| Ball and roller bearing manufacturing   | -                             | \$571    | \$203   | \$774 | -                  | 2        | 1       | 2     |
| Air and gas compressor manufacturing  | -                             | \$745    | \$25    | \$770 | -                  | 1        | -       | 2     |
| Other cut and sew apparel manufacturing   | -                             | \$6      | \$752   | \$758 | -                  | -        | 5       | 5     |
| Semiconductor machinery manufacturing   | -                             | \$295    | \$438   | \$733 | -                  | 1        | 1       | 2     |
| Railroad rolling stock manufacturing  | -                             | \$572    | \$120   | \$693 | -                  | 1        | -       | 1     |
| Magnetic and optical recording media manufacturing                              | -                             | \$223    | \$445   | \$668 | -                  | -        | 1       | 1     |
| Other major household appliance manufacturing                                   | -                             | \$615    | \$44    | \$659 | -                  | 1        | -       | 1     |
| Other pressed and blown glass and glassware manufacturing                       | -                             | \$294    | \$361   | \$654 | -                  | 1        | 1       | 3     |
| Bowling centers   | -                             | \$1      | \$641   | \$642 | -                  | -        | 12      | 12    |
| Gasket, packing, and sealing device manufacturing                               | -                             | \$461    | \$164   | \$625 | -                  | 3        | 1       | 3     |
| Farm machinery and equipment manufacturing                                      | -                             | \$464    | \$129   | \$593 | -                  | 1        | -       | 1     |
| Other industrial machinery manufacturing  | -                             | \$367    | \$215   | \$582 | -                  | 2        | 1       | 2     |
| Travel trailer and camper manufacturing   | -                             | \$62     | \$482   | \$544 | -                  | -        | 2       | 2     |
| Air purification and ventilation equipment manufacturing                        | -                             | \$469    | \$71    | \$540 | -                  | 2        | -       | 3     |
| Other aircraft parts and auxiliary equipment manufacturing                      | -                             | \$253    | \$265   | \$518 | -                  | 1        | 1       | 2     |
| Jewelry and silverware manufacturing  | -                             | \$8      | \$505   | \$514 | -                  | -        | 2       | 2     |
| Other general purpose machinery manufacturing                                   | -                             | \$468    | \$43    | \$511 | -                  | 2        | -       | 2     |
| Nonwoven fabric mills   | -                             | \$345    | \$110   | \$455 | -                  | 1        | -       | 1     |
| Apparel accessories and other apparel manufacturing                             | -                             | \$22     | \$432   | \$454 | -                  | -        | 3       | 3     |
| Office supplies (except paper) manufacturing                                    | -                             | \$87     | \$361   | \$448 | -                  | -        | 2       | 2     |
| Commercial Fishing  | -                             | \$43     | \$389   | \$432 | -                  | 1        | 6       | 7     |
| Rubber and plastics hoses and belting manufacturing                             | -                             | \$256    | \$174   | \$430 | -                  | 1        | 1       | 2     |

APPENDIX A—DETAILED CALIFORNIA IMPACTS

| Sector Name   | Output Impacts (in thousands) |          |         |       | Employment Impacts |          |         |       |
|---|-------------------------------|----------|---------|-------|--------------------|----------|---------|-------|
|   | Direct                        | Indirect | Induced | Total | Direct             | Indirect | Induced | Total |
| All other transportation equipment manufacturing                                    | -                             | \$38     | \$360   | \$398 | -                  | -        | 1       | 1     |
| Fabric coating mills  | -                             | \$296    | \$96    | \$392 | -                  | 1        | -       | 1     |
| Beet sugar manufacturing  | -                             | \$3      | \$382   | \$386 | -                  | -        | 1       | 1     |
| Other engine equipment manufacturing  | -                             | \$229    | \$152   | \$381 | -                  | -        | -       | 1     |
| Arms, ordnance, and accessories manufacturing                                       | -                             | \$62     | \$313   | \$375 | -                  | -        | 1       | 1     |
| Totalizing fluid meters and counting devices manufacturing                          | -                             | \$160    | \$211   | \$371 | -                  | -        | -       | 1     |
| Household refrigerator and home freezer manufacturing                               | -                             | \$36     | \$323   | \$359 | -                  | -        | 1       | 1     |
| Other leather and allied product manufacturing                                      | -                             | \$21     | \$333   | \$354 | -                  | -        | 3       | 3     |
| Boat building   | -                             | \$14     | \$326   | \$341 | -                  | -        | 2       | 2     |
| Heavy duty truck manufacturing  | -                             | \$78     | \$256   | \$335 | -                  | -        | -       | -     |
| Cutting tool and machine tool accessory manufacturing                               | -                             | \$265    | \$65    | \$329 | -                  | 2        | -       | 2     |
| Footwear manufacturing  | -                             | -        | \$325   | \$325 | -                  | -        | 2       | 2     |
| Electric lamp bulb and part manufacturing   | -                             | \$120    | \$196   | \$317 | -                  | -        | 1       | 1     |
| Industrial mold manufacturing   | -                             | \$250    | \$62    | \$312 | -                  | 2        | -       | 2     |
| Turbine and turbine generator set units manufacturing                               | -                             | \$118    | \$174   | \$292 | -                  | -        | -       | -     |
| Search, detection, and navigation instruments manufacturing                         | -                             | \$167    | \$116   | \$283 | -                  | -        | -       | 1     |
| Broadwoven fabric mills   | -                             | \$72     | \$206   | \$278 | -                  | -        | 1       | 1     |
| Musical instrument manufacturing  | -                             | \$25     | \$249   | \$274 | -                  | -        | 2       | 2     |
| Cutlery, utensil, pot, and pan manufacturing  | -                             | \$75     | \$189   | \$263 | -                  | -        | 1       | 1     |
| Plastics and rubber industry machinery manufacturing                                | -                             | \$219    | \$36    | \$254 | -                  | 1        | -       | 1     |
| Metal cutting and forming machine tool manufacturing                                | -                             | \$191    | \$58    | \$249 | -                  | 1        | -       | 1     |
| Power-driven handtool manufacturing   | -                             | \$185    | \$51    | \$237 | -                  | 1        | -       | 1     |
| Electron tube manufacturing   | -                             | \$102    | \$131   | \$233 | -                  | -        | -       | 1     |
| Mining and oil and gas field machinery manufacturing                                | -                             | \$182    | \$35    | \$217 | -                  | -        | -       | -     |
| Industrial process furnace and oven manufacturing                                   | -                             | \$188    | \$22    | \$211 | -                  | 1        | -       | 1     |
| Carbon and graphite product manufacturing   | -                             | \$130    | \$68    | \$198 | -                  | -        | -       | 1     |
| Mining gold, silver, and other metal ore  | -                             | \$153    | \$40    | \$193 | -                  | -        | -       | -     |
| Mining coal   | -                             | \$105    | \$85    | \$191 | -                  | -        | -       | 1     |
| Photographic and photocopying equipment manufacturing                               | -                             | \$74     | \$114   | \$188 | -                  | -        | -       | -     |
| Commercial hunting and trapping   | -                             | -        | \$175   | \$175 | -                  | -        | 1       | 1     |
| Alumina refining and primary aluminum production                                    | -                             | \$125    | \$48    | \$173 | -                  | -        | -       | -     |
| Vending, commercial, industrial, and office machinery manufacturing                 | -                             | \$10     | \$160   | \$170 | -                  | -        | -       | -     |
| Primary smelting and refining of nonferrous metal (except copper and aluminum)      | -                             | \$129    | \$39    | \$168 | -                  | -        | -       | -     |
| Speed changer, industrial high-speed drive, and gear manufacturing                  | -                             | \$115    | \$49    | \$165 | -                  | -        | -       | -     |
| Fiber, yarn, and thread mills   | -                             | \$99     | \$61    | \$160 | -                  | -        | -       | 1     |
| Mechanical power transmission equipment manufacturing                               | -                             | \$112    | \$44    | \$156 | -                  | -        | -       | 1     |
| Electronic capacitor, resistor, coil, transformer, and other inductor manufacturing | -                             | \$91     | \$62    | \$153 | -                  | 1        | -       | 1     |
| Special tool, die, jig, and fixture manufacturing                                   | -                             | \$104    | \$47    | \$151 | -                  | 1        | -       | 1     |
| Cotton farming  | -                             | \$25     | \$110   | \$135 | -                  | -        | -       | -     |
| Alkalies and chlorine manufacturing   | -                             | \$69     | \$55    | \$124 | -                  | -        | -       | -     |

**APPENDIX A—DETAILED CALIFORNIA IMPACTS**

| <i>Sector Name</i>   | <i>Output Impacts (in thousands)</i> |                 |                |              | <i>Employment Impacts</i> |                 |                |              |
|--|--------------------------------------|-----------------|----------------|--------------|---------------------------|-----------------|----------------|--------------|
|  | <i>Direct</i>                        | <i>Indirect</i> | <i>Induced</i> | <i>Total</i> | <i>Direct</i>             | <i>Indirect</i> | <i>Induced</i> | <i>Total</i> |
| Packaging machinery manufacturing                                | -                                    | \$87            | \$32           | \$119        | -                         | -               | -              | 1            |
| Light truck and utility vehicle manufacturing                    | -                                    | -               | \$94           | \$94         | -                         | -               | -              | -            |
| Sugarcane and sugar beet farming                                 | -                                    | \$3             | \$86           | \$89         | -                         | -               | 1              | 1            |
| Guided missile and space vehicle manufacturing                   | -                                    | \$70            | \$16           | \$86         | -                         | -               | -              | -            |
| Manufactured home (mobile home) manufacturing                    | -                                    | \$78            | \$8            | \$85         | -                         | 1               | -              | 1            |
| Narrow fabric mills and schiffli machine embroidery              | -                                    | \$40            | \$33           | \$73         | -                         | -               | -              | 1            |
| Ammunition manufacturing   | -                                    | \$9             | \$59           | \$68         | -                         | -               | -              | -            |
| Optical instrument and lens manufacturing                        | -                                    | \$21            | \$45           | \$66         | -                         | -               | -              | -            |
| Knit fabric mills  | -                                    | \$24            | \$37           | \$61         | -                         | -               | -              | -            |
| Irradiation apparatus manufacturing                              | -                                    | \$6             | \$52           | \$58         | -                         | -               | -              | -            |
| Ship building and repairing                                      | -                                    | \$32            | \$18           | \$50         | -                         | -               | -              | -            |
| Aircraft engine and engine parts manufacturing                   | -                                    | \$28            | \$21           | \$49         | -                         | -               | -              | -            |
| Military armored vehicle, tank, and tank component manufacturing | -                                    | \$37            | \$12           | \$49         | -                         | -               | -              | -            |
| Artificial and synthetic fibers and filaments manufacturing      | -                                    | \$35            | \$8            | \$44         | -                         | -               | -              | -            |
| Petrochemical manufacturing                                      | -                                    | \$31            | \$9            | \$40         | -                         | -               | -              | -            |
| Rolling mill and other metalworking machinery manufacturing      | -                                    | \$11            | \$26           | \$37         | -                         | -               | -              | -            |
| Oilseed farming  | -                                    | \$3             | \$34           | \$36         | -                         | -               | -              | -            |
| Truck trailer manufacturing                                      | -                                    | \$25            | \$5            | \$29         | -                         | -               | -              | -            |
| Household laundry equipment manufacturing                        | -                                    | -               | \$26           | \$26         | -                         | -               | -              | -            |
| Pulp mills   | -                                    | \$12            | \$12           | \$23         | -                         | -               | -              | -            |
| Motor home manufacturing   | -                                    | -               | \$20           | \$21         | -                         | -               | -              | -            |
| Lawn and garden equipment manufacturing                          | -                                    | \$4             | \$14           | \$17         | -                         | -               | -              | -            |
| Leather and hide tanning and finishing                           | -                                    | \$3             | \$8            | \$11         | -                         | -               | -              | -            |
| Mining iron ore  | -                                    | \$9             | \$1            | \$10         | -                         | -               | -              | -            |
| Tobacco farming  | -                                    | -               | -              | -            | -                         | -               | -              | -            |

Center for Strategic Economic Research, June 2012

Data Source: IMPLAN, 2010 Coefficients based on United States Census Bureau information

Note: Differences due to rounding.

APPENDIX B—INDUSTRY GROUPINGS

## Appendix B—California Industry Groupings

| <i>Industry Grouping / Sector Name</i>                                       | <i>Output<br/>(in thousands)</i> | <i>Employment</i> |
|--|----------------------------------|-------------------|
| <b>California Total Economy</b>  | <b>\$3,176,523,531</b>           | <b>19,821,474</b> |
| <b>Housing (including Real Estate)</b>                                       | <b>\$328,549,056</b>             | <b>922,317</b>    |
| Construct new residential permanent site single- and multi-family structures | \$18,329,360                     | 104,281           |
| Construct other new residential structures                                   | \$27,354,913                     | 162,309           |
| Maint & repair construct of residential structures                           | \$3,392,379                      | 21,218            |
| Imputed rental activity for owner-occupied dwellings                         | \$162,016,362                    | 0                 |
| 70% of Real Estate   | \$117,456,041                    | 634,509           |
| <b>Wholesale and Retail Trade</b>  | <b>\$266,972,904</b>             | <b>2,585,476</b>  |
| Retail trade subtotal  | \$143,033,678                    | 1,877,929         |
| Motor vehicle and parts  | \$18,541,007                     | 181,325           |
| Furniture and home furnishing  | \$5,717,479                      | 58,170            |
| Electronics and appliances   | \$9,524,668                      | 69,178            |
| Building material and garden   | \$9,846,855                      | 114,938           |
| Food and beverage  | \$24,178,526                     | 359,179           |
| Health and personal care   | \$10,298,030                     | 121,393           |
| Gasoline stations  | \$8,635,223                      | 55,441            |
| Clothing and clothing accessories  | \$12,714,676                     | 201,636           |
| Sporting goods, hobby, book and music stores                                 | \$5,205,767                      | 89,539            |
| General merchandise  | \$17,620,199                     | 291,551           |
| Miscellaneous  | \$9,830,681                      | 164,199           |
| Direct and electronic sale   | \$10,920,567                     | 171,379           |
| Wholesale trade  | \$123,939,226                    | 707,547           |
| <b>Finance and Insurance</b>   | <b>\$263,423,755</b>             | <b>1,259,757</b>  |
| Monetary authorities and depository credit intermediation                    | \$67,867,931                     | 159,856           |
| Nondepository credit intermediation and related activities                   | \$47,237,931                     | 310,722           |
| Securities, commodity contracts, investments and related activities          | \$72,917,762                     | 486,433           |
| Insurance carriers   | \$40,273,506                     | 129,585           |
| Insurance agencies, brokerages, and related activities                       | \$19,584,807                     | 129,622           |
| Funds, trusts, and other financial vehicles                                  | \$15,541,818                     | 43,539            |
| <b>Professional, Scientific, and Technical Services</b>                      | <b>\$242,592,580</b>             | <b>1,745,733</b>  |
| Legal services   | \$36,976,140                     | 217,326           |
| Accounting, tax preparation, bookkeeping and payroll services                | \$19,497,243                     | 183,410           |
| Architectural, engineering and related services                              | \$33,127,918                     | 257,920           |
| Specialized design services  | \$4,483,164                      | 31,680            |
| Custom computer programming services   | \$34,452,627                     | 244,672           |
| Computer systems design services   | \$11,479,271                     | 121,902           |
| Other computer related services, including facilities management             | \$6,825,027                      | 21,782            |
| Management, scientific and technical consulting services                     | \$17,741,957                     | 137,788           |
| Environmental and other technical consulting                                 | \$12,837,877                     | 131,169           |
| Scientific research and development services                                 | \$36,700,647                     | 194,561           |
| Advertising and related services   | \$15,406,554                     | 107,085           |
| Photographic services  | \$1,102,531                      | 12,010            |
| Veterinary services  | \$2,539,811                      | 43,403            |
| All other miscellaneous professional, scientific and technical services      | \$9,421,813                      | 41,025            |

## APPENDIX B—INDUSTRY GROUPINGS

| <i>Industry Grouping / Sector Name</i>  | <i>Output<br/>(in thousands)</i> | <i>Employment</i> |
|---|----------------------------------|-------------------|
| <b>State and Local Government</b>   | <b>\$199,301,271</b>             | <b>2,218,818</b>  |
| State and local government passenger transit  | \$1,670,745                      | 31,873            |
| State and local government electric utilities   | \$4,574,331                      | 11,326            |
| Other state and local government enterprises  | \$26,143,171                     | 91,182            |
| Employment and payroll for State and Local Government Non-Education                   | \$83,088,835                     | 920,293           |
| Employment and payroll for State and Local Government Education                       | \$83,824,189                     | 1,164,145         |
| <b>Information</b>  | <b>\$197,379,561</b>             | <b>501,719</b>    |
| Newspaper publishers  | \$2,633,951                      | 21,301            |
| Periodical publishers   | \$3,815,650                      | 13,322            |
| Book publishers   | \$2,382,680                      | 7,467             |
| Directory, mailing list, and other publishers   | \$1,500,250                      | 4,310             |
| Software publishers   | \$32,747,364                     | 54,164            |
| Motion picture and video industries   | \$50,445,615                     | 163,487           |
| Sound recording industries  | \$5,149,358                      | 4,543             |
| Radio and television broadcasting   | \$7,043,950                      | 28,305            |
| Cable and other subscription programming  | \$8,251,587                      | 23,320            |
| Internet publishing and broadcasting  | \$10,514,309                     | 34,182            |
| Telecommunications  | \$60,137,722                     | 117,716           |
| Data processing, hosting, and related services  | \$10,385,154                     | 26,270            |
| Other information services  | \$2,371,971                      | 3,333             |
| <b>Health Care and Social Assistance</b>  | <b>\$188,602,063</b>             | <b>1,846,821</b>  |
| Offices of physicians, dentists, and other health practitioners                       | \$63,720,096                     | 541,098           |
| Home health care services   | \$4,644,849                      | 83,426            |
| Medical and diagnostic labs and outpatient and other ambulatory care services         | \$32,671,029                     | 193,201           |
| Private hospitals   | \$56,813,609                     | 379,235           |
| Nursing and residential care facilities   | \$15,367,894                     | 265,013           |
| Child day care services   | \$4,675,535                      | 107,528           |
| Individual and family services  | \$7,190,139                      | 190,326           |
| Community food, housing, and other relief services, including rehabilitation services | \$3,518,912                      | 86,994            |
| <b>Computer and Electronic Product Manufacturing</b>                                  | <b>\$184,607,279</b>             | <b>256,778</b>    |
| Electronic computer manufacturing   | \$73,313,231                     | 40,194            |
| Computer storage device manufacturing   | \$4,524,881                      | 4,168             |
| Computer terminals and other computer peripheral equipment manufacturing              | \$4,628,801                      | 9,022             |
| Telephone apparatus manufacturing   | \$4,695,621                      | 5,790             |
| Broadcast and wireless communications equipment                                       | \$9,109,616                      | 17,246            |
| Other communications equipment manufacturing  | \$1,964,432                      | 4,576             |
| Audio and video equipment manufacturing   | \$3,138,946                      | 6,649             |
| Electron tube manufacturing   | \$921,588                        | 2,520             |
| Bare printed circuit board manufacturing  | \$2,121,856                      | 10,379            |
| Semiconductor and related device manufacturing  | \$38,976,434                     | 45,605            |
| Electronic capacitor, resistor, coil, transformer and other inductor manufacturing    | \$427,623                        | 2,384             |
| Electronic connector manufacturing  | \$1,083,617                      | 4,650             |
| Printed circuit assembly (electronic assembly) manufacturing                          | \$2,480,255                      | 7,972             |
| Other electronic component manufacturing  | \$3,047,106                      | 13,040            |
| Search, detection, and navigation instruments manufacturing                           | \$17,564,729                     | 39,888            |
| Automatic environmental control manufacturing   | \$350,571                        | 1,222             |
| Industrial process variable instruments manufacturing                                 | \$2,412,163                      | 8,215             |
| Totalizing fluid meters and counting devices  | \$402,095                        | 912               |
| Electricity and signal testing instruments  | \$5,185,053                      | 13,240            |
| Analytical laboratory instrument manufacturing  | \$3,878,910                      | 8,878             |
| Irradiation apparatus manufacturing   | \$514,759                        | 1,142             |
| Watch, clock, and other measuring and controlling device manufacturing                | \$1,058,593                      | 3,801             |
| Software, audio, and video media reproducing  | \$1,216,146                      | 2,959             |
| Magnetic and optical recording media manufacturing                                    | \$1,333,474                      | 2,326             |

## APPENDIX B—INDUSTRY GROUPINGS

| <i>Industry Grouping / Sector Name</i>                             | <i>Output<br/>(in thousands)</i> | <i>Employment</i> |
|--|----------------------------------|-------------------|
| <b>Agriculture and Food Processing</b>                             | <b>\$151,882,300</b>             | <b>599,223</b>    |
| Oilseed farming  | \$31,439                         | 228               |
| <b>Grain farming</b>   | <b>\$1,155,977</b>               | <b>13,072</b>     |
| Vegetable and melon farming  | \$6,998,461                      | 21,642            |
| <b>Fruit farming</b>   | <b>\$13,483,430</b>              | <b>50,447</b>     |
| Tree nut farming   | \$5,104,614                      | 36,975            |
| <b>Greenhouse, nursery, and floriculture products</b>              | <b>\$3,977,492</b>               | <b>18,607</b>     |
| Cotton farming   | \$436,817                        | 1,254             |
| <b>Sugarcane and sugar beet farming</b>                            | <b>\$49,093</b>                  | <b>772</b>        |
| All other crop farming   | \$3,499,057                      | 10,051            |
| <b>Cattle ranching and farming</b>                                 | <b>\$2,082,627</b>               | <b>9,906</b>      |
| Dairy cattle and milk production                                   | \$6,060,426                      | 25,346            |
| <b>Poultry and egg production</b>                                  | <b>\$1,417,936</b>               | <b>1,583</b>      |
| Animal production, except cattle and poultry                       | \$401,682                        | 5,948             |
| <b>Forestry, forest products, and timber tract products</b>        | <b>\$351,176</b>                 | <b>1,831</b>      |
| Commercial logging   | \$409,107                        | 3,703             |
| <b>Commercial Fishing</b>  | <b>\$336,385</b>                 | <b>5,680</b>      |
| Commercial hunting and trapping                                    | \$41,860                         | 255               |
| <b>Support activities for agriculture and forest</b>               | <b>\$7,557,722</b>               | <b>197,856</b>    |
| Dog and cat food manufacturing                                     | \$1,466,157                      | 1,016             |
| <b>Other animal food manufacturing</b>                             | <b>\$3,470,935</b>               | <b>2,854</b>      |
| Flour milling and malt manufacturing                               | \$2,450,994                      | 1,985             |
| <b>Wet corn milling</b>  | <b>\$809,019</b>                 | <b>360</b>        |
| Soybean and other oilseed processing                               | \$1,832,754                      | 451               |
| <b>Fats and oils refining and blending</b>                         | <b>\$1,064,130</b>               | <b>642</b>        |
| Breakfast cereal manufacturing                                     | \$803,768                        | 780               |
| <b>Sugar cane mills and refining</b>                               | <b>\$812,482</b>                 | <b>902</b>        |
| Beet sugar manufacturing   | \$168,350                        | 309               |
| <b>Chocolate and confectionery manufacturing fro</b>               | <b>\$516,526</b>                 | <b>789</b>        |
| Confectionery manufacturing from purchased chocolate               | \$880,352                        | 2,250             |
| <b>Nonchocolate confectionery manufacturing</b>                    | <b>\$767,835</b>                 | <b>2,009</b>      |
| Frozen food manufacturing  | \$3,982,041                      | 11,862            |
| <b>Fruit and vegetable canning, pickling, and drying</b>           | <b>\$10,853,645</b>              | <b>20,609</b>     |
| Fluid milk and butter manufacturing                                | \$5,345,882                      | 7,947             |
| <b>Cheese manufacturing</b>  | <b>\$4,608,296</b>               | <b>5,913</b>      |
| Dry, condensed, and evaporated dairy products                      | \$1,006,042                      | 907               |
| <b>Ice cream and frozen dessert manufacturing</b>                  | <b>\$1,103,659</b>               | <b>2,529</b>      |
| Animal (except poultry) slaughtering, rendering, and processing    | \$6,133,879                      | 13,531            |
| <b>Poultry processing</b>  | <b>\$2,142,798</b>               | <b>8,874</b>      |
| Seafood product preparation and packaging                          | \$368,975                        | 1,091             |
| <b>Bread and bakery product manufacturing</b>                      | <b>\$4,805,186</b>               | <b>27,823</b>     |
| Cookie- cracker- and pasta manufacturing                           | \$2,103,152                      | 4,629             |
| <b>Tortilla manufacturing</b>                                      | <b>\$1,471,411</b>               | <b>6,433</b>      |
| Snack food manufacturing   | \$5,642,941                      | 7,839             |
| <b>Coffee and tea manufacturing</b>                                | <b>\$1,003,095</b>               | <b>1,474</b>      |
| Flavoring syrup and concentrate manufacturing                      | \$1,598,914                      | 763               |
| <b>Seasoning and dressing manufacturing</b>                        | <b>\$1,903,001</b>               | <b>3,308</b>      |
| All other food manufacturing                                       | \$3,151,442                      | 9,724             |
| <b>Soft drink and ice manufacturing</b>                            | <b>\$9,915,646</b>               | <b>13,488</b>     |
| Brew eries   | \$3,628,941                      | 2,983             |
| <b>Wineries</b>  | <b>\$12,236,006</b>              | <b>27,580</b>     |
| Distilleries   | \$438,746                        | 411               |
| <b>Non-Residential Construction</b>                                | <b>\$141,409,121</b>             | <b>876,426</b>    |
| Construct new nonresidential commercial and health care structures | \$26,098,788                     | 177,994           |
| Construct new nonresidential manufacturing structures              | \$4,373,012                      | 30,298            |
| Construct other new nonresidential structures                      | \$42,412,540                     | 268,001           |
| Maint & repair construct of nonresident structures                 | \$18,186,478                     | 128,200           |
| 30% of Real Estate   | \$50,338,303                     | 271,932           |

## APPENDIX B—INDUSTRY GROUPINGS

| <i>Industry Grouping / Sector Name</i>  | <i>Output<br/>(in thousands)</i> | <i>Employment</i> |
|---|----------------------------------|-------------------|
| <b>Leisure and Hospitality</b>  | <b>\$133,614,707</b>             | <b>1,883,849</b>  |
| Performing arts companies   | \$2,282,264                      | 63,242            |
| Spectator sports companies  | \$3,581,693                      | 65,173            |
| Promoters of performing arts and sports and agents for public figures           | \$4,512,967                      | 72,012            |
| Independent artists, writers, and performers                                    | \$14,488,066                     | 70,172            |
| Museums, historical sites, zoos, and parks                                      | \$1,791,397                      | 13,806            |
| Fitness and recreational sports centers   | \$2,523,852                      | 66,131            |
| Bowling centers   | \$240,727                        | 4,669             |
| Amusement parks, arcades, and gambling industry                                 | \$10,821,998                     | 110,164           |
| Hotels and motels, including casino hotels                                      | \$14,823,333                     | 134,722           |
| Other accommodations  | \$1,720,509                      | 18,286            |
| Food services and drinking places   | \$73,621,070                     | 1,213,868         |
| Other amusement and recreation industries                                       | \$3,206,833                      | 51,605            |
| <b>Management and Support</b>   | <b>\$114,711,974</b>             | <b>1,389,776</b>  |
| Management of companies and enterprises   | \$38,051,176                     | 197,575           |
| Employment services   | \$18,991,348                     | 466,268           |
| Travel arrangement and reservation services                                     | \$4,147,005                      | 28,728            |
| Office administrative services  | \$11,366,274                     | 98,789            |
| Facilities support services   | \$1,282,695                      | 10,116            |
| Business support services   | \$4,357,636                      | 71,844            |
| Investigation and security services   | \$6,443,887                      | 161,454           |
| Services to buildings and dwellings   | \$17,372,039                     | 276,744           |
| Other support services  | \$3,773,369                      | 35,292            |
| Waste management and remediation services                                       | \$8,926,545                      | 42,967            |
| <b>Other Services</b>   | <b>\$85,133,448</b>              | <b>1,192,029</b>  |
| Automotive repair and maintenance, except car washes                            | \$14,070,146                     | 145,559           |
| Car washes  | \$1,674,879                      | 41,779            |
| Electronic and precision equipment repair and maintenance                       | \$5,055,886                      | 29,813            |
| Commercial and industrial machinery and equipment                               | \$4,507,728                      | 36,889            |
| Personal and household goods repair and maintenance                             | \$2,658,540                      | 16,802            |
| Personal care services  | \$7,185,265                      | 109,514           |
| Death care services   | \$1,821,586                      | 17,491            |
| Dry-cleaning and laundry services   | \$4,045,304                      | 60,742            |
| Other personal services   | \$10,563,287                     | 70,145            |
| Religious organizations   | \$9,028,574                      | 69,492            |
| Grantmaking, giving, and social advocacy organizations                          | \$9,243,326                      | 90,965            |
| Civic, social, professional, and similar organizations                          | \$11,803,428                     | 136,351           |
| Private household operations  | \$3,475,498                      | 366,487           |
| <b>Transportation and Warehousing</b>   | <b>\$78,478,504</b>              | <b>622,234</b>    |
| Transport by air  | \$11,720,040                     | 42,331            |
| Transport by rail   | \$3,388,558                      | 10,684            |
| Transport by water  | \$2,804,193                      | 6,081             |
| Transport by truck  | \$21,300,453                     | 179,682           |
| Transit and ground passenger transportation                                     | \$3,216,605                      | 59,269            |
| Transport by pipeline   | \$2,576,284                      | 2,838             |
| Scenic and sightseeing transportation and support activities for transportation | \$11,531,666                     | 89,644            |
| Couriers and messengers   | \$7,718,398                      | 83,830            |
| Warehousing and storage   | \$7,167,453                      | 79,270            |
| US Postal Service   | \$7,054,853                      | 68,605            |

## APPENDIX B—INDUSTRY GROUPINGS

| <i>Industry Grouping / Sector Name</i>                           | <i>Output<br/>(in thousands)</i> | <i>Employment</i> |
|--|----------------------------------|-------------------|
| <b>Medical Manufacturing</b>                                     | <b>\$75,273,761</b>              | <b>111,668</b>    |
| Medicinal and botanical manufacturing                            | \$1,170,935                      | 2,654             |
| Pharmaceutical preparation manufacturing                         | \$47,346,737                     | 33,809            |
| In-vitro diagnostic substance manufacturing                      | \$2,205,806                      | 4,679             |
| Biological product (except diagnostic) manufacturing             | \$1,942,279                      | 2,745             |
| Electromedical and electrotherapeutic apparatus manufacturing    | \$4,999,480                      | 10,639            |
| Surgical and medical instrument manufacturing                    | \$10,014,007                     | 26,877            |
| Surgical appliance and supplies manufacturing                    | \$4,332,408                      | 12,833            |
| Dental equipment and supplies manufacturing                      | \$1,258,147                      | 4,240             |
| Ophthalmic goods manufacturing                                   | \$1,312,136                      | 4,775             |
| Dental laboratories manufacturing                                | \$691,825                        | 8,417             |
| <b>Federal Government</b>  | <b>\$66,023,196</b>              | <b>466,420</b>    |
| Other Federal Government enterprises                             | \$2,431,591                      | 7,025             |
| Employment and payroll for Federal Non-Military                  | \$25,513,279                     | 207,016           |
| Employment and payroll for Federal Military                      | \$38,078,325                     | 252,379           |
| <b>Utilities</b>   | <b>\$55,640,630</b>              | <b>59,132</b>     |
| Electric power generation, transmission, and distribution        | \$17,759,695                     | 22,156            |
| Natural gas distribution   | \$36,259,406                     | 31,341            |
| Water- sewerage and other treatment and deliver                  | \$1,621,529                      | 5,635             |
| <b>Transportation Equipment Manufacturing</b>                    | <b>\$48,610,304</b>              | <b>105,357</b>    |
| Automobile manufacturing   | \$4,957,513                      | 3,256             |
| Light truck and utility vehicle manufacturing                    | \$52,641                         | 27                |
| Heavy duty truck manufacturing                                   | \$1,076,159                      | 1,246             |
| Motor vehicle body manufacturing                                 | \$1,506,876                      | 3,855             |
| Truck trailer manufacturing                                      | \$168,990                        | 666               |
| Motor home manufacturing   | \$22,328                         | 81                |
| Travel trailer and camper manufacturing                          | \$294,422                        | 1,390             |
| Motor vehicle parts manufacturing                                | \$4,566,286                      | 12,435            |
| Aircraft manufacturing   | \$14,954,193                     | 22,860            |
| Aircraft engine and engine parts manufacturing                   | \$1,411,322                      | 2,884             |
| Other aircraft parts and auxiliary equipment                     | \$7,228,639                      | 25,239            |
| Guided missile and space vehicle manufacturing                   | \$6,884,140                      | 15,592            |
| Propulsion units and parts for space vehicles                    | \$826,884                        | 2,986             |
| Railroad rolling stock manufacturing                             | \$334,209                        | 690               |
| Ship building and repairing                                      | \$1,823,016                      | 7,848             |
| Boat building  | \$169,926                        | 861               |
| Motorcycle, bicycle, and parts manufacturing                     | \$977,069                        | 1,772             |
| Military armored vehicle, tank, and tank component manufacturing | \$1,185,733                      | 1,335             |
| All other transportation equipment manufacturing                 | \$169,957                        | 333               |

Center for Strategic Economic Research, June 2012

Data Source: IMPLAN, 2010 coefficients

Note: Differences due to rounding.

Appendix C—Population Distribution of California’s Counties

