

bae urban economics

Port of San Francisco
Economic Value At-Risk Analysis

May 11, 2017



bae urban economics

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Mr. Keven Brough
Port of San Francisco
Pier 1, The Embarcadero
San Francisco, CA 94111

Dear Mr. Brough,

Enclosed please find the Port of San Francisco Economic Value At-Risk Analysis. This analysis evaluates the total economic activity and property value at risk from a breach in the Seawall, excluding the value of utilities.

We have enjoyed working with you on this project.

Sincerely,



Sherry Okun-Rudnak, MA
Principal

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EXECUTIVE SUMMARY

Introduction

San Francisco's historic seawall lies underneath Port of San Francisco property, acting as a retaining wall for filled land behind it and protecting the Port and portions of downtown San Francisco from flood surge in the event of a major flood or earthquake. The historic seawall stretches from Fisherman's Wharf to AT&T Park. It holds up many of the Port's piers and supports the land that creates a large portion of downtown San Francisco and the waterfront. A recent vulnerability report commissioned by the Port confirmed that the seawall – and the areas of San Francisco that it protects – is under threat from a significant earthquake in the short-to-medium term and from growing flood risk over the long term as sea levels rise.

The Port of San Francisco (Port) engaged BAE Urban Economics (BAE) to evaluate the economic value at-risk from a seawall breach resulting from a natural disaster, most likely to be an earthquake or flood. The purpose of this analysis is to determine the total amount of economic value that the seawall protects in the event of a natural disaster. It does not predict the actual impacts of a specific disaster. BAE considered three disaster scenarios: a liquefaction induced lateral spread greater than or equal to five inches (≥ 5 " lateral spread) from a Maximum Considered Earthquake¹ (defined for this exercise as a magnitude 8(M8) earthquake), a 24" sea level rise (SLR) + 100-year flood, and a 66" sea level rise (SLR) + 100-year flood.

Components of Value and Activity

Value, as evaluated in this analysis, has three main components: Economic value, Lifelines, and Reputation. While lifeline and reputation values will be qualitatively addressed in this analysis, the focus lies on economic value, which is more easily quantifiable.

Economic Value. Economic value includes both property value and business activity. A breach in the seawall would result in real property loss, removing economic value from the City. This could include public and private buildings as well as transit and roadway infrastructure. The loss of property would also cause business interruptions from those firms located in damaged properties. Economic activity would likely cease while businesses assess the damage to their places of business and determine whether workers can resume activities from a remote location.

¹ "In a normal seismic hazard analyses intended for the public, that of a "**maximum considered earthquake**", or "**maximum considered event**" (MCE) for a specific area, is an **earthquake** that is expected to occur once in approximately 2,500 years; that is, it has a 2-percent probability of being exceeded in 50 years."

Lifelines. Due to San Francisco’s geography and lack of major entrance and exit highways, Emergency planners consider the Embarcadero a key evacuation and supply route in the event of a natural disaster. Emergency planners also depend on the structural integrity of the waterfront to support landing zones for helicopters, evacuation and delivery points for ships, fuel depots, and areas to supply food, water, sanitation, and coordination of city-wide emergency responses. Significant aspects of the City’s emergency plan depend on the soundness of the waterfront and, in turn, the seawall.

Reputation. Impacts to a city’s reputation can vary depending on the event and the City’s character. According to a 1994 UC Berkeley study, the reputational impacts to San Francisco following the 1989 Loma Prieta earthquake were short-lived.² Likewise, impacts to New York and New Jersey following Hurricane Sandy were short-lived.³ Tourists and businesses returned as soon as possible. However, it has taken the City of New Orleans 10 years to attract pre-Katrina levels of visitors.⁴⁵ There is also clear but hard-to-quantify value in preservation of the City’s iconic landmarks, including the Ferry Building and the Embarcadero.

Threats and Affected Zones

As previously stated, this analysis evaluates the economic value at-risk under three disaster scenarios. Each scenario has a different “affected zone” depending on the impact from a seawall breach or damage. While an earthquake would likely have the widest impacts on economic activity and value, it has a smaller affected zone than the 66” SLR + 100-year flood zone because the damage from an earthquake-related seawall breach would not be expected to reach as far inland as that flood surge.

Magnitude 8 Earthquake

According to the U.S. Geological Survey, the Bay Area has an approximately two out of three chance of a greater-than-6.7 magnitude earthquake striking a major fault in the next 30 years. The Maximum Considered Earthquake (MCE) - a design standard common in building codes in earthquake country - is a magnitude 8 earthquake. Earthquakes of this magnitude are predicted to cause the seawall to fail and move bayward, resulting in a zone of lateral spreading of the filled land behind.

² Kroll, Cynthia A., Landis, John D., Shen, Qing, and Stryker, Sean. Studies on the Loma Prieta Earthquake No. 3. “Economic Impacts of the Loma Prieta Earthquake: A Focus on Small Business.” January 1991.

³ U.S. Department of Commerce. “Economic Impact of Hurricane Sandy: Potential Economic Activity Lost and Gained in New Jersey and New York.” September 2013.

⁴ “2014 New Orleans Visitor Profile Study.” University of New Orleans Hospitality Research Center. March 9, 2015.

⁵ Some news reports suggest that the long recovery period is due to a change in tourist profiles from primarily college-aged visitors to the French Quarter, to more families seeking an historic and food-driven tourism experience. Others suggest that news of the devastation was widespread, while news of the recovery was not, meaning that tourists still don’t really know the extent to which the City has recovered.

The seawall-related, or affected, zone was limited to those areas close to the water where lateral spreading of fill was expected to be equal to or greater than five inches – in effect those areas where the land will move the most and the seawall will be most needed to act as a retaining wall. The affected zone includes all Port property as well as City property implicated in those areas behind the seawall with an expected 5 inches or more of lateral spread in a MCE.

24" SLR + 100-Year Flood

A 24" SLR + 100-year Flood could breach the seawall, causing a 66" surge. In this case, coastal flooding would affect a zone that reaches from the Wharf to AT&T Park, including a portion of the Downtown area.

66" SLR + 100-Year Flood

A 66" SLR + 100-year Flood is predicted to overtop the seawall and cause additional inland flooring. In this case, the surge would cause flooding in an affected zone that reaches from beyond the Wharf to past AT&T Park, including all of the piers, as well as portions of North Beach, the Downtown area, and Mission Creek.

Value At Risk Findings

Economic Value

Economic value can be measured in terms of physical assets, business activities, and tax revenues. Physical assets include Port property, other public and private property, as well as roads and transit infrastructure. Property destruction will have the indirect impact of at least temporarily disrupting business and other economic activity. These disruptions would result in reduced wages, building lease payments, business revenues, and subsequent reduced tax revenues to Local, State, and Federal agencies.

As Table ES-1 shows, a breach in the seawall puts a tremendous amount of economic value at risk under each scenario. Including physical assets, economic activity, and tax revenues, there is between \$24.6 billion and \$102.1 billion at risk. Assuming a needed investment level of at least \$2.5 billion, the at-risk value is between 9.8 and 40.8 times greater investment required to maintain the seawall.⁶

⁶ The Port has made early estimates for the investment required to both deal with immediate seismic risk and prepare for sea level rise, with the former projected to be \$500 million and the latter anywhere from \$2-5 billion (or more). All of these estimates are expected to change as the Port does further work to understand the most vulnerable areas and the costs of the needed fixes.

Table ES-1: Summary of Value at Risk

Summary of Value at Risk, Millions of Dollars	M8 Earthquake	24" SLR + 100-yr Flood	66" SLR + 100-yr Flood
Physical Assets	(\$17,398)	(\$26,236)	(\$41,446)
Business Interruption (a)	(\$6,258)	(\$14,622)	(\$53,497)
Local, State, and Federal Taxes (a)	(\$902)	(\$1,918)	(\$7,136.53)
Total	(\$24,558)	(\$42,776)	(\$102,079)
Jobs	(29,028)	(59,314)	(211,729)
Values at Risk Relative to Seawall Cost (b)	M8 Earthquake	24" SLR + 100-yr Flood	66" SLR + 100-yr Flood
Physical Assets	6.96	10.49	16.58
Business Interruption (a)	2.50	5.85	21.40
Local, State, and Federal Taxes (a)	0.36	0.77	2.85
Total Value at Risk Relative to Seawall Cost	9.82	17.11	40.83

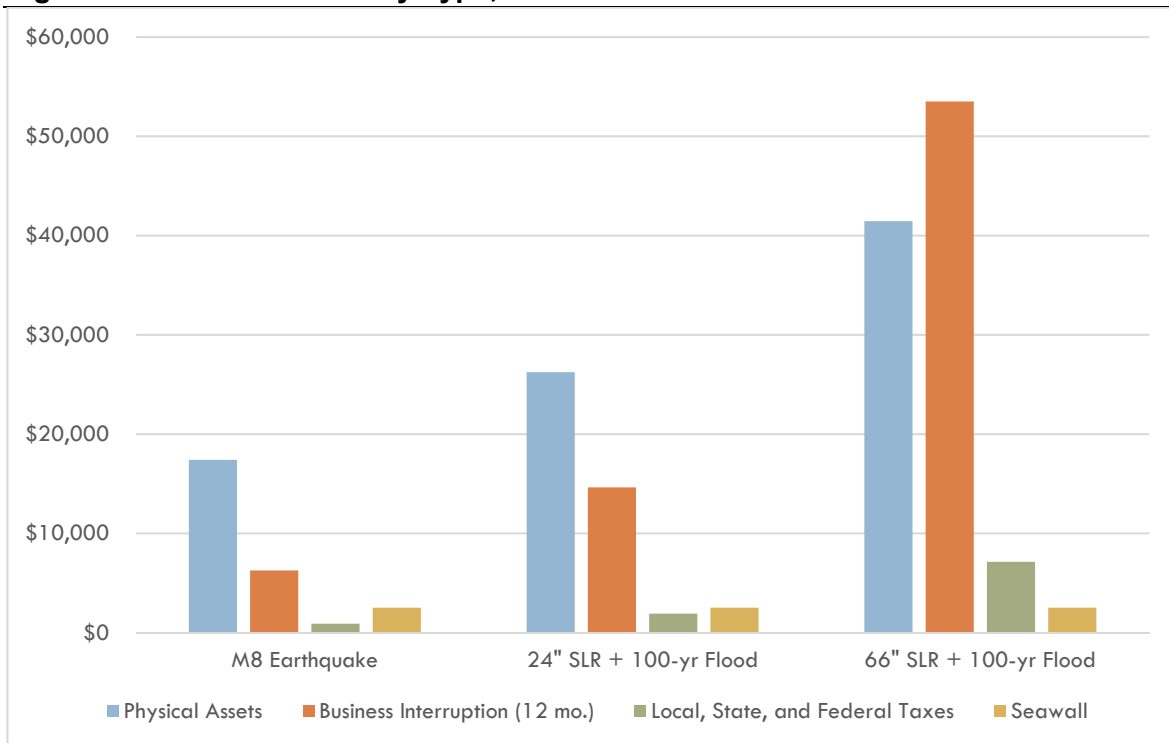
Notes:

(a) Assumes a 12 month business interruption period.

(b) Cost of seawall investment, (millions of dollars): \$2,500

Source: BAE, 2017.

Figure ES-1: Value at Risk by Type, Millions of Dollars



However, it should be noted that these modeling exercises are imprecise and often conservative. As we have seen in the Bay Area, “damage” to one key piece of infrastructure can have ripple effects that cause actual economic activity losses to be considerably higher. For example, according to the Bay Area Council Economic Institute, the 2013 Bay Area Rapid

Transit (BART) union strike cost \$73 million per day for the Bay Area region.⁷ If it lasted for a year, it would amount to approximately \$26.6 billion in lost worker productivity, in the Bay Area alone. These estimates only account for lost worker productivity, and do not include multiplier effects from reduced worker spending.⁸

Lifelines

In the event of a major disaster event, freeways and bridges leading into and out of San Francisco may be compromised. Emergency planners are relying on ferry and helicopter landing areas along the waterfront to provide evacuation routes out of San Francisco, and are planning on using the Embarcadero as a primary corridor for moving people, goods, and services up and down the city.

Because the Embarcadero and waterfront are currently protected by the seawall, evacuation plans rely on its structural soundness. The San Francisco Bay Area Water Emergency Transportation Authority (WETA) has estimated that it will be called upon to provide two days of continuous evacuation services along the waterfront to meet the demands of the thousands of people seeking to get back to the East Bay or to head north – this number increases if other evacuation routes out of the city are damaged, and it depends on a functioning waterfront with accessible landing and refueling areas. If the Embarcadero is unusable due to a breach in the seawall, evacuations would take much longer, leading to potentially significant loss of life.

Likewise, life-safety personnel will rely on fuel stations located on Port property to assist with providing services and/or evacuation efforts. If fuel depots become unusable due to a seawall breach, the results could be catastrophic to life-safety efforts.

Reputation and Quality of Life

A breach in the seawall could have additional quality of life implications as well as loss of value and impacts to the ability of life-safety personnel to evacuate the City. The Port and wider affected zones are home to numerous historically designated assets, tourist destinations, and environmental assets. The destruction of San Francisco's historic waterfront building stock could damage San Francisco's aesthetic and lead to new development that is potentially unaffordable to existing commercial tenants.

The quantitative analysis alone shows that the value of property and economic activity at risk far outweigh the proposed costs of reconstructing or redeveloping the seawall. The additional value from the use of the Embarcadero as an access route for life safety and resources cannot be overstated. Subsequent analysis by the Port of San Francisco to determine the as yet

⁷ <http://www.bayareacouncil.org/economy/bay-area-council-economic-institute-puts-economic-cost-of-bart-strike-at-73-million-a-day/>

⁸ Ibid. It is also worth noting that BART is implicated in the assets affected in some of the disaster scenarios, and thus the strike analysis is particularly germane to this study.

unmentioned potential environmental impacts with provide an even clearer picture of the costs and benefits of reconstructing or repairing the seawall.

INTRODUCTION

Study Concept

San Francisco's historic seawall lies underneath Port of San Francisco property, acting as a retaining wall for filled land behind it and protecting the Port and portions of downtown San Francisco from flood surge in the event of a major flood or earthquake. The historic seawall stretches from Fisherman's Wharf to AT&T Park. It holds up many of the Port's piers and supports the land that creates a large portion of downtown San Francisco and the waterfront. A recent vulnerability report commissioned by the Port confirmed that the seawall – and the areas of San Francisco that it protects – is under threat from a significant earthquake in the short-to-medium term and from growing flood risk over the long term as sea levels rise.

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The loss of property would also cause business interruptions from those firms located in destroyed properties. Economic activity would likely cease while businesses assess the

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damage to their places of business and determine whether workers can resume activities from a remote location. Some businesses may close their doors entirely, at least temporarily, if activities depend being located on-site (e.g., retail), or if they cannot sustain and replace equipment and/or inventory losses.

While these represent economic impacts in affected zones, losses could occur in other parts of the City, as well. Impacts to the Wharf and Embarcadero could affect citywide tourism; and, impacts to transit and utilities could cause losses across the City.

It should be noted that economic losses from business interruption would be temporary, depending on the time required to rebuild or relocate. Office users, who primarily rely on computer access could resume work more quickly than restaurant and retail users, whose economic activity is highly location-specific. This analysis assumes that business activity would resume within one year of the disaster event.

Lifeline Value

Because of San Francisco's geography and lack of major entrance and exit highways, Emergency planners consider the Embarcadero a key evacuation and supply route in the event of a natural disaster. Emergency planners also are depending on the structural integrity of the waterfront to support landing zones for helicopters, evacuation and delivery points for ships, fuel depots, and areas to supply food, water, sanitation, and coordination of city-wide emergency response. Significant aspects of the City's emergency plan depend on the soundness of the waterfront and, in turn, the seawall.

Reputation

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¹⁰ Kroll, Cynthia A., Landis, John D., Shen, Qing, and Stryker, Sean. Studies on the Loma Prieta Earthquake No. 3. "Economic Impacts of the Loma Prieta Earthquake: A Focus on Small Business." January 1991.

¹¹ U.S. Department of Commerce. "Economic Impact of Hurricane Sandy: Potential Economic Activity Lost and Gained in New Jersey and New York." September 2013.

¹² "2014 New Orleans Visitor Profile Study." University of New Orleans Hospitality Research Center. March 9, 2015.

METHODOLOGY FOR CALCULATING ECONOMIC VALUE AT-RISK

For each disaster scenario, BAE estimates the total value of economic activity at risk. This includes the value of the physical assets in affected zones, as well as business activity losses from interruption and the corresponding multiplier effects of losses.

Estimate Physical Assets

Port Property

Estimates for port property come from the Port itself. Values reflect the most recent replacement values calculated for Port property and include piers, sheds, and all other facilities. The seawall is not included in these costs.

Private Property

Estimates for private property values come from Risk Management Solutions (RMS), a private consulting firm that estimated property replacement costs on a parcel by parcel basis to inform the City of San Francisco's March 2016 Sea Level Rise Action Plan. The City and Port engaged RMS to provide property value estimates for buildings located off of Port property but within the affected zones of the two SLR scenarios. This analysis uses the RMS values to estimate the value of private property at risk under the two SLR scenarios.

Using the RMS data, along with GIS software, BAE imputed the value of private property in the M8 Earthquake scenario, based on the share of non-Port land area included in the M8 Earthquake affected zone.

Infrastructure

Infrastructure replacement cost estimates come from a variety of sources. City of San Francisco Public Works staff provided an average replacement cost per mile of roadway. San Francisco Metropolitan Transportation Authority (MTA) provided replacement cost data for MUNI rail lines, platforms, and stations in the affected zones. Port staff included seawall replacement cost data. Although utility replacement cost data should be included in this category, estimates were unavailable. Thus, infrastructure values are underestimated.

Estimate Business Activity

BAE estimated the amount of business activities at risk for each scenario using employment estimates from Dun & Bradstreet. Dun & Bradstreet employment estimates are geocoded in each of the affected zones, and include NAICS industry classification information. This allows BAE to estimate the total employment by sector at risk of interruption from a disaster event.

Employment numbers are input into the IMPLAN input-output model to determine the value of economic activity, income, and tax revenues at risk from disaster event and seawall breach.

Input Estimates into IMPLAN Input-Output Model

Economists use regional and national input-output models as a tool to understand the complex interactions among the various parts of an economy. The economic model used in this analysis, IMPLAN (“IMPact analysis for PLANning”), is a computer software package that automates the process of developing input-output models for regions within the United States. The IMPLAN model is well respected as an industry standard for projecting economic impacts resulting from current or future economic activities often called “events.” In this study, there are three IMPLAN “events” associated with potential seawall breaches which are analyzed: (1) business interruptions resulting from an M8 Earthquake, (2) business interruptions resulting from a 24” SLR + 100-year flood and (3) business interruptions resulting from a 66” SLR + 100-year flood.

At the heart of the IMPLAN model is a county-level trade flow called the Social Accounting Matrix (SAM) constructed from the production functions of 536 industries, using data from a variety of sources including the Bureau of Economic Analysis, Bureau of Labor Statistics, and the US Census. The SAM uses each county’s observed economic relationships between government, industry, and household sectors, allowing IMPLAN to model payment flows between industries, between households and industries, between government and industries, and between government and households. Thus, for a specified region (San Francisco County), the input-output table accounts for all of the dollar flows between the different sectors within the economy. IMPLAN then applies county-level price and wage data, as well as considering the availability of goods within San Francisco to estimate the impacts specific to the local economy. This analysis uses a multi-regional model to first estimate the impacts at the point of location, San Francisco County, and then the multiplier, or ripple impacts throughout the statewide, California economy.

Once the economic events have been entered into the model, IMPLAN reports the following types of impacts:

- **Direct Impacts.** Direct impacts refer to the set of producer or consumer expenditures applied to the predictive model for impact analysis. It is the amount of spending available to flow through the local economy. IMPLAN displays how the local economy will then respond to these initial changes. The direct impacts may equal up to the amount of spending input into the model, depending on a variety of factors.
- **Indirect Impacts.** The indirect impacts refer to the impact of local industries buying goods and services from other San Francisco and California industries. The cycle of spending works its way backward through the supply chain until all money leaks from

the local and statewide economies, either through imports or by payments to income and taxes.

- **Induced Impacts.** The induced impacts refer to the economies' responses to an initial change (direct impact) that occurs through re-spending of income according to household spending patterns. When households earn income, they spend part of that income on goods and services, such as food and healthcare. IMPLAN models households' disposable income spending patterns and distributes them through the San Francisco and California economies.

Results from this analysis are reported in annual 2017 dollars. While employment estimates show the number of jobs at risk irrespective of the business interruption duration, output and income results represent the potential loss of economic activity over a one-year business interruption period. Shorter or longer durations would result in smaller or greater losses, respectively. Because IMPLAN is a linear model, a six-month business interruption period would result in a 50 percent potential loss, while an 18-month period would result in a 150 percent potential loss.

Property values are not input into the IMPLAN input-output model. While property losses represent real economic losses, they do not multiply throughout the economy. Business interruptions of those firms operating inside of the buildings produce multiplier effects. One effect would be an indirect loss to the real estate leasing sector, which represents the ongoing economic activity of properties at risk. In this model, real estate leases are a portion of the supply chain. Thus, the value of properties at risk are not included in the economic activity estimates.

THREATS AND AFFECTED ZONES

As previously stated, this analysis evaluates the economic value at-risk under three disaster scenarios. Each scenario has a different “affected zone” depending on the impact from a seawall breach. While an earthquake would likely have the widest impacts on economic activity and value, it has a smaller affected zone than the 66” SLR + 100-year flood zone because the damage from a seawall breach would not be expected to reach as far inland as that flood surge.

Magnitude 8 Earthquake

The Bay Area has an approximately two out of three chance of a greater-than-6.7 magnitude earthquake striking a major fault in the next 30 years according to the U.S. Geological Survey. The Maximum Considered Earthquake (MCE) - a design standard common in building codes in earthquake country - is a magnitude 8 earthquake. Earthquakes of this magnitude are predicted to cause the seawall to fail and move bayward, resulting in a zone of lateral spreading of the filled land behind. As Figure 1 shows, the seawall-related affected zone is defined by a five-inch lateral spread. Although the piers themselves may not be impacted by an M8 earthquake, they are included in the affected zone because one or more could be at risk, depending on the location of the earthquake event. Thus, the affected zone includes all Port property, as well as a ≥ 5 ” lateral spread from a Maximum Considered Earthquake (M8 Earthquake).

Figure 1: M8 Earthquake Affected Zone



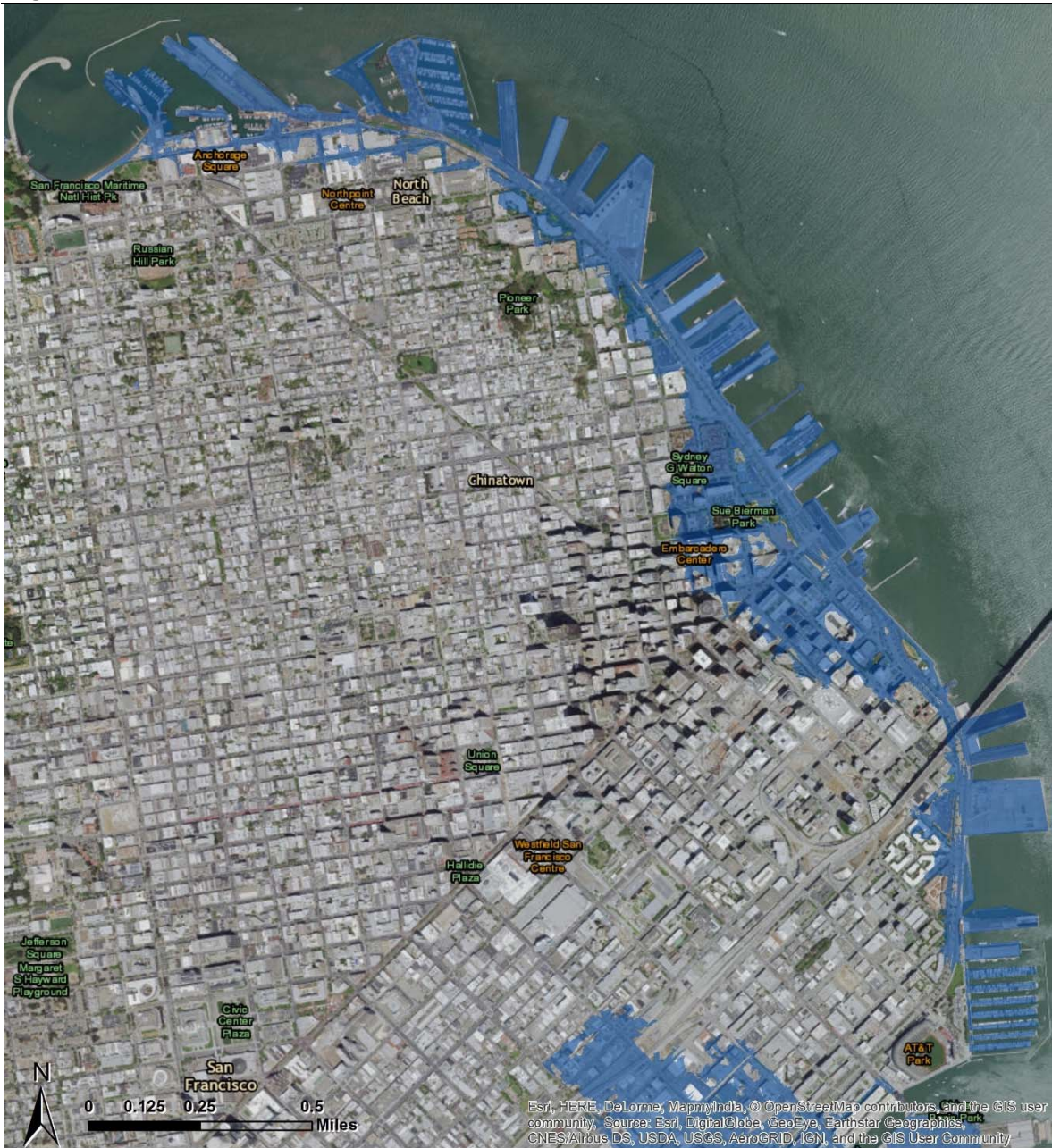
Sources: Port of San Francisco; BAE, 2017.

24" Sea Level Rise + 100-Year Flood

A 24" SLR + 100-year Flood could breach the seawall, causing a 66" surge. In this case, the surge would cause flooding in an affected zone that reaches from the Wharf to AT&T Park, including a portion of the Downtown area. Similar to the M8 Earthquake scenario, the piers themselves may not be at risk from the 66" surge; however, depending on the location of the

surge, one or more may be at risk. Thus, they are included in the affected zone. Figure 2 shows the 24" SLR + 100-year Flood affected zone.

Figure 2: 24" SLR + 100-Year Flood Affected Zone



Sources: Port of San Francisco; BAE 2017.

66" Sea Level Rise + 100-Year Flood

A 66" SLR + 100-year Flood could breach the seawall, causing a 108" surge event. In this case, the surge would cause flooding in an affected zone that reaches from beyond the Wharf to past AT&T Park, including all of the piers, as well as portions of North Beach, the Downtown area, and Mission Creek. Figure 3 shows the 66" SLR + 100-year Flood affected zone.

Figure 3: 66" SLR + 100-Year Flood Affected Zone



Sources: Port of San Francisco; BAE 2017.

SEAWALL PROTECTED ASSETS

This chapter presents the value of the assets at risk from a breach in the seawall. Assets include physical assets, economic activity, tax revenues, lifelines, and quality of life. The economic value of business interruption as reported in number of jobs by industry sector are used as inputs in the IMPLAN model to estimate the total value of economic activity at risk.

Economic value

Economic value can be measured for both physical assets, business activity, and tax revenues. This section presents the findings of BAE’s analysis of the value of assets and activity that are directly at-risk from a breach in the seawall following a disaster event.

Physical assets

Physical assets include Port property, other public and private property, as well as roads and transit infrastructure. Port property includes the seawall, piers and buildings, internal roads, and the F Muni Line. Private infrastructure includes roads, Muni property, and the BART Embarcadero station. Off-Port Property includes public and privately owned buildings not on Port property. As Table 1 shows, the total value of property at-risk is \$17.4 billion under the M8 Earthquake scenario, \$26.2 billion under the 24” SLR + 100-Year Flood scenario, and \$41.4 billion under the 66” SLR + 100-Year Flood scenario.

Table 1: Physical Asset Value at Risk

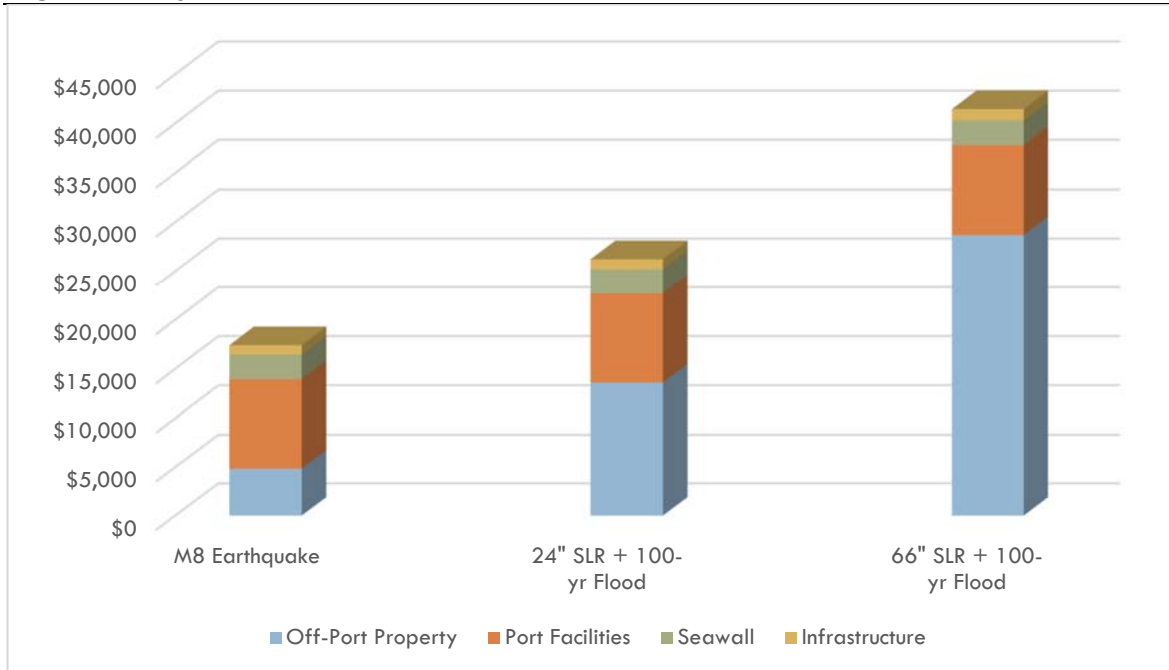
Physical Assets at Risk (in millions \$)	M8 Earthquake	24" SLR + 100-yr Flood	66" SLR + 100-yr Flood
Off-Port Property	\$4,841	\$13,600	\$28,700
Port Facilities	\$9,100	\$9,100	\$9,100
Seawall	\$2,500	\$2,500	\$2,500
Infrastructure			
Roads	\$41	\$120	\$182
Transit	\$916 (a)	\$916 (a)	\$964
Total	\$17,398	\$26,236	\$41,446

Note:

(a) Only includes F Muni Line.

Sources: Port of San Francisco; City of San Francisco; SFMTA; RMS; BAE, 2017.

Figure 4: Physical Assets at Risk, Millions of Dollars



Sources: Port of San Francisco; City of San Francisco, RMS; SFMTA, BAE, 2017.

It should be noted that the totals shown in Table 1 do not include the value of utilities located in the affected zones. Utility companies were not forthcoming with replacement cost estimates. It is anticipated that the loss of physical utilities in the affected zones would cause or elongate business interruptions in the affected zones and throughout the City. Thus, the total value of physical assets at risk shown in Table 1 are conservative.

Economic activity (Port and City)

Economic activities occurring in the affected zones are at risk from each of the three disaster event scenarios. Property destruction will have the indirect impact of at least temporarily disrupting business and other economic activity. While some office users may be able to resume operations quickly from other locations (barring widespread utility disruptions), retail and restaurant establishments, as well as industrial uses will not be able to resume operations until physical repairs to buildings and infrastructure are completed. These disruptions would result in reduced wages, building lease payments, business revenues, and subsequent reduced tax revenues to Local, State, and Federal agencies.

Using employment data from Dun & Bradstreet, along with the IMPLAN model, BAE estimated the amount of economic activity at risk under each scenario. Employment numbers represent the number of employees at risk of losing their jobs. Labor Income and Output numbers represent the amount of income and economic activity at risk per year of business interruption. If businesses resume operations within six months, the actual loss would be half of that projected. Likewise, if businesses could not resume operations for over a year,

potential losses would be greater than predicted. The single year period is shown for ease of temporal reference. Business interruption durations could be longer or shorter, depending on the location of the event, ability to access recovery resources, and/or other factors.

Table 2 shows the amount of economic activity at risk in each scenario. Under the M8 Earthquake scenario, which has the smallest affected zone, approximately 29,000 jobs, \$6.3 billion of annual economic activity, and \$3.0 billion in annual labor income would be at risk of interruption. Under the 24" SLR + 100-Year Flood scenario, approximately 59,300 jobs, \$14.6 billion of annual economic activity, and \$6.4 billion in annual labor income would be at risk of interruption; while under the 66" SLR + 100-Year Flood scenario, which has the largest affected zone, approximately 211,700 jobs, \$53.5 billion of annual economic activity, and \$23.7 billion in annual labor income would be at risk of interruption. Employment estimates per sector that were used as IMPLAN inputs are included as direct employment losses in Appendix B, while the remaining information in Appendix B shows the sector by sector potential losses for each scenario.

Table 2: Economic Activity at Risk from Business Interruption

M8 Earthquake	Employment	Labor Income (in Millions \$)	Output (in Millions \$)
Direct	(17,314)	(\$1,949)	(\$3,817)
Indirect	(6,114)	(\$615)	(\$1,432)
Induced	(5,600)	(\$392)	(\$1,008)
Total	(29,028)	(\$2,956)	(\$6,258)
<i>Multiplier</i>			1.64

24" SLR + 100-yr Flood	Employment	Labor Income (in Millions \$)	Output (in Millions \$)
Direct	(33,583)	(\$4,146)	(\$9,164)
Indirect	(13,829)	(\$1,451)	(\$3,311)
Induced	(11,902)	(\$836)	(\$2,146)
Total	(59,314)	(\$6,433)	(\$14,622)
<i>Multiplier</i>			1.60

66" SLR + 100-yr Flood	Employment	Labor Income (in Millions \$)	Output (in Millions \$)
Direct	(118,794)	(\$15,485)	(\$33,971)
Indirect	(49,005)	(\$5,177)	(\$11,603)
Induced	(43,930)	(\$3,086)	(\$7,923)
Total	(211,729)	(\$23,747)	(\$53,497)
<i>Multiplier</i>			1.57

Sources: IMPLAN, 2015; BAE, 2017.

While this analysis shows output values for the State of California ranging between \$6.3 billion and \$53.5 billion per year, it should be noted that actual economic activity losses could be considerably higher. These modeling exercises are imprecise and often conservative. As we have seen in the Bay Area, "damage" to one key piece of infrastructure can have ripple effects that cause actual economic activity losses to be considerably higher. For example, according

to the Bay Area Council Economic Institute, the 2013 Bay Area Rapid Transit (BART) union strike cost \$73 million per day for the Bay Area region.¹³ If it lasted for a year, it would amount to approximately \$26.6 billion in lost worker productivity, in the Bay Area alone. Also, these estimates only account for lost worker productivity, and do not include multiplier effects from reduced worker spending.¹⁴

In addition, BAE conducted a literature review of other analyses that evaluate the economic impacts of natural disasters (see Appendix A). Many of those studies estimate the total economic losses from actual events based on property replacement values, and find that total economic multipliers, including impacts from business interruption generally range between 1.3 and 1.7.¹⁵ As Table 3 shows, the total activity at risk from business interruption and the resulting multipliers range between 1.36 and 2.29.¹⁶

Table 3: Business Interruption Multipliers as a Function of Property at Risk

Values (Millions of \$)	M8 Earthquake	24" SLR + 100-yr Flood	66" SLR + 100-yr Flood
Property Value	\$17,398	\$26,236	\$41,446
Business Interruption Output	\$6,258	\$14,622	\$53,497
Multiplier	1.36	1.56	2.29

Sources: IMPLAN, 2015; BAE, 2017.

Tax Receipts at Risk

Interruptions to business and economic activity also place tax revenues at risk. Businesses and households pay tax revenues to local, state, and federal government agencies. IMPLAN provides aggregated tax estimates as part of its model. While it does distinguish between federal and state/local tax revenues, it does not distinguish between state and local taxes. In order to estimate the taxes at risk to the City of San Francisco, BAE assumed that the City receives all property tax revenues¹⁷ and 10 percent of sales tax revenues¹⁸ produced by San Francisco economic activity at risk. All other San Francisco state and local taxes, as well as

¹³ <http://www.bayareacouncil.org/economy/bay-area-council-economic-institute-puts-economic-cost-of-bart-strike-at-73-million-a-day/>

¹⁴ Ibid. It is also worth noting that BART is implicated in the assets affected in some of the disaster scenarios, and thus the strike analysis is particularly germane to this study.

¹⁵ Although, as Appendix A shows, multipliers can be as high as 2.0.

¹⁶ The multiplier in the 66" SLR + 100-Year Flood scenario is likely high due to the 12-month business interruption period assumed in this analysis. If business interruptions lasted six months, its multiplier would be 1.65.

¹⁷ Property tax revenues from the IMPLAN model are meant to show an order of magnitude estimate. The IMPLAN model does not account for either tax exempt properties (leading to potential overestimation of revenues), nor does it account for the fact that some areas in the affected zones are newly developed compared to San Francisco overall, and may pay a higher percentage of market value towards property taxes than San Francisco properties, on average (leading to potential underestimation of revenues).

¹⁸ The City receives one percent of taxable sales, with the remaining sales tax revenues accruing to the State of California. The City's sales tax rate is 9.25 percent of taxable sales. The City's one percent rate is approximately 11 percent of total sales tax revenues collected.

state and local taxes occurring elsewhere in California are included in the aggregated State and Local Tax Revenues estimates.

As Table 4 shows, business interruption under each scenario puts significant amounts of tax revenues at risk. The City of San Francisco has between \$56.5 million and \$492.4 million in tax revenues at risk from a breach in the seawall. Other municipalities and the State of California have a total of between \$269.4 million and \$1.8 billion at risk, while the Federal government has between \$575.9 million and \$4.9 billion at risk. In total, there are approximately \$901.9 million in tax revenues at risk under the M8 Earthquake scenario, \$1.9 billion at risk under the 24" SLR + 100-year flood scenario, and \$7.1 billion at risk under the 66" SLR + 100-year flood scenario.

Table 4: Annual Tax Revenues at Risk, for Each Year of Interruption

Annual San Francisco Taxes at Risk (a)	M8 Earthquake	24" SLR + 100-yr Flood	66" SLR + 100-yr Flood
Tax on Production and Imports (b)	(\$55.8)	(\$119.4)	(\$486.8)
Households (c)	(\$0.7)	(\$1.5)	(\$5.7)
Total San Francisco Taxes	(\$56.5)	(\$120.9)	(\$492.4)
Annual State and Local Taxes at Risk (d)	M8 Earthquake	24" SLR + 100-yr Flood	66" SLR + 100-yr Flood
Employee Compensation	(\$6.6)	(\$15.5)	(\$57.0)
Tax on Production and Imports	(\$161.7)	(\$224.5)	(\$910.7)
Households	(\$87.7)	(\$183.2)	(\$676.5)
Corporations	(\$13.4)	(\$40.7)	(\$138.6)
Total State and Local Taxes	(\$269.4)	(\$463.8)	(\$1,782.8)
Annual Federal Taxes at Risk	M8 Earthquake	24" SLR + 100-yr Flood	66" SLR + 100-yr Flood
Employee Compensation	(245.1)	(572.6)	(2111.2)
Proprietor Income	(22.8)	(33.4)	(124.4)
Tax on Production and Imports	(15.1)	(32.0)	(129.9)
Households	(207.4)	(436.9)	(1613.9)
Corporations	(85.5)	(258.7)	(881.8)
Total Federal Taxes	(\$575.9)	(\$1,333.7)	(\$4,861.3)
Total Annual Tax Revenues at Risk	(\$901.9)	(\$1,918.4)	(\$7,136.5)

Notes: All figures are in millions of dollars.

(a) From IMPLAN model, only on economic activity occurring with San Francisco County.

(b) Includes local portion of sales taxes and property taxes.

San Francisco sales tax rate	9.25%
Portion allocated to City	1.00%
Share of sales taxes to City	10.81%

(c) Includes property taxes.

(d) Net of San Francisco sales and property taxes; may include some other San Francisco taxes; includes state and local taxes in the remainder of the State.

Sources: IMPLAN; State Board of Equalization; BAE, 2017.

Total Economic Value at Risk

As Table 5 shows, a breach in the seawall puts a tremendous amount of economic value at risk under each scenario. Including physical assets, economic activity, and tax revenues, there

is between \$24.6 billion and \$102.1 billion at risk. Of this total, the physical assets represent a one-time loss in value, while the economic activity and tax revenues represent potential annual losses. In addition, there are between 29,000 and 211,700 jobs at risk. The total value at risk is nearly ten times higher than the cost of the seawall investment (\$2.5 billion) under the M8 Earthquake scenario, more than 17 times higher than the cost of the seawall investment under the 24" SLR + 100-Year Flood scenario, and nearly 41 times higher than under the 24" SLR + 100-Year Flood scenario.

Table 5: Summary of Value at Risk

Summary of Value at Risk, Millions of Dollars	M8 Earthquake	24" SLR + 100-yr Flood	66" SLR + 100-yr Flood
Physical Assets	(\$17,398)	(\$26,236)	(\$41,446)
Business Interruption (a)	(\$6,258)	(\$14,622)	(\$53,497)
Local, State, and Federal Taxes (a)	(\$902)	(\$1,918)	(\$7,136.53)
Total	(\$24,558)	(\$42,776)	(\$102,079)
Jobs	(29,028)	(59,314)	(211,729)
Values at Risk Relative to Seawall Cost (b)	M8 Earthquake	24" SLR + 100-yr Flood	66" SLR + 100-yr Flood
Physical Assets	6.96	10.49	16.58
Business Interruption (a)	2.50	5.85	21.40
Local, State, and Federal Taxes (a)	0.36	0.77	2.85
Total Value at Risk Relative to Seawall Cost	9.82	17.11	40.83

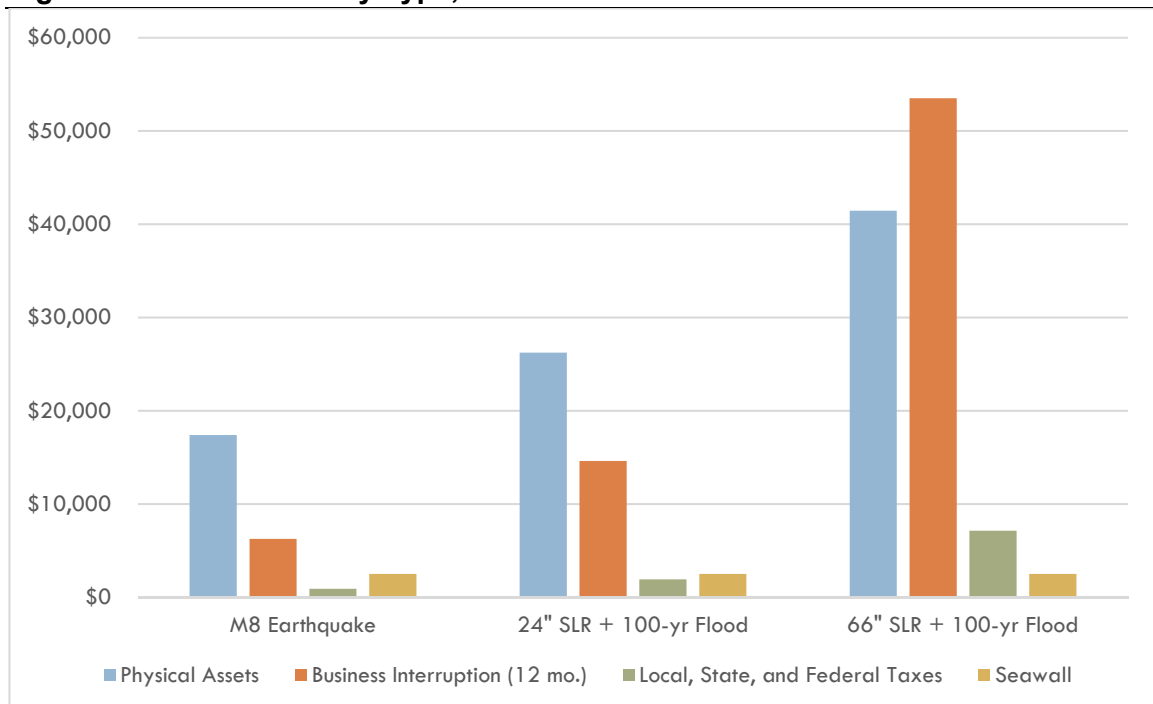
Notes:

(a) Assumes a 12 month business interruption period.

(b) Cost of seawall investment, (millions of dollars): \$2,500

Source: BAE, 2017.

Figure 5: Value at Risk by Type, Millions of Dollars



Lifelines

In the event of a major disaster event, freeways and bridges leading into and out of San Francisco may be compromised. Emergency planners are relying on ferry and helicopter landing areas along the waterfront to provide evacuation routes out of San Francisco, and are planning on using the Embarcadero as a primary corridor for moving people, goods, and services up and down the city.

Because the Embarcadero and waterfront are currently protected by the seawall, evacuation plans rely on its structural soundness. The San Francisco Bay Area Water Emergency Transportation Authority (WETA) has estimated that it will be called upon to provide two days of continuous evacuation services along the waterfront to meet the demands of the thousands of people seeking to get back to the East Bay or to head north – this number increases if other evacuation routes out of the city are damaged, and it depends on a functioning waterfront with accessible landing and refueling areas. If the Embarcadero is unusable due to a breach in the seawall, evacuations would take much longer, leading to potentially significant loss of life.

The fuel depots located on Port property are also considered high-value emergency assets to support evacuation efforts and the movement of traffic along the water. If fuel depots become unusable due to a seawall breach, the results could be catastrophic to life-safety efforts.

Reputation and Quality of Life

A breach in the seawall could have additional quality of life implications as well as loss of value and impacts to the ability of life-safety personnel to evacuate the City. The Port and wider affected zones are home to numerous historically designated assets, tourist destinations, and environmental assets.

Historic Assets

Much of the property located at the Port and protected by the seawall is historically designated by the State and National Trusts. Loss of these buildings, or even compromising the historical elements of these buildings could impact the City's ability to acquire Historic Tax Credits to assist with redevelopment, and would mean a loss of historic architecture that is a cornerstone of San Francisco's aesthetic. New buildings being raised on these sites would most likely have high development costs and be built to Class A office and/or industrial standards, making these spaces unaffordable to many of the "maker space" and incubator uses currently in repurposed historic buildings within the affected zones. Thus, loss of historic buildings would have an economic development displacement affect, as well as a loss of architecture central to the waterfront aesthetic.

Tourism and Visitation

Impacts to a city's tourism industry can vary depending on the event and the City's character. Fisherman's Wharf, which is protected by the seawall, is one of San Francisco's most well-known tourism destinations. Convention travelers along with tourists often make their way over to the Wharf to visit the Pier 39 sea lions and stay to eat dungeness crab and Boudin bread on a bench. A seawall breach that affects the Wharf may indicate to tourists around the world that San Francisco is "closed" for tourism.

However, studies show that natural disasters like the 1989 Loma Prieta Earthquake, Hurricane Sandy, and even the 9/11 Terrorist Attacks tend to have only a small and short-lived impact to tourism. According to a 1991 UC Berkeley study, while hotel occupancies in San Francisco dropped following the Loma Prieta Earthquake, they increased in San Jose and Oakland; and, the adjustment of demand was short-lived, lasting only a few months.¹⁹ Likewise, impacts to New York and New Jersey following Hurricane Sandy were short-lived, with "disaster tourism" making up for any lost seasonal tourism.²⁰ Following Sandy, both seasonal tourists and businesses returned as soon as possible. The same cannot be said of New Orleans, which began to achieve pre-Katrina tourism numbers 10 years after the devastating hurricane.²¹

Different outcomes for the different locations may result from the initial robustness of the local tourism market, as well as perceptions about the extent and lasting impacts of the damage. Some local New Orleans news reports suggest that the delayed tourism recovery after Katrina resulted from a change in tourist profiles from primarily college-aged visitors to the French Quarter, to more families seeking an historic and food-driven tourism experience. Other sources suggested that news of the devastation was widespread, while news of the recovery was not, meaning that tourists still don't really know the extent to which the City of New Orleans has recovered. Tourism markets in New York and the Bay Area are more robust than New Orleans, with visitors coming for a myriad of reasons. Likewise, the recovery of these areas tends to be more widely publicized as they are both international cities central to the US economy.

Thus, while a natural disaster may not have lasting impacts to tourism, there can be some impacts. Given that San Francisco relies on Fisherman's Wharf as a major tourist destination, and that the Wharf is protected by the seawall, and supports much of the fishing industry in San Francisco, its importance cannot be understated.

¹⁹ Kroll, Cynthia A., Landis, John D., Shen, Qing, and Stryker, Sean. Studies on the Loma Prieta Earthquake No. 3. "Economic Impacts of the Loma Prieta Earthquake: A Focus on Small Business." January 1991.

²⁰ U.S. Department of Commerce. "Economic Impact of Hurricane Sandy: Potential Economic Activity Lost and Gained in New Jersey and New York." September 2013.

²¹ "2014 New Orleans Visitor Profile Study." University of New Orleans Hospitality Research Center. March 9, 2015.

Conclusion

The quantitative analysis alone shows that the value of property and economic activity at risk far outweigh the proposed costs of reconstructing or redeveloping the seawall. The additional value from the use of the Embarcadero as an access route for life safety and resources cannot be overstated. Subsequent analysis by the Port of San Francisco to determine the as yet unmentioned potential environmental impacts will provide an even clearer picture of the costs and benefits of reconstructing or repairing the seawall.

APPENDIX A: OUTCOMES FROM OTHER ANALOGOUS DISASTERS LITERATURE REVIEW

This chapter provides an overview of the methodologies for estimating the direct and indirect economic impacts of natural hazards and disasters. Although different hazards affect the built environment differently, common frameworks are often used across hazard types. After identifying the theoretical frameworks for economic impact estimation of natural hazards, the section provides empirical data on the impacts from prior major earthquake and flood disasters.

Overview of Natural Hazard Economic Impact Estimation

Current methods for assessing the economic impacts of natural hazards and disasters employ a variety of methodological approaches depending on the type of natural hazard, spatial scale of analysis, and the availability of pre-existing data. In the United States, the most widely used economic impact estimation methodology is the HAZUS model developed by the Federal Emergency Management Agency (FEMA). Released in 1997, HAZUS is an input-output model that provides a standardized methodology for estimating losses associated with earthquakes, floods, and hurricanes. The HAZUS model utilizes information about building stock, local geology, and the location and size of potential natural hazards in order to estimate the potential economic impacts of a disaster. The model provides estimates of the direct costs of damage to structures and transportation systems, as well as the costs of repair, cleanup, and indirect effects due to declines in sales and supply shortages.²²

The results of economic impact assessments depend heavily on assumptions related to the spatial scale and temporal boundaries of the study. For local-sized study areas such as a municipality or a single floodplain, micro-scale assessments based on single elements at risk offer the highest level of precision.²³ Most often, economic damages are calculated separately for different economic sectors, such as private households, businesses, the public sector, and lifelines and infrastructure (see Table).

²² Greenberg, M., M. Lahr, and N. Mantell. "Understanding the Economic Costs and Benefits of Catastrophes and Their Aftermath: A Review and Suggestions for the U.S. Federal Government". *Risk Analysis*, Vol. 27, No. 1, 2007.

²³ Messner, F. et al. "Evaluating Flood Damages: Guidance and Recommendations on Principles and Methods". *Integrated Flood Risk Analysis and Management Methodologies (FLOODsite)*, Jan. 2007.

Table 6: Classification by Economic Sectors

Sector	Examples	Remarks
Private households	Residential buildings including contents, garages, summer houses etc., privately used vehicles	Majority of data sets and approaches exist for this sector. Variation of assets and susceptibility is rather low compared to other sectors.
Industry, manufacturing	Mining, metal processes, car and mechanical engineering industry, chemical industry, construction industry, installers workshop, carpentry, etc.	High variability and little data available. Transfer of asset values and damage functions within sector is problematic. Booysen et al. (1999) argue that it is not possible to develop standard damage function for industries and that questionnaires have to be provided for each industrial plant.
Services sector	Retail trade, wholesale trade, credit and insurance institutions, hotel and restaurant industry, lawyers, software companies, etc.	Rather high variability and little data available. Transfer of asset values and damage functions within sector has to be done with care.
Public sector	Education and culture (schools, universities, theaters, etc.), recreation and sports (campsite, sports hall, etc.), administration, health care and social welfare (hospitals, nursing home, etc.), churches	High variability and little data available. Transfer of asset values and damage functions within sector is problematic.
Lifelines and infrastructure	Water supply, sewerage and drainage, gas supply, power supply, telecommunication, transportation	Little data available. Transfer of asset values and damage functions possible within certain classes, e.g. unit values and damage functions for roads of certain characteristics.
Agriculture	Loss of crops, damage to buildings, contents, machinery; soil erosion, loss of livestock	Methods and data availability comparatively good. Average values per element at risk might be suitable in countries where this sector has a small damage potential compared to other sectors.
Others	Damage to flood defence structures; clean-up costs, evacuation and disaster management costs	Little data available. Average values are often used, e.g. average costs of evacuation (Penning-Rowsell and Green, 2000), but do not hold in the context of multiple hazards (Pfurtscheller and Schwarze, 2008).

Source: Merz et al. "Assessment of Economic Flood Damage". *Natural Hazards and Earth System Sciences*, 10, 1697-1724, 2010.

In most cases, hazard loss estimation techniques distinguish between direct and indirect economic losses. Direct losses typically result from the physical destruction of buildings and infrastructure, while indirect losses represent "the consequence" of direct physical destruction.²⁴ The total economic impact is defined as the sum of the direct and indirect impacts.

Direct and indirect losses are further classified into tangible and intangible damages, depending on the extent to which they can be assessed in monetary terms.²⁵ The economic impacts of a disaster typically describe market-based (tangible) losses, which can include things such as destruction to property, reductions in income, and losses in production. Merz et al. (2010) provides the following classification of damages caused by natural disasters:²⁶

²⁴ National Research Council. "The Impacts of Natural Disasters: A Framework for Loss Estimation." *Resources for the Future*. Washington, DC, 1999.

²⁵ Ibid.

²⁶ Merz et al. "Assessment of Economic Flood Damage". *Natural Hazards and Earth System Sciences*, 10, 1697-1724, 2010.

- **Direct, tangible:** damage to private buildings and contents; destruction of infrastructure such as roads, railroads; evacuation and rescue measures; business interruption inside the flooded area; cleanup costs.
- **Direct, intangible:** loss of life; injuries; loss of memorabilia; psychological distress, damage to cultural heritage; negative effects on ecosystems.
- **Indirect, tangible:** disruption of public services outside the flooded area; induced production losses to companies outside the flooded area (e.g. suppliers of flooded companies); cost of traffic disruption; loss of tax revenue due to migration of companies in the aftermath of floods.
- **Indirect, intangible:** trauma; loss of trust in authorities.

Direct Losses

Direct economic losses are the monetized damages to property and contents that occur due to physical damage. Direct losses are typically the consequence of high winds, flooding, or of ground shaking, and include things such as the physical destruction of buildings, business inventories, infrastructure, personal property, infrastructure, or other assets. For earthquakes and floods, direct costs are often referred to as “asset losses”.²⁷ Generally, asset losses are measured as the repair or replacement value of the capital lost.

Direct losses are often classified into direct tangible market losses and direct non-market, or intangible, losses. Tangible market losses describe losses to goods and services that are typically traded in markets, and for which a price can be easily observed.²⁸ For earthquakes and floods, direct market losses are most often caused by direct damages to the built environment and manufactured goods.²⁹ Non-market direct impacts include damages that cannot be repaired or replaced through market purchases. There are no easily observed prices that can be used to estimate non-market direct losses. Examples of non-market direct impacts include loss of lives, damages to natural assets and ecosystems, and damages to historical and cultural assets.

When determining direct losses at the micro-scale, Messner et al. (2007) recommends using an object-oriented approach that calculates damages for each individual asset. This approach is most often used to estimate values of fixed assets such as buildings. To apply this approach, it is necessary to obtain detailed information on the size, age, location, construction type, and number of stories of each building. The values of different types of buildings can be assessed in terms of the replacement or repair costs of the damaged assets. If actual sale data is not available, the asset values of different types of buildings can be estimated by

²⁷ Hallegatte, S. and V. Przulski. “The Economics of Natural Disasters: Concepts and Methods”. *Policy Research Working Paper, The World Bank Sustainable Development Network* (Office of the Chief Economist), Dec. 2010.

²⁸ Ibid.

²⁹ Ibid.

means of their typical construction costs.³⁰ Standard construction costs are most often used as a basis for valuation of infrastructure.

Indirect Losses

Whereas direct losses are typically thought of as losses in asset value, indirect losses are typically considered in terms of losses in income and/or production. Although there are significant variations in the definitions of indirect economic losses across studies, they can generally be categorized into three groups: induced losses, linkage losses, and consumption reduction losses.³¹ Induced losses pertain to production in businesses that are directly damaged by the hazard itself. In addition to lost production stemming from direct damage to buildings, induced losses include the lost production from direct loss of public utility and infrastructure services.³² Linkage losses describe the input/output losses experienced by firms that are “forward-linked” or “backward-linked” to those firms that are directly impacted by physical damage. These linkage losses are sometimes referred to as “ripple” or “multiplier” effects in the literature. Consumption reduction losses refer to spending reductions from the income losses experienced by employees of firms experiencing reduced production and sales.

Table 7 provides several examples of indirect tangible losses that can be incurred as a consequence of a disaster. As shown, these costs are incurred as a consequence of direct damage, and can occur either inside or outside of the hazard area, and often with a time lag.³³

³⁰ Messner, F. et al. “Evaluating Flood Damages: Guidance and Recommendations on Principles and Methods”. *Integrated Flood Risk Analysis and Management Methodologies (FLOODsite)*, Jan. 2007.

³¹ National Research Council. “The Impacts of Natural Disasters: A Framework for Loss Estimation.” *Resources for the Future*. Washington, DC, 1999.

³² Rose, A. “Economic Principles, Issues, and Research Priorities in Hazard Loss Estimation”. *Modeling Spatial and Economic Impacts of Disasters*, edited by Yasuhide Okuyama and Stephanie E. Chang, Springer, 2013.

³³ Meyer, V. et al. “Assessing the Costs of Natural Hazards – State of the Art and Knowledge Gaps”. *Nat. Hazards Earth System Sciences*, 13, 1351-1373, 2013.

Table 7: Classification of Indirect Tangible Losses

Loss category	Examples
Disruption of business	<ul style="list-style-type: none">• Manufacturing production• Retail, distribution, office• Leisure services
Disruption of networks	<ul style="list-style-type: none">• Communications<ul style="list-style-type: none">– Road traffic– Other traffic• Public utilities<ul style="list-style-type: none">– Water supply– Sewerage and sewerage treatment– Gas– Electricity– Telecommunications• Computer control systems
Disruption of public services	
Disruption of households	<ul style="list-style-type: none">• Additional heating/drying out costs• Other miscellaneous costs
Emergency service costs	<ul style="list-style-type: none">• Local government• Police• Fire brigades• Ambulance services• Flood defence agencies• Military aid• Voluntary services

Source: Australian Bureau of Transport Economics, Economic Costs of Natural Disasters in Australia, Report 103, 2001.

For earthquakes and floods, indirect losses typically refer to “output losses” from the business interruptions that are provoked by a disaster.³⁴ These output losses can refer to the business interruptions in production during the event, production losses directly due to asset losses during reconstruction after the event, supply-chain disruptions to firms that are not directly affected, and macro-economic feedbacks.³⁵ Indirect losses can also describe changes in operational expenditures, the losses of income resulting from the nonprovision of goods and services, or the effects on public finance.³⁶

Attempts to define and measure indirect impacts stem from the understanding that many assets that are damaged from natural disasters have values that are much larger than their simple replacement values. This is especially true for public goods such as infrastructure, health services and education services. Often, these goods or services are not exchanged on

³⁴ Hallegatte, S. and V. Przulski. “The Economics of Natural Disasters: Concepts and Methods”. *Policy Research Working Paper, The World Bank Sustainable Development Network* (Office of the Chief Economist), Dec. 2010.

³⁵ Ibid.

³⁶ Pelling, M. “The Macro-Economic Impact of Disasters”. *Progress in Development Studies*, 2004.

markets, but rather, are provided through political processes that take several non-market criteria into account.

Business Interruption Losses

Although some authors distinguish between business interruption losses and indirect tangible losses, the terms are often used interchangeably. However, methods to evaluate business interruption losses, which have both direct and indirect components, are generally different from those used for other indirect or direct damages. Table 8 provides an overview of the types and origin of business losses due to a disaster. Direct losses consist of primary direct losses, which are those resulting from immediate destruction, and secondary direct losses, which refer to the additional damages resulting from “follow-on” physical destruction, such as a fire following an earthquake or additional water damage to unrepaired buildings from rain following a major hurricane.³⁷ Indirect losses can also be categorized into primary and secondary losses. Primary indirect losses are those that are induced by a loss of production.³⁸ Secondary indirect losses take into account the system-wide impact of losses, or the macroeconomic feedbacks that occur in the aftermath of a disaster. Negative market effects can include price changes, labor shortages, or decreased competition.

Table 8: Types and Origin of Business Disaster Losses

Direct Losses	Indirect losses
Primary direct losses	Primary losses
Physical damage to buildings	Loss of production due to direct damages
Physical damage to production equipment	Loss of production due to infrastructure disruptions
Physical damage to raw materials	Loss of production due to supply chain disruptions
Physical damage to products in stock	
Physical damage to semi-finished products	Secondary losses
Physical damage to control installations	Market disturbances (e.g. from higher prices for raw materials)
Physical damage to service installations	Decreased competitiveness
Secondary direct losses	Damage to company's image
Secondary hazards and damages (e.g. due to explosions)	Extra labor for process recovery
Costs for remediation and emergency measures	

Source: Hiete, M. and M. Merz. “An Indicator Framework to Assess the Vulnerability of Industrial Sectors against Indirect Disaster Losses”. *6th International ISCRAM Conference*. May, 2009.

There are three principal methods for determining economic impacts due to business interruption:³⁹

³⁷ National Research Council. “The Impacts of Natural Disasters: A Framework for Loss Estimation.” *Resources for the Future*. Washington, DC, 1999.

³⁸ Hiete, M. and M. Merz. “An Indicator Framework to Assess the Vulnerability of Industrial Sectors against Indirect Disaster Losses”. *6th International ISCRAM Conference*. May, 2009.

³⁹ Meyer, V. et al. “Assessing the Costs of Natural Hazards – State of the Art and Knowledge Gaps”. *Nat. Hazards Earth System Sciences*, 13, 1351-1373, 2013.

- applying sector-specific reference values (e.g. for loss of added value, wage losses, or relocation expenses)
- comparing production output between hazard and non-hazard years; and
- calculating production losses using a fixed share of direct damages

The simplest method is to apply a multiplier or fixed percentage of the direct costs using empirical data from prior disaster events.⁴⁰ The main challenge with using this technique is deciding on which multiplier to use, given the high variability of published estimates of indirect costs. The most comprehensive approach involves applying a sector-specific unit loss value to each major industrial sector in the hazard area.⁴¹

The indirect vulnerability of an industrial sector is understood to vary according to the sector's technical attributes, organizational properties, and degree of external dependencies.⁴² In general, the industrial sectors with extensive material requirements, as well as those with higher degrees of dependencies on transportation and other infrastructures, are the most vulnerable to indirect losses due to a disaster. Other indirect vulnerabilities can arise from structural supply chain characteristics, such as the degree of vertical integration, clustering, and customer proximity.⁴³

Economic Impact Multipliers

Economic multipliers are often used to describe the relationship between direct and indirect losses. These multipliers measure the ratio between the overall economic cost and the direct costs due to a disaster.⁴⁴ Although indirect costs are often treated differently and are difficult to compare across studies, in broad terms, indirect losses are typically in the range of 20 percent to 45 percent of direct losses.⁴⁵

Hallegatte (2008) introduced an adaptive regional input-output model that accounts for changes in production capacity, as well as several adaptive behaviors in the disaster aftermath, to assess the economic costs of Hurricane Katrina.⁴⁶ The model estimated direct losses equal to \$107 billion and total costs equal to \$149 billion, suggesting an indirect

⁴⁰ Hammond, M.J. et al. "Urban Flood Impact Assessment: A State-of-the-art Review". Centre for Water Systems, University of Exeter, DHI Group.

⁴¹ Ibid.

⁴² Hiete, M. and M. Merz. "An Indicator Framework to Assess the Vulnerability of Industrial Sectors against Indirect Disaster Losses". *6th International ISCRAM Conference*. May, 2009.

⁴³ Ibid.

⁴⁴ Hallegatte, S. "A Roadmap to Assess the Economic Cost of Climate Change with an Application to Hurricanes in the United States"

⁴⁵ Bureau of Transport Economics, Commonwealth of Australia. "Economic Costs of Natural Disasters in Australia". Report 103. 2001.

⁴⁶ Hallegatte, S. "An Adaptive Regional Input-Output Model and its Application to the Assessment of the Economic Cost of Katrina", 28, (3): 779-799, 2008.

multiplier of 1.44. Importantly, the ratio of total damages to direct damages increased exponentially with the size of the disaster, reaching 2.0 for a disaster with \$200 billion direct losses.

Table 9: Economic Impact Multipliers

Disaster Name Disaster Type	Direct Impacts		Indirect Impacts	Impact Multiplier (Total / Direct Costs)
	Type	Scale		
Katrina <i>Hurricane</i>	Fixed Capital Damages	State of Louisiana	Sector Production Losses Housing Service Production Losses	1.39
Copenhagen <i>Storm Surge</i>	Fixed Capital Damages	Capital Region	Business Interruption Losses Production Losses During Reconstruction Housing Service Production Losses	1.03-1.14
Galveston Bay <i>Storm Surge</i>	Property Damage	3 counties	Business Interruption Losses	1.40
Southern California <i>Major Earthquake</i>	Damages to built environment Interruption of Lifeline Services	8 counties	Business Interruption Losses	1.70
London <i>Extreme Weather Event</i>	Fixed Capital Damages	London	Business Interruption Losses	1.3-2.0

Source: BAE, 2017.

The indirect costs shown in Table 9 are in line with empirical data from several prior disasters, including the Loma Prieta earthquake (1989), Northridge earthquake (1994), and Hurricane Sandy (2012). The Loma Prieta earthquake resulted in indirect losses of \$2 billion, or 20 percent of direct losses.⁴⁷ In the case of the Northridge earthquake, Gordon and Richardson (1995) estimated indirect losses totaling approximately 30 percent of direct losses. Indirect losses from Hurricane Sandy, the second costliest hurricane in U.S. history, have been estimated at 48 percent of direct losses.⁴⁸

⁴⁷ Seismic Safety Commission, "Loma Prieta's Call to Action" (1991). *California Agencies*. Paper 192. http://digitalcommons.law.ggu.edu/caldocs_agencies/192

⁴⁸ Park, J. et al. "Hurricane Sandy." National Economic Impact Analysis of Terrorist Attacks and Natural Disasters, edited by Richardson, H.W., et al. Edward Elgar Publishing, 2014, pp. 204-220.

APPENDIX B: EMPLOYEMENT ESTIMATES AND IMPLAN RESULTS

San Francisco Employment at Risk, 8M Earthquake

Sector	Description	Direct	Indirect	Induced	Total
0	Total	(17,314)	(6,114)	(5,600)	(29,028)
1	Oilseed farming	0	(0)	(0)	(0)
2	Grain farming	0	(1)	(0)	(1)
3	Vegetable and melon farming	0	(1)	(1)	(1)
4	Fruit farming	(2)	(64)	(2)	(68)
5	Tree nut farming	0	(3)	(0)	(3)
6	Greenhouse, nursery, and floriculture production	0	(3)	(1)	(4)
7	Tobacco farming	0	0	0	0
8	Cotton farming	0	(0)	(0)	(0)
9	Sugarcane and sugar beet farming	0	(0)	(0)	(0)
10	All other crop farming	0	(22)	(2)	(24)
11	Beef cattle ranching and farming, including feedlots and dual-purpose ranch	0	(2)	(2)	(3)
12	Dairy cattle and milk production	0	(3)	(1)	(4)
13	Poultry and egg production	0	(0)	(0)	(1)
14	Animal production, except cattle and poultry and eggs	(10)	(1)	(1)	(11)
15	Forestry, forest products, and timber tract production	0	(0)	(0)	(0)
16	Commercial logging	0	(1)	(0)	(2)
17	Commercial fishing	0	(23)	(4)	(27)
18	Commercial hunting and trapping	0	(0)	(0)	(0)
19	Support activities for agriculture and forestry	(7)	(24)	(3)	(34)
20	Extraction of natural gas and crude petroleum	0	(14)	(4)	(18)
21	Extraction of natural gas liquids	0	(0)	(0)	(0)
22	Coal mining	0	(0)	(0)	(0)
23	Iron ore mining	0	(0)	(0)	(0)
24	Gold ore mining	0	(0)	(0)	(0)
25	Silver ore mining	0	0	0	0
26	Lead and zinc ore mining	0	0	0	0
27	Copper ore mining	0	(0)	(0)	(0)
28	Uranium-radium-vanadium ore mining	0	0	0	0
29	Other metal ore mining	0	(0)	(0)	(0)
30	Stone mining and quarrying	0	(0)	(0)	(0)
31	Sand and gravel mining	0	(1)	(0)	(1)
32	Other clay, ceramic, refractory minerals mining	0	(0)	(0)	(0)
33	Potash, soda, and borate mineral mining	0	(0)	(0)	(0)
34	Phosphate rock mining	0	0	0	0
35	Other chemical and fertilizer mineral mining	0	(0)	(0)	(0)
36	Other nonmetallic minerals	0	(0)	(0)	(0)
37	Drilling oil and gas wells	0	(0)	(0)	(0)
38	Support activities for oil and gas operations	(2)	(3)	(0)	(5)
39	Metal mining services	0	(0)	(0)	(0)
40	Other nonmetallic minerals services	0	(0)	(0)	(0)
41	Electric power generation - Hydroelectric	0	(0)	(0)	(0)
42	Electric power generation - Fossil fuel	0	(0)	(0)	(0)
43	Electric power generation - Nuclear	0	(0)	(0)	(0)
44	Electric power generation - Solar	0	(0)	(0)	(0)
45	Electric power generation - Wind	0	(0)	(0)	(0)
46	Electric power generation - Geothermal	0	(0)	(0)	(0)
47	Electric power generation - Biomass	0	(0)	(0)	(0)
48	Electric power generation - All other	(8)	(0)	(0)	(8)
49	Electric power transmission and distribution	0	(0)	(0)	(1)
50	Natural gas distribution	0	(5)	(3)	(8)
51	Water, sewage and other systems	0	(6)	(9)	(15)
52	Construction of new health care structures	0	0	0	0
53	Construction of new manufacturing structures	0	0	0	0
54	Construction of new power and communication structures	0	0	0	0
55	Construction of new educational and vocational structures	0	0	0	0
56	Construction of new highways and streets	(12)	0	0	(12)
57	Construction of new commercial structures, including farm structures	(159)	0	0	(159)
58	Construction of other new nonresidential structures	0	0	0	0
59	Construction of new single-family residential structures	(6)	0	0	(6)
60	Construction of new multifamily residential structures	0	0	0	0
61	Construction of other new residential structures	(8)	0	0	(8)
62	Maintenance and repair construction of nonresidential structures	(274)	(93)	(26)	(393)

(Continued on the following page)

San Francisco Employment at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
63	Maintenance and repair construction of residential structures	0	(6)	(36)	(42)
64	Maintenance and repair construction of highways, streets, bridges, and tunn	0	0	0	0
65	Dog and cat food manufacturing	0	(0)	(0)	(0)
66	Other animal food manufacturing	0	(0)	(0)	(1)
67	Flour milling	0	(1)	(0)	(1)
68	Rice milling	0	(0)	(0)	(0)
69	Malt manufacturing	0	(0)	(0)	(0)
70	Wet corn milling	0	(0)	(0)	(0)
71	Soybean and other oilseed processing	0	(0)	(0)	(0)
72	Fats and oils refining and blending	(3)	(0)	(0)	(3)
73	Breakfast cereal manufacturing	0	(0)	(0)	(0)
74	Beet sugar manufacturing	0	(0)	(0)	(0)
75	Sugar cane mills and refining	0	(1)	(0)	(1)
76	Nonchocolate confectionery manufacturing	0	(0)	(0)	(0)
77	Chocolate and confectionery manufacturing from cacao beans	(28)	(2)	(0)	(30)
78	Confectionery manufacturing from purchased chocolate	0	(0)	(0)	(0)
79	Frozen fruits, juices and vegetables manufacturing	0	(0)	(0)	(1)
80	Frozen specialties manufacturing	0	(1)	(1)	(2)
81	Canned fruits and vegetables manufacturing	0	(1)	(1)	(2)
82	Canned specialties	0	(0)	(0)	(0)
83	Dehydrated food products manufacturing	0	(0)	(0)	(0)
84	Fluid milk manufacturing	0	(2)	(1)	(3)
85	Creamery butter manufacturing	0	(0)	(0)	(0)
86	Cheese manufacturing	0	(1)	(1)	(2)
87	Dry, condensed, and evaporated dairy product manufacturing	0	(0)	(0)	(0)
88	Ice cream and frozen dessert manufacturing	(1)	(1)	(0)	(3)
89	Animal, except poultry, slaughtering	0	(1)	(1)	(2)
90	Meat processed from carcasses	0	(0)	(1)	(1)
91	Rendering and meat byproduct processing	0	(0)	(0)	(0)
92	Poultry processing	0	(3)	(2)	(4)
93	Seafood product preparation and packaging	(1)	(1)	(1)	(3)
94	Bread and bakery product, except frozen, manufacturing	(12)	(6)	(9)	(27)
95	Frozen cakes and other pastries manufacturing	0	(0)	(0)	(1)
96	Cookie and cracker manufacturing	0	(0)	(0)	(0)
97	Dry pasta, mixes, and dough manufacturing	0	(0)	(0)	(0)
98	Tortilla manufacturing	0	(0)	(0)	(1)
99	Roasted nuts and peanut butter manufacturing	0	(0)	(0)	(1)
100	Other snack food manufacturing	0	(1)	(0)	(1)
101	Coffee and tea manufacturing	0	(0)	(0)	(1)
102	Flavoring syrup and concentrate manufacturing	0	(0)	(0)	(1)
103	Mayonnaise, dressing, and sauce manufacturing	0	(0)	(0)	(0)
104	Spice and extract manufacturing	0	(0)	(0)	(0)
105	All other food manufacturing	0	(2)	(1)	(3)
106	Bottled and canned soft drinks & water	(7)	(1)	(1)	(10)
107	Manufactured ice	0	(0)	(0)	(0)
108	Breweries	(61)	(1)	(3)	(65)
109	Wineries	(96)	(5)	(1)	(102)
110	Distilleries	(12)	(0)	(0)	(12)
111	Tobacco product manufacturing	0	(0)	(0)	(0)
112	Fiber, yarn, and thread mills	0	(0)	(0)	(0)
113	Broadwoven fabric mills	0	(0)	(0)	(0)
114	Narrow fabric mills and schiffli machine embroidery	(2)	(0)	(0)	(2)
115	Nonwoven fabric mills	0	(0)	(0)	(0)
116	Knit fabric mills	0	(0)	(0)	(0)
117	Textile and fabric finishing mills	0	(1)	(0)	(1)
118	Fabric coating mills	0	(0)	(0)	(0)
119	Carpet and rug mills	0	(0)	(0)	(0)
120	Curtain and linen mills	0	(1)	(0)	(1)
121	Textile bag and canvas mills	0	(0)	(0)	(1)
122	Rope, cordage, twine, tire cord and tire fabric mills	0	(0)	(0)	(0)
123	Other textile product mills	0	(1)	(0)	(1)
124	Hosiery and sock mills	0	(0)	(0)	(0)

(Continued on the following page)

San Francisco Employment at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
125	Other apparel knitting mills	(3)	(0)	(0)	(3)
126	Cut and sew apparel contractors	0	(9)	(3)	(12)
127	Mens and boys cut and sew apparel manufacturing	0	(0)	(0)	(0)
128	Womens and girls cut and sew apparel manufacturing	0	(0)	(1)	(1)
129	Other cut and sew apparel manufacturing	0	(0)	(0)	(0)
130	Apparel accessories and other apparel manufacturing	0	(3)	(0)	(4)
131	Leather and hide tanning and finishing	0	(0)	(0)	(0)
132	Footwear manufacturing	0	(0)	(0)	(0)
133	Other leather and allied product manufacturing	0	(0)	(0)	(0)
134	Sawmills	0	(2)	(1)	(2)
135	Wood preservation	0	(0)	(0)	(0)
136	Veneer and plywood manufacturing	0	(0)	(0)	(0)
137	Engineered wood member and truss manufacturing	0	(1)	(0)	(1)
138	Reconstituted wood product manufacturing	0	(0)	(0)	(0)
139	Wood windows and door manufacturing	0	(4)	(2)	(6)
140	Cut stock, resawing lumber, and planing	0	(1)	(0)	(1)
141	Other millwork, including flooring	0	(3)	(1)	(4)
142	Wood container and pallet manufacturing	0	(2)	(1)	(2)
143	Manufactured home (mobile home) manufacturing	0	(0)	(0)	(0)
144	Prefabricated wood building manufacturing	0	(0)	(0)	(0)
145	All other miscellaneous wood product manufacturing	0	(2)	(0)	(3)
146	Pulp mills	0	(0)	(0)	(0)
147	Paper mills	0	(0)	(0)	(0)
148	Paperboard mills	0	(0)	(0)	(0)
149	Paperboard container manufacturing	0	(14)	(2)	(16)
150	Paper bag and coated and treated paper manufacturing	0	(1)	(0)	(1)
151	Stationery product manufacturing	0	(0)	(0)	(0)
152	Sanitary paper product manufacturing	0	(0)	(0)	(0)
153	All other converted paper product manufacturing	0	(0)	(0)	(0)
154	Printing	0	(93)	(8)	(101)
155	Support activities for printing	0	(10)	(1)	(10)
156	Petroleum refineries	0	(4)	(1)	(5)
157	Asphalt paving mixture and block manufacturing	0	(0)	(0)	(0)
158	Asphalt shingle and coating materials manufacturing	0	(0)	(0)	(0)
159	Petroleum lubricating oil and grease manufacturing	0	(1)	(0)	(1)
160	All other petroleum and coal products manufacturing	0	(0)	(0)	(0)
161	Petrochemical manufacturing	0	(0)	(0)	(0)
162	Industrial gas manufacturing	0	(0)	(0)	(0)
163	Synthetic dye and pigment manufacturing	0	(0)	(0)	(0)
164	Other basic inorganic chemical manufacturing	0	(0)	(0)	(0)
165	Other basic organic chemical manufacturing	(4)	(0)	(0)	(4)
166	Plastics material and resin manufacturing	0	(0)	(0)	(0)
167	Synthetic rubber manufacturing	0	(0)	(0)	(0)
168	Artificial and synthetic fibers and filaments manufacturing	0	(0)	(0)	(0)
169	Nitrogenous fertilizer manufacturing	0	(0)	(0)	(0)
170	Phosphatic fertilizer manufacturing	0	(0)	(0)	(0)
171	Fertilizer mixing	0	(1)	(0)	(1)
172	Pesticide and other agricultural chemical manufacturing	0	(0)	(0)	(0)
173	Medicinal and botanical manufacturing	0	(0)	(0)	(1)
174	Pharmaceutical preparation manufacturing	(3)	(1)	(2)	(6)
175	In-vitro diagnostic substance manufacturing	0	(2)	(1)	(3)
176	Biological product (except diagnostic) manufacturing	0	(1)	(0)	(1)
177	Paint and coating manufacturing	0	(1)	(0)	(1)
178	Adhesive manufacturing	0	(0)	(0)	(1)
179	Soap and other detergent manufacturing	0	(0)	(0)	(1)
180	Polish and other sanitation good manufacturing	0	(0)	(0)	(1)
181	Surface active agent manufacturing	0	(0)	(0)	(0)
182	Toilet preparation manufacturing	0	(0)	(0)	(1)
183	Printing ink manufacturing	0	(2)	(0)	(2)
184	Explosives manufacturing	0	(0)	(0)	(0)
185	Custom compounding of purchased resins	0	(0)	(0)	(0)
186	Photographic film and chemical manufacturing	0	(0)	(0)	(0)

(Continued on the following page)

San Francisco Employment at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
187	Other miscellaneous chemical product manufacturing	0	(1)	(0)	(1)
188	Plastics packaging materials and unlaminated film and sheet manufacturing	0	(2)	(0)	(3)
189	Unlaminated plastics profile shape manufacturing	0	(1)	(0)	(1)
190	Plastics pipe and pipe fitting manufacturing	0	(1)	(0)	(1)
191	Laminated plastics plate, sheet (except packaging), and shape manufacturir	0	(0)	(0)	(0)
192	Polystyrene foam product manufacturing	0	(1)	(0)	(1)
193	Urethane and other foam product (except polystyrene) manufacturing	0	(1)	(0)	(2)
194	Plastics bottle manufacturing	0	(1)	(0)	(1)
195	Other plastics product manufacturing	0	(7)	(2)	(9)
196	Tire manufacturing	0	(0)	(0)	(0)
197	Rubber and plastics hoses and belting manufacturing	0	(0)	(0)	(0)
198	Other rubber product manufacturing	0	(1)	(0)	(1)
199	Pottery, ceramics, and plumbing fixture manufacturing	0	(1)	(0)	(1)
200	Brick, tile, and other structural clay product manufacturing	0	(1)	(1)	(2)
201	Flat glass manufacturing	0	(0)	(0)	(0)
202	Other pressed and blown glass and glassware manufacturing	0	(1)	(0)	(1)
203	Glass container manufacturing	0	(13)	(0)	(14)
204	Glass product manufacturing made of purchased glass	0	(2)	(0)	(2)
205	Cement manufacturing	0	(1)	(0)	(1)
206	Ready-mix concrete manufacturing	0	(3)	(1)	(3)
207	Concrete block and brick manufacturing	0	(0)	(0)	(1)
208	Concrete pipe manufacturing	0	(0)	(0)	(0)
209	Other concrete product manufacturing	0	(4)	(1)	(4)
210	Lime manufacturing	0	(0)	(0)	(0)
211	Gypsum product manufacturing	0	(1)	(0)	(1)
212	Abrasive product manufacturing	0	(0)	(0)	(0)
213	Cut stone and stone product manufacturing	0	(0)	(0)	(1)
214	Ground or treated mineral and earth manufacturing	0	(0)	(0)	(0)
215	Mineral wool manufacturing	0	(0)	(0)	(1)
216	Miscellaneous nonmetallic mineral products manufacturing	0	(0)	(0)	(0)
217	Iron and steel mills and ferroalloy manufacturing	0	(1)	(0)	(1)
218	Iron, steel pipe and tube manufacturing from purchased steel	0	(1)	(0)	(1)
219	Rolled steel shape manufacturing	0	(0)	(0)	(0)
220	Steel wire drawing	0	(0)	(0)	(0)
221	Alumina refining and primary aluminum production	0	(0)	(0)	(0)
222	Secondary smelting and alloying of aluminum	0	(0)	(0)	(0)
223	Aluminum sheet, plate, and foil manufacturing	0	(0)	(0)	(0)
224	Other aluminum rolling, drawing and extruding	0	(1)	(0)	(1)
225	Nonferrous metal (exc aluminum) smelting and refining	0	(0)	(0)	(0)
226	Copper rolling, drawing, extruding and alloying	0	(0)	(0)	(0)
227	Nonferrous metal, except copper and aluminum, shaping	0	(0)	(0)	(0)
228	Secondary processing of other nonferrous metals	0	(0)	(0)	(0)
229	Ferrous metal foundries	0	(1)	(0)	(1)
230	Nonferrous metal foundries	0	(0)	(0)	(0)
231	Iron and steel forging	0	(0)	(0)	(0)
232	Nonferrous forging	0	(0)	(0)	(0)
233	Custom roll forming	0	(0)	(0)	(0)
234	Crown and closure manufacturing and metal stamping	0	(1)	(0)	(1)
235	Cutlery, utensil, pot, and pan manufacturing	0	(0)	(0)	(0)
236	Handtool manufacturing	0	(0)	(0)	(0)
237	Prefabricated metal buildings and components manufacturing	0	(1)	(0)	(1)
238	Fabricated structural metal manufacturing	0	(3)	(0)	(3)
239	Plate work manufacturing	0	(1)	(0)	(2)
240	Metal window and door manufacturing	0	(2)	(1)	(2)
241	Sheet metal work manufacturing	0	(3)	(1)	(4)
242	Ornamental and architectural metal work manufacturing	0	(2)	(0)	(2)
243	Power boiler and heat exchanger manufacturing	0	(0)	(0)	(0)
244	Metal tank (heavy gauge) manufacturing	0	(0)	(0)	(0)
245	Metal cans manufacturing	0	(4)	(0)	(5)
246	Metal barrels, drums and pails manufacturing	0	(1)	(0)	(1)
247	Hardware manufacturing	0	(1)	(0)	(1)
248	Spring and wire product manufacturing	0	(1)	(0)	(1)

(Continued on the following page)

San Francisco Employment at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
249	Machine shops	0	(13)	(2)	(15)
250	Turned product and screw, nut, and bolt manufacturing	0	(4)	(0)	(4)
251	Metal heat treating	0	(1)	(0)	(1)
252	Metal coating and nonprecious engraving	0	(3)	(0)	(4)
253	Electroplating, anodizing, and coloring metal	0	(4)	(1)	(5)
254	Valve and fittings, other than plumbing, manufacturing	0	(3)	(0)	(3)
255	Plumbing fixture fitting and trim manufacturing	0	(0)	(0)	(1)
256	Ball and roller bearing manufacturing	0	(0)	(0)	(0)
257	Small arms ammunition manufacturing	0	(0)	(0)	(0)
258	Ammunition, except for small arms, manufacturing	0	(0)	(0)	(0)
259	Small arms, ordnance, and accessories manufacturing	0	(0)	(0)	(0)
260	Fabricated pipe and pipe fitting manufacturing	0	(0)	(0)	(1)
261	Other fabricated metal manufacturing	(2)	(4)	(1)	(6)
262	Farm machinery and equipment manufacturing	0	(0)	(0)	(0)
263	Lawn and garden equipment manufacturing	0	(0)	(0)	(0)
264	Construction machinery manufacturing	0	(0)	(0)	(0)
265	Mining machinery and equipment manufacturing	0	(0)	(0)	(0)
266	Oil and gas field machinery and equipment manufacturing	0	(0)	(0)	(0)
267	Food product machinery manufacturing	0	(0)	(0)	(0)
268	Semiconductor machinery manufacturing	0	(1)	(0)	(1)
269	Sawmill, woodworking, and paper machinery	0	(0)	(0)	(0)
270	Printing machinery and equipment manufacturing	0	(0)	(0)	(0)
271	All other industrial machinery manufacturing	(14)	(0)	(0)	(14)
272	Optical instrument and lens manufacturing	0	(0)	(0)	(0)
273	Photographic and photocopying equipment manufacturing	0	(0)	(0)	(0)
274	Other commercial service industry machinery manufacturing	0	(2)	(0)	(2)
275	Air purification and ventilation equipment manufacturing	0	(0)	(0)	(0)
276	Heating equipment (except warm air furnaces) manufacturing	0	(0)	(0)	(0)
277	Air conditioning, refrigeration, and warm air heating equipment manufacturir	0	(1)	(0)	(1)
278	Industrial mold manufacturing	0	(0)	(0)	(0)
279	Special tool, die, jig, and fixture manufacturing	0	(0)	(0)	(0)
280	Cutting tool and machine tool accessory manufacturing	0	(0)	(0)	(0)
281	Machine tool manufacturing	0	(0)	(0)	(0)
282	Rolling mill and other metalworking machinery manufacturing	0	(0)	(0)	(0)
283	Turbine and turbine generator set units manufacturing	0	(0)	(0)	(0)
284	Speed changer, industrial high-speed drive, and gear manufacturing	0	(0)	(0)	(0)
285	Mechanical power transmission equipment manufacturing	0	(0)	(0)	(0)
286	Other engine equipment manufacturing	0	(0)	(0)	(0)
287	Pump and pumping equipment manufacturing	0	(0)	(0)	(0)
288	Air and gas compressor manufacturing	0	(0)	(0)	(0)
289	Measuring and dispensing pump manufacturing	0	(0)	(0)	(0)
290	Elevator and moving stairway manufacturing	0	(0)	(0)	(0)
291	Conveyor and conveying equipment manufacturing	0	(0)	(0)	(0)
292	Overhead cranes, hoists, and monorail systems manufacturing	0	(0)	(0)	(0)
293	Industrial truck, trailer, and stacker manufacturing	0	(0)	(0)	(0)
294	Power-driven handtool manufacturing	0	(0)	(0)	(0)
295	Welding and soldering equipment manufacturing	0	(0)	(0)	(0)
296	Packaging machinery manufacturing	0	(3)	(0)	(3)
297	Industrial process furnace and oven manufacturing	0	(0)	(0)	(0)
298	Fluid power cylinder and actuator manufacturing	0	(0)	(0)	(0)
299	Fluid power pump and motor manufacturing	0	(0)	(0)	(0)
300	Scales, balances, and miscellaneous general purpose machinery manufact	0	(0)	(0)	(0)
301	Electronic computer manufacturing	0	(1)	(1)	(2)
302	Computer storage device manufacturing	0	(0)	(0)	(0)
303	Computer terminals and other computer peripheral equipment manufacturin	0	(2)	(0)	(2)
304	Telephone apparatus manufacturing	0	(0)	(0)	(1)
305	Broadcast and wireless communications equipment manufacturing	0	(5)	(1)	(6)
306	Other communications equipment manufacturing	0	(1)	(0)	(1)
307	Audio and video equipment manufacturing	(43)	(4)	(0)	(47)
308	Bare printed circuit board manufacturing	0	(2)	(0)	(2)
309	Semiconductor and related device manufacturing	0	(9)	(2)	(11)
310	Capacitor, resistor, coil, transformer, and other inductor manufacturing	0	(1)	(0)	(1)

(Continued on the following page)

San Francisco Employment at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
311	Electronic connector manufacturing	0	(1)	(0)	(1)
312	Printed circuit assembly (electronic assembly) manufacturing	0	(3)	(0)	(4)
313	Other electronic component manufacturing	0	(4)	(0)	(5)
314	Electromedical and electrotherapeutic apparatus manufacturing	0	(0)	(0)	(0)
315	Search, detection, and navigation instruments manufacturing	0	(0)	(0)	(0)
316	Automatic environmental control manufacturing	0	(0)	(0)	(0)
317	Industrial process variable instruments manufacturing	0	(0)	(0)	(0)
318	Totalizing fluid meter and counting device manufacturing	0	(0)	(0)	(0)
319	Electricity and signal testing instruments manufacturing	0	(0)	(0)	(0)
320	Analytical laboratory instrument manufacturing	0	(0)	(0)	(0)
321	Irradiation apparatus manufacturing	0	(0)	(0)	(0)
322	Watch, clock, and other measuring and controlling device manufacturing	0	(0)	(0)	(0)
323	Blank magnetic and optical recording media manufacturing	0	(2)	(0)	(2)
324	Software and other prerecorded and record reproducing	0	(2)	(0)	(2)
325	Electric lamp bulb and part manufacturing	0	(0)	(0)	(0)
326	Lighting fixture manufacturing	0	(2)	(0)	(2)
327	Small electrical appliance manufacturing	0	(0)	(0)	(0)
328	Household cooking appliance manufacturing	0	(0)	(0)	(0)
329	Household refrigerator and home freezer manufacturing	0	(0)	(0)	(0)
330	Household laundry equipment manufacturing	0	(0)	(1)	(1)
331	Other major household appliance manufacturing	0	(0)	(0)	(0)
332	Power, distribution, and specialty transformer manufacturing	0	(0)	(0)	(0)
333	Motor and generator manufacturing	0	(0)	(0)	(1)
334	Switchgear and switchboard apparatus manufacturing	0	(1)	(0)	(1)
335	Relay and industrial control manufacturing	0	(0)	(0)	(0)
336	Storage battery manufacturing	0	(0)	(0)	(1)
337	Primary battery manufacturing	0	(0)	(0)	(0)
338	Fiber optic cable manufacturing	0	(1)	(0)	(1)
339	Other communication and energy wire manufacturing	0	(0)	(0)	(1)
340	Wiring device manufacturing	0	(1)	(0)	(2)
341	Carbon and graphite product manufacturing	0	(0)	(0)	(0)
342	All other miscellaneous electrical equipment and component manufacturing	(2)	(0)	(0)	(2)
343	Automobile manufacturing	0	(0)	(0)	(0)
344	Light truck and utility vehicle manufacturing	0	(0)	(0)	(0)
345	Heavy duty truck manufacturing	0	(0)	(0)	(0)
346	Motor vehicle body manufacturing	0	(0)	(0)	(0)
347	Truck trailer manufacturing	0	(0)	(0)	(0)
348	Motor home manufacturing	0	(0)	(0)	(0)
349	Travel trailer and camper manufacturing	0	(0)	(0)	(0)
350	Motor vehicle gasoline engine and engine parts manufacturing	0	(0)	(0)	(0)
351	Motor vehicle electrical and electronic equipment manufacturing	0	(1)	(0)	(1)
352	Motor vehicle steering, suspension component (except spring), and brake s	0	(1)	(0)	(1)
353	Motor vehicle transmission and power train parts manufacturing	0	(0)	(0)	(0)
354	Motor vehicle seating and interior trim manufacturing	0	(0)	(0)	(0)
355	Motor vehicle metal stamping	0	(0)	(0)	(0)
356	Other motor vehicle parts manufacturing	0	(2)	(0)	(2)
357	Aircraft manufacturing	0	(0)	(0)	(0)
358	Aircraft engine and engine parts manufacturing	0	(0)	(0)	(0)
359	Other aircraft parts and auxiliary equipment manufacturing	0	(0)	(0)	(0)
360	Guided missile and space vehicle manufacturing	0	(0)	(0)	(0)
361	Propulsion units and parts for space vehicles and guided missiles manufact	0	(0)	(0)	(0)
362	Railroad rolling stock manufacturing	(14)	(1)	(0)	(15)
363	Ship building and repairing	0	(1)	(0)	(1)
364	Boat building	0	(0)	(0)	(0)
365	Motorcycle, bicycle, and parts manufacturing	0	(0)	(0)	(0)
366	Military armored vehicle, tank, and tank component manufacturing	0	(0)	(0)	(0)
367	All other transportation equipment manufacturing	0	(0)	(0)	(0)
368	Wood kitchen cabinet and countertop manufacturing	0	(2)	(3)	(5)
369	Upholstered household furniture manufacturing	0	(0)	(1)	(1)
370	Nonupholstered wood household furniture manufacturing	0	(0)	(1)	(1)
371	Other household nonupholstered furniture manufacturing	0	(2)	(0)	(2)
372	Institutional furniture manufacturing	0	(0)	(0)	(0)

(Continued on the following page)

San Francisco Employment at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
373	Wood office furniture manufacturing	0	(0)	(0)	(0)
374	Custom architectural woodwork and millwork	0	(0)	(0)	(0)
375	Office furniture, except wood, manufacturing	0	(0)	(0)	(0)
376	Showcase, partition, shelving, and locker manufacturing	0	(1)	(0)	(1)
377	Mattress manufacturing	0	(0)	(0)	(0)
378	Blind and shade manufacturing	0	(0)	(0)	(0)
379	Surgical and medical instrument manufacturing	0	(1)	(1)	(2)
380	Surgical appliance and supplies manufacturing	0	(1)	(1)	(1)
381	Dental equipment and supplies manufacturing	0	(0)	(0)	(0)
382	Ophthalmic goods manufacturing	0	(0)	(0)	(0)
383	Dental laboratories	0	(0)	(2)	(2)
384	Jewelry and silverware manufacturing	0	(0)	(0)	(1)
385	Sporting and athletic goods manufacturing	0	(0)	(0)	(0)
386	Doll, toy, and game manufacturing	(3)	(0)	(0)	(4)
387	Office supplies (except paper) manufacturing	0	(1)	(0)	(1)
388	Sign manufacturing	(88)	(2)	(0)	(90)
389	Gasket, packing, and sealing device manufacturing	0	(1)	(0)	(1)
390	Musical instrument manufacturing	0	(0)	(0)	(0)
391	Fasteners, buttons, needles, and pins manufacturing	0	(0)	(0)	(0)
392	Broom, brush, and mop manufacturing	0	(0)	(0)	(0)
393	Burial casket manufacturing	0	(0)	(0)	(0)
394	All other miscellaneous manufacturing	0	(4)	(2)	(5)
395	Wholesale trade	(305)	(201)	(165)	(671)
396	Retail - Motor vehicle and parts dealers	(16)	(5)	(31)	(53)
397	Retail - Furniture and home furnishings stores	(145)	(3)	(22)	(170)
398	Retail - Electronics and appliance stores	(242)	(8)	(24)	(274)
399	Retail - Building material and garden equipment and supplies stores	(4)	(11)	(44)	(59)
400	Retail - Food and beverage stores	(214)	(2)	(183)	(399)
401	Retail - Health and personal care stores	(26)	(14)	(69)	(109)
402	Retail - Gasoline stores	0	(4)	(20)	(24)
403	Retail - Clothing and clothing accessories stores	(213)	(11)	(78)	(302)
404	Retail - Sporting goods, hobby, musical instrument and book stores	(30)	(5)	(32)	(68)
405	Retail - General merchandise stores	0	(6)	(130)	(136)
406	Retail - Miscellaneous store retailers	(128)	(13)	(74)	(216)
407	Retail - Nonstore retailers	(37)	(4)	(67)	(108)
408	Air transportation	0	(29)	(8)	(37)
409	Rail transportation	0	(6)	(2)	(8)
410	Water transportation	(11)	(1)	(2)	(14)
411	Truck transportation	(369)	(51)	(29)	(448)
412	Transit and ground passenger transportation	(161)	(46)	(42)	(248)
413	Pipeline transportation	0	(2)	(1)	(3)
414	Scenic and sightseeing transportation and support activities for transportatic	(291)	(125)	(20)	(436)
415	Couriers and messengers	(1)	(147)	(18)	(166)
416	Warehousing and storage	0	(72)	(20)	(92)
417	Newspaper publishers	(5)	(13)	(4)	(21)
418	Periodical publishers	(274)	(9)	(4)	(287)
419	Book publishers	0	(1)	(3)	(3)
420	Directory, mailing list, and other publishers	(5)	(2)	(0)	(7)
421	Greeting card publishing	0	(0)	(0)	(0)
422	Software publishers	(159)	(15)	(9)	(183)
423	Motion picture and video industries	(92)	(44)	(9)	(145)
424	Sound recording industries	0	(3)	(1)	(3)
425	Radio and television broadcasting	(1,515)	(170)	(4)	(1,688)
426	Cable and other subscription programming	(9)	(29)	(2)	(39)
427	Wired telecommunications carriers	0	(34)	(26)	(60)
428	Wireless telecommunications carriers (except satellite)	0	(10)	(7)	(17)
429	Satellite, telecommunications resellers, and all other telecommunications	(2)	(9)	(6)	(18)
430	Data processing, hosting, and related services	(5)	(32)	(7)	(44)
431	News syndicates, libraries, archives and all other information services	(2)	(2)	(2)	(6)
432	Internet publishing and broadcasting and web search portals	0	(107)	(12)	(119)
433	Monetary authorities and depository credit intermediation	(9)	(52)	(43)	(105)
434	Nondepository credit intermediation and related activities	(663)	(75)	(44)	(782)

(Continued on the following page)

San Francisco Employment at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
435	Securities and commodity contracts intermediation and brokerage	(405)	(42)	(24)	(471)
436	Other financial investment activities	(121)	(56)	(66)	(243)
437	Insurance carriers	(44)	(44)	(48)	(136)
438	Insurance agencies, brokerages, and related activities	(17)	(151)	(47)	(215)
439	Funds, trusts, and other financial vehicles	(18)	(3)	(32)	(53)
440	Real estate	(628)	(253)	(142)	(1,023)
441	Owner-occupied dwellings	0	0	0	0
442	Automotive equipment rental and leasing	(23)	(13)	(8)	(44)
443	General and consumer goods rental except video tapes and discs	(6)	(11)	(9)	(27)
444	Video tape and disc rental	0	0	(1)	(1)
445	Commercial and industrial machinery and equipment rental and leasing	(10)	(55)	(3)	(68)
446	Lessors of nonfinancial intangible assets	0	(11)	(1)	(12)
447	Legal services	(256)	(74)	(55)	(384)
448	Accounting, tax preparation, bookkeeping, and payroll services	(24)	(123)	(34)	(181)
449	Architectural, engineering, and related services	(330)	(75)	(22)	(427)
450	Specialized design services	(90)	(66)	(9)	(164)
451	Custom computer programming services	(232)	(7)	(1)	(239)
452	Computer systems design services	(76)	(43)	(8)	(126)
453	Other computer related services, including facilities management	(148)	(31)	(6)	(184)
454	Management consulting services	(212)	(148)	(25)	(385)
455	Environmental and other technical consulting services	(99)	(54)	(10)	(163)
456	Scientific research and development services	(19)	(2)	(2)	(23)
457	Advertising, public relations, and related services	(1,606)	(180)	(16)	(1,802)
458	Photographic services	(3)	(35)	(10)	(48)
459	Veterinary services	0	(1)	(11)	(12)
460	Marketing research and all other miscellaneous professional, scientific, and	(155)	(119)	(20)	(294)
461	Management of companies and enterprises	(16)	(160)	(32)	(209)
462	Office administrative services	(1,606)	(83)	(12)	(1,701)
463	Facilities support services	(10)	(16)	(3)	(29)
464	Employment services	(13)	(331)	(54)	(398)
465	Business support services	(8)	(92)	(21)	(121)
466	Travel arrangement and reservation services	(39)	(15)	(14)	(68)
467	Investigation and security services	(7)	(92)	(28)	(127)
468	Services to buildings	0	(142)	(81)	(223)
469	Landscape and horticultural services	0	(79)	(47)	(126)
470	Other support services	(46)	(36)	(7)	(89)
471	Waste management and remediation services	0	(25)	(10)	(35)
472	Elementary and secondary schools	(30)	0	(88)	(118)
473	Junior colleges, colleges, universities, and professional schools	(45)	(1)	(121)	(168)
474	Other educational services	(70)	(31)	(110)	(211)
475	Offices of physicians	(119)	0	(161)	(280)
476	Offices of dentists	(18)	0	(83)	(101)
477	Offices of other health practitioners	(9)	0	(107)	(116)
478	Outpatient care centers	0	0	(45)	(45)
479	Medical and diagnostic laboratories	(15)	(2)	(14)	(30)
480	Home health care services	0	0	(48)	(48)
481	Other ambulatory health care services	(25)	(7)	(15)	(48)
482	Hospitals	(474)	(0)	(206)	(680)
483	Nursing and community care facilities	0	0	(82)	(82)
484	Residential mental retardation, mental health, substance abuse and other fa	(408)	0	(33)	(441)
485	Individual and family services	(13)	0	(279)	(292)
486	Community food, housing, and other relief services, including rehabilitation s	(10)	0	(35)	(45)
487	Child day care services	(12)	0	(80)	(92)
488	Performing arts companies	(87)	(7)	(18)	(112)
489	Commercial Sports Except Racing	0	(288)	(11)	(299)
490	Racing and Track Operation	0	(0)	(0)	(0)
491	Promoters of performing arts and sports and agents for public figures	(19)	(70)	(20)	(108)
492	Independent artists, writers, and performers	0	(319)	(33)	(352)
493	Museums, historical sites, zoos, and parks	(337)	0	(11)	(348)
494	Amusement parks and arcades	(2)	(0)	(5)	(8)
495	Gambling industries (except casino hotels)	0	(0)	(30)	(30)
496	Other amusement and recreation industries	(24)	(13)	(32)	(68)

(Continued on the following page)

San Francisco Employment at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
497	Fitness and recreational sports centers	(405)	(16)	(50)	(471)
498	Bowling centers	(9)	(0)	(1)	(10)
499	Hotels and motels, including casino hotels	(234)	(16)	(7)	(258)
500	Other accommodations	(2)	(0)	(0)	(3)
501	Full-service restaurants	(2,101)	(152)	(321)	(2,573)
502	Limited-service restaurants	(157)	(67)	(257)	(481)
503	All other food and drinking places	(61)	(50)	(172)	(283)
504	Automotive repair and maintenance, except car washes	(5)	(36)	(59)	(100)
505	Car washes	0	(4)	(8)	(12)
506	Electronic and precision equipment repair and maintenance	0	(18)	(5)	(23)
507	Commercial and industrial machinery and equipment repair and maintenance	(2)	(33)	(7)	(42)
508	Personal and household goods repair and maintenance	0	(37)	(23)	(60)
509	Personal care services	(6)	(0)	(142)	(148)
510	Death care services	(5)	0	(3)	(8)
511	Dry-cleaning and laundry services	(7)	(16)	(15)	(38)
512	Other personal services	(10)	(73)	(140)	(222)
513	Religious organizations	(5)	0	(130)	(135)
514	Grantmaking, giving, and social advocacy organizations	(103)	(2)	(25)	(130)
515	Business and professional associations	(56)	(11)	(10)	(77)
516	Labor and civic organizations	(342)	(0)	(40)	(382)
517	Private households	0	0	(92)	(92)
518	Postal service	0	(101)	(17)	(117)
519	Federal electric utilities	0	0	0	0
520	Other federal government enterprises	0	(5)	(3)	(8)
521	State government passenger transit	0	0	0	0
522	State government electric utilities	0	0	0	0
523	Other state government enterprises	0	(0)	(0)	(0)
524	Local government passenger transit	0	(25)	(23)	(47)
525	Local government electric utilities	0	(1)	(1)	(2)
526	Other local government enterprises	0	(11)	(12)	(23)
527	* Not an industry (Used and secondhand goods)	0	0	0	0
528	* Not an industry (Scrap)	0	0	0	0
529	* Not an industry (Rest of world adjustment)	0	0	0	0
530	* Not an industry (Noncomparable foreign imports)	0	0	0	0
531	* Employment and payroll of state govt, non-education	0	0	0	0
532	* Employment and payroll of state govt, education	0	0	0	0
533	* Employment and payroll of local govt, non-education	0	0	0	0
534	* Employment and payroll of local govt, education	0	0	0	0
535	* Employment and payroll of federal govt, non-military	0	0	0	0
536	* Employment and payroll of federal govt, military	0	0	0	0

Sources: IMPLAN; BAE, 2017.

San Francisco Labor Income at Risk, 8M Earthquake

Sector	Description	Direct	Indirect	Induced	Total
0	Total	(\$1,949,408,812)	(\$614,591,924)	(\$392,083,177)	(\$2,956,083,913)
1	Oilseed farming	\$0	(\$4,331)	(\$404)	(\$4,735)
2	Grain farming	\$0	(\$49,533)	(\$6,650)	(\$56,183)
3	Vegetable and melon farming	\$0	(\$71,723)	(\$65,898)	(\$137,621)
4	Fruit farming	(\$73,980)	(\$3,352,171)	(\$111,428)	(\$3,537,578)
5	Tree nut farming	\$0	(\$336,978)	(\$12,767)	(\$349,745)
6	Greenhouse, nursery, and floriculture production	\$0	(\$229,504)	(\$92,186)	(\$321,690)
7	Tobacco farming	\$0	\$0	\$0	\$0
8	Cotton farming	\$0	(\$5,418)	(\$962)	(\$6,379)
9	Sugarcane and sugar beet farming	\$0	(\$14,877)	(\$781)	(\$15,658)
10	All other crop farming	\$0	(\$1,035,787)	(\$93,911)	(\$1,129,699)
11	Beef cattle ranching and farming, including feedlots and dual-pur	\$0	(\$105,636)	(\$83,160)	(\$188,796)
12	Dairy cattle and milk production	\$0	(\$360,957)	(\$169,674)	(\$530,631)
13	Poultry and egg production	\$0	(\$54,730)	(\$33,873)	(\$88,603)
14	Animal production, except cattle and poultry and eggs	(\$719,280)	(\$54,759)	(\$48,939)	(\$822,978)
15	Forestry, forest products, and timber tract production	\$0	(\$9,054)	(\$1,669)	(\$10,723)
16	Commercial logging	\$0	(\$68,406)	(\$20,881)	(\$89,287)
17	Commercial fishing	\$0	(\$719,636)	(\$133,396)	(\$853,032)
18	Commercial hunting and trapping	\$0	(\$285)	(\$10,835)	(\$11,120)
19	Support activities for agriculture and forestry	(\$141,916)	(\$939,145)	(\$111,787)	(\$1,192,848)
20	Extraction of natural gas and crude petroleum	\$0	(\$1,484,628)	(\$384,812)	(\$1,869,440)
21	Extraction of natural gas liquids	\$0	(\$40,355)	(\$9,286)	(\$49,641)
22	Coal mining	\$0	(\$1,296)	(\$226)	(\$1,522)
23	Iron ore mining	\$0	(\$366)	(\$46)	(\$412)
24	Gold ore mining	\$0	(\$9,157)	(\$1,567)	(\$10,724)
25	Silver ore mining	\$0	\$0	\$0	\$0
26	Lead and zinc ore mining	\$0	\$0	\$0	\$0
27	Copper ore mining	\$0	(\$17,647)	(\$3,095)	(\$20,742)
28	Uranium-radium-vanadium ore mining	\$0	\$0	\$0	\$0
29	Other metal ore mining	\$0	(\$4,112)	(\$587)	(\$4,698)
30	Stone mining and quarrying	\$0	(\$15,462)	(\$6,099)	(\$21,562)
31	Sand and gravel mining	\$0	(\$56,687)	(\$16,818)	(\$73,505)
32	Other clay, ceramic, refractory minerals mining	\$0	(\$5,158)	(\$1,668)	(\$6,826)
33	Potash, soda, and borate mineral mining	\$0	(\$8,557)	(\$1,399)	(\$9,956)
34	Phosphate rock mining	\$0	\$0	\$0	\$0
35	Other chemical and fertilizer mineral mining	\$0	(\$113)	(\$20)	(\$134)
36	Other nonmetallic minerals	\$0	(\$8,317)	(\$2,753)	(\$11,070)
37	Drilling oil and gas wells	\$0	(\$1,451)	(\$173)	(\$1,625)
38	Support activities for oil and gas operations	(\$52,241)	(\$144,046)	(\$24,132)	(\$220,419)
39	Metal mining services	\$0	(\$1,452)	(\$108)	(\$1,560)
40	Other nonmetallic minerals services	\$0	(\$17,287)	(\$1,275)	(\$18,562)
41	Electric power generation - Hydroelectric	\$0	(\$1,546)	(\$830)	(\$2,376)
42	Electric power generation - Fossil fuel	\$0	(\$31,498)	(\$17,111)	(\$48,609)
43	Electric power generation - Nuclear	\$0	(\$22,957)	(\$12,317)	(\$35,274)
44	Electric power generation - Solar	\$0	(\$15,262)	(\$8,982)	(\$24,245)
45	Electric power generation - Wind	\$0	(\$10,905)	(\$6,449)	(\$17,354)
46	Electric power generation - Geothermal	\$0	(\$2,852)	(\$1,530)	(\$4,382)
47	Electric power generation - Biomass	\$0	(\$8,005)	(\$4,636)	(\$12,640)
48	Electric power generation - All other	(\$1,500,315)	(\$2,261)	(\$1,285)	(\$1,503,861)
49	Electric power transmission and distribution	\$0	(\$95,808)	(\$55,254)	(\$151,062)
50	Natural gas distribution	\$0	(\$1,225,844)	(\$798,155)	(\$2,023,999)
51	Water, sewage and other systems	\$0	(\$1,096,735)	(\$1,608,357)	(\$2,705,091)
52	Construction of new health care structures	\$0	\$0	\$0	\$0
53	Construction of new manufacturing structures	\$0	\$0	\$0	\$0
54	Construction of new power and communication structures	\$0	\$0	\$0	\$0
55	Construction of new educational and vocational structures	\$0	\$0	\$0	\$0
56	Construction of new highways and streets	(\$1,017,157)	\$0	\$0	(\$1,017,157)
57	Construction of new commercial structures, including farm struct	(\$13,677,280)	\$0	\$0	(\$13,677,280)
58	Construction of other new nonresidential structures	\$0	\$0	\$0	\$0
59	Construction of new single-family residential structures	(\$490,378)	\$0	\$0	(\$490,378)
60	Construction of new multifamily residential structures	\$0	\$0	\$0	\$0
61	Construction of other new residential structures	(\$472,680)	\$0	\$0	(\$472,680)
62	Maintenance and repair construction of nonresidential structures	(\$22,603,142)	(\$7,018,556)	(\$1,907,145)	(\$31,528,843)

(Continued on the following page)

San Francisco Labor Income at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
63	Maintenance and repair construction of residential structures	\$0	(\$495,226)	(\$2,828,297)	(\$3,323,523)
64	Maintenance and repair construction of highways, streets, bridge	\$0	\$0	\$0	\$0
65	Dog and cat food manufacturing	\$0	(\$150)	(\$2,329)	(\$2,480)
66	Other animal food manufacturing	\$0	(\$29,123)	(\$19,156)	(\$48,279)
67	Flour milling	\$0	(\$65,720)	(\$6,961)	(\$72,681)
68	Rice milling	\$0	(\$28,359)	(\$2,634)	(\$30,993)
69	Malt manufacturing	\$0	(\$115)	(\$14)	(\$129)
70	Wet corn milling	\$0	(\$38,454)	(\$4,240)	(\$42,693)
71	Soybean and other oilseed processing	\$0	(\$23,304)	(\$2,863)	(\$26,167)
72	Fats and oils refining and blending	(\$221,045)	(\$28,416)	(\$2,836)	(\$252,297)
73	Breakfast cereal manufacturing	\$0	(\$1,795)	(\$2,551)	(\$4,347)
74	Beet sugar manufacturing	\$0	(\$4,091)	(\$322)	(\$4,413)
75	Sugar cane mills and refining	\$0	(\$53,725)	(\$2,540)	(\$56,265)
76	Nonchocolate confectionery manufacturing	\$0	(\$15,065)	(\$7,012)	(\$22,077)
77	Chocolate and confectionery manufacturing from cacao beans	(\$572,982)	(\$154,474)	(\$5,281)	(\$732,737)
78	Confectionery manufacturing from purchased chocolate	\$0	(\$9,646)	(\$5,692)	(\$15,338)
79	Frozen fruits, juices and vegetables manufacturing	\$0	(\$19,455)	(\$13,529)	(\$32,985)
80	Frozen specialties manufacturing	\$0	(\$38,417)	(\$44,964)	(\$83,381)
81	Canned fruits and vegetables manufacturing	\$0	(\$71,845)	(\$39,030)	(\$110,875)
82	Canned specialties	\$0	(\$2,532)	(\$1,509)	(\$4,041)
83	Dehydrated food products manufacturing	\$0	(\$10,583)	(\$5,782)	(\$16,365)
84	Fluid milk manufacturing	\$0	(\$204,157)	(\$97,215)	(\$301,372)
85	Creamery butter manufacturing	\$0	(\$6,721)	(\$7,718)	(\$14,439)
86	Cheese manufacturing	\$0	(\$101,353)	(\$50,233)	(\$151,585)
87	Dry, condensed, and evaporated dairy product manufacturing	\$0	(\$20,861)	(\$9,085)	(\$29,945)
88	Ice cream and frozen dessert manufacturing	(\$69,824)	(\$82,147)	(\$32,543)	(\$184,514)
89	Animal, except poultry, slaughtering	\$0	(\$59,861)	(\$32,014)	(\$91,875)
90	Meat processed from carcasses	\$0	(\$10,644)	(\$103,928)	(\$114,572)
91	Rendering and meat byproduct processing	\$0	(\$9,965)	(\$7,035)	(\$17,000)
92	Poultry processing	\$0	(\$122,869)	(\$75,064)	(\$197,932)
93	Seafood product preparation and packaging	(\$79,016)	(\$99,579)	(\$54,179)	(\$232,774)
94	Bread and bakery product, except frozen, manufacturing	(\$443,851)	(\$253,167)	(\$350,719)	(\$1,047,737)
95	Frozen cakes and other pastries manufacturing	\$0	(\$12,482)	(\$12,644)	(\$25,126)
96	Cookie and cracker manufacturing	\$0	(\$12,418)	(\$9,549)	(\$21,967)
97	Dry pasta, mixes, and dough manufacturing	\$0	(\$7,557)	(\$8,069)	(\$15,627)
98	Tortilla manufacturing	\$0	(\$17,132)	(\$10,990)	(\$28,122)
99	Roasted nuts and peanut butter manufacturing	\$0	(\$28,561)	(\$10,237)	(\$38,798)
100	Other snack food manufacturing	\$0	(\$35,630)	(\$16,680)	(\$52,310)
101	Coffee and tea manufacturing	\$0	(\$22,789)	(\$11,896)	(\$34,684)
102	Flavoring syrup and concentrate manufacturing	\$0	(\$33,271)	(\$6,804)	(\$40,075)
103	Mayonnaise, dressing, and sauce manufacturing	\$0	(\$19,468)	(\$9,006)	(\$28,474)
104	Spice and extract manufacturing	\$0	(\$16,799)	(\$7,673)	(\$24,472)
105	All other food manufacturing	\$0	(\$79,186)	(\$37,213)	(\$116,399)
106	Bottled and canned soft drinks & water	(\$815,276)	(\$126,247)	(\$114,442)	(\$1,055,965)
107	Manufactured ice	\$0	(\$7,889)	(\$4,603)	(\$12,492)
108	Breweries	(\$5,071,754)	(\$107,417)	(\$254,201)	(\$5,433,372)
109	Wineries	(\$18,527,460)	(\$435,811)	(\$122,677)	(\$19,085,947)
110	Distilleries	(\$3,699,504)	(\$8,296)	(\$999)	(\$3,708,800)
111	Tobacco product manufacturing	\$0	(\$0)	(\$203)	(\$203)
112	Fiber, yarn, and thread mills	\$0	(\$1,888)	(\$334)	(\$2,222)
113	Broadwoven fabric mills	\$0	(\$2,448)	(\$984)	(\$3,433)
114	Narrow fabric mills and schiffli machine embroidery	(\$53,367)	(\$1,574)	(\$500)	(\$55,440)
115	Nonwoven fabric mills	\$0	(\$1,824)	(\$458)	(\$2,282)
116	Knit fabric mills	\$0	(\$1,537)	(\$750)	(\$2,287)
117	Textile and fabric finishing mills	\$0	(\$21,584)	(\$6,636)	(\$28,220)
118	Fabric coating mills	\$0	(\$1,875)	(\$687)	(\$2,563)
119	Carpet and rug mills	\$0	(\$1,211)	(\$2,039)	(\$3,250)
120	Curtain and linen mills	\$0	(\$23,338)	(\$12,873)	(\$36,211)
121	Textile bag and canvas mills	\$0	(\$21,305)	(\$14,288)	(\$35,593)
122	Rope, cordage, twine, tire cord and tire fabric mills	\$0	(\$844)	(\$353)	(\$1,197)
123	Other textile product mills	\$0	(\$35,265)	(\$9,866)	(\$45,131)
124	Hosiery and sock mills	\$0	(\$632)	(\$620)	(\$1,252)

(Continued on the following page)

San Francisco Labor Income at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
125	Other apparel knitting mills	(\$126,516)	(\$5,173)	(\$4,740)	(\$136,429)
126	Cut and sew apparel contractors	\$0	(\$255,143)	(\$87,761)	(\$342,904)
127	Mens and boys cut and sew apparel manufacturing	\$0	(\$8,165)	(\$5,993)	(\$14,158)
128	Womens and girls cut and sew apparel manufacturing	\$0	(\$12,642)	(\$29,284)	(\$41,926)
129	Other cut and sew apparel manufacturing	\$0	(\$5,455)	(\$5,991)	(\$11,446)
130	Apparel accessories and other apparel manufacturing	\$0	(\$139,695)	(\$21,584)	(\$161,278)
131	Leather and hide tanning and finishing	\$0	(\$37)	(\$11)	(\$48)
132	Footwear manufacturing	\$0	(\$2)	(\$169)	(\$171)
133	Other leather and allied product manufacturing	\$0	(\$4,023)	(\$1,236)	(\$5,259)
134	Sawmills	\$0	(\$122,562)	(\$37,145)	(\$159,708)
135	Wood preservation	\$0	(\$15,584)	(\$4,612)	(\$20,197)
136	Veneer and plywood manufacturing	\$0	(\$9,313)	(\$3,113)	(\$12,426)
137	Engineered wood member and truss manufacturing	\$0	(\$44,789)	(\$14,861)	(\$59,650)
138	Reconstituted wood product manufacturing	\$0	(\$9,141)	(\$2,934)	(\$12,074)
139	Wood windows and door manufacturing	\$0	(\$201,202)	(\$74,302)	(\$275,503)
140	Cut stock, resawing lumber, and planing	\$0	(\$24,890)	(\$11,743)	(\$36,633)
141	Other millwork, including flooring	\$0	(\$137,026)	(\$46,040)	(\$183,067)
142	Wood container and pallet manufacturing	\$0	(\$66,223)	(\$25,038)	(\$91,261)
143	Manufactured home (mobile home) manufacturing	\$0	(\$100)	(\$21)	(\$120)
144	Prefabricated wood building manufacturing	\$0	(\$10,459)	(\$2,237)	(\$12,697)
145	All other miscellaneous wood product manufacturing	\$0	(\$84,359)	(\$15,107)	(\$99,466)
146	Pulp mills	\$0	(\$1,959)	(\$288)	(\$2,247)
147	Paper mills	\$0	(\$35,512)	(\$6,091)	(\$41,603)
148	Paperboard mills	\$0	(\$33,952)	(\$3,352)	(\$37,304)
149	Paperboard container manufacturing	\$0	(\$1,270,949)	(\$143,980)	(\$1,414,929)
150	Paper bag and coated and treated paper manufacturing	\$0	(\$100,804)	(\$19,154)	(\$119,958)
151	Stationery product manufacturing	\$0	(\$38,713)	(\$6,500)	(\$45,213)
152	Sanitary paper product manufacturing	\$0	(\$18,482)	(\$6,341)	(\$24,823)
153	All other converted paper product manufacturing	\$0	(\$36,295)	(\$7,318)	(\$43,613)
154	Printing	\$0	(\$3,953,951)	(\$328,148)	(\$4,282,099)
155	Support activities for printing	\$0	(\$520,766)	(\$29,550)	(\$550,316)
156	Petroleum refineries	\$0	(\$1,159,275)	(\$255,661)	(\$1,414,936)
157	Asphalt paving mixture and block manufacturing	\$0	(\$34,203)	(\$11,778)	(\$45,981)
158	Asphalt shingle and coating materials manufacturing	\$0	(\$8,614)	(\$5,494)	(\$14,108)
159	Petroleum lubricating oil and grease manufacturing	\$0	(\$76,657)	(\$8,987)	(\$85,643)
160	All other petroleum and coal products manufacturing	\$0	(\$32,592)	(\$3,485)	(\$36,077)
161	Petrochemical manufacturing	\$0	(\$39)	(\$4)	(\$43)
162	Industrial gas manufacturing	\$0	(\$40,507)	(\$11,331)	(\$51,837)
163	Synthetic dye and pigment manufacturing	\$0	(\$7,373)	(\$1,237)	(\$8,610)
164	Other basic inorganic chemical manufacturing	\$0	(\$39,352)	(\$11,500)	(\$50,852)
165	Other basic organic chemical manufacturing	(\$188,379)	(\$6,121)	(\$1,184)	(\$195,684)
166	Plastics material and resin manufacturing	\$0	(\$20,354)	(\$4,348)	(\$24,702)
167	Synthetic rubber manufacturing	\$0	(\$2,937)	(\$775)	(\$3,712)
168	Artificial and synthetic fibers and filaments manufacturing	\$0	(\$113)	(\$23)	(\$136)
169	Nitrogenous fertilizer manufacturing	\$0	(\$34,346)	(\$4,606)	(\$38,952)
170	Phosphatic fertilizer manufacturing	\$0	(\$29,165)	(\$4,015)	(\$33,179)
171	Fertilizer mixing	\$0	(\$54,158)	(\$7,410)	(\$61,569)
172	Pesticide and other agricultural chemical manufacturing	\$0	(\$7,697)	(\$1,634)	(\$9,331)
173	Medicinal and botanical manufacturing	\$0	(\$63,662)	(\$32,136)	(\$95,798)
174	Pharmaceutical preparation manufacturing	(\$1,300,835)	(\$351,095)	(\$552,331)	(\$2,204,261)
175	In-vitro diagnostic substance manufacturing	\$0	(\$278,734)	(\$120,595)	(\$399,328)
176	Biological product (except diagnostic) manufacturing	\$0	(\$78,043)	(\$46,620)	(\$124,663)
177	Paint and coating manufacturing	\$0	(\$99,073)	(\$19,855)	(\$118,928)
178	Adhesive manufacturing	\$0	(\$45,733)	(\$10,928)	(\$56,661)
179	Soap and other detergent manufacturing	\$0	(\$38,398)	(\$13,924)	(\$52,322)
180	Polish and other sanitation good manufacturing	\$0	(\$93,658)	(\$28,291)	(\$121,950)
181	Surface active agent manufacturing	\$0	(\$1,198)	(\$398)	(\$1,595)
182	Toilet preparation manufacturing	\$0	(\$10,918)	(\$34,567)	(\$45,485)
183	Printing ink manufacturing	\$0	(\$188,686)	(\$8,414)	(\$197,100)
184	Explosives manufacturing	\$0	(\$6,012)	(\$661)	(\$6,673)
185	Custom compounding of purchased resins	\$0	(\$28,065)	(\$3,561)	(\$31,626)
186	Photographic film and chemical manufacturing	\$0	(\$34,441)	(\$4,741)	(\$39,182)

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San Francisco Labor Income at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
187	Other miscellaneous chemical product manufacturing	\$0	(\$99,633)	(\$18,069)	(\$117,702)
188	Plastics packaging materials and unlaminated film and sheet ma	\$0	(\$133,876)	(\$25,160)	(\$159,036)
189	Unlaminated plastics profile shape manufacturing	\$0	(\$44,381)	(\$6,375)	(\$50,755)
190	Plastics pipe and pipe fitting manufacturing	\$0	(\$46,014)	(\$15,382)	(\$61,396)
191	Laminated plastics plate, sheet (except packaging), and shape n	\$0	(\$20,947)	(\$4,802)	(\$25,748)
192	Polystyrene foam product manufacturing	\$0	(\$43,528)	(\$15,822)	(\$59,350)
193	Urethane and other foam product (except polystyrene) manufact	\$0	(\$69,068)	(\$24,987)	(\$94,055)
194	Plastics bottle manufacturing	\$0	(\$78,504)	(\$12,190)	(\$90,695)
195	Other plastics product manufacturing	\$0	(\$417,268)	(\$118,343)	(\$535,611)
196	Tire manufacturing	\$0	(\$10,726)	(\$3,178)	(\$13,904)
197	Rubber and plastics hoses and belting manufacturing	\$0	(\$15,479)	(\$3,739)	(\$19,218)
198	Other rubber product manufacturing	\$0	(\$49,821)	(\$16,410)	(\$66,231)
199	Pottery, ceramics, and plumbing fixture manufacturing	\$0	(\$23,313)	(\$5,364)	(\$28,678)
200	Brick, tile, and other structural clay product manufacturing	\$0	(\$68,023)	(\$27,084)	(\$95,107)
201	Flat glass manufacturing	\$0	(\$6,617)	(\$854)	(\$7,471)
202	Other pressed and blown glass and glassware manufacturing	\$0	(\$39,981)	(\$9,548)	(\$49,530)
203	Glass container manufacturing	\$0	(\$1,117,633)	(\$38,381)	(\$1,156,014)
204	Glass product manufacturing made of purchased glass	\$0	(\$93,545)	(\$21,719)	(\$115,264)
205	Cement manufacturing	\$0	(\$56,423)	(\$14,937)	(\$71,360)
206	Ready-mix concrete manufacturing	\$0	(\$281,348)	(\$83,709)	(\$365,057)
207	Concrete block and brick manufacturing	\$0	(\$27,119)	(\$9,374)	(\$36,493)
208	Concrete pipe manufacturing	\$0	(\$7,114)	(\$1,104)	(\$8,219)
209	Other concrete product manufacturing	\$0	(\$231,134)	(\$31,583)	(\$262,716)
210	Lime manufacturing	\$0	(\$4,721)	(\$948)	(\$5,669)
211	Gypsum product manufacturing	\$0	(\$48,012)	(\$17,180)	(\$65,192)
212	Abrasive product manufacturing	\$0	(\$3,958)	(\$903)	(\$4,861)
213	Cut stone and stone product manufacturing	\$0	(\$15,004)	(\$11,269)	(\$26,273)
214	Ground or treated mineral and earth manufacturing	\$0	(\$7,017)	(\$2,029)	(\$9,046)
215	Mineral wool manufacturing	\$0	(\$25,436)	(\$22,337)	(\$47,773)
216	Miscellaneous nonmetallic mineral products manufacturing	\$0	(\$17,078)	(\$1,836)	(\$18,914)
217	Iron and steel mills and ferroalloy manufacturing	\$0	(\$94,426)	(\$11,073)	(\$105,499)
218	Iron, steel pipe and tube manufacturing from purchased steel	\$0	(\$49,336)	(\$6,064)	(\$55,399)
219	Rolled steel shape manufacturing	\$0	(\$9,087)	(\$1,078)	(\$10,165)
220	Steel wire drawing	\$0	(\$13,730)	(\$2,730)	(\$16,460)
221	Alumina refining and primary aluminum production	\$0	(\$10,018)	(\$870)	(\$10,888)
222	Secondary smelting and alloying of aluminum	\$0	(\$7,278)	(\$611)	(\$7,889)
223	Aluminum sheet, plate, and foil manufacturing	\$0	(\$3,119)	(\$297)	(\$3,416)
224	Other aluminum rolling, drawing and extruding	\$0	(\$100,757)	(\$9,244)	(\$110,000)
225	Nonferrous metal (exc aluminum) smelting and refining	\$0	(\$663)	(\$93)	(\$757)
226	Copper rolling, drawing, extruding and alloying	\$0	(\$1,682)	(\$303)	(\$1,985)
227	Nonferrous metal, except copper and aluminum, shaping	\$0	(\$5,232)	(\$820)	(\$6,053)
228	Secondary processing of other nonferrous metals	\$0	(\$9,205)	(\$1,277)	(\$10,481)
229	Ferrous metal foundries	\$0	(\$83,688)	(\$4,998)	(\$88,686)
230	Nonferrous metal foundries	\$0	(\$17,763)	(\$3,308)	(\$21,071)
231	Iron and steel forging	\$0	(\$29,512)	(\$4,061)	(\$33,572)
232	Nonferrous forging	\$0	(\$19,377)	(\$2,598)	(\$21,975)
233	Custom roll forming	\$0	(\$31,537)	(\$1,825)	(\$33,362)
234	Crown and closure manufacturing and metal stamping	\$0	(\$76,553)	(\$12,780)	(\$89,332)
235	Cutlery, utensil, pot, and pan manufacturing	\$0	(\$1,617)	(\$398)	(\$2,014)
236	Handtool manufacturing	\$0	(\$14,235)	(\$3,110)	(\$17,345)
237	Prefabricated metal buildings and components manufacturing	\$0	(\$52,938)	(\$12,441)	(\$65,379)
238	Fabricated structural metal manufacturing	\$0	(\$221,256)	(\$22,533)	(\$243,789)
239	Plate work manufacturing	\$0	(\$93,478)	(\$4,946)	(\$98,425)
240	Metal window and door manufacturing	\$0	(\$103,401)	(\$40,183)	(\$143,583)
241	Sheet metal work manufacturing	\$0	(\$214,413)	(\$69,848)	(\$284,261)
242	Ornamental and architectural metal work manufacturing	\$0	(\$137,860)	(\$21,557)	(\$159,418)
243	Power boiler and heat exchanger manufacturing	\$0	(\$1,478)	(\$300)	(\$1,778)
244	Metal tank (heavy gauge) manufacturing	\$0	(\$8,625)	(\$1,755)	(\$10,380)
245	Metal cans manufacturing	\$0	(\$456,118)	(\$23,666)	(\$479,784)
246	Metal barrels, drums and pails manufacturing	\$0	(\$46,664)	(\$3,879)	(\$50,543)
247	Hardware manufacturing	\$0	(\$57,563)	(\$17,048)	(\$74,611)
248	Spring and wire product manufacturing	\$0	(\$75,355)	(\$13,268)	(\$88,623)

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San Francisco Labor Income at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
249	Machine shops	\$0	(\$838,286)	(\$119,732)	(\$958,018)
250	Turned product and screw, nut, and bolt manufacturing	\$0	(\$275,873)	(\$26,744)	(\$302,617)
251	Metal heat treating	\$0	(\$81,336)	(\$11,466)	(\$92,802)
252	Metal coating and nonprecious engraving	\$0	(\$171,527)	(\$23,503)	(\$195,030)
253	Electroplating, anodizing, and coloring metal	\$0	(\$226,263)	(\$37,026)	(\$263,289)
254	Valve and fittings, other than plumbing, manufacturing	\$0	(\$255,185)	(\$23,295)	(\$278,480)
255	Plumbing fixture fitting and trim manufacturing	\$0	(\$37,113)	(\$15,913)	(\$53,025)
256	Ball and roller bearing manufacturing	\$0	(\$21,924)	(\$4,045)	(\$25,969)
257	Small arms ammunition manufacturing	\$0	(\$81)	(\$134)	(\$215)
258	Ammunition, except for small arms, manufacturing	\$0	(\$146)	(\$60)	(\$206)
259	Small arms, ordnance, and accessories manufacturing	\$0	(\$1,436)	(\$913)	(\$2,349)
260	Fabricated pipe and pipe fitting manufacturing	\$0	(\$25,105)	(\$9,248)	(\$34,354)
261	Other fabricated metal manufacturing	(\$60,879)	(\$255,968)	(\$39,611)	(\$356,457)
262	Farm machinery and equipment manufacturing	\$0	(\$7,222)	(\$1,779)	(\$9,001)
263	Lawn and garden equipment manufacturing	\$0	(\$442)	(\$748)	(\$1,190)
264	Construction machinery manufacturing	\$0	(\$1,141)	(\$210)	(\$1,351)
265	Mining machinery and equipment manufacturing	\$0	(\$299)	(\$50)	(\$349)
266	Oil and gas field machinery and equipment manufacturing	\$0	(\$2,984)	(\$559)	(\$3,543)
267	Food product machinery manufacturing	\$0	(\$11,798)	(\$2,264)	(\$14,062)
268	Semiconductor machinery manufacturing	\$0	(\$205,895)	(\$17,625)	(\$223,520)
269	Sawmill, woodworking, and paper machinery	\$0	(\$2,602)	(\$171)	(\$2,773)
270	Printing machinery and equipment manufacturing	\$0	(\$12,754)	(\$1,333)	(\$14,088)
271	All other industrial machinery manufacturing	(\$2,647,552)	(\$14,553)	(\$1,965)	(\$2,664,070)
272	Optical instrument and lens manufacturing	\$0	(\$4,563)	(\$658)	(\$5,220)
273	Photographic and photocopying equipment manufacturing	\$0	(\$3,713)	(\$1,563)	(\$5,276)
274	Other commercial service industry machinery manufacturing	\$0	(\$131,167)	(\$23,281)	(\$154,449)
275	Air purification and ventilation equipment manufacturing	\$0	(\$14,413)	(\$1,972)	(\$16,384)
276	Heating equipment (except warm air furnaces) manufacturing	\$0	(\$20,221)	(\$10,531)	(\$30,752)
277	Air conditioning, refrigeration, and warm air heating equipment m	\$0	(\$70,001)	(\$19,387)	(\$89,388)
278	Industrial mold manufacturing	\$0	(\$8,539)	(\$960)	(\$9,499)
279	Special tool, die, jig, and fixture manufacturing	\$0	(\$14,042)	(\$928)	(\$14,969)
280	Cutting tool and machine tool accessory manufacturing	\$0	(\$15,728)	(\$1,337)	(\$17,064)
281	Machine tool manufacturing	\$0	(\$7,348)	(\$1,592)	(\$8,940)
282	Rolling mill and other metalworking machinery manufacturing	\$0	(\$1,180)	(\$396)	(\$1,576)
283	Turbine and turbine generator set units manufacturing	\$0	(\$1,826)	(\$246)	(\$2,071)
284	Speed changer, industrial high-speed drive, and gear manufactu	\$0	(\$3,914)	(\$329)	(\$4,243)
285	Mechanical power transmission equipment manufacturing	\$0	(\$1,111)	(\$192)	(\$1,302)
286	Other engine equipment manufacturing	\$0	(\$301)	(\$100)	(\$401)
287	Pump and pumping equipment manufacturing	\$0	(\$9,963)	(\$5,039)	(\$15,002)
288	Air and gas compressor manufacturing	\$0	(\$6,015)	(\$864)	(\$6,880)
289	Measuring and dispensing pump manufacturing	\$0	(\$38)	(\$7)	(\$45)
290	Elevator and moving stairway manufacturing	\$0	(\$4,807)	(\$133)	(\$4,940)
291	Conveyor and conveying equipment manufacturing	\$0	(\$2,016)	(\$225)	(\$2,242)
292	Overhead cranes, hoists, and monorail systems manufacturing	\$0	(\$165)	(\$41)	(\$206)
293	Industrial truck, trailer, and stacker manufacturing	\$0	(\$3,543)	(\$522)	(\$4,065)
294	Power-driven handtool manufacturing	\$0	(\$396)	(\$180)	(\$576)
295	Welding and soldering equipment manufacturing	\$0	(\$6,261)	(\$1,549)	(\$7,811)
296	Packaging machinery manufacturing	\$0	(\$201,613)	(\$1,955)	(\$203,568)
297	Industrial process furnace and oven manufacturing	\$0	(\$595)	(\$111)	(\$706)
298	Fluid power cylinder and actuator manufacturing	\$0	(\$4,170)	(\$270)	(\$4,440)
299	Fluid power pump and motor manufacturing	\$0	(\$13,441)	(\$993)	(\$14,434)
300	Scales, balances, and miscellaneous general purpose machiner	\$0	(\$9,834)	(\$1,280)	(\$11,113)
301	Electronic computer manufacturing	\$0	(\$175,149)	(\$304,937)	(\$480,085)
302	Computer storage device manufacturing	\$0	(\$27,948)	(\$13,135)	(\$41,083)
303	Computer terminals and other computer peripheral equipment m	\$0	(\$271,162)	(\$27,391)	(\$298,553)
304	Telephone apparatus manufacturing	\$0	(\$69,744)	(\$19,507)	(\$89,252)
305	Broadcast and wireless communications equipment manufactur	\$0	(\$800,284)	(\$81,852)	(\$882,136)
306	Other communications equipment manufacturing	\$0	(\$46,612)	(\$6,935)	(\$53,547)
307	Audio and video equipment manufacturing	(\$2,104,902)	(\$417,998)	(\$10,261)	(\$2,533,161)
308	Bare printed circuit board manufacturing	\$0	(\$162,048)	(\$8,655)	(\$170,703)
309	Semiconductor and related device manufacturing	\$0	(\$1,967,570)	(\$484,644)	(\$2,452,214)
310	Capacitor, resistor, coil, transformer, and other inductor manufac	\$0	(\$42,150)	(\$5,993)	(\$48,144)

(Continued on the following page)

San Francisco Labor Income at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
311	Electronic connector manufacturing	\$0	(\$56,709)	(\$7,902)	(\$64,611)
312	Printed circuit assembly (electronic assembly) manufacturing	\$0	(\$237,107)	(\$18,437)	(\$255,543)
313	Other electronic component manufacturing	\$0	(\$476,840)	(\$19,606)	(\$496,446)
314	Electromedical and electrotherapeutic apparatus manufacturing	\$0	(\$3,363)	(\$3,799)	(\$7,162)
315	Search, detection, and navigation instruments manufacturing	\$0	(\$26,318)	(\$3,232)	(\$29,550)
316	Automatic environmental control manufacturing	\$0	(\$5,073)	(\$1,841)	(\$6,914)
317	Industrial process variable instruments manufacturing	\$0	(\$27,140)	(\$4,190)	(\$31,330)
318	Totalizing fluid meter and counting device manufacturing	\$0	(\$2,668)	(\$686)	(\$3,354)
319	Electricity and signal testing instruments manufacturing	\$0	(\$7,647)	(\$1,286)	(\$8,933)
320	Analytical laboratory instrument manufacturing	\$0	(\$47,589)	(\$11,570)	(\$59,159)
321	Irradiation apparatus manufacturing	\$0	(\$1,550)	(\$759)	(\$2,308)
322	Watch, clock, and other measuring and controlling device manuf.	\$0	(\$7,052)	(\$2,570)	(\$9,621)
323	Blank magnetic and optical recording media manufacturing	\$0	(\$433,989)	(\$21,213)	(\$455,203)
324	Software and other prerecorded and record reproducing	\$0	(\$240,901)	(\$12,586)	(\$253,487)
325	Electric lamp bulb and part manufacturing	\$0	(\$7,201)	(\$2,444)	(\$9,645)
326	Lighting fixture manufacturing	\$0	(\$119,810)	(\$17,874)	(\$137,684)
327	Small electrical appliance manufacturing	\$0	(\$1,707)	(\$671)	(\$2,378)
328	Household cooking appliance manufacturing	\$0	(\$9,678)	(\$4,606)	(\$14,284)
329	Household refrigerator and home freezer manufacturing	\$0	(\$392)	(\$625)	(\$1,017)
330	Household laundry equipment manufacturing	\$0	(\$3,786)	(\$87,077)	(\$90,863)
331	Other major household appliance manufacturing	\$0	(\$1)	(\$1)	(\$2)
332	Power, distribution, and specialty transformer manufacturing	\$0	(\$33,367)	(\$3,370)	(\$36,737)
333	Motor and generator manufacturing	\$0	(\$31,238)	(\$12,217)	(\$43,455)
334	Switchgear and switchboard apparatus manufacturing	\$0	(\$81,401)	(\$11,507)	(\$92,908)
335	Relay and industrial control manufacturing	\$0	(\$38,348)	(\$4,010)	(\$42,359)
336	Storage battery manufacturing	\$0	(\$38,124)	(\$9,326)	(\$47,449)
337	Primary battery manufacturing	\$0	(\$741)	(\$1,377)	(\$2,118)
338	Fiber optic cable manufacturing	\$0	(\$162,201)	(\$24,873)	(\$187,075)
339	Other communication and energy wire manufacturing	\$0	(\$34,667)	(\$6,942)	(\$41,609)
340	Wiring device manufacturing	\$0	(\$125,818)	(\$42,549)	(\$168,367)
341	Carbon and graphite product manufacturing	\$0	(\$28,291)	(\$2,340)	(\$30,631)
342	All other miscellaneous electrical equipment and component mar	(\$248,768)	(\$24,708)	(\$6,008)	(\$279,485)
343	Automobile manufacturing	\$0	(\$1,956)	(\$13,462)	(\$15,418)
344	Light truck and utility vehicle manufacturing	\$0	(\$4)	(\$280)	(\$284)
345	Heavy duty truck manufacturing	\$0	(\$495)	(\$195)	(\$690)
346	Motor vehicle body manufacturing	\$0	(\$443)	(\$443)	(\$887)
347	Truck trailer manufacturing	\$0	(\$48)	(\$76)	(\$124)
348	Motor home manufacturing	\$0	(\$14)	(\$282)	(\$296)
349	Travel trailer and camper manufacturing	\$0	(\$6,424)	(\$5,468)	(\$11,892)
350	Motor vehicle gasoline engine and engine parts manufacturing	\$0	(\$8,591)	(\$2,622)	(\$11,213)
351	Motor vehicle electrical and electronic equipment manufacturing	\$0	(\$53,585)	(\$11,082)	(\$64,668)
352	Motor vehicle steering, suspension component (except spring), a	\$0	(\$43,468)	(\$9,276)	(\$52,744)
353	Motor vehicle transmission and power train parts manufacturing	\$0	(\$3,247)	(\$717)	(\$3,964)
354	Motor vehicle seating and interior trim manufacturing	\$0	(\$527)	(\$185)	(\$712)
355	Motor vehicle metal stamping	\$0	(\$306)	(\$60)	(\$366)
356	Other motor vehicle parts manufacturing	\$0	(\$99,167)	(\$17,630)	(\$116,797)
357	Aircraft manufacturing	\$0	(\$2,827)	(\$752)	(\$3,580)
358	Aircraft engine and engine parts manufacturing	\$0	(\$597)	(\$79)	(\$677)
359	Other aircraft parts and auxiliary equipment manufacturing	\$0	(\$39,601)	(\$5,254)	(\$44,855)
360	Guided missile and space vehicle manufacturing	\$0	(\$5,502)	(\$2,404)	(\$7,906)
361	Propulsion units and parts for space vehicles and guided missile	\$0	(\$2,076)	(\$227)	(\$2,303)
362	Railroad rolling stock manufacturing	(\$2,156,245)	(\$64,703)	(\$1,291)	(\$2,222,239)
363	Ship building and repairing	\$0	(\$43,527)	(\$7,245)	(\$50,772)
364	Boat building	\$0	(\$340)	(\$2,532)	(\$2,872)
365	Motorcycle, bicycle, and parts manufacturing	\$0	(\$1,543)	(\$2,542)	(\$4,084)
366	Military armored vehicle, tank, and tank component manufactur	\$0	(\$804)	(\$130)	(\$933)
367	All other transportation equipment manufacturing	\$0	(\$572)	(\$832)	(\$1,404)
368	Wood kitchen cabinet and countertop manufacturing	\$0	(\$113,017)	(\$125,420)	(\$238,437)
369	Upholstered household furniture manufacturing	\$0	(\$3,742)	(\$24,567)	(\$28,310)
370	Nonupholstered wood household furniture manufacturing	\$0	(\$4,597)	(\$21,340)	(\$25,937)
371	Other household nonupholstered furniture manufacturing	\$0	(\$78,672)	(\$4,072)	(\$82,745)
372	Institutional furniture manufacturing	\$0	(\$1,245)	(\$584)	(\$1,829)

(Continued on the following page)

San Francisco Labor Income at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
373	Wood office furniture manufacturing	\$0	(\$161)	(\$82)	(\$243)
374	Custom architectural woodwork and millwork	\$0	(\$4,373)	(\$1,054)	(\$5,427)
375	Office furniture, except wood, manufacturing	\$0	(\$656)	(\$309)	(\$965)
376	Showcase, partition, shelving, and locker manufacturing	\$0	(\$53,575)	(\$9,432)	(\$63,007)
377	Mattress manufacturing	\$0	(\$2,390)	(\$7,690)	(\$10,079)
378	Blind and shade manufacturing	\$0	(\$5,794)	(\$2,738)	(\$8,532)
379	Surgical and medical instrument manufacturing	\$0	(\$181,958)	(\$150,312)	(\$332,270)
380	Surgical appliance and supplies manufacturing	\$0	(\$85,598)	(\$75,493)	(\$161,091)
381	Dental equipment and supplies manufacturing	\$0	(\$8,279)	(\$37,168)	(\$45,447)
382	Ophthalmic goods manufacturing	\$0	(\$672)	(\$6,532)	(\$7,205)
383	Dental laboratories	\$0	(\$23,792)	(\$109,429)	(\$133,222)
384	Jewelry and silverware manufacturing	\$0	(\$14,975)	(\$7,869)	(\$22,844)
385	Sporting and athletic goods manufacturing	\$0	(\$5,892)	(\$12,325)	(\$18,217)
386	Doll, toy, and game manufacturing	(\$425,416)	(\$5,272)	(\$64,495)	(\$495,183)
387	Office supplies (except paper) manufacturing	\$0	(\$21,189)	(\$1,217)	(\$22,406)
388	Sign manufacturing	(\$5,160,209)	(\$116,358)	(\$6,414)	(\$5,282,982)
389	Gasket, packing, and sealing device manufacturing	\$0	(\$41,842)	(\$9,378)	(\$51,220)
390	Musical instrument manufacturing	\$0	(\$5,982)	(\$14,996)	(\$20,978)
391	Fasteners, buttons, needles, and pins manufacturing	\$0	(\$1,499)	(\$1,395)	(\$2,895)
392	Broom, brush, and mop manufacturing	\$0	(\$10,762)	(\$3,283)	(\$14,045)
393	Burial casket manufacturing	\$0	(\$354)	(\$265)	(\$619)
394	All other miscellaneous manufacturing	\$0	(\$185,088)	(\$91,536)	(\$276,624)
395	Wholesale trade	(\$35,603,861)	(\$22,415,091)	(\$18,665,571)	(\$76,684,524)
396	Retail - Motor vehicle and parts dealers	(\$1,229,811)	(\$379,509)	(\$2,338,616)	(\$3,947,936)
397	Retail - Furniture and home furnishings stores	(\$14,864,875)	(\$325,844)	(\$2,078,205)	(\$17,268,924)
398	Retail - Electronics and appliance stores	(\$22,309,455)	(\$741,202)	(\$2,184,312)	(\$25,234,969)
399	Retail - Building material and garden equipment and supplies stc	(\$239,760)	(\$582,594)	(\$2,531,486)	(\$3,353,839)
400	Retail - Food and beverage stores	(\$10,185,748)	(\$93,902)	(\$8,568,101)	(\$18,847,751)
401	Retail - Health and personal care stores	(\$1,425,303)	(\$749,211)	(\$3,733,272)	(\$5,907,786)
402	Retail - Gasoline stores	\$0	(\$386,085)	(\$1,962,925)	(\$2,349,010)
403	Retail - Clothing and clothing accessories stores	(\$10,595,564)	(\$500,494)	(\$3,726,361)	(\$14,822,419)
404	Retail - Sporting goods, hobby, musical instrument and book stor	(\$1,722,636)	(\$281,459)	(\$1,753,363)	(\$3,757,458)
405	Retail - General merchandise stores	\$0	(\$268,680)	(\$6,221,850)	(\$6,490,530)
406	Retail - Miscellaneous store retailers	(\$5,720,336)	(\$568,333)	(\$3,159,344)	(\$9,448,013)
407	Retail - Nonstore retailers	(\$2,646,560)	(\$285,472)	(\$4,434,990)	(\$7,367,022)
408	Air transportation	\$0	(\$2,857,126)	(\$753,374)	(\$3,610,500)
409	Rail transportation	\$0	(\$619,365)	(\$159,209)	(\$778,574)
410	Water transportation	(\$1,069,302)	(\$119,115)	(\$198,103)	(\$1,386,520)
411	Truck transportation	(\$17,091,276)	(\$2,606,581)	(\$1,421,006)	(\$21,118,862)
412	Transit and ground passenger transportation	(\$7,102,665)	(\$1,952,755)	(\$1,790,124)	(\$10,845,544)
413	Pipeline transportation	\$0	(\$450,487)	(\$172,357)	(\$622,844)
414	Scenic and sightseeing transportation and support activities for t	(\$18,769,859)	(\$8,221,030)	(\$1,309,917)	(\$28,300,806)
415	Couriers and messengers	(\$47,050)	(\$6,709,163)	(\$813,631)	(\$7,569,845)
416	Warehousing and storage	\$0	(\$3,675,948)	(\$1,027,109)	(\$4,703,057)
417	Newspaper publishers	(\$507,963)	(\$1,261,305)	(\$354,754)	(\$2,124,023)
418	Periodical publishers	(\$28,109,002)	(\$893,704)	(\$383,021)	(\$29,385,727)
419	Book publishers	\$0	(\$67,256)	(\$319,233)	(\$386,489)
420	Directory, mailing list, and other publishers	(\$497,804)	(\$183,553)	(\$44,466)	(\$725,823)
421	Greeting card publishing	\$0	(\$292)	(\$197)	(\$490)
422	Software publishers	(\$34,551,976)	(\$3,321,695)	(\$1,896,171)	(\$39,769,841)
423	Motion picture and video industries	(\$15,099,798)	(\$7,275,255)	(\$1,394,241)	(\$23,769,294)
424	Sound recording industries	\$0	(\$498,457)	(\$137,825)	(\$636,282)
425	Radio and television broadcasting	(\$366,663,783)	(\$41,158,137)	(\$964,778)	(\$408,786,698)
426	Cable and other subscription programming	(\$2,152,150)	(\$6,841,981)	(\$405,178)	(\$9,399,310)
427	Wired telecommunications carriers	\$0	(\$4,632,878)	(\$3,486,030)	(\$8,118,908)
428	Wireless telecommunications carriers (except satellite)	\$0	(\$839,846)	(\$616,452)	(\$1,456,298)
429	Satellite, telecommunications resellers, and all other telecommur	(\$236,298)	(\$1,069,233)	(\$750,107)	(\$2,055,638)
430	Data processing, hosting, and related services	(\$1,043,024)	(\$6,528,896)	(\$1,319,301)	(\$8,891,220)
431	News syndicates, libraries, archives and all other information ser	(\$205,990)	(\$231,032)	(\$219,295)	(\$656,317)
432	Internet publishing and broadcasting and web search portals	\$0	(\$26,523,875)	(\$3,070,539)	(\$29,594,413)
433	Monetary authorities and depository credit intermediation	(\$1,604,478)	(\$9,020,221)	(\$7,263,238)	(\$17,887,936)
434	Nondepository credit intermediation and related activities	(\$98,778,763)	(\$10,862,274)	(\$6,296,830)	(\$115,937,867)

(Continued on the following page)

San Francisco Labor Income at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
435	Securities and commodity contracts intermediation and brokerag	(\$132,141,056)	(\$13,253,017)	(\$7,343,695)	(\$152,737,768)
436	Other financial investment activities	(\$27,668,999)	(\$12,253,732)	(\$12,674,200)	(\$52,596,932)
437	Insurance carriers	(\$6,826,520)	(\$6,670,377)	(\$7,194,097)	(\$20,690,993)
438	Insurance agencies, brokerages, and related activities	(\$2,099,007)	(\$18,127,837)	(\$5,360,930)	(\$25,587,774)
439	Funds, trusts, and other financial vehicles	(\$4,201,226)	(\$712,583)	(\$6,706,241)	(\$11,620,050)
440	Real estate	(\$44,742,761)	(\$17,378,619)	(\$9,125,093)	(\$71,246,473)
441	Owner-occupied dwellings	\$0	\$0	\$0	\$0
442	Automotive equipment rental and leasing	(\$1,369,937)	(\$777,271)	(\$448,089)	(\$2,595,297)
443	General and consumer goods rental except video tapes and disc	(\$316,481)	(\$618,841)	(\$497,765)	(\$1,433,087)
444	Video tape and disc rental	\$0	\$0	(\$33,959)	(\$33,959)
445	Commercial and industrial machinery and equipment rental and l	(\$1,141,599)	(\$6,177,427)	(\$360,961)	(\$7,679,986)
446	Lessors of nonfinancial intangible assets	\$0	(\$1,331,694)	(\$114,879)	(\$1,446,572)
447	Legal services	(\$35,850,962)	(\$10,090,337)	(\$7,361,934)	(\$53,303,233)
448	Accounting, tax preparation, bookkeeping, and payroll services	(\$2,867,036)	(\$14,222,043)	(\$3,827,995)	(\$20,917,073)
449	Architectural, engineering, and related services	(\$43,503,489)	(\$9,688,769)	(\$2,795,381)	(\$55,987,639)
450	Specialized design services	(\$8,331,908)	(\$5,952,955)	(\$731,050)	(\$15,015,913)
451	Custom computer programming services	(\$37,756,714)	(\$1,094,723)	(\$84,798)	(\$38,936,235)
452	Computer systems design services	(\$15,303,616)	(\$8,449,478)	(\$1,407,852)	(\$25,160,945)
453	Other computer related services, including facilities management	(\$37,129,437)	(\$7,524,779)	(\$1,295,018)	(\$45,949,234)
454	Management consulting services	(\$34,434,254)	(\$23,615,799)	(\$3,649,074)	(\$61,699,126)
455	Environmental and other technical consulting services	(\$12,149,458)	(\$6,507,892)	(\$1,109,770)	(\$19,767,120)
456	Scientific research and development services	(\$2,909,536)	(\$288,302)	(\$320,549)	(\$3,518,386)
457	Advertising, public relations, and related services	(\$214,888,263)	(\$23,888,696)	(\$2,027,910)	(\$240,804,869)
458	Photographic services	(\$259,950)	(\$2,996,347)	(\$815,124)	(\$4,071,421)
459	Veterinary services	\$0	(\$67,837)	(\$691,020)	(\$758,857)
460	Marketing research and all other miscellaneous professional, sci	(\$14,393,230)	(\$10,666,950)	(\$1,653,204)	(\$26,713,384)
461	Management of companies and enterprises	(\$3,479,531)	(\$33,332,703)	(\$6,325,276)	(\$43,137,510)
462	Office administrative services	(\$189,829,334)	(\$9,681,271)	(\$1,363,546)	(\$200,874,151)
463	Facilities support services	(\$543,724)	(\$853,225)	(\$164,812)	(\$1,561,761)
464	Employment services	(\$1,201,656)	(\$26,034,806)	(\$3,912,360)	(\$31,148,822)
465	Business support services	(\$607,119)	(\$6,760,685)	(\$1,453,549)	(\$8,821,353)
466	Travel arrangement and reservation services	(\$3,510,069)	(\$1,281,468)	(\$1,223,427)	(\$6,014,965)
467	Investigation and security services	(\$312,092)	(\$4,037,185)	(\$1,236,420)	(\$5,585,698)
468	Services to buildings	\$0	(\$6,106,506)	(\$3,405,981)	(\$9,512,487)
469	Landscape and horticultural services	\$0	(\$2,473,908)	(\$1,473,652)	(\$3,947,561)
470	Other support services	(\$3,473,532)	(\$2,580,302)	(\$505,137)	(\$6,558,970)
471	Waste management and remediation services	\$0	(\$2,745,843)	(\$1,074,742)	(\$3,820,585)
472	Elementary and secondary schools	(\$1,874,277)	\$0	(\$5,443,411)	(\$7,317,688)
473	Junior colleges, colleges, universities, and professional schools	(\$2,972,013)	(\$88,788)	(\$8,073,640)	(\$11,134,441)
474	Other educational services	(\$2,767,771)	(\$1,235,673)	(\$4,209,498)	(\$8,212,942)
475	Offices of physicians	(\$13,766,132)	\$0	(\$18,378,963)	(\$32,145,096)
476	Offices of dentists	(\$1,070,592)	\$0	(\$4,924,109)	(\$5,994,700)
477	Offices of other health practitioners	(\$440,815)	\$0	(\$5,219,595)	(\$5,660,410)
478	Outpatient care centers	\$0	\$0	(\$6,230,566)	(\$6,230,566)
479	Medical and diagnostic laboratories	(\$2,038,380)	(\$202,494)	(\$1,746,500)	(\$3,987,374)
480	Home health care services	\$0	\$0	(\$2,520,642)	(\$2,520,642)
481	Other ambulatory health care services	(\$1,870,970)	(\$514,000)	(\$1,110,405)	(\$3,495,375)
482	Hospitals	(\$57,122,371)	(\$48,843)	(\$24,442,410)	(\$81,613,624)
483	Nursing and community care facilities	\$0	\$0	(\$4,202,572)	(\$4,202,572)
484	Residential mental retardation, mental health, substance abuse c	(\$20,012,694)	\$0	(\$1,589,407)	(\$21,602,100)
485	Individual and family services	(\$264,293)	\$0	(\$5,633,771)	(\$5,898,064)
486	Community food, housing, and other relief services, including ref	(\$494,983)	\$0	(\$1,682,037)	(\$2,177,019)
487	Child day care services	(\$449,614)	\$0	(\$2,952,973)	(\$3,402,588)
488	Performing arts companies	(\$4,308,955)	(\$324,707)	(\$905,914)	(\$5,539,575)
489	Commercial Sports Except Racing	\$0	(\$37,243,792)	(\$1,397,949)	(\$38,641,741)
490	Racing and Track Operation	\$0	(\$1,216)	(\$11,896)	(\$13,112)
491	Promoters of performing arts and sports and agents for public fig	(\$594,545)	(\$2,224,089)	(\$642,264)	(\$3,460,898)
492	Independent artists, writers, and performers	\$0	(\$8,849,940)	(\$918,920)	(\$9,768,859)
493	Museums, historical sites, zoos, and parks	(\$20,438,677)	\$0	(\$678,321)	(\$21,116,999)
494	Amusement parks and arcades	(\$299,754)	(\$24,356)	(\$708,538)	(\$1,032,648)
495	Gambling industries (except casino hotels)	\$0	(\$754)	(\$2,142,802)	(\$2,143,556)
496	Other amusement and recreation industries	(\$766,948)	(\$380,254)	(\$994,191)	(\$2,141,393)

(Continued on the following page)

San Francisco Labor Income at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
497	Fitness and recreational sports centers	(\$9,319,066)	(\$362,696)	(\$1,135,781)	(\$10,817,542)
498	Bowling centers	(\$235,662)	(\$98)	(\$17,227)	(\$252,987)
499	Hotels and motels, including casino hotels	(\$13,890,486)	(\$771,002)	(\$396,027)	(\$15,057,516)
500	Other accommodations	(\$78,871)	(\$11,540)	(\$12,713)	(\$103,125)
501	Full-service restaurants	(\$79,471,509)	(\$5,678,948)	(\$11,826,998)	(\$96,977,455)
502	Limited-service restaurants	(\$5,517,641)	(\$2,200,751)	(\$8,703,915)	(\$16,422,307)
503	All other food and drinking places	(\$2,420,187)	(\$1,955,867)	(\$6,707,302)	(\$11,083,355)
504	Automotive repair and maintenance, except car washes	(\$323,286)	(\$2,202,160)	(\$3,731,064)	(\$6,256,510)
505	Car washes	\$0	(\$160,095)	(\$322,582)	(\$482,678)
506	Electronic and precision equipment repair and maintenance	\$0	(\$1,489,290)	(\$399,747)	(\$1,889,037)
507	Commercial and industrial machinery and equipment repair and	(\$225,751)	(\$2,902,493)	(\$634,733)	(\$3,762,977)
508	Personal and household goods repair and maintenance	\$0	(\$2,185,177)	(\$1,348,208)	(\$3,533,385)
509	Personal care services	(\$230,624)	(\$1,675)	(\$5,339,013)	(\$5,571,313)
510	Death care services	(\$265,260)	\$0	(\$146,457)	(\$411,717)
511	Dry-cleaning and laundry services	(\$229,744)	(\$541,232)	(\$506,141)	(\$1,277,118)
512	Other personal services	(\$451,287)	(\$3,139,696)	(\$6,144,922)	(\$9,735,906)
513	Religious organizations	(\$345,901)	\$0	(\$8,876,413)	(\$9,222,314)
514	Grantmaking, giving, and social advocacy organizations	(\$9,126,046)	(\$172,210)	(\$2,107,383)	(\$11,405,639)
515	Business and professional associations	(\$6,962,999)	(\$1,342,167)	(\$1,166,427)	(\$9,471,593)
516	Labor and civic organizations	(\$20,720,974)	(\$23,590)	(\$2,336,538)	(\$23,081,103)
517	Private households	\$0	\$0	(\$2,022,493)	(\$2,022,493)
518	Postal service	\$0	(\$9,904,451)	(\$1,634,349)	(\$11,538,801)
519	Federal electric utilities	\$0	\$0	\$0	\$0
520	Other federal government enterprises	\$0	(\$646,300)	(\$420,472)	(\$1,066,772)
521	State government passenger transit	\$0	\$0	\$0	\$0
522	State government electric utilities	\$0	\$0	\$0	\$0
523	Other state government enterprises	\$0	(\$416)	(\$664)	(\$1,081)
524	Local government passenger transit	\$0	(\$3,931,754)	(\$3,643,622)	(\$7,575,376)
525	Local government electric utilities	\$0	(\$191,180)	(\$102,572)	(\$293,752)
526	Other local government enterprises	\$0	(\$1,651,030)	(\$1,943,852)	(\$3,594,882)
527	* Not an industry (Used and secondhand goods)	\$0	\$0	\$0	\$0
528	* Not an industry (Scrap)	\$0	\$0	\$0	\$0
529	* Not an industry (Rest of world adjustment)	\$0	\$0	\$0	\$0
530	* Not an industry (Noncomparable foreign imports)	\$0	\$0	\$0	\$0
531	* Employment and payroll of state govt, non-education	\$0	\$0	\$0	\$0
532	* Employment and payroll of state govt, education	\$0	\$0	\$0	\$0
533	* Employment and payroll of local govt, non-education	\$0	\$0	\$0	\$0
534	* Employment and payroll of local govt, education	\$0	\$0	\$0	\$0
535	* Employment and payroll of federal govt, non-military	\$0	\$0	\$0	\$0
536	* Employment and payroll of federal govt, military	\$0	\$0	\$0	\$0

Sources: IMPLAN; BAE, 2017.

San Francisco Output at Risk, 8M Earthquake

Sector	Description	Direct	Indirect	Induced	Total
0	Total	(\$3,817,075,306)	(\$1,432,465,781)	(\$1,008,029,271)	(\$6,257,570,357)
1	Oilseed farming	\$0	(\$14,978)	(\$1,396)	(\$16,374)
2	Grain farming	\$0	(\$531,598)	(\$71,370)	(\$602,968)
3	Vegetable and melon farming	\$0	(\$139,303)	(\$127,990)	(\$267,293)
4	Fruit farming	(\$2,151)	(\$5,818,313)	(\$148,645)	(\$5,969,108)
5	Tree nut farming	\$0	(\$646,461)	(\$24,492)	(\$670,953)
6	Greenhouse, nursery, and floriculture production	\$0	(\$463,851)	(\$186,316)	(\$650,168)
7	Tobacco farming	\$0	\$0	\$0	\$0
8	Cotton farming	\$0	(\$13,508)	(\$2,397)	(\$15,905)
9	Sugarcane and sugar beet farming	\$0	(\$35,644)	(\$1,871)	(\$37,515)
10	All other crop farming	\$0	(\$2,517,902)	(\$231,886)	(\$2,749,788)
11	Beef cattle ranching and farming, including feedlots and dual-purpose ranching	\$0	(\$554,976)	(\$436,897)	(\$991,873)
12	Dairy cattle and milk production	\$0	(\$1,399,379)	(\$657,804)	(\$2,057,184)
13	Poultry and egg production	\$0	(\$327,566)	(\$202,731)	(\$530,297)
14	Animal production, except cattle and poultry and eggs	(\$55,527)	(\$92,502)	(\$52,692)	(\$200,721)
15	Forestry, forest products, and timber tract production	\$0	(\$17,093)	(\$3,151)	(\$20,244)
16	Commercial logging	\$0	(\$107,625)	(\$32,843)	(\$140,468)
17	Commercial fishing	\$0	(\$837,200)	(\$154,374)	(\$991,574)
18	Commercial hunting and trapping	\$0	(\$505)	(\$19,544)	(\$20,049)
19	Support activities for agriculture and forestry	(\$281,091)	(\$1,557,126)	(\$187,214)	(\$2,025,431)
20	Extraction of natural gas and crude petroleum	\$0	(\$3,206,445)	(\$857,494)	(\$4,063,939)
21	Extraction of natural gas liquids	\$0	(\$282,920)	(\$65,099)	(\$348,019)
22	Coal mining	\$0	(\$40,680)	(\$7,087)	(\$47,767)
23	Iron ore mining	\$0	(\$12,065)	(\$1,518)	(\$13,582)
24	Gold ore mining	\$0	(\$72,400)	(\$12,389)	(\$84,789)
25	Silver ore mining	\$0	\$0	\$0	\$0
26	Lead and zinc ore mining	\$0	\$0	\$0	\$0
27	Copper ore mining	\$0	(\$91,155)	(\$15,989)	(\$107,143)
28	Uranium-radium-vanadium ore mining	\$0	\$0	\$0	\$0
29	Other metal ore mining	\$0	(\$44,109)	(\$6,294)	(\$50,403)
30	Stone mining and quarrying	\$0	(\$75,842)	(\$29,916)	(\$105,759)
31	Sand and gravel mining	\$0	(\$247,459)	(\$73,417)	(\$320,876)
32	Other clay, ceramic, refractory minerals mining	\$0	(\$17,022)	(\$5,504)	(\$22,526)
33	Potash, soda, and borate mineral mining	\$0	(\$45,271)	(\$7,399)	(\$52,669)
34	Phosphate rock mining	\$0	\$0	\$0	\$0
35	Other chemical and fertilizer mineral mining	\$0	(\$789)	(\$143)	(\$932)
36	Other nonmetallic minerals	\$0	(\$23,764)	(\$7,868)	(\$31,632)
37	Drilling oil and gas wells	\$0	(\$4,585)	(\$510)	(\$5,095)
38	Support activities for oil and gas operations	(\$184,303)	(\$351,245)	(\$51,556)	(\$587,105)
39	Metal mining services	\$0	(\$5,761)	(\$427)	(\$6,187)
40	Other nonmetallic minerals services	\$0	(\$41,872)	(\$3,075)	(\$44,947)
41	Electric power generation - Hydroelectric	\$0	(\$8,245)	(\$4,424)	(\$12,669)
42	Electric power generation - Fossil fuel	\$0	(\$306,507)	(\$166,503)	(\$473,011)
43	Electric power generation - Nuclear	\$0	(\$124,295)	(\$66,687)	(\$190,982)
44	Electric power generation - Solar	\$0	(\$62,479)	(\$36,797)	(\$99,276)
45	Electric power generation - Wind	\$0	(\$150,985)	(\$88,901)	(\$239,886)
46	Electric power generation - Geothermal	\$0	(\$14,899)	(\$7,994)	(\$22,893)
47	Electric power generation - Biomass	\$0	(\$46,352)	(\$26,421)	(\$72,773)
48	Electric power generation - All other	(\$4,611,319)	(\$7,246)	(\$4,107)	(\$4,622,672)
49	Electric power transmission and distribution	\$0	(\$862,039)	(\$493,529)	(\$1,355,568)
50	Natural gas distribution	\$0	(\$4,746,105)	(\$2,994,699)	(\$7,740,804)
51	Water, sewage and other systems	\$0	(\$2,801,111)	(\$4,106,847)	(\$6,907,958)
52	Construction of new health care structures	\$0	\$0	\$0	\$0
53	Construction of new manufacturing structures	\$0	\$0	\$0	\$0
54	Construction of new power and communication structures	\$0	\$0	\$0	\$0
55	Construction of new educational and vocational structures	\$0	\$0	\$0	\$0
56	Construction of new highways and streets	(\$2,658,069)	\$0	\$0	(\$2,658,069)
57	Construction of new commercial structures, including farm structures	(\$28,498,895)	\$0	\$0	(\$28,498,895)
58	Construction of other new nonresidential structures	\$0	\$0	\$0	\$0
59	Construction of new single-family residential structures	(\$1,310,357)	\$0	\$0	(\$1,310,357)
60	Construction of new multifamily residential structures	\$0	\$0	\$0	\$0
61	Construction of other new residential structures	(\$2,781,977)	\$0	\$0	(\$2,781,977)
62	Maintenance and repair construction of nonresidential structures	(\$56,150,235)	(\$18,109,548)	(\$4,957,629)	(\$79,217,411)

(Continued on the following page)

San Francisco Output at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
63	Maintenance and repair construction of residential structures	\$0	(\$1,305,542)	(\$7,477,833)	(\$8,783,375)
64	Maintenance and repair construction of highways, streets, bridges, and tunnels	\$0	\$0	\$0	\$0
65	Dog and cat food manufacturing	\$0	(\$2,664)	(\$44,267)	(\$46,932)
66	Other animal food manufacturing	\$0	(\$562,230)	(\$370,983)	(\$933,213)
67	Flour milling	\$0	(\$1,253,245)	(\$132,735)	(\$1,385,980)
68	Rice milling	\$0	(\$377,603)	(\$35,076)	(\$412,679)
69	Malt manufacturing	\$0	(\$3,608)	(\$442)	(\$4,049)
70	Wet corn milling	\$0	(\$884,573)	(\$97,531)	(\$982,103)
71	Soybean and other oilseed processing	\$0	(\$1,749,662)	(\$214,948)	(\$1,964,609)
72	Fats and oils refining and blending	(\$5,909,550)	(\$665,386)	(\$67,179)	(\$6,642,115)
73	Breakfast cereal manufacturing	\$0	(\$13,932)	(\$19,239)	(\$33,171)
74	Beet sugar manufacturing	\$0	(\$37,983)	(\$2,988)	(\$40,971)
75	Sugar cane mills and refining	\$0	(\$513,090)	(\$24,253)	(\$537,343)
76	Nonchocolate confectionery manufacturing	\$0	(\$94,947)	(\$49,201)	(\$144,148)
77	Chocolate and confectionery manufacturing from cacao beans	(\$17,358,610)	(\$1,436,196)	(\$65,816)	(\$18,860,622)
78	Confectionery manufacturing from purchased chocolate	\$0	(\$67,492)	(\$45,607)	(\$113,099)
79	Frozen fruits, juices and vegetables manufacturing	\$0	(\$136,859)	(\$95,174)	(\$232,032)
80	Frozen specialties manufacturing	\$0	(\$257,225)	(\$356,351)	(\$613,575)
81	Canned fruits and vegetables manufacturing	\$0	(\$560,290)	(\$310,656)	(\$870,946)
82	Canned specialties	\$0	(\$30,986)	(\$18,466)	(\$49,452)
83	Dehydrated food products manufacturing	\$0	(\$90,390)	(\$49,388)	(\$139,778)
84	Fluid milk manufacturing	\$0	(\$1,642,885)	(\$764,766)	(\$2,407,651)
85	Creamery butter manufacturing	\$0	(\$224,863)	(\$259,311)	(\$484,174)
86	Cheese manufacturing	\$0	(\$1,423,135)	(\$701,571)	(\$2,124,706)
87	Dry, condensed, and evaporated dairy product manufacturing	\$0	(\$414,180)	(\$176,909)	(\$591,090)
88	Ice cream and frozen dessert manufacturing	(\$418,813)	(\$481,587)	(\$190,872)	(\$1,091,272)
89	Animal, except poultry, slaughtering	\$0	(\$866,764)	(\$463,550)	(\$1,330,314)
90	Meat processed from carcasses	\$0	(\$90,253)	(\$766,805)	(\$857,058)
91	Rendering and meat byproduct processing	\$0	(\$75,730)	(\$47,955)	(\$123,685)
92	Poultry processing	\$0	(\$833,888)	(\$486,691)	(\$1,320,579)
93	Seafood product preparation and packaging	(\$434,154)	(\$573,693)	(\$308,078)	(\$1,315,925)
94	Bread and bakery product, except frozen, manufacturing	(\$1,583,189)	(\$860,562)	(\$1,220,870)	(\$3,664,621)
95	Frozen cakes and other pastries manufacturing	\$0	(\$47,526)	(\$49,494)	(\$97,019)
96	Cookie and cracker manufacturing	\$0	(\$91,535)	(\$71,570)	(\$163,106)
97	Dry pasta, mixes, and dough manufacturing	\$0	(\$79,248)	(\$104,484)	(\$183,733)
98	Tortilla manufacturing	\$0	(\$72,732)	(\$46,659)	(\$119,392)
99	Roasted nuts and peanut butter manufacturing	\$0	(\$331,344)	(\$118,760)	(\$450,104)
100	Other snack food manufacturing	\$0	(\$363,682)	(\$170,258)	(\$533,940)
101	Coffee and tea manufacturing	\$0	(\$201,001)	(\$108,526)	(\$309,527)
102	Flavoring syrup and concentrate manufacturing	\$0	(\$845,418)	(\$172,029)	(\$1,017,447)
103	Mayonnaise, dressing, and sauce manufacturing	\$0	(\$160,955)	(\$75,859)	(\$236,814)
104	Spice and extract manufacturing	\$0	(\$119,781)	(\$55,719)	(\$175,500)
105	All other food manufacturing	\$0	(\$578,829)	(\$294,394)	(\$873,223)
106	Bottled and canned soft drinks & water	(\$5,965,022)	(\$1,173,391)	(\$989,323)	(\$8,127,736)
107	Manufactured ice	\$0	(\$14,834)	(\$8,654)	(\$23,489)
108	Breweries	(\$64,179,429)	(\$1,198,339)	(\$3,064,274)	(\$68,442,042)
109	Wineries	(\$42,928,102)	(\$1,754,788)	(\$427,388)	(\$45,110,277)
110	Distilleries	(\$23,817,317)	(\$156,648)	(\$16,243)	(\$23,990,208)
111	Tobacco product manufacturing	\$0	(\$1)	(\$10,883)	(\$10,884)
112	Fiber, yarn, and thread mills	\$0	(\$19,973)	(\$3,606)	(\$23,579)
113	Broadwoven fabric mills	\$0	(\$12,817)	(\$5,154)	(\$17,971)
114	Narrow fabric mills and schiffli machine embroidery	(\$292,292)	(\$6,050)	(\$1,931)	(\$300,273)
115	Nonwoven fabric mills	\$0	(\$13,297)	(\$3,342)	(\$16,639)
116	Knit fabric mills	\$0	(\$8,734)	(\$4,261)	(\$12,995)
117	Textile and fabric finishing mills	\$0	(\$131,807)	(\$40,499)	(\$172,306)
118	Fabric coating mills	\$0	(\$8,692)	(\$3,185)	(\$11,876)
119	Carpet and rug mills	\$0	(\$7,091)	(\$11,947)	(\$19,038)
120	Curtain and linen mills	\$0	(\$101,659)	(\$60,635)	(\$162,294)
121	Textile bag and canvas mills	\$0	(\$72,991)	(\$47,532)	(\$120,523)
122	Rope, cordage, twine, tire cord and tire fabric mills	\$0	(\$4,132)	(\$1,726)	(\$5,857)
123	Other textile product mills	\$0	(\$111,942)	(\$32,139)	(\$144,081)
124	Hosiery and sock mills	\$0	(\$1,299)	(\$1,275)	(\$2,574)

(Continued on the following page)

San Francisco Output at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
125	Other apparel knitting mills	(\$681,240)	(\$24,990)	(\$24,285)	(\$730,515)
126	Cut and sew apparel contractors	\$0	(\$439,796)	(\$151,218)	(\$591,014)
127	Mens and boys cut and sew apparel manufacturing	\$0	(\$18,978)	(\$15,586)	(\$34,563)
128	Womens and girls cut and sew apparel manufacturing	\$0	(\$51,052)	(\$159,475)	(\$210,527)
129	Other cut and sew apparel manufacturing	\$0	(\$12,846)	(\$18,057)	(\$30,903)
130	Apparel accessories and other apparel manufacturing	\$0	(\$372,607)	(\$57,547)	(\$430,154)
131	Leather and hide tanning and finishing	\$0	(\$652)	(\$192)	(\$844)
132	Footwear manufacturing	\$0	(\$9)	(\$653)	(\$663)
133	Other leather and allied product manufacturing	\$0	(\$12,087)	(\$3,164)	(\$15,251)
134	Sawmills	\$0	(\$547,418)	(\$165,906)	(\$713,324)
135	Wood preservation	\$0	(\$151,152)	(\$44,734)	(\$195,886)
136	Veneer and plywood manufacturing	\$0	(\$48,083)	(\$16,072)	(\$64,155)
137	Engineered wood member and truss manufacturing	\$0	(\$197,599)	(\$65,564)	(\$263,162)
138	Reconstituted wood product manufacturing	\$0	(\$66,347)	(\$21,292)	(\$87,638)
139	Wood windows and door manufacturing	\$0	(\$871,225)	(\$320,753)	(\$1,191,978)
140	Cut stock, resawing lumber, and planing	\$0	(\$146,907)	(\$69,312)	(\$216,219)
141	Other millwork, including flooring	\$0	(\$572,891)	(\$192,557)	(\$765,448)
142	Wood container and pallet manufacturing	\$0	(\$219,146)	(\$82,855)	(\$302,001)
143	Manufactured home (mobile home) manufacturing	\$0	(\$400)	(\$84)	(\$483)
144	Prefabricated wood building manufacturing	\$0	(\$38,864)	(\$8,314)	(\$47,178)
145	All other miscellaneous wood product manufacturing	\$0	(\$354,972)	(\$64,694)	(\$419,667)
146	Pulp mills	\$0	(\$14,240)	(\$2,095)	(\$16,335)
147	Paper mills	\$0	(\$239,232)	(\$41,034)	(\$280,267)
148	Paperboard mills	\$0	(\$278,611)	(\$27,510)	(\$306,121)
149	Paperboard container manufacturing	\$0	(\$6,882,560)	(\$780,603)	(\$7,663,163)
150	Paper bag and coated and treated paper manufacturing	\$0	(\$492,940)	(\$89,446)	(\$582,387)
151	Stationery product manufacturing	\$0	(\$168,540)	(\$25,863)	(\$194,403)
152	Sanitary paper product manufacturing	\$0	(\$178,323)	(\$61,181)	(\$239,504)
153	All other converted paper product manufacturing	\$0	(\$141,748)	(\$28,582)	(\$170,329)
154	Printing	\$0	(\$13,958,855)	(\$1,155,608)	(\$15,114,463)
155	Support activities for printing	\$0	(\$1,170,622)	(\$66,624)	(\$1,237,246)
156	Petroleum refineries	\$0	(\$23,436,163)	(\$5,046,021)	(\$28,482,184)
157	Asphalt paving mixture and block manufacturing	\$0	(\$186,817)	(\$64,333)	(\$251,150)
158	Asphalt shingle and coating materials manufacturing	\$0	(\$58,418)	(\$37,260)	(\$95,677)
159	Petroleum lubricating oil and grease manufacturing	\$0	(\$695,959)	(\$81,590)	(\$777,549)
160	All other petroleum and coal products manufacturing	\$0	(\$225,812)	(\$24,145)	(\$249,957)
161	Petrochemical manufacturing	\$0	(\$6,085)	(\$673)	(\$6,758)
162	Industrial gas manufacturing	\$0	(\$357,367)	(\$99,964)	(\$457,330)
163	Synthetic dye and pigment manufacturing	\$0	(\$111,855)	(\$18,760)	(\$130,615)
164	Other basic inorganic chemical manufacturing	\$0	(\$338,596)	(\$98,946)	(\$437,542)
165	Other basic organic chemical manufacturing	(\$7,601,131)	(\$125,791)	(\$24,398)	(\$7,751,320)
166	Plastics material and resin manufacturing	\$0	(\$374,577)	(\$80,103)	(\$454,680)
167	Synthetic rubber manufacturing	\$0	(\$41,596)	(\$10,976)	(\$52,572)
168	Artificial and synthetic fibers and filaments manufacturing	\$0	(\$1,518)	(\$304)	(\$1,821)
169	Nitrogenous fertilizer manufacturing	\$0	(\$656,608)	(\$88,065)	(\$744,674)
170	Phosphatic fertilizer manufacturing	\$0	(\$519,525)	(\$71,517)	(\$591,041)
171	Fertilizer mixing	\$0	(\$474,201)	(\$64,885)	(\$539,086)
172	Pesticide and other agricultural chemical manufacturing	\$0	(\$117,456)	(\$24,932)	(\$142,387)
173	Medicinal and botanical manufacturing	\$0	(\$272,082)	(\$137,322)	(\$409,404)
174	Pharmaceutical preparation manufacturing	(\$9,706,678)	(\$3,387,859)	(\$4,914,710)	(\$18,009,247)
175	In-vitro diagnostic substance manufacturing	\$0	(\$725,375)	(\$313,835)	(\$1,039,209)
176	Biological product (except diagnostic) manufacturing	\$0	(\$378,581)	(\$226,095)	(\$604,676)
177	Paint and coating manufacturing	\$0	(\$880,299)	(\$176,392)	(\$1,056,691)
178	Adhesive manufacturing	\$0	(\$294,763)	(\$70,437)	(\$365,200)
179	Soap and other detergent manufacturing	\$0	(\$492,325)	(\$178,529)	(\$670,854)
180	Polish and other sanitation good manufacturing	\$0	(\$462,905)	(\$139,828)	(\$602,733)
181	Surface active agent manufacturing	\$0	(\$10,348)	(\$3,435)	(\$13,783)
182	Toilet preparation manufacturing	\$0	(\$119,342)	(\$381,938)	(\$501,280)
183	Printing ink manufacturing	\$0	(\$865,095)	(\$43,149)	(\$908,244)
184	Explosives manufacturing	\$0	(\$26,975)	(\$2,968)	(\$29,943)
185	Custom compounding of purchased resins	\$0	(\$226,966)	(\$28,797)	(\$255,763)
186	Photographic film and chemical manufacturing	\$0	(\$269,716)	(\$37,127)	(\$306,844)

(Continued on the following page)

San Francisco Output at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
187	Other miscellaneous chemical product manufacturing	\$0	(\$666,770)	(\$120,925)	(\$787,694)
188	Plastics packaging materials and unlaminated film and sheet manufacturing	\$0	(\$977,328)	(\$183,804)	(\$1,161,132)
189	Unlaminated plastics profile shape manufacturing	\$0	(\$220,826)	(\$31,718)	(\$252,544)
190	Plastics pipe and pipe fitting manufacturing	\$0	(\$392,783)	(\$131,304)	(\$524,087)
191	Laminated plastics plate, sheet (except packaging), and shape manufacturing	\$0	(\$119,187)	(\$27,265)	(\$146,452)
192	Polystyrene foam product manufacturing	\$0	(\$284,311)	(\$103,344)	(\$387,654)
193	Urethane and other foam product (except polystyrene) manufacturing	\$0	(\$436,491)	(\$158,134)	(\$594,624)
194	Plastics bottle manufacturing	\$0	(\$518,580)	(\$80,527)	(\$599,107)
195	Other plastics product manufacturing	\$0	(\$1,872,533)	(\$531,499)	(\$2,404,032)
196	Tire manufacturing	\$0	(\$74,519)	(\$22,079)	(\$96,598)
197	Rubber and plastics hoses and belting manufacturing	\$0	(\$72,599)	(\$17,538)	(\$90,138)
198	Other rubber product manufacturing	\$0	(\$276,535)	(\$91,083)	(\$367,618)
199	Pottery, ceramics, and plumbing fixture manufacturing	\$0	(\$87,659)	(\$21,444)	(\$109,103)
200	Brick, tile, and other structural clay product manufacturing	\$0	(\$341,630)	(\$136,024)	(\$477,654)
201	Flat glass manufacturing	\$0	(\$39,245)	(\$5,067)	(\$44,313)
202	Other pressed and blown glass and glassware manufacturing	\$0	(\$200,997)	(\$48,317)	(\$249,313)
203	Glass container manufacturing	\$0	(\$4,871,296)	(\$167,773)	(\$5,039,069)
204	Glass product manufacturing made of purchased glass	\$0	(\$420,078)	(\$100,325)	(\$520,403)
205	Cement manufacturing	\$0	(\$324,444)	(\$85,892)	(\$410,336)
206	Ready-mix concrete manufacturing	\$0	(\$1,061,335)	(\$321,766)	(\$1,383,101)
207	Concrete block and brick manufacturing	\$0	(\$112,676)	(\$38,946)	(\$151,622)
208	Concrete pipe manufacturing	\$0	(\$32,668)	(\$5,072)	(\$37,740)
209	Other concrete product manufacturing	\$0	(\$836,817)	(\$114,214)	(\$951,031)
210	Lime manufacturing	\$0	(\$37,959)	(\$7,622)	(\$45,581)
211	Gypsum product manufacturing	\$0	(\$413,190)	(\$146,620)	(\$559,811)
212	Abrasive product manufacturing	\$0	(\$26,205)	(\$5,977)	(\$32,183)
213	Cut stone and stone product manufacturing	\$0	(\$47,721)	(\$37,136)	(\$84,857)
214	Ground or treated mineral and earth manufacturing	\$0	(\$64,334)	(\$18,602)	(\$82,937)
215	Mineral wool manufacturing	\$0	(\$131,821)	(\$115,763)	(\$247,584)
216	Miscellaneous nonmetallic mineral products manufacturing	\$0	(\$101,683)	(\$10,706)	(\$112,389)
217	Iron and steel mills and ferroalloy manufacturing	\$0	(\$1,213,757)	(\$142,077)	(\$1,355,834)
218	Iron, steel pipe and tube manufacturing from purchased steel	\$0	(\$307,625)	(\$37,808)	(\$345,433)
219	Rolled steel shape manufacturing	\$0	(\$101,542)	(\$12,042)	(\$113,584)
220	Steel wire drawing	\$0	(\$78,157)	(\$15,539)	(\$93,696)
221	Alumina refining and primary aluminum production	\$0	(\$55,585)	(\$4,826)	(\$60,411)
222	Secondary smelting and alloying of aluminum	\$0	(\$114,707)	(\$9,623)	(\$124,330)
223	Aluminum sheet, plate, and foil manufacturing	\$0	(\$55,375)	(\$5,273)	(\$60,648)
224	Other aluminum rolling, drawing and extruding	\$0	(\$561,147)	(\$51,481)	(\$612,628)
225	Nonferrous metal (exc aluminum) smelting and refining	\$0	(\$12,006)	(\$1,685)	(\$13,691)
226	Copper rolling, drawing, extruding and alloying	\$0	(\$23,546)	(\$4,246)	(\$27,791)
227	Nonferrous metal, except copper and aluminum, shaping	\$0	(\$41,218)	(\$6,464)	(\$47,682)
228	Secondary processing of other nonferrous metals	\$0	(\$127,923)	(\$17,869)	(\$145,792)
229	Ferrous metal foundries	\$0	(\$396,097)	(\$23,654)	(\$419,752)
230	Nonferrous metal foundries	\$0	(\$74,952)	(\$13,977)	(\$88,929)
231	Iron and steel forging	\$0	(\$185,819)	(\$25,545)	(\$211,364)
232	Nonferrous forging	\$0	(\$115,738)	(\$15,520)	(\$131,258)
233	Custom roll forming	\$0	(\$255,343)	(\$14,608)	(\$269,951)
234	Crown and closure manufacturing and metal stamping	\$0	(\$284,052)	(\$47,420)	(\$331,472)
235	Cutlery, utensil, pot, and pan manufacturing	\$0	(\$16,802)	(\$4,133)	(\$20,935)
236	Handtool manufacturing	\$0	(\$54,658)	(\$11,947)	(\$66,605)
237	Prefabricated metal buildings and components manufacturing	\$0	(\$205,456)	(\$48,504)	(\$253,960)
238	Fabricated structural metal manufacturing	\$0	(\$1,057,856)	(\$107,912)	(\$1,165,767)
239	Plate work manufacturing	\$0	(\$310,974)	(\$16,642)	(\$327,616)
240	Metal window and door manufacturing	\$0	(\$414,924)	(\$161,224)	(\$576,148)
241	Sheet metal work manufacturing	\$0	(\$727,624)	(\$236,931)	(\$964,554)
242	Ornamental and architectural metal work manufacturing	\$0	(\$441,697)	(\$68,824)	(\$510,522)
243	Power boiler and heat exchanger manufacturing	\$0	(\$6,471)	(\$1,311)	(\$7,782)
244	Metal tank (heavy gauge) manufacturing	\$0	(\$34,106)	(\$6,940)	(\$41,046)
245	Metal cans manufacturing	\$0	(\$4,355,375)	(\$225,981)	(\$4,581,355)
246	Metal barrels, drums and pails manufacturing	\$0	(\$208,116)	(\$17,351)	(\$225,467)
247	Hardware manufacturing	\$0	(\$255,028)	(\$75,532)	(\$330,561)
248	Spring and wire product manufacturing	\$0	(\$319,866)	(\$56,320)	(\$376,186)

(Continued on the following page)

San Francisco Output at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
249	Machine shops	\$0	(\$2,052,656)	(\$293,150)	(\$2,345,807)
250	Turned product and screw, nut, and bolt manufacturing	\$0	(\$1,047,099)	(\$101,554)	(\$1,148,654)
251	Metal heat treating	\$0	(\$383,949)	(\$54,125)	(\$438,075)
252	Metal coating and nonprecious engraving	\$0	(\$885,136)	(\$121,275)	(\$1,006,411)
253	Electroplating, anodizing, and coloring metal	\$0	(\$584,233)	(\$95,599)	(\$679,832)
254	Valve and fittings, other than plumbing, manufacturing	\$0	(\$1,038,619)	(\$94,758)	(\$1,133,377)
255	Plumbing fixture fitting and trim manufacturing	\$0	(\$299,817)	(\$128,400)	(\$428,216)
256	Ball and roller bearing manufacturing	\$0	(\$105,245)	(\$19,415)	(\$124,661)
257	Small arms ammunition manufacturing	\$0	(\$470)	(\$774)	(\$1,244)
258	Ammunition, except for small arms, manufacturing	\$0	(\$502)	(\$206)	(\$708)
259	Small arms, ordnance, and accessories manufacturing	\$0	(\$6,429)	(\$4,087)	(\$10,516)
260	Fabricated pipe and pipe fitting manufacturing	\$0	(\$112,718)	(\$41,523)	(\$154,242)
261	Other fabricated metal manufacturing	(\$366,329)	(\$878,802)	(\$136,253)	(\$1,381,384)
262	Farm machinery and equipment manufacturing	\$0	(\$63,839)	(\$15,727)	(\$79,567)
263	Lawn and garden equipment manufacturing	\$0	(\$5,299)	(\$8,590)	(\$13,890)
264	Construction machinery manufacturing	\$0	(\$15,344)	(\$2,824)	(\$18,168)
265	Mining machinery and equipment manufacturing	\$0	(\$1,700)	(\$287)	(\$1,987)
266	Oil and gas field machinery and equipment manufacturing	\$0	(\$22,326)	(\$4,181)	(\$26,507)
267	Food product machinery manufacturing	\$0	(\$53,971)	(\$10,359)	(\$64,330)
268	Semiconductor machinery manufacturing	\$0	(\$646,781)	(\$55,367)	(\$702,148)
269	Sawmill, woodworking, and paper machinery	\$0	(\$8,376)	(\$532)	(\$8,908)
270	Printing machinery and equipment manufacturing	\$0	(\$42,945)	(\$4,490)	(\$47,435)
271	All other industrial machinery manufacturing	(\$5,937,959)	(\$50,471)	(\$6,774)	(\$5,995,204)
272	Optical instrument and lens manufacturing	\$0	(\$12,099)	(\$1,744)	(\$13,843)
273	Photographic and photocopying equipment manufacturing	\$0	(\$22,023)	(\$9,239)	(\$31,263)
274	Other commercial service industry machinery manufacturing	\$0	(\$578,501)	(\$102,740)	(\$681,241)
275	Air purification and ventilation equipment manufacturing	\$0	(\$66,933)	(\$9,158)	(\$76,091)
276	Heating equipment (except warm air furnaces) manufacturing	\$0	(\$76,271)	(\$39,721)	(\$115,992)
277	Air conditioning, refrigeration, and warm air heating equipment manufacturing	\$0	(\$430,456)	(\$119,035)	(\$549,492)
278	Industrial mold manufacturing	\$0	(\$23,593)	(\$2,651)	(\$26,243)
279	Special tool, die, jig, and fixture manufacturing	\$0	(\$37,231)	(\$2,460)	(\$39,691)
280	Cutting tool and machine tool accessory manufacturing	\$0	(\$48,180)	(\$4,100)	(\$52,280)
281	Machine tool manufacturing	\$0	(\$32,164)	(\$6,966)	(\$39,130)
282	Rolling mill and other metalworking machinery manufacturing	\$0	(\$4,775)	(\$1,604)	(\$6,379)
283	Turbine and turbine generator set units manufacturing	\$0	(\$7,428)	(\$999)	(\$8,427)
284	Speed changer, industrial high-speed drive, and gear manufacturing	\$0	(\$13,608)	(\$1,143)	(\$14,751)
285	Mechanical power transmission equipment manufacturing	\$0	(\$5,337)	(\$920)	(\$6,257)
286	Other engine equipment manufacturing	\$0	(\$4,806)	(\$1,598)	(\$6,404)
287	Pump and pumping equipment manufacturing	\$0	(\$56,911)	(\$28,786)	(\$85,697)
288	Air and gas compressor manufacturing	\$0	(\$42,253)	(\$6,072)	(\$48,325)
289	Measuring and dispensing pump manufacturing	\$0	(\$198)	(\$35)	(\$233)
290	Elevator and moving stairway manufacturing	\$0	(\$31,932)	(\$882)	(\$32,814)
291	Conveyor and conveying equipment manufacturing	\$0	(\$7,810)	(\$873)	(\$8,683)
292	Overhead cranes, hoists, and monorail systems manufacturing	\$0	(\$1,251)	(\$312)	(\$1,562)
293	Industrial truck, trailer, and stacker manufacturing	\$0	(\$29,307)	(\$4,320)	(\$33,627)
294	Power-driven handtool manufacturing	\$0	(\$3,647)	(\$1,663)	(\$5,310)
295	Welding and soldering equipment manufacturing	\$0	(\$28,274)	(\$7,001)	(\$35,275)
296	Packaging machinery manufacturing	\$0	(\$785,814)	(\$7,619)	(\$793,434)
297	Industrial process furnace and oven manufacturing	\$0	(\$2,129)	(\$397)	(\$2,525)
298	Fluid power cylinder and actuator manufacturing	\$0	(\$16,943)	(\$1,097)	(\$18,040)
299	Fluid power pump and motor manufacturing	\$0	(\$60,924)	(\$4,500)	(\$65,424)
300	Scales, balances, and miscellaneous general purpose machinery manufacturing	\$0	(\$39,812)	(\$5,182)	(\$44,994)
301	Electronic computer manufacturing	\$0	(\$890,088)	(\$1,534,571)	(\$2,424,659)
302	Computer storage device manufacturing	\$0	(\$234,977)	(\$110,465)	(\$345,442)
303	Computer terminals and other computer peripheral equipment manufacturing	\$0	(\$1,245,058)	(\$125,887)	(\$1,370,945)
304	Telephone apparatus manufacturing	\$0	(\$326,577)	(\$91,342)	(\$417,919)
305	Broadcast and wireless communications equipment manufacturing	\$0	(\$2,497,220)	(\$253,843)	(\$2,751,063)
306	Other communications equipment manufacturing	\$0	(\$231,653)	(\$34,468)	(\$266,121)
307	Audio and video equipment manufacturing	(\$15,583,327)	(\$1,663,412)	(\$42,320)	(\$17,289,059)
308	Bare printed circuit board manufacturing	\$0	(\$499,219)	(\$26,664)	(\$525,883)
309	Semiconductor and related device manufacturing	\$0	(\$5,809,118)	(\$1,430,873)	(\$7,239,991)
310	Capacitor, resistor, coil, transformer, and other inductor manufacturing	\$0	(\$140,348)	(\$19,957)	(\$160,305)

(Continued on the following page)

San Francisco Output at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
311	Electronic connector manufacturing	\$0	(\$222,916)	(\$31,062)	(\$253,978)
312	Printed circuit assembly (electronic assembly) manufacturing	\$0	(\$1,028,676)	(\$79,955)	(\$1,108,631)
313	Other electronic component manufacturing	\$0	(\$1,308,251)	(\$53,790)	(\$1,362,041)
314	Electromedical and electrotherapeutic apparatus manufacturing	\$0	(\$13,402)	(\$15,131)	(\$28,532)
315	Search, detection, and navigation instruments manufacturing	\$0	(\$79,162)	(\$9,720)	(\$88,882)
316	Automatic environmental control manufacturing	\$0	(\$15,329)	(\$5,563)	(\$20,892)
317	Industrial process variable instruments manufacturing	\$0	(\$102,213)	(\$15,781)	(\$117,994)
318	Totalizing fluid meter and counting device manufacturing	\$0	(\$11,533)	(\$2,963)	(\$14,496)
319	Electricity and signal testing instruments manufacturing	\$0	(\$22,209)	(\$3,733)	(\$25,943)
320	Analytical laboratory instrument manufacturing	\$0	(\$158,809)	(\$38,610)	(\$197,419)
321	Irradiation apparatus manufacturing	\$0	(\$10,086)	(\$4,936)	(\$15,023)
322	Watch, clock, and other measuring and controlling device manufacturing	\$0	(\$21,702)	(\$7,919)	(\$29,621)
323	Blank magnetic and optical recording media manufacturing	\$0	(\$1,352,126)	(\$66,092)	(\$1,418,217)
324	Software and other prerecorded and record reproducing	\$0	(\$678,056)	(\$35,489)	(\$713,545)
325	Electric lamp bulb and part manufacturing	\$0	(\$38,930)	(\$13,211)	(\$52,141)
326	Lighting fixture manufacturing	\$0	(\$472,659)	(\$70,853)	(\$543,512)
327	Small electrical appliance manufacturing	\$0	(\$11,567)	(\$4,546)	(\$16,112)
328	Household cooking appliance manufacturing	\$0	(\$54,466)	(\$25,919)	(\$80,385)
329	Household refrigerator and home freezer manufacturing	\$0	(\$2,879)	(\$4,582)	(\$7,460)
330	Household laundry equipment manufacturing	\$0	(\$21,676)	(\$497,311)	(\$518,987)
331	Other major household appliance manufacturing	\$0	(\$43)	(\$120)	(\$163)
332	Power, distribution, and specialty transformer manufacturing	\$0	(\$133,140)	(\$13,448)	(\$146,587)
333	Motor and generator manufacturing	\$0	(\$146,528)	(\$57,322)	(\$203,849)
334	Switchgear and switchboard apparatus manufacturing	\$0	(\$360,427)	(\$50,969)	(\$411,397)
335	Relay and industrial control manufacturing	\$0	(\$144,124)	(\$15,072)	(\$159,196)
336	Storage battery manufacturing	\$0	(\$180,331)	(\$44,111)	(\$224,443)
337	Primary battery manufacturing	\$0	(\$3,499)	(\$6,505)	(\$10,003)
338	Fiber optic cable manufacturing	\$0	(\$682,286)	(\$104,628)	(\$786,914)
339	Other communication and energy wire manufacturing	\$0	(\$270,325)	(\$54,216)	(\$324,541)
340	Wiring device manufacturing	\$0	(\$480,165)	(\$162,391)	(\$642,556)
341	Carbon and graphite product manufacturing	\$0	(\$160,948)	(\$13,314)	(\$174,262)
342	All other miscellaneous electrical equipment and component manufacturing	(\$644,192)	(\$73,788)	(\$17,912)	(\$735,891)
343	Automobile manufacturing	\$0	(\$27,606)	(\$190,015)	(\$217,621)
344	Light truck and utility vehicle manufacturing	\$0	(\$134)	(\$9,659)	(\$9,793)
345	Heavy duty truck manufacturing	\$0	(\$5,560)	(\$2,185)	(\$7,745)
346	Motor vehicle body manufacturing	\$0	(\$2,105)	(\$2,107)	(\$4,212)
347	Truck trailer manufacturing	\$0	(\$167)	(\$266)	(\$433)
348	Motor home manufacturing	\$0	(\$76)	(\$1,511)	(\$1,587)
349	Travel trailer and camper manufacturing	\$0	(\$32,147)	(\$27,365)	(\$59,512)
350	Motor vehicle gasoline engine and engine parts manufacturing	\$0	(\$58,060)	(\$17,723)	(\$75,783)
351	Motor vehicle electrical and electronic equipment manufacturing	\$0	(\$253,190)	(\$52,293)	(\$305,483)
352	Motor vehicle steering, suspension component (except spring), and brake syst	\$0	(\$328,072)	(\$70,008)	(\$398,080)
353	Motor vehicle transmission and power train parts manufacturing	\$0	(\$21,450)	(\$4,736)	(\$26,186)
354	Motor vehicle seating and interior trim manufacturing	\$0	(\$4,420)	(\$1,549)	(\$5,970)
355	Motor vehicle metal stamping	\$0	(\$1,634)	(\$318)	(\$1,953)
356	Other motor vehicle parts manufacturing	\$0	(\$744,121)	(\$132,289)	(\$876,410)
357	Aircraft manufacturing	\$0	(\$16,920)	(\$4,501)	(\$21,421)
358	Aircraft engine and engine parts manufacturing	\$0	(\$3,090)	(\$411)	(\$3,501)
359	Other aircraft parts and auxiliary equipment manufacturing	\$0	(\$136,388)	(\$18,095)	(\$154,483)
360	Guided missile and space vehicle manufacturing	\$0	(\$15,225)	(\$6,739)	(\$21,965)
361	Propulsion units and parts for space vehicles and guided missiles manufactur	\$0	(\$5,215)	(\$571)	(\$5,786)
362	Railroad rolling stock manufacturing	(\$12,390,368)	(\$491,841)	(\$9,846)	(\$12,892,054)
363	Ship building and repairing	\$0	(\$135,292)	(\$22,380)	(\$157,672)
364	Boat building	\$0	(\$1,461)	(\$10,879)	(\$12,339)
365	Motorcycle, bicycle, and parts manufacturing	\$0	(\$14,916)	(\$24,034)	(\$38,950)
366	Military armored vehicle, tank, and tank component manufacturing	\$0	(\$2,241)	(\$361)	(\$2,603)
367	All other transportation equipment manufacturing	\$0	(\$5,224)	(\$7,605)	(\$12,829)
368	Wood kitchen cabinet and countertop manufacturing	\$0	(\$320,726)	(\$355,790)	(\$676,516)
369	Upholstered household furniture manufacturing	\$0	(\$16,859)	(\$135,214)	(\$152,074)
370	Nonupholstered wood household furniture manufacturing	\$0	(\$14,379)	(\$74,811)	(\$89,190)
371	Other household nonupholstered furniture manufacturing	\$0	(\$410,595)	(\$23,869)	(\$434,464)
372	Institutional furniture manufacturing	\$0	(\$3,986)	(\$1,893)	(\$5,879)

(Continued on the following page)

San Francisco Output at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
373	Wood office furniture manufacturing	\$0	(\$648)	(\$327)	(\$975)
374	Custom architectural woodwork and millwork	\$0	(\$10,522)	(\$2,540)	(\$13,062)
375	Office furniture, except wood, manufacturing	\$0	(\$3,632)	(\$1,773)	(\$5,405)
376	Showcase, partition, shelving, and locker manufacturing	\$0	(\$204,196)	(\$36,317)	(\$240,512)
377	Mattress manufacturing	\$0	(\$20,106)	(\$62,837)	(\$82,943)
378	Blind and shade manufacturing	\$0	(\$19,402)	(\$9,170)	(\$28,571)
379	Surgical and medical instrument manufacturing	\$0	(\$672,430)	(\$555,482)	(\$1,227,911)
380	Surgical appliance and supplies manufacturing	\$0	(\$322,086)	(\$283,982)	(\$606,068)
381	Dental equipment and supplies manufacturing	\$0	(\$32,529)	(\$146,044)	(\$178,573)
382	Ophthalmic goods manufacturing	\$0	(\$2,199)	(\$21,693)	(\$23,892)
383	Dental laboratories	\$0	(\$41,380)	(\$190,293)	(\$231,673)
384	Jewelry and silverware manufacturing	\$0	(\$76,809)	(\$47,352)	(\$124,162)
385	Sporting and athletic goods manufacturing	\$0	(\$22,842)	(\$50,167)	(\$73,009)
386	Doll, toy, and game manufacturing	(\$1,209,785)	(\$16,315)	(\$188,613)	(\$1,414,713)
387	Office supplies (except paper) manufacturing	\$0	(\$105,768)	(\$6,074)	(\$111,842)
388	Sign manufacturing	(\$10,158,161)	(\$248,287)	(\$13,642)	(\$10,420,091)
389	Gasket, packing, and sealing device manufacturing	\$0	(\$138,876)	(\$31,127)	(\$170,002)
390	Musical instrument manufacturing	\$0	(\$13,315)	(\$32,066)	(\$45,381)
391	Fasteners, buttons, needles, and pins manufacturing	\$0	(\$5,799)	(\$5,396)	(\$11,196)
392	Broom, brush, and mop manufacturing	\$0	(\$55,530)	(\$16,938)	(\$72,469)
393	Burial casket manufacturing	\$0	(\$1,535)	(\$1,152)	(\$2,687)
394	All other miscellaneous manufacturing	\$0	(\$581,650)	(\$282,238)	(\$863,889)
395	Wholesale trade	(\$93,001,460)	(\$59,770,434)	(\$49,471,257)	(\$202,243,152)
396	Retail - Motor vehicle and parts dealers	(\$2,368,159)	(\$757,891)	(\$4,563,409)	(\$7,689,459)
397	Retail - Furniture and home furnishings stores	(\$27,464,447)	(\$618,440)	(\$3,918,415)	(\$32,001,302)
398	Retail - Electronics and appliance stores	(\$22,522,033)	(\$753,158)	(\$2,217,044)	(\$25,492,235)
399	Retail - Building material and garden equipment and supplies stores	(\$508,410)	(\$1,304,287)	(\$5,467,831)	(\$7,280,528)
400	Retail - Food and beverage stores	(\$19,230,662)	(\$179,405)	(\$16,268,925)	(\$35,678,992)
401	Retail - Health and personal care stores	(\$2,723,723)	(\$1,441,790)	(\$7,174,099)	(\$11,339,612)
402	Retail - Gasoline stores	\$0	(\$517,765)	(\$2,583,799)	(\$3,101,564)
403	Retail - Clothing and clothing accessories stores	(\$26,354,135)	(\$1,267,945)	(\$9,400,810)	(\$37,022,890)
404	Retail - Sporting goods, hobby, musical instrument and book stores	(\$2,926,892)	(\$489,360)	(\$3,031,811)	(\$6,448,063)
405	Retail - General merchandise stores	\$0	(\$582,554)	(\$13,099,637)	(\$13,682,192)
406	Retail - Miscellaneous store retailers	(\$8,039,549)	(\$815,315)	(\$4,511,422)	(\$13,366,285)
407	Retail - Nonstore retailers	(\$10,270,362)	(\$1,126,600)	(\$17,426,816)	(\$28,823,779)
408	Air transportation	\$0	(\$12,923,715)	(\$3,422,199)	(\$16,345,914)
409	Rail transportation	\$0	(\$1,934,722)	(\$503,331)	(\$2,438,053)
410	Water transportation	(\$9,205,409)	(\$1,008,453)	(\$1,695,134)	(\$11,908,997)
411	Truck transportation	(\$55,915,113)	(\$7,986,464)	(\$4,442,833)	(\$68,344,410)
412	Transit and ground passenger transportation	(\$13,731,338)	(\$3,835,470)	(\$3,503,446)	(\$21,070,254)
413	Pipeline transportation	\$0	(\$656,777)	(\$273,681)	(\$930,458)
414	Scenic and sightseeing transportation and support activities for transportation	(\$48,287,517)	(\$20,957,844)	(\$3,310,035)	(\$72,555,395)
415	Couriers and messengers	(\$125,205)	(\$18,041,775)	(\$2,203,604)	(\$20,370,584)
416	Warehousing and storage	\$0	(\$7,798,459)	(\$2,186,705)	(\$9,985,164)
417	Newspaper publishers	(\$1,038,581)	(\$2,588,400)	(\$735,540)	(\$4,362,521)
418	Periodical publishers	(\$98,177,832)	(\$3,131,648)	(\$1,351,186)	(\$102,660,666)
419	Book publishers	\$0	(\$441,125)	(\$2,100,269)	(\$2,541,394)
420	Directory, mailing list, and other publishers	(\$2,172,018)	(\$804,288)	(\$197,331)	(\$3,173,637)
421	Greeting card publishing	\$0	(\$1,249)	(\$844)	(\$2,093)
422	Software publishers	(\$87,151,894)	(\$8,378,452)	(\$4,782,797)	(\$100,313,142)
423	Motion picture and video industries	(\$47,374,554)	(\$22,855,411)	(\$4,446,445)	(\$74,676,410)
424	Sound recording industries	\$0	(\$2,272,008)	(\$644,460)	(\$2,916,468)
425	Radio and television broadcasting	(\$517,530,980)	(\$58,047,032)	(\$1,328,476)	(\$576,906,487)
426	Cable and other subscription programming	(\$12,289,756)	(\$38,998,060)	(\$2,252,285)	(\$53,540,102)
427	Wired telecommunications carriers	\$0	(\$18,872,777)	(\$14,257,865)	(\$33,130,642)
428	Wireless telecommunications carriers (except satellite)	\$0	(\$22,228,349)	(\$16,299,581)	(\$38,527,930)
429	Satellite, telecommunications resellers, and all other telecommunications	(\$312,660)	(\$1,418,245)	(\$997,817)	(\$2,728,722)
430	Data processing, hosting, and related services	(\$2,064,132)	(\$13,055,554)	(\$2,695,347)	(\$17,815,033)
431	News syndicates, libraries, archives and all other information services	(\$1,836,051)	(\$2,066,693)	(\$1,978,659)	(\$5,881,403)
432	Internet publishing and broadcasting and web search portals	\$0	(\$71,034,320)	(\$8,073,879)	(\$79,108,199)
433	Monetary authorities and depository credit intermediation	(\$5,718,246)	(\$32,291,978)	(\$26,120,774)	(\$64,130,997)
434	Nondepository credit intermediation and related activities	(\$160,039,634)	(\$17,769,901)	(\$10,361,668)	(\$188,171,204)

(Continued on the following page)

San Francisco Output at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
435	Securities and commodity contracts intermediation and brokerage	(\$114,479,055)	(\$11,541,870)	(\$6,459,966)	(\$132,480,891)
436	Other financial investment activities	(\$49,026,348)	(\$21,962,343)	(\$23,632,137)	(\$94,620,828)
437	Insurance carriers	(\$22,846,943)	(\$22,661,122)	(\$24,424,810)	(\$69,932,875)
438	Insurance agencies, brokerages, and related activities	(\$4,357,054)	(\$38,037,109)	(\$11,499,453)	(\$53,893,616)
439	Funds, trusts, and other financial vehicles	(\$8,064,397)	(\$1,394,586)	(\$13,521,701)	(\$22,980,685)
440	Real estate	(\$311,342,591)	(\$120,827,086)	(\$63,325,574)	(\$495,495,251)
441	Owner-occupied dwellings	\$0	\$0	(\$139,087,879)	(\$139,087,879)
442	Automotive equipment rental and leasing	(\$6,251,368)	(\$3,492,673)	(\$2,019,242)	(\$11,763,283)
443	General and consumer goods rental except video tapes and discs	(\$549,195)	(\$1,058,090)	(\$855,420)	(\$2,462,705)
444	Video tape and disc rental	\$0	\$0	(\$309,478)	(\$309,478)
445	Commercial and industrial machinery and equipment rental and leasing	(\$4,172,556)	(\$22,464,344)	(\$1,284,265)	(\$27,921,164)
446	Lessors of nonfinancial intangible assets	\$0	(\$25,489,602)	(\$2,278,584)	(\$27,768,186)
447	Legal services	(\$72,286,099)	(\$20,428,535)	(\$14,955,201)	(\$107,669,836)
448	Accounting, tax preparation, bookkeeping, and payroll services	(\$4,038,693)	(\$20,103,552)	(\$5,439,244)	(\$29,581,488)
449	Architectural, engineering, and related services	(\$69,371,179)	(\$15,566,202)	(\$4,519,100)	(\$89,456,481)
450	Specialized design services	(\$12,475,840)	(\$8,964,402)	(\$1,117,396)	(\$22,557,638)
451	Custom computer programming services	(\$63,787,180)	(\$1,855,388)	(\$144,478)	(\$65,787,046)
452	Computer systems design services	(\$15,825,351)	(\$8,783,210)	(\$1,481,305)	(\$26,089,866)
453	Other computer related services, including facilities management	(\$51,280,240)	(\$10,431,166)	(\$1,815,417)	(\$63,526,823)
454	Management consulting services	(\$43,398,101)	(\$29,902,625)	(\$4,698,245)	(\$77,998,971)
455	Environmental and other technical consulting services	(\$11,540,794)	(\$6,225,558)	(\$1,086,182)	(\$18,852,534)
456	Scientific research and development services	(\$6,512,806)	(\$644,565)	(\$716,221)	(\$7,873,592)
457	Advertising, public relations, and related services	(\$565,213,904)	(\$62,958,472)	(\$5,416,261)	(\$633,588,637)
458	Photographic services	(\$307,055)	(\$3,544,366)	(\$976,562)	(\$4,827,982)
459	Veterinary services	\$0	(\$140,597)	(\$1,347,771)	(\$1,488,368)
460	Marketing research and all other miscellaneous professional, scientific, and tec	(\$17,916,485)	(\$13,393,500)	(\$2,117,127)	(\$33,427,112)
461	Management of companies and enterprises	(\$5,613,513)	(\$54,430,556)	(\$10,509,314)	(\$70,553,382)
462	Office administrative services	(\$224,780,563)	(\$11,483,691)	(\$1,628,463)	(\$237,892,717)
463	Facilities support services	(\$1,758,591)	(\$2,763,567)	(\$534,832)	(\$5,056,990)
464	Employment services	(\$1,947,677)	(\$42,985,175)	(\$6,528,183)	(\$51,461,036)
465	Business support services	(\$736,205)	(\$8,261,578)	(\$1,795,038)	(\$10,792,822)
466	Travel arrangement and reservation services	(\$9,671,130)	(\$3,577,422)	(\$3,423,588)	(\$16,672,140)
467	Investigation and security services	(\$432,648)	(\$5,614,632)	(\$1,724,888)	(\$7,772,169)
468	Services to buildings	\$0	(\$9,078,916)	(\$5,090,651)	(\$14,169,567)
469	Landscape and horticultural services	\$0	(\$4,609,855)	(\$2,733,136)	(\$7,342,991)
470	Other support services	(\$5,358,052)	(\$4,035,080)	(\$803,456)	(\$10,196,587)
471	Waste management and remediation services	\$0	(\$7,028,435)	(\$2,779,273)	(\$9,807,708)
472	Elementary and secondary schools	(\$2,287,202)	\$0	(\$6,665,485)	(\$8,952,687)
473	Junior colleges, colleges, universities, and professional schools	(\$5,528,941)	(\$164,600)	(\$14,976,036)	(\$20,669,576)
474	Other educational services	(\$3,812,780)	(\$1,704,239)	(\$5,850,144)	(\$11,367,163)
475	Offices of physicians	(\$18,498,820)	\$0	(\$24,802,409)	(\$43,301,229)
476	Offices of dentists	(\$2,188,847)	\$0	(\$10,081,735)	(\$12,270,582)
477	Offices of other health practitioners	(\$741,325)	\$0	(\$8,783,274)	(\$9,524,599)
478	Outpatient care centers	\$0	\$0	(\$12,235,529)	(\$12,235,529)
479	Medical and diagnostic laboratories	(\$2,684,028)	(\$273,856)	(\$2,338,248)	(\$5,296,132)
480	Home health care services	\$0	\$0	(\$2,514,828)	(\$2,514,828)
481	Other ambulatory health care services	(\$3,037,454)	(\$853,924)	(\$1,827,201)	(\$5,718,579)
482	Hospitals	(\$95,684,836)	(\$81,882)	(\$41,158,117)	(\$136,924,836)
483	Nursing and community care facilities	\$0	\$0	(\$6,591,662)	(\$6,591,662)
484	Residential mental retardation, mental health, substance abuse and other facili	(\$23,890,518)	\$0	(\$1,906,251)	(\$25,796,769)
485	Individual and family services	(\$395,742)	\$0	(\$8,456,556)	(\$8,852,297)
486	Community food, housing, and other relief services, including rehabilitation ser	(\$1,125,553)	\$0	(\$3,851,049)	(\$4,976,603)
487	Child day care services	(\$768,316)	\$0	(\$5,057,185)	(\$5,825,501)
488	Performing arts companies	(\$16,078,872)	(\$1,211,865)	(\$3,381,507)	(\$20,672,244)
489	Commercial Sports Except Racing	\$0	(\$52,646,160)	(\$1,981,503)	(\$54,627,663)
490	Racing and Track Operation	\$0	(\$1,576)	(\$14,775)	(\$16,351)
491	Promoters of performing arts and sports and agents for public figures	(\$2,258,780)	(\$8,370,692)	(\$2,388,650)	(\$13,018,122)
492	Independent artists, writers, and performers	\$0	(\$14,429,899)	(\$1,492,469)	(\$15,922,368)
493	Museums, historical sites, zoos, and parks	(\$33,700,944)	\$0	(\$1,123,581)	(\$34,824,525)
494	Amusement parks and arcades	(\$438,686)	(\$36,079)	(\$1,054,481)	(\$1,529,246)
495	Gambling industries (except casino hotels)	\$0	(\$2,795)	(\$7,481,166)	(\$7,483,962)
496	Other amusement and recreation industries	(\$1,661,969)	(\$843,318)	(\$2,174,411)	(\$4,679,699)

(Continued on the following page)

San Francisco Output at Risk, 8M Earthquake (continued)

Sector	Description	Direct	Indirect	Induced	Total
497	Fitness and recreational sports centers	(\$20,211,413)	(\$790,916)	(\$2,481,515)	(\$23,483,845)
498	Bowling centers	(\$546,944)	(\$234)	(\$41,338)	(\$588,515)
499	Hotels and motels, including casino hotels	(\$33,806,279)	(\$2,007,146)	(\$998,421)	(\$36,811,846)
500	Other accommodations	(\$115,614)	(\$17,504)	(\$18,944)	(\$152,062)
501	Full-service restaurants	(\$130,088,218)	(\$9,342,017)	(\$19,560,475)	(\$158,990,710)
502	Limited-service restaurants	(\$18,095,288)	(\$7,394,046)	(\$28,941,431)	(\$54,430,765)
503	All other food and drinking places	(\$2,970,274)	(\$2,414,946)	(\$8,273,951)	(\$13,659,171)
504	Automotive repair and maintenance, except car washes	(\$560,960)	(\$3,916,462)	(\$6,531,258)	(\$11,008,680)
505	Car washes	\$0	(\$279,673)	(\$553,782)	(\$833,455)
506	Electronic and precision equipment repair and maintenance	\$0	(\$2,889,611)	(\$773,836)	(\$3,663,448)
507	Commercial and industrial machinery and equipment repair and maintenance	(\$425,199)	(\$5,942,462)	(\$1,306,515)	(\$7,674,177)
508	Personal and household goods repair and maintenance	\$0	(\$3,638,518)	(\$2,244,883)	(\$5,883,401)
509	Personal care services	(\$225,686)	(\$1,682)	(\$5,351,778)	(\$5,579,146)
510	Death care services	(\$593,569)	\$0	(\$327,027)	(\$920,596)
511	Dry-cleaning and laundry services	(\$467,325)	(\$1,087,239)	(\$1,021,084)	(\$2,575,647)
512	Other personal services	(\$262,072)	(\$1,965,999)	(\$3,729,547)	(\$5,957,617)
513	Religious organizations	(\$956,656)	\$0	(\$24,772,658)	(\$25,729,314)
514	Grantmaking, giving, and social advocacy organizations	(\$22,666,880)	(\$427,922)	(\$5,314,062)	(\$28,408,864)
515	Business and professional associations	(\$17,072,463)	(\$3,309,882)	(\$2,887,741)	(\$23,270,086)
516	Labor and civic organizations	(\$45,804,922)	(\$52,394)	(\$5,219,584)	(\$51,076,900)
517	Private households	\$0	\$0	(\$2,023,586)	(\$2,023,586)
518	Postal service	\$0	(\$11,730,782)	(\$1,936,754)	(\$13,667,536)
519	Federal electric utilities	\$0	\$0	\$0	\$0
520	Other federal government enterprises	\$0	(\$1,345,449)	(\$885,208)	(\$2,230,657)
521	State government passenger transit	\$0	\$0	\$0	\$0
522	State government electric utilities	\$0	\$0	\$0	\$0
523	Other state government enterprises	\$0	(\$688)	(\$1,099)	(\$1,787)
524	Local government passenger transit	\$0	(\$192,273)	(\$173,979)	(\$366,252)
525	Local government electric utilities	\$0	(\$739,036)	(\$396,508)	(\$1,135,544)
526	Other local government enterprises	\$0	(\$3,954,690)	(\$4,588,780)	(\$8,543,471)
527	* Not an industry (Used and secondhand goods)	\$0	\$0	\$0	\$0
528	* Not an industry (Scrap)	\$0	\$0	\$0	\$0
529	* Not an industry (Rest of world adjustment)	\$0	\$0	\$0	\$0
530	* Not an industry (Noncomparable foreign imports)	\$0	\$0	\$0	\$0
531	* Employment and payroll of state govt, non-education	\$0	\$0	\$0	\$0
532	* Employment and payroll of state govt, education	\$0	\$0	\$0	\$0
533	* Employment and payroll of local govt, non-education	\$0	\$0	\$0	\$0
534	* Employment and payroll of local govt, education	\$0	\$0	\$0	\$0
535	* Employment and payroll of federal govt, non-military	\$0	\$0	\$0	\$0
536	* Employment and payroll of federal govt, military	\$0	\$0	\$0	\$0

Sources: IMPLAN; BAE, 2017.

San Francisco Employment at Risk, 24" SLR + 100-Year Flood

Sector	Description	Direct	Indirect	Induced	Total
0	Total	(33,583)	(13,829)	(11,902)	(59,314)
1	Oilseed farming	0	(0)	(0)	(0)
2	Grain farming	0	(2)	(0)	(2)
3	Vegetable and melon farming	0	(33)	(1)	(34)
4	Fruit farming	(12)	(199)	(5)	(216)
5	Tree nut farming	0	(1)	(0)	(1)
6	Greenhouse, nursery, and floriculture production	0	(20)	(3)	(23)
7	Tobacco farming	0	0	0	0
8	Cotton farming	0	(0)	(0)	(0)
9	Sugarcane and sugar beet farming	0	(0)	(0)	(0)
10	All other crop farming	(1)	(10)	(4)	(15)
11	Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	0	(4)	(3)	(7)
12	Dairy cattle and milk production	0	(10)	(3)	(12)
13	Poultry and egg production	0	(4)	(0)	(4)
14	Animal production, except cattle and poultry and eggs	(14)	(4)	(1)	(20)
15	Forestry, forest products, and timber tract production	0	(1)	(0)	(1)
16	Commercial logging	0	(3)	(1)	(4)
17	Commercial fishing	0	(28)	(9)	(36)
18	Commercial hunting and trapping	0	(0)	(0)	(0)
19	Support activities for agriculture and forestry	(7)	(66)	(6)	(80)
20	Extraction of natural gas and crude petroleum	0	(24)	(9)	(33)
21	Extraction of natural gas liquids	0	(1)	(0)	(1)
22	Coal mining	0	(0)	(0)	(0)
23	Iron ore mining	(8)	(0)	(0)	(8)
24	Gold ore mining	0	(0)	(0)	(0)
25	Silver ore mining	0	0	0	0
26	Lead and zinc ore mining	0	0	0	0
27	Copper ore mining	0	(0)	(0)	(0)
28	Uranium-radium-vanadium ore mining	0	0	0	0
29	Other metal ore mining	0	(0)	(0)	(0)
30	Stone mining and quarrying	0	(0)	(0)	(1)
31	Sand and gravel mining	0	(1)	(1)	(2)
32	Other clay, ceramic, refractory minerals mining	0	(0)	(0)	(0)
33	Potash, soda, and borate mineral mining	0	(0)	(0)	(0)
34	Phosphate rock mining	0	0	0	0
35	Other chemical and fertilizer mineral mining	0	(0)	(0)	(0)
36	Other nonmetallic minerals	0	(0)	(0)	(0)
37	Drilling oil and gas wells	0	(0)	(0)	(0)
38	Support activities for oil and gas operations	(7)	(4)	(1)	(11)
39	Metal mining services	0	(0)	(0)	(0)
40	Other nonmetallic minerals services	0	(0)	(0)	(0)
41	Electric power generation - Hydroelectric	0	(0)	(0)	(0)
42	Electric power generation - Fossil fuel	0	(1)	(0)	(1)
43	Electric power generation - Nuclear	0	(0)	(0)	(0)
44	Electric power generation - Solar	(116)	(3)	(0)	(119)
45	Electric power generation - Wind	0	(2)	(0)	(2)
46	Electric power generation - Geothermal	0	(0)	(0)	(0)
47	Electric power generation - Biomass	0	(1)	(0)	(1)
48	Electric power generation - All other	(12)	(0)	(0)	(12)
49	Electric power transmission and distribution	(13)	(1)	(1)	(15)
50	Natural gas distribution	(7)	(7)	(6)	(21)
51	Water, sewage and other systems	(3)	(12)	(19)	(34)
52	Construction of new health care structures	0	0	0	0
53	Construction of new manufacturing structures	(4)	0	0	(4)
54	Construction of new power and communication structures	0	0	0	0
55	Construction of new educational and vocational structures	0	0	0	0
56	Construction of new highways and streets	(10)	0	0	(10)
57	Construction of new commercial structures, including farm structures	(211)	0	0	(211)
58	Construction of other new nonresidential structures	0	0	0	0
59	Construction of new single-family residential structures	(5)	0	0	(5)
60	Construction of new multifamily residential structures	(2)	0	0	(2)
61	Construction of other new residential structures	(1)	0	0	(1)
62	Maintenance and repair construction of nonresidential structures	(176)	(199)	(55)	(430)

(Continued on the following page)

San Francisco Employment at Risk, 24" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
63	Maintenance and repair construction of residential structures	0	(11)	(76)	(87)
64	Maintenance and repair construction of highways, streets, bridges, and tunnels	0	0	0	0
65	Dog and cat food manufacturing	0	(0)	(0)	(0)
66	Other animal food manufacturing	0	(2)	(1)	(2)
67	Flour milling	0	(2)	(0)	(2)
68	Rice milling	0	(1)	(0)	(1)
69	Malt manufacturing	0	(0)	(0)	(0)
70	Wet corn milling	0	(0)	(0)	(1)
71	Soybean and other oilseed processing	0	(1)	(0)	(1)
72	Fats and oils refining and blending	(3)	(1)	(0)	(4)
73	Breakfast cereal manufacturing	0	(0)	(0)	(0)
74	Beet sugar manufacturing	0	(0)	(0)	(0)
75	Sugar cane mills and refining	0	(1)	(0)	(1)
76	Nonchocolate confectionery manufacturing	0	(0)	(0)	(1)
77	Chocolate and confectionery manufacturing from cacao beans	0	(0)	(0)	(0)
78	Confectionery manufacturing from purchased chocolate	0	(0)	(0)	(0)
79	Frozen fruits, juices and vegetables manufacturing	0	(4)	(0)	(4)
80	Frozen specialties manufacturing	(67)	(2)	(2)	(71)
81	Canned fruits and vegetables manufacturing	(32)	(5)	(1)	(38)
82	Canned specialties	0	(0)	(0)	(0)
83	Dehydrated food products manufacturing	0	(1)	(0)	(1)
84	Fluid milk manufacturing	0	(2)	(2)	(4)
85	Creamery butter manufacturing	0	(0)	(0)	(0)
86	Cheese manufacturing	0	(3)	(1)	(4)
87	Dry, condensed, and evaporated dairy product manufacturing	0	(0)	(0)	(1)
88	Ice cream and frozen dessert manufacturing	(4)	(1)	(1)	(6)
89	Animal, except poultry, slaughtering	0	(2)	(1)	(4)
90	Meat processed from carcasses	0	(1)	(3)	(4)
91	Rendering and meat byproduct processing	0	(0)	(0)	(1)
92	Poultry processing	0	(7)	(3)	(10)
93	Seafood product preparation and packaging	(1)	(2)	(2)	(4)
94	Bread and bakery product, except frozen, manufacturing	(161)	(12)	(19)	(192)
95	Frozen cakes and other pastries manufacturing	0	(0)	(1)	(1)
96	Cookie and cracker manufacturing	0	(1)	(0)	(1)
97	Dry pasta, mixes, and dough manufacturing	0	(1)	(0)	(1)
98	Tortilla manufacturing	0	(1)	(0)	(1)
99	Roasted nuts and peanut butter manufacturing	0	(0)	(0)	(1)
100	Other snack food manufacturing	0	(0)	(1)	(1)
101	Coffee and tea manufacturing	0	(1)	(0)	(2)
102	Flavoring syrup and concentrate manufacturing	0	(1)	(0)	(1)
103	Mayonnaise, dressing, and sauce manufacturing	0	(1)	(0)	(1)
104	Spice and extract manufacturing	0	(1)	(0)	(1)
105	All other food manufacturing	(303)	(8)	(2)	(313)
106	Bottled and canned soft drinks & water	(7)	(2)	(3)	(11)
107	Manufactured ice	0	(0)	(0)	(0)
108	Breweries	(7)	(1)	(6)	(14)
109	Wineries	(96)	(6)	(2)	(104)
110	Distilleries	(12)	(0)	(0)	(12)
111	Tobacco product manufacturing	0	(0)	(0)	(0)
112	Fiber, yarn, and thread mills	0	(0)	(0)	(0)
113	Broadwoven fabric mills	0	(0)	(0)	(0)
114	Narrow fabric mills and schiffli machine embroidery	(2)	(0)	(0)	(2)
115	Nonwoven fabric mills	0	(0)	(0)	(0)
116	Knit fabric mills	0	(0)	(0)	(0)
117	Textile and fabric finishing mills	0	(1)	(0)	(1)
118	Fabric coating mills	0	(0)	(0)	(0)
119	Carpet and rug mills	0	(0)	(0)	(0)
120	Curtain and linen mills	0	(1)	(1)	(2)
121	Textile bag and canvas mills	0	(1)	(1)	(1)
122	Rope, cordage, twine, tire cord and tire fabric mills	0	(0)	(0)	(0)
123	Other textile product mills	0	(1)	(0)	(1)
124	Hosiery and sock mills	0	(0)	(0)	(0)

(Continued on the following page)

San Francisco Employment at Risk, 24" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
125	Other apparel knitting mills	0	(0)	(0)	(0)
126	Cut and sew apparel contractors	0	(12)	(6)	(18)
127	Mens and boys cut and sew apparel manufacturing	0	(0)	(0)	(0)
128	Womens and girls cut and sew apparel manufacturing	0	(0)	(2)	(2)
129	Other cut and sew apparel manufacturing	0	(0)	(0)	(0)
130	Apparel accessories and other apparel manufacturing	0	(4)	(1)	(5)
131	Leather and hide tanning and finishing	0	(0)	(0)	(0)
132	Footwear manufacturing	0	(0)	(0)	(0)
133	Other leather and allied product manufacturing	(4)	(0)	(0)	(4)
134	Sawmills	0	(4)	(1)	(5)
135	Wood preservation	0	(1)	(0)	(1)
136	Veneer and plywood manufacturing	0	(0)	(0)	(1)
137	Engineered wood member and truss manufacturing	0	(2)	(1)	(3)
138	Reconstituted wood product manufacturing	0	(0)	(0)	(0)
139	Wood windows and door manufacturing	0	(7)	(3)	(10)
140	Cut stock, resawing lumber, and planing	0	(1)	(1)	(2)
141	Other millwork, including flooring	0	(4)	(2)	(6)
142	Wood container and pallet manufacturing	0	(4)	(1)	(5)
143	Manufactured home (mobile home) manufacturing	0	(0)	(0)	(0)
144	Prefabricated wood building manufacturing	0	(0)	(0)	(0)
145	All other miscellaneous wood product manufacturing	0	(4)	(1)	(5)
146	Pulp mills	0	(0)	(0)	(0)
147	Paper mills	0	(0)	(0)	(1)
148	Paperboard mills	0	(1)	(0)	(1)
149	Paperboard container manufacturing	0	(21)	(3)	(25)
150	Paper bag and coated and treated paper manufacturing	0	(3)	(0)	(4)
151	Stationery product manufacturing	0	(1)	(0)	(2)
152	Sanitary paper product manufacturing	0	(0)	(0)	(0)
153	All other converted paper product manufacturing	0	(1)	(0)	(1)
154	Printing	(64)	(129)	(16)	(209)
155	Support activities for printing	0	(15)	(1)	(16)
156	Petroleum refineries	0	(6)	(2)	(8)
157	Asphalt paving mixture and block manufacturing	0	(0)	(0)	(0)
158	Asphalt shingle and coating materials manufacturing	0	(0)	(0)	(0)
159	Petroleum lubricating oil and grease manufacturing	0	(1)	(0)	(1)
160	All other petroleum and coal products manufacturing	0	(0)	(0)	(0)
161	Petrochemical manufacturing	0	(0)	(0)	(0)
162	Industrial gas manufacturing	0	(1)	(0)	(1)
163	Synthetic dye and pigment manufacturing	0	(0)	(0)	(0)
164	Other basic inorganic chemical manufacturing	0	(1)	(0)	(1)
165	Other basic organic chemical manufacturing	(4)	(0)	(0)	(4)
166	Plastics material and resin manufacturing	0	(1)	(0)	(1)
167	Synthetic rubber manufacturing	0	(0)	(0)	(0)
168	Artificial and synthetic fibers and filaments manufacturing	0	(0)	(0)	(0)
169	Nitrogenous fertilizer manufacturing	0	(1)	(0)	(1)
170	Phosphatic fertilizer manufacturing	0	(0)	(0)	(0)
171	Fertilizer mixing	0	(1)	(0)	(1)
172	Pesticide and other agricultural chemical manufacturing	0	(0)	(0)	(0)
173	Medicinal and botanical manufacturing	0	(1)	(0)	(1)
174	Pharmaceutical preparation manufacturing	(9)	(2)	(4)	(15)
175	In-vitro diagnostic substance manufacturing	0	(2)	(2)	(4)
176	Biological product (except diagnostic) manufacturing	0	(1)	(1)	(2)
177	Paint and coating manufacturing	0	(2)	(0)	(2)
178	Adhesive manufacturing	0	(1)	(0)	(1)
179	Soap and other detergent manufacturing	0	(1)	(0)	(1)
180	Polish and other sanitation good manufacturing	0	(1)	(0)	(1)
181	Surface active agent manufacturing	0	(0)	(0)	(0)
182	Toilet preparation manufacturing	0	(0)	(1)	(1)
183	Printing ink manufacturing	0	(2)	(0)	(2)
184	Explosives manufacturing	0	(0)	(0)	(0)
185	Custom compounding of purchased resins	0	(1)	(0)	(1)
186	Photographic film and chemical manufacturing	0	(1)	(0)	(1)

(Continued on the following page)

San Francisco Employment at Risk, 24" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
187	Other miscellaneous chemical product manufacturing	0	(2)	(0)	(2)
188	Plastics packaging materials and unlaminated film and sheet manufacturing	0	(5)	(1)	(5)
189	Unlaminated plastics profile shape manufacturing	0	(2)	(0)	(3)
190	Plastics pipe and pipe fitting manufacturing	0	(1)	(1)	(2)
191	Laminated plastics plate, sheet (except packaging), and shape manufacturing	(5)	(1)	(0)	(6)
192	Polystyrene foam product manufacturing	0	(1)	(1)	(2)
193	Urethane and other foam product (except polystyrene) manufacturing	0	(2)	(1)	(3)
194	Plastics bottle manufacturing	0	(2)	(0)	(2)
195	Other plastics product manufacturing	(25)	(13)	(4)	(42)
196	Tire manufacturing	0	(0)	(0)	(0)
197	Rubber and plastics hoses and belting manufacturing	0	(0)	(0)	(1)
198	Other rubber product manufacturing	0	(1)	(1)	(2)
199	Pottery, ceramics, and plumbing fixture manufacturing	0	(1)	(0)	(1)
200	Brick, tile, and other structural clay product manufacturing	0	(4)	(1)	(5)
201	Flat glass manufacturing	0	(0)	(0)	(0)
202	Other pressed and blown glass and glassware manufacturing	0	(2)	(0)	(2)
203	Glass container manufacturing	0	(6)	(1)	(7)
204	Glass product manufacturing made of purchased glass	0	(4)	(1)	(5)
205	Cement manufacturing	0	(1)	(0)	(1)
206	Ready-mix concrete manufacturing	0	(6)	(2)	(7)
207	Concrete block and brick manufacturing	0	(1)	(0)	(1)
208	Concrete pipe manufacturing	0	(0)	(0)	(0)
209	Other concrete product manufacturing	0	(7)	(1)	(8)
210	Lime manufacturing	0	(0)	(0)	(0)
211	Gypsum product manufacturing	0	(1)	(1)	(2)
212	Abrasive product manufacturing	0	(0)	(0)	(0)
213	Cut stone and stone product manufacturing	0	(1)	(1)	(1)
214	Ground or treated mineral and earth manufacturing	0	(0)	(0)	(0)
215	Mineral wool manufacturing	0	(1)	(1)	(1)
216	Miscellaneous nonmetallic mineral products manufacturing	0	(0)	(0)	(0)
217	Iron and steel mills and ferroalloy manufacturing	0	(2)	(0)	(2)
218	Iron, steel pipe and tube manufacturing from purchased steel	0	(1)	(0)	(1)
219	Rolled steel shape manufacturing	0	(0)	(0)	(0)
220	Steel wire drawing	0	(0)	(0)	(0)
221	Alumina refining and primary aluminum production	0	(0)	(0)	(0)
222	Secondary smelting and alloying of aluminum	0	(0)	(0)	(0)
223	Aluminum sheet, plate, and foil manufacturing	0	(0)	(0)	(0)
224	Other aluminum rolling, drawing and extruding	0	(1)	(0)	(1)
225	Nonferrous metal (exc aluminum) smelting and refining	0	(0)	(0)	(0)
226	Copper rolling, drawing, extruding and alloying	0	(0)	(0)	(0)
227	Nonferrous metal, except copper and aluminum, shaping	0	(0)	(0)	(0)
228	Secondary processing of other nonferrous metals	0	(0)	(0)	(0)
229	Ferrous metal foundries	0	(2)	(0)	(2)
230	Nonferrous metal foundries	0	(1)	(0)	(1)
231	Iron and steel forging	0	(1)	(0)	(1)
232	Nonferrous forging	0	(0)	(0)	(0)
233	Custom roll forming	0	(1)	(0)	(1)
234	Crown and closure manufacturing and metal stamping	0	(5)	(0)	(6)
235	Cutlery, utensil, pot, and pan manufacturing	0	(0)	(0)	(0)
236	Handtool manufacturing	0	(0)	(0)	(0)
237	Prefabricated metal buildings and components manufacturing	0	(1)	(0)	(1)
238	Fabricated structural metal manufacturing	0	(5)	(1)	(5)
239	Plate work manufacturing	0	(1)	(0)	(1)
240	Metal window and door manufacturing	0	(3)	(1)	(5)
241	Sheet metal work manufacturing	0	(5)	(2)	(7)
242	Ornamental and architectural metal work manufacturing	0	(4)	(1)	(5)
243	Power boiler and heat exchanger manufacturing	0	(0)	(0)	(0)
244	Metal tank (heavy gauge) manufacturing	0	(0)	(0)	(0)
245	Metal cans manufacturing	0	(1)	(0)	(2)
246	Metal barrels, drums and pails manufacturing	0	(0)	(0)	(0)
247	Hardware manufacturing	0	(1)	(0)	(1)
248	Spring and wire product manufacturing	0	(1)	(0)	(2)

(Continued on the following page)

San Francisco Employment at Risk, 24" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
249	Machine shops	0	(18)	(4)	(22)
250	Turned product and screw, nut, and bolt manufacturing	0	(4)	(1)	(5)
251	Metal heat treating	0	(1)	(0)	(1)
252	Metal coating and nonprecious engraving	0	(3)	(1)	(4)
253	Electroplating, anodizing, and coloring metal	(3)	(5)	(1)	(9)
254	Valve and fittings, other than plumbing, manufacturing	0	(14)	(1)	(15)
255	Plumbing fixture fitting and trim manufacturing	0	(1)	(0)	(1)
256	Ball and roller bearing manufacturing	0	(0)	(0)	(1)
257	Small arms ammunition manufacturing	0	(0)	(0)	(0)
258	Ammunition, except for small arms, manufacturing	0	(0)	(0)	(0)
259	Small arms, ordnance, and accessories manufacturing	0	(0)	(0)	(0)
260	Fabricated pipe and pipe fitting manufacturing	0	(1)	(0)	(1)
261	Other fabricated metal manufacturing	(2)	(7)	(1)	(11)
262	Farm machinery and equipment manufacturing	0	(0)	(0)	(0)
263	Lawn and garden equipment manufacturing	0	(0)	(0)	(0)
264	Construction machinery manufacturing	0	(0)	(0)	(0)
265	Mining machinery and equipment manufacturing	0	(0)	(0)	(0)
266	Oil and gas field machinery and equipment manufacturing	0	(0)	(0)	(0)
267	Food product machinery manufacturing	0	(0)	(0)	(0)
268	Semiconductor machinery manufacturing	0	(1)	(0)	(2)
269	Sawmill, woodworking, and paper machinery	0	(0)	(0)	(0)
270	Printing machinery and equipment manufacturing	0	(0)	(0)	(0)
271	All other industrial machinery manufacturing	(14)	(0)	(0)	(14)
272	Optical instrument and lens manufacturing	0	(0)	(0)	(0)
273	Photographic and photocopying equipment manufacturing	0	(0)	(0)	(0)
274	Other commercial service industry machinery manufacturing	0	(2)	(1)	(3)
275	Air purification and ventilation equipment manufacturing	0	(1)	(0)	(1)
276	Heating equipment (except warm air furnaces) manufacturing	0	(0)	(0)	(1)
277	Air conditioning, refrigeration, and warm air heating equipment manufacturing	(3)	(2)	(1)	(6)
278	Industrial mold manufacturing	0	(0)	(0)	(0)
279	Special tool, die, jig, and fixture manufacturing	0	(0)	(0)	(0)
280	Cutting tool and machine tool accessory manufacturing	0	(0)	(0)	(0)
281	Machine tool manufacturing	0	(0)	(0)	(0)
282	Rolling mill and other metalworking machinery manufacturing	0	(0)	(0)	(0)
283	Turbine and turbine generator set units manufacturing	0	(0)	(0)	(0)
284	Speed changer, industrial high-speed drive, and gear manufacturing	0	(0)	(0)	(0)
285	Mechanical power transmission equipment manufacturing	0	(0)	(0)	(0)
286	Other engine equipment manufacturing	0	(0)	(0)	(0)
287	Pump and pumping equipment manufacturing	0	(0)	(0)	(0)
288	Air and gas compressor manufacturing	0	(0)	(0)	(0)
289	Measuring and dispensing pump manufacturing	0	(0)	(0)	(0)
290	Elevator and moving stairway manufacturing	0	(0)	(0)	(0)
291	Conveyor and conveying equipment manufacturing	0	(0)	(0)	(0)
292	Overhead cranes, hoists, and monorail systems manufacturing	0	(0)	(0)	(0)
293	Industrial truck, trailer, and stacker manufacturing	0	(0)	(0)	(0)
294	Power-driven handtool manufacturing	0	(0)	(0)	(0)
295	Welding and soldering equipment manufacturing	0	(0)	(0)	(0)
296	Packaging machinery manufacturing	0	(3)	(0)	(3)
297	Industrial process furnace and oven manufacturing	0	(0)	(0)	(0)
298	Fluid power cylinder and actuator manufacturing	0	(0)	(0)	(0)
299	Fluid power pump and motor manufacturing	0	(0)	(0)	(0)
300	Scales, balances, and miscellaneous general purpose machinery manufacturing	0	(0)	(0)	(0)
301	Electronic computer manufacturing	0	(1)	(2)	(4)
302	Computer storage device manufacturing	0	(0)	(0)	(0)
303	Computer terminals and other computer peripheral equipment manufacturing	0	(3)	(0)	(4)
304	Telephone apparatus manufacturing	0	(2)	(0)	(2)
305	Broadcast and wireless communications equipment manufacturing	(4)	(15)	(1)	(20)
306	Other communications equipment manufacturing	0	(1)	(0)	(2)
307	Audio and video equipment manufacturing	0	(1)	(0)	(1)
308	Bare printed circuit board manufacturing	0	(6)	(0)	(6)
309	Semiconductor and related device manufacturing	(5)	(15)	(5)	(25)
310	Capacitor, resistor, coil, transformer, and other inductor manufacturing	(15)	(5)	(0)	(21)

(Continued on the following page)

San Francisco Employment at Risk, 24" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
311	Electronic connector manufacturing	0	(3)	(0)	(3)
312	Printed circuit assembly (electronic assembly) manufacturing	0	(3)	(1)	(3)
313	Other electronic component manufacturing	0	(3)	(0)	(4)
314	Electromedical and electrotherapeutic apparatus manufacturing	0	(0)	(0)	(0)
315	Search, detection, and navigation instruments manufacturing	0	(0)	(0)	(1)
316	Automatic environmental control manufacturing	0	(0)	(0)	(0)
317	Industrial process variable instruments manufacturing	(5)	(1)	(0)	(6)
318	Totalizing fluid meter and counting device manufacturing	0	(0)	(0)	(0)
319	Electricity and signal testing instruments manufacturing	0	(0)	(0)	(0)
320	Analytical laboratory instrument manufacturing	0	(1)	(0)	(1)
321	Irradiation apparatus manufacturing	0	(0)	(0)	(0)
322	Watch, clock, and other measuring and controlling device manufacturing	0	(0)	(0)	(0)
323	Blank magnetic and optical recording media manufacturing	0	(5)	(0)	(5)
324	Software and other prerecorded and record reproducing	0	(3)	(0)	(3)
325	Electric lamp bulb and part manufacturing	0	(0)	(0)	(0)
326	Lighting fixture manufacturing	(7)	(2)	(1)	(10)
327	Small electrical appliance manufacturing	0	(0)	(0)	(0)
328	Household cooking appliance manufacturing	0	(0)	(0)	(0)
329	Household refrigerator and home freezer manufacturing	0	(0)	(0)	(0)
330	Household laundry equipment manufacturing	0	(0)	(2)	(2)
331	Other major household appliance manufacturing	0	(0)	(0)	(0)
332	Power, distribution, and specialty transformer manufacturing	0	(1)	(0)	(1)
333	Motor and generator manufacturing	0	(1)	(0)	(1)
334	Switchgear and switchboard apparatus manufacturing	0	(2)	(0)	(3)
335	Relay and industrial control manufacturing	0	(1)	(0)	(1)
336	Storage battery manufacturing	0	(1)	(0)	(1)
337	Primary battery manufacturing	0	(0)	(0)	(0)
338	Fiber optic cable manufacturing	0	(2)	(0)	(3)
339	Other communication and energy wire manufacturing	0	(1)	(0)	(1)
340	Wiring device manufacturing	0	(2)	(1)	(3)
341	Carbon and graphite product manufacturing	0	(1)	(0)	(1)
342	All other miscellaneous electrical equipment and component manufacturing	(1)	(1)	(0)	(2)
343	Automobile manufacturing	0	(0)	(0)	(0)
344	Light truck and utility vehicle manufacturing	0	(0)	(0)	(0)
345	Heavy duty truck manufacturing	0	(0)	(0)	(0)
346	Motor vehicle body manufacturing	0	(0)	(0)	(0)
347	Truck trailer manufacturing	0	(0)	(0)	(0)
348	Motor home manufacturing	0	(0)	(0)	(0)
349	Travel trailer and camper manufacturing	0	(0)	(0)	(0)
350	Motor vehicle gasoline engine and engine parts manufacturing	0	(0)	(0)	(0)
351	Motor vehicle electrical and electronic equipment manufacturing	0	(1)	(0)	(1)
352	Motor vehicle steering, suspension component (except spring), and brake systems manufacturi	0	(1)	(0)	(2)
353	Motor vehicle transmission and power train parts manufacturing	0	(0)	(0)	(0)
354	Motor vehicle seating and interior trim manufacturing	0	(0)	(0)	(0)
355	Motor vehicle metal stamping	0	(0)	(0)	(0)
356	Other motor vehicle parts manufacturing	0	(2)	(1)	(2)
357	Aircraft manufacturing	0	(0)	(0)	(0)
358	Aircraft engine and engine parts manufacturing	0	(0)	(0)	(0)
359	Other aircraft parts and auxiliary equipment manufacturing	0	(1)	(0)	(1)
360	Guided missile and space vehicle manufacturing	0	(0)	(0)	(0)
361	Propulsion units and parts for space vehicles and guided missiles manufacturing	0	(0)	(0)	(0)
362	Railroad rolling stock manufacturing	0	(0)	(0)	(0)
363	Ship building and repairing	0	(1)	(0)	(1)
364	Boat building	0	(0)	(0)	(0)
365	Motorcycle, bicycle, and parts manufacturing	0	(0)	(0)	(0)
366	Military armored vehicle, tank, and tank component manufacturing	0	(0)	(0)	(0)
367	All other transportation equipment manufacturing	0	(0)	(0)	(0)
368	Wood kitchen cabinet and countertop manufacturing	0	(6)	(6)	(12)
369	Upholstered household furniture manufacturing	0	(0)	(2)	(2)
370	Nonupholstered wood household furniture manufacturing	0	(0)	(1)	(1)
371	Other household nonupholstered furniture manufacturing	0	(0)	(0)	(0)
372	Institutional furniture manufacturing	(12)	(0)	(0)	(12)

(Continued on the following page)

San Francisco Employment at Risk, 24" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
373	Wood office furniture manufacturing	0	(0)	(0)	(0)
374	Custom architectural woodwork and millwork	0	(0)	(0)	(0)
375	Office furniture, except wood, manufacturing	0	(0)	(0)	(0)
376	Showcase, partition, shelving, and locker manufacturing	0	(2)	(0)	(2)
377	Mattress manufacturing	0	(0)	(0)	(0)
378	Blind and shade manufacturing	0	(0)	(0)	(0)
379	Surgical and medical instrument manufacturing	(1)	(1)	(2)	(5)
380	Surgical appliance and supplies manufacturing	0	(1)	(1)	(2)
381	Dental equipment and supplies manufacturing	0	(0)	(1)	(1)
382	Ophthalmic goods manufacturing	0	(0)	(0)	(0)
383	Dental laboratories	0	(0)	(4)	(5)
384	Jewelry and silverware manufacturing	0	(0)	(0)	(1)
385	Sporting and athletic goods manufacturing	0	(0)	(0)	(1)
386	Doll, toy, and game manufacturing	(3)	(0)	(1)	(4)
387	Office supplies (except paper) manufacturing	0	(1)	(0)	(1)
388	Sign manufacturing	(88)	(3)	(0)	(91)
389	Gasket, packing, and sealing device manufacturing	0	(1)	(0)	(1)
390	Musical instrument manufacturing	0	(0)	(0)	(1)
391	Fasteners, buttons, needles, and pins manufacturing	0	(0)	(0)	(0)
392	Broom, brush, and mop manufacturing	0	(0)	(0)	(0)
393	Burial casket manufacturing	0	(0)	(0)	(0)
394	All other miscellaneous manufacturing	(1)	(7)	(4)	(12)
395	Wholesale trade	(328)	(394)	(352)	(1,074)
396	Retail - Motor vehicle and parts dealers	(13)	(7)	(66)	(86)
397	Retail - Furniture and home furnishings stores	(31)	(5)	(46)	(82)
398	Retail - Electronics and appliance stores	(124)	(11)	(51)	(186)
399	Retail - Building material and garden equipment and supplies stores	(11)	(16)	(94)	(120)
400	Retail - Food and beverage stores	(238)	(4)	(389)	(631)
401	Retail - Health and personal care stores	(89)	(19)	(147)	(255)
402	Retail - Gasoline stores	0	(6)	(43)	(49)
403	Retail - Clothing and clothing accessories stores	(3,129)	(15)	(166)	(3,310)
404	Retail - Sporting goods, hobby, musical instrument and book stores	(31)	(7)	(69)	(107)
405	Retail - General merchandise stores	0	(11)	(276)	(287)
406	Retail - Miscellaneous store retailers	(127)	(19)	(157)	(304)
407	Retail - Nonstore retailers	(98)	(6)	(141)	(246)
408	Air transportation	0	(73)	(16)	(90)
409	Rail transportation	(67)	(9)	(3)	(79)
410	Water transportation	(14)	(2)	(4)	(20)
411	Truck transportation	(20)	(89)	(60)	(170)
412	Transit and ground passenger transportation	(154)	(131)	(88)	(373)
413	Pipeline transportation	0	(4)	(2)	(6)
414	Scenic and sightseeing transportation and support activities for transportation	(280)	(189)	(42)	(510)
415	Couriers and messengers	0	(220)	(39)	(259)
416	Warehousing and storage	0	(133)	(43)	(176)
417	Newspaper publishers	0	(19)	(8)	(27)
418	Periodical publishers	(18)	(15)	(8)	(41)
419	Book publishers	0	(1)	(6)	(7)
420	Directory, mailing list, and other publishers	(9)	(3)	(1)	(13)
421	Greeting card publishing	0	(0)	(0)	(0)
422	Software publishers	(1,316)	(100)	(19)	(1,435)
423	Motion picture and video industries	(26)	(227)	(19)	(271)
424	Sound recording industries	0	(4)	(2)	(5)
425	Radio and television broadcasting	(92)	(53)	(8)	(153)
426	Cable and other subscription programming	(353)	(69)	(4)	(425)
427	Wired telecommunications carriers	0	(91)	(55)	(146)
428	Wireless telecommunications carriers (except satellite)	0	(25)	(16)	(41)
429	Satellite, telecommunications resellers, and all other telecommunications	(241)	(25)	(14)	(280)
430	Data processing, hosting, and related services	(1,130)	(130)	(14)	(1,274)
431	News syndicates, libraries, archives and all other information services	(16)	(7)	(5)	(28)
432	Internet publishing and broadcasting and web search portals	(34)	(173)	(26)	(233)
433	Monetary authorities and depository credit intermediation	(455)	(174)	(93)	(722)
434	Nondepository credit intermediation and related activities	(1,608)	(192)	(94)	(1,893)

(Continued on the following page)

San Francisco Employment at Risk, 24" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
435	Securities and commodity contracts intermediation and brokerage	(683)	(181)	(51)	(916)
436	Other financial investment activities	(1,431)	(406)	(140)	(1,978)
437	Insurance carriers	(594)	(123)	(102)	(819)
438	Insurance agencies, brokerages, and related activities	(816)	(1,021)	(100)	(1,938)
439	Funds, trusts, and other financial vehicles	(543)	(34)	(68)	(645)
440	Real estate	(1,007)	(521)	(303)	(1,831)
441	Owner-occupied dwellings	0	0	0	0
442	Automotive equipment rental and leasing	0	(23)	(16)	(39)
443	General and consumer goods rental except video tapes and discs	(99)	(19)	(20)	(138)
444	Video tape and disc rental	0	0	(3)	(3)
445	Commercial and industrial machinery and equipment rental and leasing	(10)	(58)	(7)	(76)
446	Lessors of nonfinancial intangible assets	(77)	(25)	(2)	(105)
447	Legal services	(2,110)	(197)	(115)	(2,422)
448	Accounting, tax preparation, bookkeeping, and payroll services	(353)	(318)	(73)	(744)
449	Architectural, engineering, and related services	(801)	(188)	(47)	(1,036)
450	Specialized design services	(135)	(105)	(18)	(258)
451	Custom computer programming services	(969)	(10)	(1)	(980)
452	Computer systems design services	(304)	(144)	(16)	(464)
453	Other computer related services, including facilities management	(104)	(104)	(12)	(220)
454	Management consulting services	(751)	(391)	(52)	(1,194)
455	Environmental and other technical consulting services	(277)	(147)	(21)	(445)
456	Scientific research and development services	(15)	(4)	(4)	(23)
457	Advertising, public relations, and related services	(1,751)	(267)	(34)	(2,053)
458	Photographic services	(1)	(48)	(21)	(71)
459	Veterinary services	0	(2)	(22)	(24)
460	Marketing research and all other miscellaneous professional, scientific, and technical services	(292)	(241)	(43)	(575)
461	Management of companies and enterprises	(43)	(321)	(69)	(432)
462	Office administrative services	(1,758)	(229)	(26)	(2,013)
463	Facilities support services	(22)	(53)	(7)	(81)
464	Employment services	(602)	(906)	(114)	(1,622)
465	Business support services	(78)	(294)	(44)	(416)
466	Travel arrangement and reservation services	(31)	(43)	(29)	(103)
467	Investigation and security services	(30)	(221)	(60)	(311)
468	Services to buildings	(1)	(314)	(172)	(487)
469	Landscape and horticultural services	0	(176)	(99)	(275)
470	Other support services	(76)	(105)	(15)	(196)
471	Waste management and remediation services	(2)	(47)	(21)	(71)
472	Elementary and secondary schools	(37)	0	(185)	(222)
473	Junior colleges, colleges, universities, and professional schools	(83)	(6)	(256)	(345)
474	Other educational services	(77)	(46)	(230)	(353)
475	Offices of physicians	(43)	0	(343)	(386)
476	Offices of dentists	(17)	0	(178)	(195)
477	Offices of other health practitioners	(21)	0	(226)	(247)
478	Outpatient care centers	(40)	0	(96)	(136)
479	Medical and diagnostic laboratories	(15)	(2)	(29)	(47)
480	Home health care services	0	0	(102)	(102)
481	Other ambulatory health care services	(20)	(8)	(33)	(61)
482	Hospitals	(482)	(0)	(443)	(925)
483	Nursing and community care facilities	0	0	(175)	(175)
484	Residential mental retardation, mental health, substance abuse and other facilities	(8)	0	(70)	(78)
485	Individual and family services	(17)	0	(591)	(608)
486	Community food, housing, and other relief services, including rehabilitation services	(10)	0	(74)	(84)
487	Child day care services	(12)	0	(169)	(181)
488	Performing arts companies	(104)	(16)	(38)	(158)
489	Commercial Sports Except Racing	(3)	(101)	(23)	(128)
490	Racing and Track Operation	0	(0)	(1)	(1)
491	Promoters of performing arts and sports and agents for public figures	(19)	(79)	(41)	(139)
492	Independent artists, writers, and performers	(9)	(653)	(69)	(731)
493	Museums, historical sites, zoos, and parks	(28)	0	(24)	(52)
494	Amusement parks and arcades	(2)	(1)	(11)	(14)
495	Gambling industries (except casino hotels)	0	(0)	(64)	(64)
496	Other amusement and recreation industries	(55)	(37)	(67)	(159)

(Continued on the following page)

San Francisco Employment at Risk, 24" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
497	Fitness and recreational sports centers	(120)	(53)	(106)	(279)
498	Bowling centers	0	(0)	(1)	(1)
499	Hotels and motels, including casino hotels	(1,967)	(45)	(16)	(2,028)
500	Other accommodations	(2)	(1)	(1)	(3)
501	Full-service restaurants	(1,562)	(467)	(683)	(2,712)
502	Limited-service restaurants	(272)	(181)	(547)	(1,000)
503	All other food and drinking places	(94)	(161)	(365)	(620)
504	Automotive repair and maintenance, except car washes	(5)	(81)	(125)	(211)
505	Car washes	(2)	(9)	(17)	(28)
506	Electronic and precision equipment repair and maintenance	(7)	(38)	(10)	(56)
507	Commercial and industrial machinery and equipment repair and maintenance	(1)	(75)	(15)	(92)
508	Personal and household goods repair and maintenance	(2)	(80)	(49)	(131)
509	Personal care services	(27)	(0)	(303)	(330)
510	Death care services	(5)	0	(6)	(11)
511	Dry-cleaning and laundry services	(13)	(25)	(32)	(70)
512	Other personal services	(47)	(120)	(298)	(465)
513	Religious organizations	(7)	0	(278)	(285)
514	Grantmaking, giving, and social advocacy organizations	(216)	(5)	(53)	(273)
515	Business and professional associations	(319)	(32)	(21)	(372)
516	Labor and civic organizations	(416)	(1)	(85)	(502)
517	Private households	0	0	(196)	(196)
518	Postal service	0	(171)	(36)	(207)
519	Federal electric utilities	0	0	0	0
520	Other federal government enterprises	0	(17)	(6)	(24)
521	State government passenger transit	0	0	0	0
522	State government electric utilities	0	0	0	0
523	Other state government enterprises	0	(0)	(0)	(0)
524	Local government passenger transit	0	(71)	(48)	(119)
525	Local government electric utilities	0	(2)	(1)	(3)
526	Other local government enterprises	0	(21)	(25)	(46)
527	* Not an industry (Used and secondhand goods)	0	0	0	0
528	* Not an industry (Scrap)	0	0	0	0
529	* Not an industry (Rest of world adjustment)	0	0	0	0
530	* Not an industry (Noncomparable foreign imports)	0	0	0	0
531	* Employment and payroll of state govt, non-education	0	0	0	0
532	* Employment and payroll of state govt, education	0	0	0	0
533	* Employment and payroll of local govt, non-education	0	0	0	0
534	* Employment and payroll of local govt, education	0	0	0	0
535	* Employment and payroll of federal govt, non-military	0	0	0	0
536	* Employment and payroll of federal govt, military	0	0	0	0

Sources: IMPLAN; BAE, 2017.

San Francisco Employment at Risk, 66" SLR + 100-Year Flood

Sector	Description	Direct	Indirect	Induced	Total
0	Total	(118,794)	(49,005)	(43,930)	(211,729)
1	Oilseed farming	0	(0)	(0)	(0)
2	Grain farming	0	(3)	(1)	(4)
3	Vegetable and melon farming	0	(35)	(4)	(40)
4	Fruit farming	(24)	(241)	(18)	(283)
5	Tree nut farming	0	(4)	(1)	(5)
6	Greenhouse, nursery, and floriculture production	0	(29)	(9)	(38)
7	Tobacco farming	0	0	0	0
8	Cotton farming	0	(0)	(0)	(0)
9	Sugarcane and sugar beet farming	0	(0)	(0)	(0)
10	All other crop farming	(6)	(40)	(16)	(62)
11	Beef cattle ranching and farming, including feedlots and dual-purpose rar	0	(8)	(12)	(20)
12	Dairy cattle and milk production	0	(17)	(10)	(27)
13	Poultry and egg production	0	(5)	(2)	(6)
14	Animal production, except cattle and poultry and eggs	(17)	(6)	(5)	(28)
15	Forestry, forest products, and timber tract production	0	(3)	(0)	(3)
16	Commercial logging	0	(41)	(3)	(44)
17	Commercial fishing	0	(64)	(33)	(97)
18	Commercial hunting and trapping	(4)	(0)	(1)	(5)
19	Support activities for agriculture and forestry	(71)	(97)	(23)	(192)
20	Extraction of natural gas and crude petroleum	(770)	(939)	(32)	(1,741)
21	Extraction of natural gas liquids	0	(8)	(1)	(9)
22	Coal mining	0	(1)	(0)	(1)
23	Iron ore mining	(8)	(0)	(0)	(8)
24	Gold ore mining	0	(1)	(0)	(2)
25	Silver ore mining	0	0	0	0
26	Lead and zinc ore mining	0	0	0	0
27	Copper ore mining	0	(1)	(0)	(2)
28	Uranium-radium-vanadium ore mining	0	0	0	0
29	Other metal ore mining	0	(0)	(0)	(0)
30	Stone mining and quarrying	0	(2)	(1)	(3)
31	Sand and gravel mining	0	(12)	(2)	(14)
32	Other clay, ceramic, refractory minerals mining	0	(1)	(0)	(1)
33	Potash, soda, and borate mineral mining	0	(0)	(0)	(1)
34	Phosphate rock mining	0	0	0	0
35	Other chemical and fertilizer mineral mining	0	(0)	(0)	(0)
36	Other nonmetallic minerals	0	(1)	(0)	(1)
37	Drilling oil and gas wells	0	(0)	(0)	(0)
38	Support activities for oil and gas operations	(56)	(48)	(3)	(106)
39	Metal mining services	0	(0)	(0)	(0)
40	Other nonmetallic minerals services	0	(1)	(0)	(1)
41	Electric power generation - Hydroelectric	0	(0)	(0)	(0)
42	Electric power generation - Fossil fuel	(37)	(2)	(1)	(40)
43	Electric power generation - Nuclear	0	(1)	(0)	(1)
44	Electric power generation - Solar	(133)	(4)	(0)	(137)
45	Electric power generation - Wind	(64)	(2)	(0)	(66)
46	Electric power generation - Geothermal	0	(0)	(0)	(0)
47	Electric power generation - Biomass	(40)	(1)	(0)	(41)
48	Electric power generation - All other	(12)	(0)	(0)	(12)
49	Electric power transmission and distribution	(13)	(3)	(2)	(18)
50	Natural gas distribution	(2,152)	(24)	(23)	(2,199)
51	Water, sewage and other systems	(1,635)	(49)	(71)	(1,755)
52	Construction of new health care structures	0	0	0	0
53	Construction of new manufacturing structures	(119)	0	0	(119)
54	Construction of new power and communication structures	0	0	0	0
55	Construction of new educational and vocational structures	0	0	0	0
56	Construction of new highways and streets	(25)	0	0	(25)
57	Construction of new commercial structures, including farm structures	(1,908)	0	0	(1,908)
58	Construction of other new nonresidential structures	(312)	0	0	(312)
59	Construction of new single-family residential structures	(28)	0	0	(28)
60	Construction of new multifamily residential structures	(6)	0	0	(6)
61	Construction of other new residential structures	(9)	0	0	(9)
62	Maintenance and repair construction of nonresidential structures	(466)	(1,122)	(203)	(1,791)

(Continued on the following page)

San Francisco Employment at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
63	Maintenance and repair construction of residential structures	0	(42)	(280)	(322)
64	Maintenance and repair construction of highways, streets, bridges, and t	0	0	0	0
65	Dog and cat food manufacturing	0	(0)	(0)	(0)
66	Other animal food manufacturing	0	(3)	(2)	(5)
67	Flour milling	0	(3)	(1)	(4)
68	Rice milling	0	(2)	(0)	(2)
69	Malt manufacturing	0	(0)	(0)	(0)
70	Wet corn milling	0	(1)	(0)	(2)
71	Soybean and other oilseed processing	0	(1)	(0)	(1)
72	Fats and oils refining and blending	(6)	(1)	(0)	(7)
73	Breakfast cereal manufacturing	0	(0)	(0)	(0)
74	Beet sugar manufacturing	0	(0)	(0)	(0)
75	Sugar cane mills and refining	0	(1)	(0)	(2)
76	Nonchocolate confectionery manufacturing	0	(1)	(1)	(2)
77	Chocolate and confectionery manufacturing from cacao beans	(28)	(2)	(1)	(31)
78	Confectionery manufacturing from purchased chocolate	0	(1)	(1)	(2)
79	Frozen fruits, juices and vegetables manufacturing	0	(5)	(2)	(6)
80	Frozen specialties manufacturing	(67)	(4)	(8)	(78)
81	Canned fruits and vegetables manufacturing	(32)	(7)	(5)	(44)
82	Canned specialties	0	(0)	(0)	(0)
83	Dehydrated food products manufacturing	0	(1)	(1)	(2)
84	Fluid milk manufacturing	(3)	(5)	(7)	(15)
85	Creamery butter manufacturing	0	(0)	(1)	(1)
86	Cheese manufacturing	0	(6)	(5)	(11)
87	Dry, condensed, and evaporated dairy product manufacturing	0	(1)	(1)	(2)
88	Ice cream and frozen dessert manufacturing	(5)	(3)	(3)	(12)
89	Animal, except poultry, slaughtering	0	(5)	(5)	(9)
90	Meat processed from carcasses	0	(1)	(10)	(11)
91	Rendering and meat byproduct processing	0	(1)	(1)	(2)
92	Poultry processing	0	(12)	(12)	(25)
93	Seafood product preparation and packaging	(1)	(4)	(6)	(11)
94	Bread and bakery product, except frozen, manufacturing	(275)	(31)	(72)	(377)
95	Frozen cakes and other pastries manufacturing	0	(1)	(2)	(3)
96	Cookie and cracker manufacturing	0	(1)	(2)	(3)
97	Dry pasta, mixes, and dough manufacturing	(3)	(1)	(2)	(6)
98	Tortilla manufacturing	0	(2)	(2)	(3)
99	Roasted nuts and peanut butter manufacturing	0	(1)	(1)	(2)
100	Other snack food manufacturing	0	(2)	(2)	(3)
101	Coffee and tea manufacturing	0	(2)	(1)	(3)
102	Flavoring syrup and concentrate manufacturing	0	(2)	(1)	(2)
103	Mayonnaise, dressing, and sauce manufacturing	0	(1)	(1)	(2)
104	Spice and extract manufacturing	0	(2)	(1)	(2)
105	All other food manufacturing	(313)	(12)	(7)	(332)
106	Bottled and canned soft drinks & water	(7)	(5)	(9)	(21)
107	Manufactured ice	0	(0)	(1)	(1)
108	Breweries	(70)	(3)	(23)	(96)
109	Wineries	(135)	(10)	(9)	(155)
110	Distilleries	(12)	(0)	(0)	(12)
111	Tobacco product manufacturing	0	(0)	(0)	(0)
112	Fiber, yarn, and thread mills	0	(0)	(0)	(0)
113	Broadwoven fabric mills	0	(0)	(0)	(0)
114	Narrow fabric mills and schiffli machine embroidery	(8)	(0)	(0)	(8)
115	Nonwoven fabric mills	0	(0)	(0)	(0)
116	Knit fabric mills	0	(0)	(0)	(0)
117	Textile and fabric finishing mills	0	(3)	(1)	(5)
118	Fabric coating mills	0	(0)	(0)	(0)
119	Carpet and rug mills	0	(0)	(0)	(0)
120	Curtain and linen mills	0	(2)	(3)	(5)
121	Textile bag and canvas mills	0	(2)	(2)	(4)
122	Rope, cordage, twine, tire cord and tire fabric mills	0	(0)	(0)	(0)
123	Other textile product mills	0	(2)	(2)	(4)
124	Hosiery and sock mills	0	(0)	(0)	(0)

(Continued on the following page)

San Francisco Employment at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
125	Other apparel knitting mills	(3)	(1)	(1)	(4)
126	Cut and sew apparel contractors	0	(42)	(23)	(65)
127	Mens and boys cut and sew apparel manufacturing	0	(1)	(1)	(2)
128	Womens and girls cut and sew apparel manufacturing	0	(2)	(7)	(9)
129	Other cut and sew apparel manufacturing	0	(0)	(1)	(2)
130	Apparel accessories and other apparel manufacturing	0	(10)	(4)	(13)
131	Leather and hide tanning and finishing	0	(0)	(0)	(0)
132	Footwear manufacturing	0	(0)	(0)	(0)
133	Other leather and allied product manufacturing	(14)	(1)	(0)	(16)
134	Sawmills	0	(12)	(4)	(16)
135	Wood preservation	0	(2)	(1)	(3)
136	Veneer and plywood manufacturing	0	(1)	(0)	(2)
137	Engineered wood member and truss manufacturing	0	(7)	(2)	(9)
138	Reconstituted wood product manufacturing	0	(1)	(0)	(1)
139	Wood windows and door manufacturing	0	(25)	(12)	(37)
140	Cut stock, resawing lumber, and planing	0	(4)	(2)	(5)
141	Other millwork, including flooring	0	(16)	(7)	(23)
142	Wood container and pallet manufacturing	0	(9)	(4)	(13)
143	Manufactured home (mobile home) manufacturing	0	(0)	(0)	(0)
144	Prefabricated wood building manufacturing	0	(2)	(0)	(2)
145	All other miscellaneous wood product manufacturing	(3)	(11)	(3)	(17)
146	Pulp mills	0	(0)	(0)	(0)
147	Paper mills	0	(2)	(0)	(2)
148	Paperboard mills	0	(2)	(0)	(2)
149	Paperboard container manufacturing	0	(55)	(13)	(67)
150	Paper bag and coated and treated paper manufacturing	0	(9)	(1)	(10)
151	Stationery product manufacturing	0	(4)	(0)	(5)
152	Sanitary paper product manufacturing	0	(1)	(1)	(2)
153	All other converted paper product manufacturing	0	(2)	(1)	(2)
154	Printing	(782)	(443)	(60)	(1,285)
155	Support activities for printing	0	(73)	(4)	(78)
156	Petroleum refineries	(4)	(21)	(7)	(32)
157	Asphalt paving mixture and block manufacturing	0	(1)	(1)	(2)
158	Asphalt shingle and coating materials manufacturing	0	(0)	(0)	(1)
159	Petroleum lubricating oil and grease manufacturing	0	(2)	(1)	(3)
160	All other petroleum and coal products manufacturing	0	(1)	(0)	(1)
161	Petrochemical manufacturing	0	(0)	(0)	(0)
162	Industrial gas manufacturing	0	(4)	(1)	(5)
163	Synthetic dye and pigment manufacturing	0	(1)	(0)	(1)
164	Other basic inorganic chemical manufacturing	0	(4)	(1)	(4)
165	Other basic organic chemical manufacturing	(4)	(0)	(0)	(5)
166	Plastics material and resin manufacturing	0	(2)	(0)	(2)
167	Synthetic rubber manufacturing	0	(0)	(0)	(0)
168	Artificial and synthetic fibers and filaments manufacturing	0	(0)	(0)	(0)
169	Nitrogenous fertilizer manufacturing	0	(1)	(0)	(2)
170	Phosphatic fertilizer manufacturing	0	(1)	(0)	(1)
171	Fertilizer mixing	0	(2)	(1)	(3)
172	Pesticide and other agricultural chemical manufacturing	0	(0)	(0)	(0)
173	Medicinal and botanical manufacturing	(4)	(5)	(2)	(11)
174	Pharmaceutical preparation manufacturing	(54)	(4)	(15)	(74)
175	In-vitro diagnostic substance manufacturing	0	(3)	(7)	(9)
176	Biological product (except diagnostic) manufacturing	(1)	(5)	(3)	(9)
177	Paint and coating manufacturing	0	(7)	(2)	(8)
178	Adhesive manufacturing	0	(3)	(1)	(4)
179	Soap and other detergent manufacturing	0	(4)	(1)	(5)
180	Polish and other sanitation good manufacturing	0	(4)	(1)	(5)
181	Surface active agent manufacturing	0	(0)	(0)	(0)
182	Toilet preparation manufacturing	0	(1)	(4)	(5)
183	Printing ink manufacturing	0	(12)	(1)	(12)
184	Explosives manufacturing	0	(1)	(0)	(1)
185	Custom compounding of purchased resins	0	(3)	(0)	(3)
186	Photographic film and chemical manufacturing	0	(3)	(0)	(3)

(Continued on the following page)

San Francisco Employment at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
187	Other miscellaneous chemical product manufacturing	0	(7)	(1)	(8)
188	Plastics packaging materials and unlaminated film and sheet manufactur	(3)	(13)	(3)	(19)
189	Unlaminated plastics profile shape manufacturing	0	(6)	(1)	(7)
190	Plastics pipe and pipe fitting manufacturing	0	(6)	(2)	(8)
191	Laminated plastics plate, sheet (except packaging), and shape manufact	(5)	(3)	(1)	(8)
192	Polystyrene foam product manufacturing	0	(5)	(2)	(7)
193	Urethane and other foam product (except polystyrene) manufacturing	(2)	(5)	(3)	(11)
194	Plastics bottle manufacturing	0	(3)	(1)	(4)
195	Other plastics product manufacturing	(25)	(40)	(15)	(80)
196	Tire manufacturing	0	(1)	(0)	(1)
197	Rubber and plastics hoses and belting manufacturing	0	(2)	(1)	(2)
198	Other rubber product manufacturing	0	(7)	(2)	(9)
199	Pottery, ceramics, and plumbing fixture manufacturing	0	(4)	(1)	(6)
200	Brick, tile, and other structural clay product manufacturing	0	(13)	(5)	(18)
201	Flat glass manufacturing	0	(1)	(0)	(1)
202	Other pressed and blown glass and glassware manufacturing	0	(6)	(2)	(7)
203	Glass container manufacturing	0	(17)	(4)	(21)
204	Glass product manufacturing made of purchased glass	0	(14)	(3)	(18)
205	Cement manufacturing	0	(5)	(1)	(6)
206	Ready-mix concrete manufacturing	0	(21)	(6)	(27)
207	Concrete block and brick manufacturing	0	(4)	(1)	(5)
208	Concrete pipe manufacturing	0	(1)	(0)	(1)
209	Other concrete product manufacturing	0	(41)	(4)	(45)
210	Lime manufacturing	0	(0)	(0)	(0)
211	Gypsum product manufacturing	0	(5)	(2)	(7)
212	Abrasive product manufacturing	0	(1)	(0)	(1)
213	Cut stone and stone product manufacturing	0	(3)	(2)	(6)
214	Ground or treated mineral and earth manufacturing	0	(1)	(0)	(1)
215	Mineral wool manufacturing	0	(2)	(2)	(5)
216	Miscellaneous nonmetallic mineral products manufacturing	0	(2)	(0)	(3)
217	Iron and steel mills and ferroalloy manufacturing	0	(7)	(1)	(8)
218	Iron, steel pipe and tube manufacturing from purchased steel	0	(3)	(1)	(4)
219	Rolled steel shape manufacturing	0	(1)	(0)	(1)
220	Steel wire drawing	0	(2)	(0)	(2)
221	Alumina refining and primary aluminum production	0	(0)	(0)	(0)
222	Secondary smelting and alloying of aluminum	0	(1)	(0)	(1)
223	Aluminum sheet, plate, and foil manufacturing	0	(0)	(0)	(0)
224	Other aluminum rolling, drawing and extruding	0	(4)	(1)	(4)
225	Nonferrous metal (exc aluminum) smelting and refining	0	(0)	(0)	(0)
226	Copper rolling, drawing, extruding and alloying	0	(0)	(0)	(0)
227	Nonferrous metal, except copper and aluminum, shaping	0	(1)	(0)	(1)
228	Secondary processing of other nonferrous metals	0	(1)	(0)	(1)
229	Ferrous metal foundries	0	(4)	(1)	(5)
230	Nonferrous metal foundries	0	(2)	(0)	(3)
231	Iron and steel forging	0	(2)	(0)	(3)
232	Nonferrous forging	0	(1)	(0)	(2)
233	Custom roll forming	0	(2)	(0)	(2)
234	Crown and closure manufacturing and metal stamping	0	(15)	(2)	(16)
235	Cutlery, utensil, pot, and pan manufacturing	0	(0)	(0)	(0)
236	Handtool manufacturing	(2)	(1)	(0)	(4)
237	Prefabricated metal buildings and components manufacturing	0	(7)	(1)	(8)
238	Fabricated structural metal manufacturing	0	(30)	(2)	(32)
239	Plate work manufacturing	0	(3)	(1)	(3)
240	Metal window and door manufacturing	0	(15)	(5)	(20)
241	Sheet metal work manufacturing	0	(35)	(8)	(43)
242	Ornamental and architectural metal work manufacturing	0	(18)	(3)	(20)
243	Power boiler and heat exchanger manufacturing	0	(0)	(0)	(0)
244	Metal tank (heavy gauge) manufacturing	0	(1)	(0)	(1)
245	Metal cans manufacturing	0	(6)	(2)	(8)
246	Metal barrels, drums and pails manufacturing	0	(1)	(0)	(2)
247	Hardware manufacturing	0	(3)	(2)	(5)
248	Spring and wire product manufacturing	(1)	(6)	(2)	(9)

(Continued on the following page)

San Francisco Employment at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
249	Machine shops	0	(70)	(15)	(85)
250	Turned product and screw, nut, and bolt manufacturing	0	(15)	(3)	(18)
251	Metal heat treating	0	(5)	(1)	(6)
252	Metal coating and nonprecious engraving	0	(14)	(4)	(18)
253	Electroplating, anodizing, and coloring metal	(3)	(19)	(5)	(27)
254	Valve and fittings, other than plumbing, manufacturing	0	(44)	(2)	(46)
255	Plumbing fixture fitting and trim manufacturing	0	(3)	(2)	(5)
256	Ball and roller bearing manufacturing	0	(2)	(0)	(2)
257	Small arms ammunition manufacturing	0	(0)	(0)	(0)
258	Ammunition, except for small arms, manufacturing	0	(0)	(0)	(0)
259	Small arms, ordnance, and accessories manufacturing	0	(0)	(0)	(0)
260	Fabricated pipe and pipe fitting manufacturing	0	(3)	(1)	(4)
261	Other fabricated metal manufacturing	(2)	(24)	(5)	(31)
262	Farm machinery and equipment manufacturing	0	(1)	(0)	(1)
263	Lawn and garden equipment manufacturing	0	(0)	(0)	(0)
264	Construction machinery manufacturing	0	(0)	(0)	(0)
265	Mining machinery and equipment manufacturing	0	(0)	(0)	(0)
266	Oil and gas field machinery and equipment manufacturing	0	(1)	(0)	(1)
267	Food product machinery manufacturing	0	(0)	(0)	(1)
268	Semiconductor machinery manufacturing	0	(17)	(1)	(18)
269	Sawmill, woodworking, and paper machinery	(1)	(0)	(0)	(1)
270	Printing machinery and equipment manufacturing	0	(2)	(0)	(3)
271	All other industrial machinery manufacturing	(16)	(1)	(0)	(17)
272	Optical instrument and lens manufacturing	0	(0)	(0)	(0)
273	Photographic and photocopying equipment manufacturing	0	(1)	(0)	(1)
274	Other commercial service industry machinery manufacturing	0	(7)	(2)	(9)
275	Air purification and ventilation equipment manufacturing	0	(4)	(0)	(4)
276	Heating equipment (except warm air furnaces) manufacturing	0	(3)	(1)	(4)
277	Air conditioning, refrigeration, and warm air heating equipment manufact	(25)	(9)	(2)	(36)
278	Industrial mold manufacturing	(27)	(2)	(0)	(29)
279	Special tool, die, jig, and fixture manufacturing	(3)	(1)	(0)	(4)
280	Cutting tool and machine tool accessory manufacturing	(11)	(2)	(0)	(13)
281	Machine tool manufacturing	0	(1)	(0)	(1)
282	Rolling mill and other metalworking machinery manufacturing	0	(0)	(0)	(0)
283	Turbine and turbine generator set units manufacturing	0	(1)	(0)	(1)
284	Speed changer, industrial high-speed drive, and gear manufacturing	0	(0)	(0)	(0)
285	Mechanical power transmission equipment manufacturing	0	(0)	(0)	(0)
286	Other engine equipment manufacturing	0	(0)	(0)	(0)
287	Pump and pumping equipment manufacturing	0	(1)	(0)	(1)
288	Air and gas compressor manufacturing	0	(0)	(0)	(0)
289	Measuring and dispensing pump manufacturing	0	(0)	(0)	(0)
290	Elevator and moving stairway manufacturing	0	(1)	(0)	(1)
291	Conveyor and conveying equipment manufacturing	0	(0)	(0)	(0)
292	Overhead cranes, hoists, and monorail systems manufacturing	0	(0)	(0)	(0)
293	Industrial truck, trailer, and stacker manufacturing	0	(0)	(0)	(0)
294	Power-driven handtool manufacturing	0	(0)	(0)	(0)
295	Welding and soldering equipment manufacturing	(21)	(1)	(0)	(22)
296	Packaging machinery manufacturing	0	(4)	(0)	(4)
297	Industrial process furnace and oven manufacturing	0	(0)	(0)	(0)
298	Fluid power cylinder and actuator manufacturing	0	(1)	(0)	(1)
299	Fluid power pump and motor manufacturing	0	(1)	(0)	(1)
300	Scales, balances, and miscellaneous general purpose machinery manufa	0	(1)	(0)	(2)
301	Electronic computer manufacturing	(391)	(33)	(8)	(433)
302	Computer storage device manufacturing	0	(25)	(1)	(26)
303	Computer terminals and other computer peripheral equipment manufactu	0	(21)	(1)	(23)
304	Telephone apparatus manufacturing	0	(5)	(1)	(6)
305	Broadcast and wireless communications equipment manufacturing	(70)	(52)	(4)	(127)
306	Other communications equipment manufacturing	0	(5)	(1)	(6)
307	Audio and video equipment manufacturing	(43)	(6)	(1)	(49)
308	Bare printed circuit board manufacturing	0	(25)	(1)	(26)
309	Semiconductor and related device manufacturing	(10)	(113)	(17)	(140)
310	Capacitor, resistor, coil, transformer, and other inductor manufacturing	(2)	(14)	(1)	(17)

(Continued on the following page)

San Francisco Employment at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
311	Electronic connector manufacturing	0	(9)	(1)	(10)
312	Printed circuit assembly (electronic assembly) manufacturing	0	(59)	(2)	(61)
313	Other electronic component manufacturing	0	(28)	(1)	(29)
314	Electromedical and electrotherapeutic apparatus manufacturing	(2)	(0)	(0)	(2)
315	Search, detection, and navigation instruments manufacturing	0	(2)	(0)	(2)
316	Automatic environmental control manufacturing	0	(1)	(0)	(1)
317	Industrial process variable instruments manufacturing	(5)	(3)	(0)	(8)
318	Totalizing fluid meter and counting device manufacturing	0	(0)	(0)	(0)
319	Electricity and signal testing instruments manufacturing	(70)	(7)	(0)	(77)
320	Analytical laboratory instrument manufacturing	0	(5)	(1)	(6)
321	Irradiation apparatus manufacturing	0	(0)	(0)	(0)
322	Watch, clock, and other measuring and controlling device manufacturing	0	(1)	(0)	(1)
323	Blank magnetic and optical recording media manufacturing	0	(14)	(1)	(15)
324	Software and other prerecorded and record reproducing	0	(9)	(1)	(10)
325	Electric lamp bulb and part manufacturing	0	(1)	(0)	(2)
326	Lighting fixture manufacturing	(7)	(13)	(2)	(22)
327	Small electrical appliance manufacturing	0	(0)	(0)	(0)
328	Household cooking appliance manufacturing	0	(1)	(0)	(2)
329	Household refrigerator and home freezer manufacturing	0	(0)	(0)	(0)
330	Household laundry equipment manufacturing	0	(0)	(6)	(6)
331	Other major household appliance manufacturing	0	(0)	(0)	(0)
332	Power, distribution, and specialty transformer manufacturing	0	(2)	(0)	(3)
333	Motor and generator manufacturing	(1)	(4)	(1)	(6)
334	Switchgear and switchboard apparatus manufacturing	(7)	(9)	(1)	(17)
335	Relay and industrial control manufacturing	0	(3)	(0)	(3)
336	Storage battery manufacturing	0	(5)	(1)	(6)
337	Primary battery manufacturing	0	(1)	(0)	(1)
338	Fiber optic cable manufacturing	0	(11)	(1)	(12)
339	Other communication and energy wire manufacturing	0	(5)	(1)	(5)
340	Wiring device manufacturing	0	(10)	(4)	(14)
341	Carbon and graphite product manufacturing	0	(4)	(0)	(4)
342	All other miscellaneous electrical equipment and component manufacturi	(19)	(11)	(0)	(30)
343	Automobile manufacturing	0	(0)	(1)	(1)
344	Light truck and utility vehicle manufacturing	0	(0)	(0)	(0)
345	Heavy duty truck manufacturing	0	(0)	(0)	(0)
346	Motor vehicle body manufacturing	0	(0)	(0)	(0)
347	Truck trailer manufacturing	0	(0)	(0)	(0)
348	Motor home manufacturing	0	(0)	(0)	(0)
349	Travel trailer and camper manufacturing	0	(1)	(1)	(1)
350	Motor vehicle gasoline engine and engine parts manufacturing	0	(0)	(0)	(0)
351	Motor vehicle electrical and electronic equipment manufacturing	0	(2)	(1)	(3)
352	Motor vehicle steering, suspension component (except spring), and brak	0	(4)	(1)	(5)
353	Motor vehicle transmission and power train parts manufacturing	0	(0)	(0)	(0)
354	Motor vehicle seating and interior trim manufacturing	0	(0)	(0)	(0)
355	Motor vehicle metal stamping	0	(0)	(0)	(0)
356	Other motor vehicle parts manufacturing	0	(8)	(2)	(10)
357	Aircraft manufacturing	0	(0)	(0)	(0)
358	Aircraft engine and engine parts manufacturing	0	(0)	(0)	(0)
359	Other aircraft parts and auxiliary equipment manufacturing	0	(2)	(0)	(2)
360	Guided missile and space vehicle manufacturing	(16)	(3)	(0)	(19)
361	Propulsion units and parts for space vehicles and guided missiles manuf:	0	(1)	(0)	(1)
362	Railroad rolling stock manufacturing	0	(1)	(0)	(1)
363	Ship building and repairing	0	(1)	(1)	(2)
364	Boat building	0	(0)	(0)	(0)
365	Motorcycle, bicycle, and parts manufacturing	0	(0)	(0)	(1)
366	Military armored vehicle, tank, and tank component manufacturing	0	(0)	(0)	(0)
367	All other transportation equipment manufacturing	0	(0)	(0)	(0)
368	Wood kitchen cabinet and countertop manufacturing	0	(19)	(21)	(40)
369	Upholstered household furniture manufacturing	0	(0)	(6)	(6)
370	Nonupholstered wood household furniture manufacturing	0	(0)	(5)	(5)
371	Other household nonupholstered furniture manufacturing	(16)	(2)	(1)	(19)
372	Institutional furniture manufacturing	(12)	(0)	(0)	(12)

(Continued on the following page)

San Francisco Employment at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
373	Wood office furniture manufacturing	0	(0)	(0)	(0)
374	Custom architectural woodwork and millwork	0	(0)	(0)	(1)
375	Office furniture, except wood, manufacturing	0	(0)	(0)	(0)
376	Showcase, partition, shelving, and locker manufacturing	0	(10)	(1)	(11)
377	Mattress manufacturing	0	(0)	(1)	(1)
378	Blind and shade manufacturing	0	(1)	(0)	(1)
379	Surgical and medical instrument manufacturing	0	(2)	(8)	(10)
380	Surgical appliance and supplies manufacturing	(9)	(3)	(5)	(17)
381	Dental equipment and supplies manufacturing	0	(1)	(3)	(4)
382	Ophthalmic goods manufacturing	0	(0)	(0)	(1)
383	Dental laboratories	0	(5)	(16)	(21)
384	Jewelry and silverware manufacturing	0	(1)	(2)	(3)
385	Sporting and athletic goods manufacturing	(6)	(1)	(1)	(8)
386	Doll, toy, and game manufacturing	(24)	(0)	(4)	(28)
387	Office supplies (except paper) manufacturing	0	(2)	(0)	(2)
388	Sign manufacturing	(88)	(7)	(1)	(96)
389	Gasket, packing, and sealing device manufacturing	0	(3)	(1)	(4)
390	Musical instrument manufacturing	(10)	(1)	(2)	(13)
391	Fasteners, buttons, needles, and pins manufacturing	0	(0)	(0)	(1)
392	Broom, brush, and mop manufacturing	0	(2)	(1)	(2)
393	Burial casket manufacturing	0	(0)	(0)	(0)
394	All other miscellaneous manufacturing	(10)	(29)	(13)	(53)
395	Wholesale trade	(1,329)	(1,426)	(1,299)	(4,053)
396	Retail - Motor vehicle and parts dealers	(43)	(25)	(245)	(312)
397	Retail - Furniture and home furnishings stores	(97)	(19)	(170)	(286)
398	Retail - Electronics and appliance stores	(452)	(43)	(189)	(684)
399	Retail - Building material and garden equipment and supplies stores	(53)	(60)	(345)	(458)
400	Retail - Food and beverage stores	(384)	(13)	(1,435)	(1,831)
401	Retail - Health and personal care stores	(245)	(73)	(542)	(860)
402	Retail - Gasoline stores	(27)	(24)	(157)	(208)
403	Retail - Clothing and clothing accessories stores	(3,527)	(58)	(613)	(4,197)
404	Retail - Sporting goods, hobby, musical instrument and book stores	(98)	(29)	(254)	(381)
405	Retail - General merchandise stores	0	(39)	(1,020)	(1,059)
406	Retail - Miscellaneous store retailers	(336)	(73)	(581)	(990)
407	Retail - Nonstore retailers	(223)	(24)	(522)	(769)
408	Air transportation	0	(251)	(61)	(311)
409	Rail transportation	(67)	(34)	(12)	(113)
410	Water transportation	(14)	(7)	(16)	(37)
411	Truck transportation	(24)	(276)	(223)	(522)
412	Transit and ground passenger transportation	(166)	(452)	(325)	(943)
413	Pipeline transportation	(1)	(335)	(7)	(343)
414	Scenic and sightseeing transportation and support activities for transport:	(426)	(611)	(154)	(1,191)
415	Couriers and messengers	(65)	(631)	(142)	(838)
416	Warehousing and storage	(17)	(402)	(159)	(578)
417	Newspaper publishers	(82)	(62)	(29)	(173)
418	Periodical publishers	(377)	(58)	(30)	(465)
419	Book publishers	(118)	(6)	(22)	(146)
420	Directory, mailing list, and other publishers	(97)	(10)	(4)	(110)
421	Greeting card publishing	0	(0)	(0)	(0)
422	Software publishers	(2,572)	(223)	(68)	(2,863)
423	Motion picture and video industries	(201)	(511)	(69)	(781)
424	Sound recording industries	(5)	(10)	(6)	(21)
425	Radio and television broadcasting	(1,610)	(283)	(29)	(1,922)
426	Cable and other subscription programming	(723)	(173)	(13)	(909)
427	Wired telecommunications carriers	0	(299)	(205)	(504)
428	Wireless telecommunications carriers (except satellite)	0	(85)	(58)	(142)
429	Satellite, telecommunications resellers, and all other telecommunications	(433)	(83)	(51)	(567)
430	Data processing, hosting, and related services	(1,729)	(427)	(53)	(2,209)
431	News syndicates, libraries, archives and all other information services	(658)	(23)	(17)	(698)
432	Internet publishing and broadcasting and web search portals	(40)	(535)	(95)	(669)
433	Monetary authorities and depository credit intermediation	(2,755)	(687)	(341)	(3,783)
434	Nondepository credit intermediation and related activities	(2,977)	(619)	(345)	(3,941)

(Continued on the following page)

San Francisco Employment at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
435	Securities and commodity contracts intermediation and brokerage	(3,760)	(644)	(190)	(4,594)
436	Other financial investment activities	(5,389)	(1,251)	(518)	(7,157)
437	Insurance carriers	(2,543)	(448)	(375)	(3,366)
438	Insurance agencies, brokerages, and related activities	(3,077)	(3,791)	(370)	(7,239)
439	Funds, trusts, and other financial vehicles	(1,367)	(123)	(252)	(1,742)
440	Real estate	(4,079)	(1,747)	(1,118)	(6,943)
441	Owner-occupied dwellings	0	0	0	0
442	Automotive equipment rental and leasing	(22)	(84)	(59)	(165)
443	General and consumer goods rental except video tapes and discs	(140)	(69)	(73)	(282)
444	Video tape and disc rental	0	0	(12)	(12)
445	Commercial and industrial machinery and equipment rental and leasing	(439)	(204)	(27)	(670)
446	Lessors of nonfinancial intangible assets	(120)	(71)	(9)	(200)
447	Legal services	(7,805)	(741)	(426)	(8,972)
448	Accounting, tax preparation, bookkeeping, and payroll services	(1,116)	(1,252)	(269)	(2,637)
449	Architectural, engineering, and related services	(7,289)	(1,104)	(172)	(8,565)
450	Specialized design services	(542)	(354)	(67)	(963)
451	Custom computer programming services	(4,114)	(37)	(4)	(4,155)
452	Computer systems design services	(1,442)	(426)	(59)	(1,926)
453	Other computer related services, including facilities management	(320)	(351)	(44)	(715)
454	Management consulting services	(4,400)	(1,504)	(192)	(6,097)
455	Environmental and other technical consulting services	(977)	(623)	(78)	(1,677)
456	Scientific research and development services	(47)	(21)	(16)	(85)
457	Advertising, public relations, and related services	(3,021)	(820)	(126)	(3,967)
458	Photographic services	(5)	(141)	(79)	(225)
459	Veterinary services	0	(2)	(82)	(84)
460	Marketing research and all other miscellaneous professional, scientific, a	(859)	(1,038)	(157)	(2,054)
461	Management of companies and enterprises	(181)	(1,099)	(253)	(1,533)
462	Office administrative services	(5,765)	(800)	(97)	(6,662)
463	Facilities support services	(22)	(177)	(24)	(223)
464	Employment services	(2,592)	(3,233)	(422)	(6,247)
465	Business support services	(559)	(952)	(162)	(1,673)
466	Travel arrangement and reservation services	(293)	(152)	(108)	(554)
467	Investigation and security services	(200)	(785)	(223)	(1,208)
468	Services to buildings	(4,793)	(1,151)	(635)	(6,579)
469	Landscape and horticultural services	(2)	(649)	(366)	(1,017)
470	Other support services	(488)	(356)	(57)	(901)
471	Waste management and remediation services	(214)	(164)	(79)	(457)
472	Elementary and secondary schools	(106)	0	(682)	(788)
473	Junior colleges, colleges, universities, and professional schools	(277)	(19)	(947)	(1,242)
474	Other educational services	(488)	(111)	(849)	(1,448)
475	Offices of physicians	(193)	0	(1,267)	(1,460)
476	Offices of dentists	(225)	0	(657)	(882)
477	Offices of other health practitioners	(133)	0	(836)	(969)
478	Outpatient care centers	(40)	0	(355)	(395)
479	Medical and diagnostic laboratories	(15)	(4)	(109)	(127)
480	Home health care services	(26)	0	(375)	(401)
481	Other ambulatory health care services	(55)	(9)	(121)	(185)
482	Hospitals	(482)	(0)	(1,634)	(2,116)
483	Nursing and community care facilities	(13)	0	(645)	(658)
484	Residential mental retardation, mental health, substance abuse and othe	(8)	0	(259)	(267)
485	Individual and family services	(68)	0	(2,183)	(2,251)
486	Community food, housing, and other relief services, including rehabilitatic	(14)	0	(272)	(286)
487	Child day care services	(107)	0	(623)	(730)
488	Performing arts companies	(140)	(54)	(142)	(337)
489	Commercial Sports Except Racing	(5)	(502)	(86)	(593)
490	Racing and Track Operation	0	(0)	(2)	(2)
491	Promoters of performing arts and sports and agents for public figures	(73)	(351)	(153)	(577)
492	Independent artists, writers, and performers	(2,831)	(1,609)	(256)	(4,696)
493	Museums, historical sites, zoos, and parks	(356)	0	(89)	(445)
494	Amusement parks and arcades	(5)	(2)	(42)	(49)
495	Gambling industries (except casino hotels)	0	(0)	(237)	(237)
496	Other amusement and recreation industries	(75)	(118)	(247)	(441)

(Continued on the following page)

San Francisco Employment at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
497	Fitness and recreational sports centers	(475)	(171)	(392)	(1,037)
498	Bowling centers	(9)	(0)	(5)	(14)
499	Hotels and motels, including casino hotels	(3,699)	(151)	(58)	(3,908)
500	Other accommodations	(4)	(3)	(3)	(10)
501	Full-service restaurants	(3,838)	(1,676)	(2,519)	(8,034)
502	Limited-service restaurants	(981)	(671)	(2,019)	(3,671)
503	All other food and drinking places	(205)	(527)	(1,348)	(2,080)
504	Automotive repair and maintenance, except car washes	(6)	(268)	(463)	(737)
505	Car washes	(2)	(31)	(64)	(98)
506	Electronic and precision equipment repair and maintenance	(15)	(155)	(38)	(208)
507	Commercial and industrial machinery and equipment repair and mainten:	(5)	(256)	(57)	(318)
508	Personal and household goods repair and maintenance	(8)	(344)	(181)	(532)
509	Personal care services	(115)	(1)	(1,119)	(1,235)
510	Death care services	(5)	0	(22)	(27)
511	Dry-cleaning and laundry services	(18)	(67)	(119)	(203)
512	Other personal services	(919)	(348)	(1,100)	(2,366)
513	Religious organizations	(15)	0	(1,027)	(1,042)
514	Grantmaking, giving, and social advocacy organizations	(296)	(11)	(195)	(503)
515	Business and professional associations	(725)	(124)	(76)	(924)
516	Labor and civic organizations	(1,052)	(3)	(313)	(1,368)
517	Private households	0	0	(723)	(723)
518	Postal service	0	(515)	(131)	(646)
519	Federal electric utilities	0	0	0	0
520	Other federal government enterprises	0	(53)	(24)	(77)
521	State government passenger transit	0	0	0	0
522	State government electric utilities	0	0	0	0
523	Other state government enterprises	0	(0)	(0)	(0)
524	Local government passenger transit	0	(245)	(177)	(422)
525	Local government electric utilities	0	(7)	(5)	(12)
526	Other local government enterprises	0	(79)	(93)	(172)
527	* Not an industry (Used and secondhand goods)	0	0	0	0
528	* Not an industry (Scrap)	0	0	0	0
529	* Not an industry (Rest of world adjustment)	0	0	0	0
530	* Not an industry (Noncomparable foreign imports)	0	0	0	0
531	* Employment and payroll of state govt, non-education	0	0	0	0
532	* Employment and payroll of state govt, education	0	0	0	0
533	* Employment and payroll of local govt, non-education	0	0	0	0
534	* Employment and payroll of local govt, education	0	0	0	0
535	* Employment and payroll of federal govt, non-military	0	0	0	0
536	* Employment and payroll of federal govt, military	0	0	0	0

Sources: IMPLAN; BAE, 2017.

San Francisco Labor Income at Risk, 66" SLR + 100-Year Flood

Sector	Description	Direct	Indirect	Induced	Total
0	Total	(\$15,484,983,167)	(\$5,176,667,810)	(\$3,085,570,737)	(\$23,747,221,714)
1	Oilseed farming	\$0	(\$12,945)	(\$3,142)	(\$16,086)
2	Grain farming	\$0	(\$191,853)	(\$51,686)	(\$243,539)
3	Vegetable and melon farming	\$0	(\$4,258,269)	(\$497,134)	(\$4,755,403)
4	Fruit farming	(\$887,754)	(\$12,643,363)	(\$860,926)	(\$14,392,044)
5	Tree nut farming	\$0	(\$454,774)	(\$96,822)	(\$551,596)
6	Greenhouse, nursery, and floriculture production	\$0	(\$2,157,500)	(\$712,206)	(\$2,869,705)
7	Tobacco farming	\$0	\$0	\$0	\$0
8	Cotton farming	\$0	(\$20,764)	(\$7,369)	(\$28,134)
9	Sugarcane and sugar beet farming	\$0	(\$38,870)	(\$6,002)	(\$44,872)
10	All other crop farming	(\$1,316,764)	(\$1,891,834)	(\$731,164)	(\$3,939,762)
11	Beef cattle ranching and farming, including feedlots and dual-	\$0	(\$458,072)	(\$648,309)	(\$1,106,381)
12	Dairy cattle and milk production	\$0	(\$2,316,434)	(\$1,323,294)	(\$3,639,727)
13	Poultry and egg production	\$0	(\$698,442)	(\$262,063)	(\$960,505)
14	Animal production, except cattle and poultry and eggs	(\$1,222,776)	(\$484,178)	(\$384,267)	(\$2,091,221)
15	Forestry, forest products, and timber tract production	\$0	(\$108,266)	(\$13,032)	(\$121,297)
16	Commercial logging	\$0	(\$2,266,727)	(\$163,390)	(\$2,430,117)
17	Commercial fishing	\$0	(\$2,022,240)	(\$1,054,401)	(\$3,076,641)
18	Commercial hunting and trapping	(\$250,066)	(\$1,383)	(\$84,702)	(\$336,151)
19	Support activities for agriculture and forestry	(\$1,439,434)	(\$3,764,351)	(\$866,603)	(\$6,070,388)
20	Extraction of natural gas and crude petroleum	(\$40,653,101)	(\$66,268,044)	(\$3,004,248)	(\$109,925,392)
21	Extraction of natural gas liquids	\$0	(\$918,385)	(\$72,225)	(\$990,609)
22	Coal mining	\$0	(\$17,555)	(\$1,743)	(\$19,299)
23	Iron ore mining	(\$56,180)	(\$2,347)	(\$364)	(\$58,892)
24	Gold ore mining	\$0	(\$62,361)	(\$12,254)	(\$74,615)
25	Silver ore mining	\$0	\$0	\$0	\$0
26	Lead and zinc ore mining	\$0	\$0	\$0	\$0
27	Copper ore mining	\$0	(\$103,424)	(\$24,232)	(\$127,656)
28	Uranium-radium-vanadium ore mining	\$0	\$0	\$0	\$0
29	Other metal ore mining	\$0	(\$30,051)	(\$4,596)	(\$34,648)
30	Stone mining and quarrying	\$0	(\$98,205)	(\$47,424)	(\$145,628)
31	Sand and gravel mining	\$0	(\$751,862)	(\$131,525)	(\$883,388)
32	Other clay, ceramic, refractory minerals mining	\$0	(\$47,482)	(\$13,079)	(\$60,561)
33	Potash, soda, and borate mineral mining	\$0	(\$48,027)	(\$10,902)	(\$58,929)
34	Phosphate rock mining	\$0	\$0	\$0	\$0
35	Other chemical and fertilizer mineral mining	\$0	(\$612)	(\$160)	(\$772)
36	Other nonmetallic minerals	\$0	(\$61,379)	(\$21,628)	(\$83,006)
37	Drilling oil and gas wells	\$0	(\$24,732)	(\$1,350)	(\$26,083)
38	Support activities for oil and gas operations	(\$1,462,757)	(\$2,616,794)	(\$187,230)	(\$4,266,781)
39	Metal mining services	\$0	(\$10,087)	(\$849)	(\$10,936)
40	Other nonmetallic minerals services	\$0	(\$127,760)	(\$10,006)	(\$137,766)
41	Electric power generation - Hydroelectric	\$0	(\$9,630)	(\$6,225)	(\$15,855)
42	Electric power generation - Fossil fuel	(\$6,938,597)	(\$360,669)	(\$129,192)	(\$7,428,459)
43	Electric power generation - Nuclear	\$0	(\$142,957)	(\$92,417)	(\$235,374)
44	Electric power generation - Solar	(\$26,377,923)	(\$710,830)	(\$70,403)	(\$27,159,156)
45	Electric power generation - Wind	(\$19,661,800)	(\$532,483)	(\$50,661)	(\$20,244,945)
46	Electric power generation - Geothermal	\$0	(\$17,758)	(\$11,480)	(\$29,238)
47	Electric power generation - Biomass	(\$11,097,792)	(\$314,388)	(\$36,074)	(\$11,448,254)
48	Electric power generation - All other	(\$2,250,473)	(\$69,455)	(\$9,909)	(\$2,329,837)
49	Electric power transmission and distribution	(\$2,982,362)	(\$601,998)	(\$429,170)	(\$4,013,531)
50	Natural gas distribution	(\$625,606,288)	(\$6,292,364)	(\$6,293,944)	(\$638,192,596)
51	Water, sewage and other systems	(\$295,720,663)	(\$8,816,924)	(\$12,774,907)	(\$317,312,493)
52	Construction of new health care structures	\$0	\$0	\$0	\$0
53	Construction of new manufacturing structures	(\$10,617,588)	\$0	\$0	(\$10,617,588)
54	Construction of new power and communication structures	\$0	\$0	\$0	\$0
55	Construction of new educational and vocational structures	\$0	\$0	\$0	\$0
56	Construction of new highways and streets	(\$2,119,077)	\$0	\$0	(\$2,119,077)
57	Construction of new commercial structures, including farm stru.	(\$164,127,351)	\$0	\$0	(\$164,127,351)
58	Construction of other new nonresidential structures	(\$25,726,408)	\$0	\$0	(\$25,726,408)
59	Construction of new single-family residential structures	(\$2,288,433)	\$0	\$0	(\$2,288,433)
60	Construction of new multifamily residential structures	(\$500,493)	\$0	\$0	(\$500,493)
61	Construction of other new residential structures	(\$531,765)	\$0	\$0	(\$531,765)
62	Maintenance and repair construction of nonresidential structur	(\$38,441,841)	(\$85,010,657)	(\$15,007,597)	(\$138,460,094)

(Continued on the following page)

San Francisco Labor Income at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
63	Maintenance and repair construction of residential structures	\$0	(\$3,304,272)	(\$22,152,653)	(\$25,456,925)
64	Maintenance and repair construction of highways, streets, brid	\$0	\$0	\$0	\$0
65	Dog and cat food manufacturing	\$0	(\$1,005)	(\$17,191)	(\$18,196)
66	Other animal food manufacturing	\$0	(\$216,335)	(\$148,989)	(\$365,324)
67	Flour milling	\$0	(\$227,508)	(\$54,145)	(\$281,652)
68	Rice milling	\$0	(\$113,683)	(\$20,374)	(\$134,058)
69	Malt manufacturing	\$0	(\$284)	(\$107)	(\$392)
70	Wet corn milling	\$0	(\$116,311)	(\$33,193)	(\$149,504)
71	Soybean and other oilseed processing	\$0	(\$77,200)	(\$22,314)	(\$99,514)
72	Fats and oils refining and blending	(\$442,090)	(\$92,209)	(\$21,945)	(\$556,243)
73	Breakfast cereal manufacturing	\$0	(\$5,393)	(\$19,531)	(\$24,924)
74	Beet sugar manufacturing	\$0	(\$9,188)	(\$2,443)	(\$11,631)
75	Sugar cane mills and refining	\$0	(\$143,164)	(\$19,594)	(\$162,758)
76	Nonchocolate confectionery manufacturing	\$0	(\$48,770)	(\$53,736)	(\$102,506)
77	Chocolate and confectionery manufacturing from cacao beans	(\$572,982)	(\$183,712)	(\$40,544)	(\$797,238)
78	Confectionery manufacturing from purchased chocolate	\$0	(\$23,558)	(\$43,798)	(\$67,356)
79	Frozen fruits, juices and vegetables manufacturing	\$0	(\$299,372)	(\$103,468)	(\$402,840)
80	Frozen specialties manufacturing	(\$2,261,188)	(\$202,056)	(\$347,807)	(\$2,811,050)
81	Canned fruits and vegetables manufacturing	(\$1,324,818)	(\$476,762)	(\$299,959)	(\$2,101,539)
82	Canned specialties	\$0	(\$14,232)	(\$11,547)	(\$25,779)
83	Dehydrated food products manufacturing	\$0	(\$66,284)	(\$44,340)	(\$110,624)
84	Fluid milk manufacturing	(\$376,145)	(\$601,339)	(\$757,481)	(\$1,734,964)
85	Creamery butter manufacturing	\$0	(\$19,918)	(\$60,996)	(\$80,913)
86	Cheese manufacturing	\$0	(\$465,544)	(\$392,633)	(\$858,177)
87	Dry, condensed, and evaporated dairy product manufacturing	\$0	(\$73,260)	(\$70,766)	(\$144,026)
88	Ice cream and frozen dessert manufacturing	(\$349,122)	(\$243,725)	(\$254,828)	(\$847,675)
89	Animal, except poultry, slaughtering	\$0	(\$242,183)	(\$248,390)	(\$490,573)
90	Meat processed from carcasses	\$0	(\$84,755)	(\$818,290)	(\$903,045)
91	Rendering and meat byproduct processing	\$0	(\$80,610)	(\$55,319)	(\$135,929)
92	Poultry processing	\$0	(\$553,002)	(\$585,322)	(\$1,138,324)
93	Seafood product preparation and packaging	(\$79,016)	(\$305,203)	(\$428,374)	(\$812,593)
94	Bread and bakery product, except frozen, manufacturing	(\$10,171,580)	(\$1,224,335)	(\$2,745,469)	(\$14,141,384)
95	Frozen cakes and other pastries manufacturing	\$0	(\$60,352)	(\$98,486)	(\$158,838)
96	Cookie and cracker manufacturing	\$0	(\$55,526)	(\$72,838)	(\$128,364)
97	Dry pasta, mixes, and dough manufacturing	(\$74,920)	(\$53,993)	(\$62,292)	(\$191,205)
98	Tortilla manufacturing	\$0	(\$75,649)	(\$83,383)	(\$159,032)
99	Roasted nuts and peanut butter manufacturing	\$0	(\$76,734)	(\$78,036)	(\$154,770)
100	Other snack food manufacturing	\$0	(\$102,835)	(\$126,905)	(\$229,740)
101	Coffee and tea manufacturing	\$0	(\$126,829)	(\$92,599)	(\$219,429)
102	Flavoring syrup and concentrate manufacturing	\$0	(\$111,430)	(\$52,987)	(\$164,418)
103	Mayonnaise, dressing, and sauce manufacturing	\$0	(\$95,590)	(\$69,564)	(\$165,155)
104	Spice and extract manufacturing	\$0	(\$124,898)	(\$59,194)	(\$184,092)
105	All other food manufacturing	(\$11,433,842)	(\$564,767)	(\$288,085)	(\$12,286,694)
106	Bottled and canned soft drinks & water	(\$815,276)	(\$452,033)	(\$885,680)	(\$2,152,988)
107	Manufactured ice	\$0	(\$27,843)	(\$35,067)	(\$62,910)
108	Breweries	(\$5,820,045)	(\$319,895)	(\$1,984,432)	(\$8,124,373)
109	Wineries	(\$26,054,239)	(\$902,995)	(\$952,423)	(\$27,909,657)
110	Distilleries	(\$3,699,504)	(\$13,604)	(\$7,778)	(\$3,720,886)
111	Tobacco product manufacturing	\$0	(\$0)	(\$1,486)	(\$1,486)
112	Fiber, yarn, and thread mills	\$0	(\$7,710)	(\$2,594)	(\$10,304)
113	Broadwoven fabric mills	\$0	(\$16,159)	(\$7,649)	(\$23,807)
114	Narrow fabric mills and schiffli machine embroidery	(\$213,469)	(\$9,321)	(\$3,923)	(\$226,713)
115	Nonwoven fabric mills	\$0	(\$9,115)	(\$3,578)	(\$12,693)
116	Knit fabric mills	\$0	(\$7,291)	(\$5,864)	(\$13,155)
117	Textile and fabric finishing mills	\$0	(\$143,336)	(\$51,755)	(\$195,091)
118	Fabric coating mills	\$0	(\$14,188)	(\$5,356)	(\$19,545)
119	Carpet and rug mills	\$0	(\$11,260)	(\$14,984)	(\$26,244)
120	Curtain and linen mills	\$0	(\$102,959)	(\$100,802)	(\$203,761)
121	Textile bag and canvas mills	\$0	(\$102,824)	(\$111,808)	(\$214,632)
122	Rope, cordage, twine, tire cord and tire fabric mills	\$0	(\$4,000)	(\$2,739)	(\$6,739)
123	Other textile product mills	\$0	(\$117,831)	(\$77,142)	(\$194,973)
124	Hosiery and sock mills	\$0	(\$7,139)	(\$4,729)	(\$11,868)

(Continued on the following page)

San Francisco Labor Income at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
125	Other apparel knitting mills	(\$126,516)	(\$27,263)	(\$37,053)	(\$190,832)
126	Cut and sew apparel contractors	\$0	(\$1,240,282)	(\$691,102)	(\$1,931,384)
127	Mens and boys cut and sew apparel manufacturing	\$0	(\$95,742)	(\$45,760)	(\$141,502)
128	Womens and girls cut and sew apparel manufacturing	\$0	(\$89,077)	(\$225,320)	(\$314,398)
129	Other cut and sew apparel manufacturing	\$0	(\$21,637)	(\$45,818)	(\$67,456)
130	Apparel accessories and other apparel manufacturing	\$0	(\$441,060)	(\$169,502)	(\$610,562)
131	Leather and hide tanning and finishing	\$0	(\$506)	(\$86)	(\$591)
132	Footwear manufacturing	\$0	(\$6)	(\$1,234)	(\$1,240)
133	Other leather and allied product manufacturing	(\$1,547,589)	(\$57,445)	(\$9,556)	(\$1,614,589)
134	Sawmills	\$0	(\$820,068)	(\$291,197)	(\$1,111,265)
135	Wood preservation	\$0	(\$105,125)	(\$36,153)	(\$141,279)
136	Veneer and plywood manufacturing	\$0	(\$66,322)	(\$24,344)	(\$90,666)
137	Engineered wood member and truss manufacturing	\$0	(\$322,266)	(\$116,368)	(\$438,634)
138	Reconstituted wood product manufacturing	\$0	(\$65,960)	(\$22,995)	(\$88,955)
139	Wood windows and door manufacturing	\$0	(\$1,228,693)	(\$582,880)	(\$1,811,572)
140	Cut stock, resawing lumber, and planing	\$0	(\$164,012)	(\$92,125)	(\$256,137)
141	Other millwork, including flooring	\$0	(\$849,105)	(\$360,763)	(\$1,209,868)
142	Wood container and pallet manufacturing	\$0	(\$380,413)	(\$195,159)	(\$575,573)
143	Manufactured home (mobile home) manufacturing	\$0	(\$876)	(\$163)	(\$1,039)
144	Prefabricated wood building manufacturing	\$0	(\$92,333)	(\$17,511)	(\$109,845)
145	All other miscellaneous wood product manufacturing	(\$75,346)	(\$434,615)	(\$118,556)	(\$628,517)
146	Pulp mills	\$0	(\$9,541)	(\$2,244)	(\$11,786)
147	Paper mills	\$0	(\$210,165)	(\$47,152)	(\$257,317)
148	Paperboard mills	\$0	(\$160,947)	(\$26,263)	(\$187,210)
149	Paperboard container manufacturing	\$0	(\$4,848,234)	(\$1,125,937)	(\$5,974,171)
150	Paper bag and coated and treated paper manufacturing	\$0	(\$929,179)	(\$150,008)	(\$1,079,187)
151	Stationery product manufacturing	\$0	(\$430,817)	(\$50,726)	(\$481,543)
152	Sanitary paper product manufacturing	\$0	(\$82,404)	(\$49,195)	(\$131,599)
153	All other converted paper product manufacturing	\$0	(\$175,102)	(\$56,970)	(\$232,072)
154	Printing	(\$22,271,130)	(\$18,764,324)	(\$2,570,183)	(\$43,605,638)
155	Support activities for printing	\$0	(\$4,006,155)	(\$232,359)	(\$4,238,514)
156	Petroleum refineries	(\$2,075,736)	(\$5,991,921)	(\$1,992,350)	(\$10,060,007)
157	Asphalt paving mixture and block manufacturing	\$0	(\$161,631)	(\$92,349)	(\$253,980)
158	Asphalt shingle and coating materials manufacturing	\$0	(\$59,746)	(\$42,281)	(\$102,027)
159	Petroleum lubricating oil and grease manufacturing	\$0	(\$330,662)	(\$69,872)	(\$400,534)
160	All other petroleum and coal products manufacturing	\$0	(\$128,226)	(\$27,293)	(\$155,520)
161	Petrochemical manufacturing	\$0	(\$181)	(\$34)	(\$214)
162	Industrial gas manufacturing	\$0	(\$475,962)	(\$88,609)	(\$564,572)
163	Synthetic dye and pigment manufacturing	\$0	(\$40,520)	(\$9,708)	(\$50,228)
164	Other basic inorganic chemical manufacturing	\$0	(\$433,489)	(\$90,231)	(\$523,720)
165	Other basic organic chemical manufacturing	(\$188,379)	(\$45,214)	(\$9,280)	(\$242,873)
166	Plastics material and resin manufacturing	\$0	(\$142,833)	(\$34,007)	(\$176,840)
167	Synthetic rubber manufacturing	\$0	(\$22,446)	(\$6,069)	(\$28,515)
168	Artificial and synthetic fibers and filaments manufacturing	\$0	(\$680)	(\$177)	(\$857)
169	Nitrogenous fertilizer manufacturing	\$0	(\$105,683)	(\$36,090)	(\$141,773)
170	Phosphatic fertilizer manufacturing	\$0	(\$91,227)	(\$31,436)	(\$122,663)
171	Fertilizer mixing	\$0	(\$166,664)	(\$58,018)	(\$224,682)
172	Pesticide and other agricultural chemical manufacturing	\$0	(\$29,757)	(\$12,383)	(\$42,141)
173	Medicinal and botanical manufacturing	(\$437,388)	(\$819,185)	(\$249,906)	(\$1,506,479)
174	Pharmaceutical preparation manufacturing	(\$23,415,027)	(\$998,202)	(\$4,315,018)	(\$28,728,247)
175	In-vitro diagnostic substance manufacturing	\$0	(\$368,670)	(\$959,641)	(\$1,328,311)
176	Biological product (except diagnostic) manufacturing	(\$121,801)	(\$764,230)	(\$367,492)	(\$1,253,523)
177	Paint and coating manufacturing	\$0	(\$616,989)	(\$155,505)	(\$772,494)
178	Adhesive manufacturing	\$0	(\$312,885)	(\$85,110)	(\$397,995)
179	Soap and other detergent manufacturing	\$0	(\$367,966)	(\$106,510)	(\$474,476)
180	Polish and other sanitation good manufacturing	\$0	(\$791,533)	(\$217,046)	(\$1,008,579)
181	Surface active agent manufacturing	\$0	(\$11,192)	(\$3,044)	(\$14,236)
182	Toilet preparation manufacturing	\$0	(\$89,843)	(\$266,213)	(\$356,055)
183	Printing ink manufacturing	\$0	(\$1,123,005)	(\$66,204)	(\$1,189,209)
184	Explosives manufacturing	\$0	(\$101,955)	(\$5,172)	(\$107,127)
185	Custom compounding of purchased resins	\$0	(\$222,058)	(\$27,775)	(\$249,833)
186	Photographic film and chemical manufacturing	\$0	(\$229,150)	(\$37,138)	(\$266,288)

(Continued on the following page)

San Francisco Labor Income at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
187	Other miscellaneous chemical product manufacturing	\$0	(\$699,023)	(\$141,020)	(\$840,043)
188	Plastics packaging materials and unlaminated film and sheet r	(\$95,795)	(\$783,530)	(\$196,733)	(\$1,076,058)
189	Unlaminated plastics profile shape manufacturing	\$0	(\$494,419)	(\$49,870)	(\$544,289)
190	Plastics pipe and pipe fitting manufacturing	\$0	(\$359,619)	(\$120,373)	(\$479,993)
191	Laminated plastics plate, sheet (except packaging), and shape	(\$143,664)	(\$173,636)	(\$37,630)	(\$354,930)
192	Polystyrene foam product manufacturing	\$0	(\$291,791)	(\$123,918)	(\$415,709)
193	Urethane and other foam product (except polystyrene) manufa	(\$75,197)	(\$294,421)	(\$195,489)	(\$565,107)
194	Plastics bottle manufacturing	\$0	(\$213,618)	(\$94,102)	(\$307,720)
195	Other plastics product manufacturing	(\$993,385)	(\$2,423,793)	(\$926,039)	(\$4,343,217)
196	Tire manufacturing	\$0	(\$57,823)	(\$24,658)	(\$82,481)
197	Rubber and plastics hoses and belting manufacturing	\$0	(\$103,281)	(\$29,315)	(\$132,596)
198	Other rubber product manufacturing	\$0	(\$380,681)	(\$128,470)	(\$509,150)
199	Pottery, ceramics, and plumbing fixture manufacturing	\$0	(\$171,054)	(\$42,259)	(\$213,313)
200	Brick, tile, and other structural clay product manufacturing	\$0	(\$625,605)	(\$212,749)	(\$838,353)
201	Flat glass manufacturing	\$0	(\$76,059)	(\$6,680)	(\$82,739)
202	Other pressed and blown glass and glassware manufacturing	\$0	(\$268,446)	(\$75,072)	(\$343,518)
203	Glass container manufacturing	\$0	(\$1,440,729)	(\$300,515)	(\$1,741,244)
204	Glass product manufacturing made of purchased glass	\$0	(\$743,573)	(\$170,045)	(\$913,618)
205	Cement manufacturing	\$0	(\$487,039)	(\$117,039)	(\$604,078)
206	Ready-mix concrete manufacturing	\$0	(\$2,245,023)	(\$656,333)	(\$2,901,355)
207	Concrete block and brick manufacturing	\$0	(\$275,570)	(\$73,087)	(\$348,657)
208	Concrete pipe manufacturing	\$0	(\$68,887)	(\$8,629)	(\$77,515)
209	Other concrete product manufacturing	\$0	(\$2,584,099)	(\$248,350)	(\$2,832,449)
210	Lime manufacturing	\$0	(\$12,101)	(\$7,448)	(\$19,548)
211	Gypsum product manufacturing	\$0	(\$335,881)	(\$134,611)	(\$470,492)
212	Abrasive product manufacturing	\$0	(\$29,433)	(\$7,024)	(\$36,457)
213	Cut stone and stone product manufacturing	\$0	(\$133,148)	(\$88,786)	(\$221,934)
214	Ground or treated mineral and earth manufacturing	\$0	(\$40,366)	(\$15,910)	(\$56,276)
215	Mineral wool manufacturing	\$0	(\$168,485)	(\$175,060)	(\$343,545)
216	Miscellaneous nonmetallic mineral products manufacturing	\$0	(\$165,417)	(\$14,354)	(\$179,771)
217	Iron and steel mills and ferroalloy manufacturing	\$0	(\$558,947)	(\$86,810)	(\$645,757)
218	Iron, steel pipe and tube manufacturing from purchased steel	\$0	(\$294,455)	(\$47,526)	(\$341,981)
219	Rolled steel shape manufacturing	\$0	(\$54,180)	(\$8,447)	(\$62,627)
220	Steel wire drawing	\$0	(\$118,706)	(\$21,410)	(\$140,116)
221	Alumina refining and primary aluminum production	\$0	(\$45,934)	(\$6,804)	(\$52,739)
222	Secondary smelting and alloying of aluminum	\$0	(\$33,744)	(\$4,777)	(\$38,521)
223	Aluminum sheet, plate, and foil manufacturing	\$0	(\$12,075)	(\$2,322)	(\$14,398)
224	Other aluminum rolling, drawing and extruding	\$0	(\$310,059)	(\$72,153)	(\$382,212)
225	Nonferrous metal (exc aluminum) smelting and refining	\$0	(\$6,429)	(\$731)	(\$7,160)
226	Copper rolling, drawing, extruding and alloying	\$0	(\$16,800)	(\$2,381)	(\$19,181)
227	Nonferrous metal, except copper and aluminum, shaping	\$0	(\$37,354)	(\$6,447)	(\$43,800)
228	Secondary processing of other nonferrous metals	\$0	(\$70,682)	(\$10,030)	(\$80,713)
229	Ferrous metal foundries	\$0	(\$254,638)	(\$39,202)	(\$293,840)
230	Nonferrous metal foundries	\$0	(\$108,728)	(\$25,864)	(\$134,592)
231	Iron and steel forging	\$0	(\$176,642)	(\$31,848)	(\$208,490)
232	Nonferrous forging	\$0	(\$114,230)	(\$20,383)	(\$134,613)
233	Custom roll forming	\$0	(\$127,834)	(\$14,291)	(\$142,125)
234	Crown and closure manufacturing and metal stamping	\$0	(\$922,690)	(\$99,992)	(\$1,022,682)
235	Cutlery, utensil, pot, and pan manufacturing	\$0	(\$6,453)	(\$3,102)	(\$9,555)
236	Handtool manufacturing	(\$106,800)	(\$67,056)	(\$24,269)	(\$198,125)
237	Prefabricated metal buildings and components manufacturing	\$0	(\$552,364)	(\$97,594)	(\$649,958)
238	Fabricated structural metal manufacturing	\$0	(\$2,107,795)	(\$176,920)	(\$2,284,715)
239	Plate work manufacturing	\$0	(\$159,878)	(\$38,772)	(\$198,650)
240	Metal window and door manufacturing	\$0	(\$870,214)	(\$314,730)	(\$1,184,944)
241	Sheet metal work manufacturing	\$0	(\$2,251,788)	(\$546,920)	(\$2,798,708)
242	Ornamental and architectural metal work manufacturing	\$0	(\$1,169,398)	(\$169,214)	(\$1,338,613)
243	Power boiler and heat exchanger manufacturing	\$0	(\$11,151)	(\$2,350)	(\$13,500)
244	Metal tank (heavy gauge) manufacturing	\$0	(\$58,268)	(\$13,743)	(\$72,011)
245	Metal cans manufacturing	\$0	(\$656,191)	(\$184,853)	(\$841,044)
246	Metal barrels, drums and pails manufacturing	\$0	(\$120,906)	(\$30,289)	(\$151,195)
247	Hardware manufacturing	\$0	(\$277,864)	(\$133,790)	(\$411,654)
248	Spring and wire product manufacturing	(\$61,336)	(\$375,349)	(\$103,921)	(\$540,606)

(Continued on the following page)

San Francisco Labor Income at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
249	Machine shops	\$0	(\$4,461,565)	(\$938,884)	(\$5,400,448)
250	Turned product and screw, nut, and bolt manufacturing	\$0	(\$1,130,384)	(\$209,681)	(\$1,340,065)
251	Metal heat treating	\$0	(\$339,438)	(\$89,912)	(\$429,350)
252	Metal coating and nonprecious engraving	\$0	(\$690,429)	(\$184,410)	(\$874,839)
253	Electroplating, anodizing, and coloring metal	(\$156,016)	(\$1,023,111)	(\$290,473)	(\$1,469,600)
254	Valve and fittings, other than plumbing, manufacturing	\$0	(\$4,184,357)	(\$183,169)	(\$4,367,526)
255	Plumbing fixture fitting and trim manufacturing	\$0	(\$244,009)	(\$124,596)	(\$368,604)
256	Ball and roller bearing manufacturing	\$0	(\$125,691)	(\$31,822)	(\$157,513)
257	Small arms ammunition manufacturing	\$0	(\$700)	(\$997)	(\$1,696)
258	Ammunition, except for small arms, manufacturing	\$0	(\$939)	(\$455)	(\$1,394)
259	Small arms, ordnance, and accessories manufacturing	\$0	(\$8,927)	(\$6,829)	(\$15,756)
260	Fabricated pipe and pipe fitting manufacturing	\$0	(\$200,121)	(\$72,247)	(\$272,369)
261	Other fabricated metal manufacturing	(\$60,879)	(\$1,642,078)	(\$310,427)	(\$2,013,384)
262	Farm machinery and equipment manufacturing	\$0	(\$42,823)	(\$13,889)	(\$56,712)
263	Lawn and garden equipment manufacturing	\$0	(\$4,231)	(\$5,877)	(\$10,108)
264	Construction machinery manufacturing	\$0	(\$15,127)	(\$1,648)	(\$16,775)
265	Mining machinery and equipment manufacturing	\$0	(\$6,103)	(\$395)	(\$6,498)
266	Oil and gas field machinery and equipment manufacturing	\$0	(\$47,665)	(\$4,382)	(\$52,047)
267	Food product machinery manufacturing	\$0	(\$25,842)	(\$17,827)	(\$43,669)
268	Semiconductor machinery manufacturing	\$0	(\$4,025,706)	(\$139,160)	(\$4,164,867)
269	Sawmill, woodworking, and paper machinery	(\$195,204)	(\$15,297)	(\$1,342)	(\$211,843)
270	Printing machinery and equipment manufacturing	\$0	(\$169,519)	(\$10,483)	(\$180,002)
271	All other industrial machinery manufacturing	(\$3,025,774)	(\$55,510)	(\$15,355)	(\$3,096,639)
272	Optical instrument and lens manufacturing	\$0	(\$57,858)	(\$5,147)	(\$63,005)
273	Photographic and photocopying equipment manufacturing	\$0	(\$43,669)	(\$12,097)	(\$55,766)
274	Other commercial service industry machinery manufacturing	\$0	(\$591,441)	(\$180,935)	(\$772,376)
275	Air purification and ventilation equipment manufacturing	\$0	(\$213,978)	(\$15,468)	(\$229,446)
276	Heating equipment (except warm air furnaces) manufacturing	\$0	(\$217,354)	(\$81,998)	(\$299,352)
277	Air conditioning, refrigeration, and warm air heating equipment	(\$2,797,700)	(\$644,027)	(\$151,811)	(\$3,593,539)
278	Industrial mold manufacturing	(\$1,962,606)	(\$88,185)	(\$7,526)	(\$2,058,317)
279	Special tool, die, jig, and fixture manufacturing	(\$182,792)	(\$54,143)	(\$7,258)	(\$244,192)
280	Cutting tool and machine tool accessory manufacturing	(\$1,047,454)	(\$124,668)	(\$10,470)	(\$1,182,592)
281	Machine tool manufacturing	\$0	(\$76,854)	(\$12,385)	(\$89,238)
282	Rolling mill and other metalworking machinery manufacturing	\$0	(\$7,466)	(\$3,072)	(\$10,538)
283	Turbine and turbine generator set units manufacturing	\$0	(\$121,072)	(\$1,912)	(\$122,984)
284	Speed changer, industrial high-speed drive, and gear manufac	\$0	(\$20,650)	(\$2,590)	(\$23,240)
285	Mechanical power transmission equipment manufacturing	\$0	(\$7,813)	(\$1,503)	(\$9,316)
286	Other engine equipment manufacturing	\$0	(\$2,020)	(\$783)	(\$2,803)
287	Pump and pumping equipment manufacturing	\$0	(\$73,161)	(\$39,490)	(\$112,651)
288	Air and gas compressor manufacturing	\$0	(\$16,673)	(\$6,804)	(\$23,477)
289	Measuring and dispensing pump manufacturing	\$0	(\$417)	(\$52)	(\$470)
290	Elevator and moving stairway manufacturing	\$0	(\$57,606)	(\$1,041)	(\$58,648)
291	Conveyor and conveying equipment manufacturing	\$0	(\$20,361)	(\$1,764)	(\$22,125)
292	Overhead cranes, hoists, and monorail systems manufacturing	\$0	(\$4,255)	(\$323)	(\$4,579)
293	Industrial truck, trailer, and stacker manufacturing	\$0	(\$18,328)	(\$4,099)	(\$22,427)
294	Power-driven handtool manufacturing	\$0	(\$4,237)	(\$1,382)	(\$5,619)
295	Welding and soldering equipment manufacturing	(\$1,139,584)	(\$60,486)	(\$12,140)	(\$1,212,210)
296	Packaging machinery manufacturing	\$0	(\$290,386)	(\$15,144)	(\$305,530)
297	Industrial process furnace and oven manufacturing	\$0	(\$3,107)	(\$867)	(\$3,974)
298	Fluid power cylinder and actuator manufacturing	\$0	(\$35,072)	(\$2,119)	(\$37,190)
299	Fluid power pump and motor manufacturing	\$0	(\$136,868)	(\$7,785)	(\$144,654)
300	Scales, balances, and miscellaneous general purpose machin	\$0	(\$119,867)	(\$10,036)	(\$129,902)
301	Electronic computer manufacturing	(\$114,205,960)	(\$9,541,776)	(\$2,377,863)	(\$126,125,599)
302	Computer storage device manufacturing	\$0	(\$4,923,887)	(\$102,248)	(\$5,026,135)
303	Computer terminals and other computer peripheral equipment	\$0	(\$3,305,179)	(\$213,679)	(\$3,518,858)
304	Telephone apparatus manufacturing	\$0	(\$946,586)	(\$154,121)	(\$1,100,707)
305	Broadcast and wireless communications equipment manufact	(\$16,607,933)	(\$7,869,419)	(\$647,349)	(\$25,124,701)
306	Other communications equipment manufacturing	\$0	(\$431,156)	(\$54,406)	(\$485,562)
307	Audio and video equipment manufacturing	(\$2,104,902)	(\$666,648)	(\$78,640)	(\$2,850,190)
308	Bare printed circuit board manufacturing	\$0	(\$1,928,819)	(\$67,921)	(\$1,996,740)
309	Semiconductor and related device manufacturing	(\$804,203)	(\$25,333,003)	(\$3,828,989)	(\$29,966,195)
310	Capacitor, resistor, coil, transformer, and other inductor manuf	(\$2,030)	(\$837,020)	(\$47,357)	(\$886,406)

(Continued on the following page)

San Francisco Labor Income at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
311	Electronic connector manufacturing	\$0	(\$699,031)	(\$62,164)	(\$761,195)
312	Printed circuit assembly (electronic assembly) manufacturing	\$0	(\$4,036,880)	(\$144,591)	(\$4,181,471)
313	Other electronic component manufacturing	\$0	(\$2,958,371)	(\$153,855)	(\$3,112,226)
314	Electromedical and electrotherapeutic apparatus manufacturin	(\$306,387)	(\$20,468)	(\$29,246)	(\$356,101)
315	Search, detection, and navigation instruments manufacturing	\$0	(\$330,613)	(\$25,410)	(\$356,023)
316	Automatic environmental control manufacturing	\$0	(\$51,836)	(\$14,445)	(\$66,281)
317	Industrial process variable instruments manufacturing	(\$165,934)	(\$238,767)	(\$32,926)	(\$437,627)
318	Totalizing fluid meter and counting device manufacturing	\$0	(\$25,446)	(\$5,385)	(\$30,831)
319	Electricity and signal testing instruments manufacturing	(\$10,949,012)	(\$1,041,148)	(\$10,099)	(\$12,000,260)
320	Analytical laboratory instrument manufacturing	\$0	(\$666,020)	(\$90,871)	(\$756,891)
321	Irradiation apparatus manufacturing	\$0	(\$15,746)	(\$6,001)	(\$21,747)
322	Watch, clock, and other measuring and controlling device man	\$0	(\$74,485)	(\$19,618)	(\$94,103)
323	Blank magnetic and optical recording media manufacturing	\$0	(\$2,598,984)	(\$167,093)	(\$2,766,077)
324	Software and other prerecorded and record reproducing	\$0	(\$1,259,867)	(\$98,928)	(\$1,358,795)
325	Electric lamp bulb and part manufacturing	\$0	(\$70,068)	(\$18,934)	(\$89,002)
326	Lighting fixture manufacturing	(\$249,122)	(\$941,976)	(\$140,363)	(\$1,331,460)
327	Small electrical appliance manufacturing	\$0	(\$10,656)	(\$5,239)	(\$15,895)
328	Household cooking appliance manufacturing	\$0	(\$93,980)	(\$34,775)	(\$128,755)
329	Household refrigerator and home freezer manufacturing	\$0	(\$3,699)	(\$4,684)	(\$8,382)
330	Household laundry equipment manufacturing	\$0	(\$13,590)	(\$690,782)	(\$704,372)
331	Other major household appliance manufacturing	\$0	(\$5)	(\$11)	(\$15)
332	Power, distribution, and specialty transformer manufacturing	\$0	(\$209,126)	(\$26,383)	(\$235,509)
333	Motor and generator manufacturing	(\$67,007)	(\$284,735)	(\$96,217)	(\$447,959)
334	Switchgear and switchboard apparatus manufacturing	(\$119,942)	(\$677,649)	(\$90,576)	(\$888,167)
335	Relay and industrial control manufacturing	\$0	(\$228,038)	(\$31,468)	(\$259,506)
336	Storage battery manufacturing	\$0	(\$432,009)	(\$72,923)	(\$504,932)
337	Primary battery manufacturing	\$0	(\$83,533)	(\$10,205)	(\$93,738)
338	Fiber optic cable manufacturing	\$0	(\$1,472,718)	(\$195,594)	(\$1,668,312)
339	Other communication and energy wire manufacturing	\$0	(\$339,562)	(\$54,848)	(\$394,411)
340	Wiring device manufacturing	\$0	(\$948,147)	(\$333,595)	(\$1,281,742)
341	Carbon and graphite product manufacturing	\$0	(\$274,935)	(\$18,337)	(\$293,272)
342	All other miscellaneous electrical equipment and component n	(\$2,363,297)	(\$1,039,444)	(\$47,238)	(\$3,449,978)
343	Automobile manufacturing	\$0	(\$9,945)	(\$98,504)	(\$108,450)
344	Light truck and utility vehicle manufacturing	\$0	(\$22)	(\$2,044)	(\$2,067)
345	Heavy duty truck manufacturing	\$0	(\$2,644)	(\$1,522)	(\$4,166)
346	Motor vehicle body manufacturing	\$0	(\$2,643)	(\$3,336)	(\$5,979)
347	Truck trailer manufacturing	\$0	(\$303)	(\$589)	(\$892)
348	Motor home manufacturing	\$0	(\$87)	(\$2,061)	(\$2,148)
349	Travel trailer and camper manufacturing	\$0	(\$39,237)	(\$41,135)	(\$80,372)
350	Motor vehicle gasoline engine and engine parts manufacturing	\$0	(\$39,287)	(\$20,548)	(\$59,835)
351	Motor vehicle electrical and electronic equipment manufacturir	\$0	(\$180,495)	(\$86,826)	(\$267,321)
352	Motor vehicle steering, suspension component (except spring)	\$0	(\$258,390)	(\$72,781)	(\$331,171)
353	Motor vehicle transmission and power train parts manufacturir	\$0	(\$17,274)	(\$5,598)	(\$22,872)
354	Motor vehicle seating and interior trim manufacturing	\$0	(\$1,939)	(\$1,376)	(\$3,315)
355	Motor vehicle metal stamping	\$0	(\$2,634)	(\$461)	(\$3,095)
356	Other motor vehicle parts manufacturing	\$0	(\$505,019)	(\$137,355)	(\$642,374)
357	Aircraft manufacturing	\$0	(\$19,789)	(\$5,712)	(\$25,501)
358	Aircraft engine and engine parts manufacturing	\$0	(\$5,384)	(\$617)	(\$6,000)
359	Other aircraft parts and auxiliary equipment manufacturing	\$0	(\$187,026)	(\$40,847)	(\$227,874)
360	Guided missile and space vehicle manufacturing	(\$2,669,619)	(\$599,205)	(\$18,520)	(\$3,287,344)
361	Propulsion units and parts for space vehicles and guided miss	\$0	(\$130,606)	(\$1,750)	(\$132,356)
362	Railroad rolling stock manufacturing	\$0	(\$59,493)	(\$10,134)	(\$69,627)
363	Ship building and repairing	\$0	(\$81,165)	(\$56,544)	(\$137,709)
364	Boat building	\$0	(\$1,577)	(\$18,550)	(\$20,127)
365	Motorcycle, bicycle, and parts manufacturing	\$0	(\$14,561)	(\$19,345)	(\$33,906)
366	Military armored vehicle, tank, and tank component manufactu	\$0	(\$2,652)	(\$995)	(\$3,647)
367	All other transportation equipment manufacturing	\$0	(\$2,915)	(\$6,136)	(\$9,051)
368	Wood kitchen cabinet and countertop manufacturing	\$0	(\$922,144)	(\$982,190)	(\$1,904,334)
369	Upholstered household furniture manufacturing	\$0	(\$4,510)	(\$188,190)	(\$192,699)
370	Nonupholstered wood household furniture manufacturing	\$0	(\$9,947)	(\$165,565)	(\$175,513)
371	Other household nonupholstered furniture manufacturing	(\$559,719)	(\$97,666)	(\$31,173)	(\$688,558)
372	Institutional furniture manufacturing	(\$521,824)	(\$23,465)	(\$4,589)	(\$549,878)

(Continued on the following page)

San Francisco Labor Income at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
373	Wood office furniture manufacturing	\$0	(\$1,685)	(\$611)	(\$2,296)
374	Custom architectural woodwork and millwork	\$0	(\$30,073)	(\$8,245)	(\$38,319)
375	Office furniture, except wood, manufacturing	\$0	(\$7,163)	(\$2,387)	(\$9,551)
376	Showcase, partition, shelving, and locker manufacturing	\$0	(\$534,509)	(\$73,735)	(\$608,244)
377	Mattress manufacturing	\$0	(\$6,243)	(\$58,758)	(\$65,001)
378	Blind and shade manufacturing	\$0	(\$32,483)	(\$20,449)	(\$52,932)
379	Surgical and medical instrument manufacturing	\$0	(\$318,265)	(\$1,187,817)	(\$1,506,082)
380	Surgical appliance and supplies manufacturing	(\$1,136,136)	(\$393,138)	(\$593,159)	(\$2,122,433)
381	Dental equipment and supplies manufacturing	\$0	(\$101,801)	(\$293,932)	(\$395,733)
382	Ophthalmic goods manufacturing	\$0	(\$3,676)	(\$47,935)	(\$51,611)
383	Dental laboratories	\$0	(\$297,544)	(\$865,211)	(\$1,162,755)
384	Jewelry and silverware manufacturing	\$0	(\$51,302)	(\$60,158)	(\$111,459)
385	Sporting and athletic goods manufacturing	(\$222,111)	(\$34,828)	(\$92,466)	(\$349,405)
386	Doll, toy, and game manufacturing	(\$3,403,326)	(\$27,690)	(\$502,017)	(\$3,933,032)
387	Office supplies (except paper) manufacturing	\$0	(\$90,929)	(\$9,454)	(\$100,383)
388	Sign manufacturing	(\$5,160,209)	(\$367,521)	(\$49,485)	(\$5,577,216)
389	Gasket, packing, and sealing device manufacturing	\$0	(\$223,434)	(\$72,785)	(\$296,218)
390	Musical instrument manufacturing	(\$700,082)	(\$80,607)	(\$116,647)	(\$897,337)
391	Fasteners, buttons, needles, and pins manufacturing	\$0	(\$18,114)	(\$10,673)	(\$28,787)
392	Broom, brush, and mop manufacturing	\$0	(\$95,483)	(\$25,387)	(\$120,870)
393	Burial casket manufacturing	\$0	(\$354)	(\$2,052)	(\$2,405)
394	All other miscellaneous manufacturing	(\$573,720)	(\$1,523,230)	(\$715,949)	(\$2,812,899)
395	Wholesale trade	(\$155,139,444)	(\$159,362,955)	(\$146,927,181)	(\$461,429,580)
396	Retail - Motor vehicle and parts dealers	(\$3,305,118)	(\$1,730,370)	(\$18,235,251)	(\$23,270,739)
397	Retail - Furniture and home furnishings stores	(\$9,944,089)	(\$1,732,415)	(\$16,363,964)	(\$28,040,468)
398	Retail - Electronics and appliance stores	(\$41,668,895)	(\$3,863,198)	(\$17,174,269)	(\$62,706,362)
399	Retail - Building material and garden equipment and supplies	(\$3,176,817)	(\$3,114,946)	(\$19,866,376)	(\$26,158,139)
400	Retail - Food and beverage stores	(\$18,277,228)	(\$585,949)	(\$67,399,621)	(\$86,262,797)
401	Retail - Health and personal care stores	(\$13,430,737)	(\$3,912,793)	(\$29,360,111)	(\$46,703,640)
402	Retail - Gasoline stores	(\$2,772,577)	(\$2,127,047)	(\$15,407,557)	(\$20,307,181)
403	Retail - Clothing and clothing accessories stores	(\$175,448,612)	(\$2,642,055)	(\$29,329,883)	(\$207,420,551)
404	Retail - Sporting goods, hobby, musical instrument and book s	(\$5,627,278)	(\$1,479,257)	(\$13,801,220)	(\$20,927,756)
405	Retail - General merchandise stores	\$0	(\$1,736,372)	(\$48,905,332)	(\$50,641,704)
406	Retail - Miscellaneous store retailers	(\$15,015,882)	(\$3,000,352)	(\$24,865,157)	(\$42,881,391)
407	Retail - Nonstore retailers	(\$15,950,891)	(\$1,506,514)	(\$34,907,687)	(\$52,365,092)
408	Air transportation	\$0	(\$24,551,850)	(\$5,847,506)	(\$30,399,357)
409	Rail transportation	(\$6,275,424)	(\$3,459,276)	(\$1,244,840)	(\$10,979,540)
410	Water transportation	(\$1,360,930)	(\$695,061)	(\$1,550,949)	(\$3,606,941)
411	Truck transportation	(\$1,111,628)	(\$14,179,831)	(\$11,045,903)	(\$26,337,362)
412	Transit and ground passenger transportation	(\$7,323,244)	(\$19,387,780)	(\$13,997,324)	(\$40,708,348)
413	Pipeline transportation	(\$124,494)	(\$44,627,352)	(\$1,347,106)	(\$46,098,952)
414	Scenic and sightseeing transportation and support activities fo	(\$27,477,526)	(\$40,449,831)	(\$10,265,265)	(\$78,192,622)
415	Couriers and messengers	(\$3,058,277)	(\$28,721,606)	(\$6,384,718)	(\$38,164,601)
416	Warehousing and storage	(\$1,114,197)	(\$20,498,004)	(\$8,039,825)	(\$29,652,026)
417	Newspaper publishers	(\$8,330,601)	(\$6,175,456)	(\$2,796,989)	(\$17,303,046)
418	Periodical publishers	(\$38,675,525)	(\$5,941,249)	(\$3,016,691)	(\$47,633,465)
419	Book publishers	(\$14,229,690)	(\$739,382)	(\$2,518,080)	(\$17,487,152)
420	Directory, mailing list, and other publishers	(\$9,657,397)	(\$936,486)	(\$348,506)	(\$10,942,389)
421	Greeting card publishing	\$0	(\$1,686)	(\$1,460)	(\$3,146)
422	Software publishers	(\$558,916,268)	(\$48,413,418)	(\$14,884,711)	(\$622,214,396)
423	Motion picture and video industries	(\$32,989,776)	(\$83,824,889)	(\$10,959,551)	(\$127,774,215)
424	Sound recording industries	(\$932,248)	(\$1,821,556)	(\$1,083,437)	(\$3,837,241)
425	Radio and television broadcasting	(\$389,655,885)	(\$69,127,372)	(\$7,541,621)	(\$466,324,878)
426	Cable and other subscription programming	(\$172,889,424)	(\$41,372,686)	(\$3,187,570)	(\$217,449,680)
427	Wired telecommunications carriers	\$0	(\$40,833,323)	(\$27,646,445)	(\$68,479,768)
428	Wireless telecommunications carriers (except satellite)	\$0	(\$7,167,843)	(\$4,877,918)	(\$12,045,762)
429	Satellite, telecommunications resellers, and all other telecomm	(\$51,158,422)	(\$9,760,649)	(\$5,957,284)	(\$66,876,354)
430	Data processing, hosting, and related services	(\$360,677,555)	(\$87,940,509)	(\$10,373,119)	(\$458,991,183)
431	News syndicates, libraries, archives and all other information s	(\$67,770,621)	(\$2,365,823)	(\$1,724,303)	(\$71,860,747)
432	Internet publishing and broadcasting and web search portals	(\$9,830,291)	(\$132,495,231)	(\$24,081,834)	(\$166,407,356)
433	Monetary authorities and depository credit intermediation	(\$491,148,512)	(\$120,566,293)	(\$57,486,094)	(\$669,200,899)
434	Nondepository credit intermediation and related activities	(\$443,536,025)	(\$90,436,463)	(\$49,505,895)	(\$583,478,383)

(Continued on the following page)

San Francisco Labor Income at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
435	Securities and commodity contracts intermediation and broker	(\$1,226,791,062)	(\$208,213,660)	(\$58,297,355)	(\$1,493,302,077)
436	Other financial investment activities	(\$1,232,299,551)	(\$282,534,223)	(\$100,750,118)	(\$1,615,583,892)
437	Insurance carriers	(\$394,541,813)	(\$67,774,309)	(\$56,675,914)	(\$518,992,036)
438	Insurance agencies, brokerages, and related activities	(\$379,920,201)	(\$463,571,046)	(\$42,177,930)	(\$885,669,176)
439	Funds, trusts, and other financial vehicles	(\$319,059,771)	(\$28,448,454)	(\$53,542,794)	(\$401,051,019)
440	Real estate	(\$290,614,200)	(\$120,377,456)	(\$72,069,142)	(\$483,060,799)
441	Owner-occupied dwellings	\$0	\$0	\$0	\$0
442	Automotive equipment rental and leasing	(\$1,310,374)	(\$4,989,533)	(\$3,499,974)	(\$9,799,881)
443	General and consumer goods rental except video tapes and d	(\$7,384,561)	(\$3,719,833)	(\$3,899,698)	(\$15,004,092)
444	Video tape and disc rental	\$0	\$0	(\$266,398)	(\$266,398)
445	Commercial and industrial machinery and equipment rental an	(\$50,116,196)	(\$22,430,243)	(\$2,828,684)	(\$75,375,122)
446	Lessors of nonfinancial intangible assets	(\$15,021,514)	(\$8,559,728)	(\$902,050)	(\$24,483,293)
447	Legal services	(\$1,093,034,247)	(\$102,119,627)	(\$57,483,624)	(\$1,252,637,498)
448	Accounting, tax preparation, bookkeeping, and payroll service:	(\$133,317,154)	(\$146,691,821)	(\$29,955,097)	(\$309,964,071)
449	Architectural, engineering, and related services	(\$960,899,719)	(\$144,112,788)	(\$21,937,428)	(\$1,126,949,935)
450	Specialized design services	(\$50,176,598)	(\$31,818,496)	(\$5,710,233)	(\$87,705,327)
451	Custom computer programming services	(\$669,530,707)	(\$5,903,089)	(\$666,845)	(\$676,100,641)
452	Computer systems design services	(\$290,365,974)	(\$84,461,646)	(\$11,053,133)	(\$385,880,753)
453	Other computer related services, including facilities managem	(\$80,279,869)	(\$86,883,417)	(\$10,167,963)	(\$177,331,248)
454	Management consulting services	(\$714,673,171)	(\$241,145,046)	(\$28,749,138)	(\$984,567,355)
455	Environmental and other technical consulting services	(\$119,899,194)	(\$75,447,827)	(\$8,738,838)	(\$204,085,859)
456	Scientific research and development services	(\$7,197,273)	(\$3,255,678)	(\$2,535,123)	(\$12,988,074)
457	Advertising, public relations, and related services	(\$404,220,069)	(\$108,553,096)	(\$15,964,990)	(\$528,738,155)
458	Photographic services	(\$433,249)	(\$12,100,024)	(\$6,431,407)	(\$18,964,680)
459	Veterinary services	\$0	(\$111,174)	(\$5,432,615)	(\$5,543,790)
460	Marketing research and all other miscellaneous professional, c	(\$79,766,352)	(\$93,803,782)	(\$13,013,623)	(\$186,583,757)
461	Management of companies and enterprises	(\$39,362,191)	(\$229,221,128)	(\$49,690,010)	(\$318,273,329)
462	Office administrative services	(\$681,423,504)	(\$93,526,086)	(\$10,721,193)	(\$785,670,783)
463	Facilities support services	(\$1,196,193)	(\$9,586,940)	(\$1,295,515)	(\$12,078,648)
464	Employment services	(\$239,591,800)	(\$256,290,219)	(\$30,742,835)	(\$526,624,853)
465	Business support services	(\$42,422,458)	(\$70,714,058)	(\$11,414,319)	(\$124,550,835)
466	Travel arrangement and reservation services	(\$26,370,521)	(\$13,394,452)	(\$9,415,438)	(\$49,180,410)
467	Investigation and security services	(\$8,916,918)	(\$34,598,132)	(\$9,689,371)	(\$53,204,420)
468	Services to buildings	(\$214,576,946)	(\$49,932,646)	(\$26,699,907)	(\$291,209,499)
469	Landscape and horticultural services	(\$76,008)	(\$20,242,128)	(\$11,542,445)	(\$31,860,581)
470	Other support services	(\$36,849,643)	(\$26,173,665)	(\$3,966,931)	(\$66,990,239)
471	Waste management and remediation services	(\$24,065,841)	(\$17,872,171)	(\$8,473,626)	(\$50,411,638)
472	Elementary and secondary schools	(\$6,622,446)	\$0	(\$42,131,546)	(\$48,753,992)
473	Junior colleges, colleges, universities, and professional school	(\$18,294,394)	(\$1,236,921)	(\$62,955,406)	(\$82,486,721)
474	Other educational services	(\$19,295,314)	(\$4,346,747)	(\$32,648,953)	(\$56,291,015)
475	Offices of physicians	(\$22,326,583)	\$0	(\$144,723,314)	(\$167,049,897)
476	Offices of dentists	(\$13,382,395)	\$0	(\$38,935,938)	(\$52,318,333)
477	Offices of other health practitioners	(\$6,514,272)	\$0	(\$40,940,065)	(\$47,454,337)
478	Outpatient care centers	(\$5,643,937)	\$0	(\$49,108,991)	(\$54,752,928)
479	Medical and diagnostic laboratories	(\$2,038,380)	(\$427,949)	(\$13,836,954)	(\$16,303,283)
480	Home health care services	(\$1,374,417)	\$0	(\$19,549,797)	(\$20,924,214)
481	Other ambulatory health care services	(\$4,116,134)	(\$619,292)	(\$8,744,794)	(\$13,480,220)
482	Hospitals	(\$58,086,463)	(\$49,667)	(\$194,072,143)	(\$252,208,273)
483	Nursing and community care facilities	(\$686,081)	\$0	(\$33,319,188)	(\$34,005,268)
484	Residential mental retardation, mental health, substance abus	(\$392,406)	\$0	(\$12,495,328)	(\$12,887,734)
485	Individual and family services	(\$1,382,457)	\$0	(\$44,118,473)	(\$45,500,930)
486	Community food, housing, and other relief services, including i	(\$692,976)	\$0	(\$13,199,454)	(\$13,892,429)
487	Child day care services	(\$4,009,061)	\$0	(\$22,977,014)	(\$26,986,075)
488	Performing arts companies	(\$6,933,951)	(\$2,698,980)	(\$7,040,652)	(\$16,673,583)
489	Commercial Sports Except Racing	(\$647,175)	(\$64,878,571)	(\$10,867,205)	(\$76,392,951)
490	Racing and Track Operation	\$0	(\$6,961)	(\$89,468)	(\$96,428)
491	Promoters of performing arts and sports and agents for public	(\$2,284,305)	(\$11,199,477)	(\$4,991,796)	(\$18,475,578)
492	Independent artists, writers, and performers	(\$71,149,676)	(\$44,540,200)	(\$7,182,231)	(\$122,872,108)
493	Museums, historical sites, zoos, and parks	(\$21,591,008)	\$0	(\$5,349,538)	(\$26,940,547)
494	Amusement parks and arcades	(\$749,386)	(\$291,357)	(\$5,530,229)	(\$6,570,972)
495	Gambling industries (except casino hotels)	\$0	(\$5,570)	(\$17,082,170)	(\$17,087,739)
496	Other amusement and recreation industries	(\$2,396,713)	(\$3,583,742)	(\$7,741,811)	(\$13,722,266)

(Continued on the following page)

San Francisco Labor Income at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
497	Fitness and recreational sports centers	(\$10,929,768)	(\$3,899,685)	(\$8,857,022)	(\$23,686,475)
498	Bowling centers	(\$235,662)	(\$1,796)	(\$131,228)	(\$368,686)
499	Hotels and motels, including casino hotels	(\$219,576,545)	(\$7,060,500)	(\$3,089,605)	(\$229,726,651)
500	Other accommodations	(\$157,743)	(\$108,287)	(\$97,213)	(\$363,243)
501	Full-service restaurants	(\$145,174,525)	(\$62,942,470)	(\$93,130,401)	(\$301,247,396)
502	Limited-service restaurants	(\$34,476,467)	(\$22,314,913)	(\$68,511,562)	(\$125,302,943)
503	All other food and drinking places	(\$8,133,416)	(\$20,625,646)	(\$52,789,030)	(\$81,548,092)
504	Automotive repair and maintenance, except car washes	(\$387,943)	(\$16,457,198)	(\$29,369,044)	(\$46,214,186)
505	Car washes	(\$79,891)	(\$1,196,714)	(\$2,532,932)	(\$3,809,537)
506	Electronic and precision equipment repair and maintenance	(\$1,421,517)	(\$12,694,135)	(\$3,142,470)	(\$17,258,121)
507	Commercial and industrial machinery and equipment repair an	(\$564,377)	(\$22,636,922)	(\$4,985,469)	(\$28,186,768)
508	Personal and household goods repair and maintenance	(\$469,712)	(\$20,163,234)	(\$10,588,559)	(\$31,221,504)
509	Personal care services	(\$4,420,300)	(\$32,103)	(\$42,112,507)	(\$46,564,909)
510	Death care services	(\$265,260)	\$0	(\$1,154,797)	(\$1,420,057)
511	Dry-cleaning and laundry services	(\$590,771)	(\$2,253,366)	(\$3,953,714)	(\$6,797,851)
512	Other personal services	(\$41,473,309)	(\$15,010,055)	(\$48,474,998)	(\$104,958,362)
513	Religious organizations	(\$1,037,703)	\$0	(\$70,154,218)	(\$71,191,921)
514	Grantmaking, giving, and social advocacy organizations	(\$26,226,307)	(\$984,611)	(\$16,656,621)	(\$43,867,539)
515	Business and professional associations	(\$90,145,963)	(\$15,228,813)	(\$9,186,240)	(\$114,561,016)
516	Labor and civic organizations	(\$63,738,195)	(\$170,493)	(\$18,376,628)	(\$82,285,317)
517	Private households	\$0	\$0	(\$15,812,092)	(\$15,812,092)
518	Postal service	\$0	(\$50,652,318)	(\$12,854,798)	(\$63,507,116)
519	Federal electric utilities	\$0	\$0	\$0	\$0
520	Other federal government enterprises	\$0	(\$7,547,485)	(\$3,319,068)	(\$10,866,552)
521	State government passenger transit	\$0	\$0	\$0	\$0
522	State government electric utilities	\$0	\$0	\$0	\$0
523	Other state government enterprises	\$0	(\$2,656)	(\$4,892)	(\$7,548)
524	Local government passenger transit	\$0	(\$39,233,333)	(\$28,542,108)	(\$67,775,441)
525	Local government electric utilities	\$0	(\$1,190,408)	(\$769,614)	(\$1,960,022)
526	Other local government enterprises	\$0	(\$12,202,281)	(\$15,227,138)	(\$27,429,419)
527	* Not an industry (Used and secondhand goods)	\$0	\$0	\$0	\$0
528	* Not an industry (Scrap)	\$0	\$0	\$0	\$0
529	* Not an industry (Rest of world adjustment)	\$0	\$0	\$0	\$0
530	* Not an industry (Noncomparable foreign imports)	\$0	\$0	\$0	\$0
531	* Employment and payroll of state govt, non-education	\$0	\$0	\$0	\$0
532	* Employment and payroll of state govt, education	\$0	\$0	\$0	\$0
533	* Employment and payroll of local govt, non-education	\$0	\$0	\$0	\$0
534	* Employment and payroll of local govt, education	\$0	\$0	\$0	\$0
535	* Employment and payroll of federal govt, non-military	\$0	\$0	\$0	\$0
536	* Employment and payroll of federal govt, military	\$0	\$0	\$0	\$0

Sources: IMPLAN; BAE, 2017.

San Francisco Output at Risk, 66" SLR + 100-Year Flood

Sector	Description	Direct	Indirect	Induced	Total
0	Total	(\$33,971,310,768)	(\$11,602,607,192)	(\$7,922,975,908)	(\$53,496,893,868)
1	Oilseed farming	\$0	(\$44,768)	(\$10,865)	(\$55,633)
2	Grain farming	\$0	(\$2,059,018)	(\$554,708)	(\$2,613,726)
3	Vegetable and melon farming	\$0	(\$8,270,575)	(\$965,554)	(\$9,236,129)
4	Fruit farming	(\$25,809)	(\$21,942,031)	(\$1,135,916)	(\$23,103,756)
5	Tree nut farming	\$0	(\$872,442)	(\$185,745)	(\$1,058,186)
6	Greenhouse, nursery, and floriculture production	\$0	(\$4,360,524)	(\$1,439,440)	(\$5,799,964)
7	Tobacco farming	\$0	\$0	\$0	\$0
8	Cotton farming	\$0	(\$51,772)	(\$18,374)	(\$70,146)
9	Sugarcane and sugar beet farming	\$0	(\$93,126)	(\$14,379)	(\$107,505)
10	All other crop farming	(\$30,231)	(\$4,640,711)	(\$1,804,666)	(\$6,475,609)
11	Beef cattle ranching and farming, including feedlots and dual-purpos	\$0	(\$2,406,559)	(\$3,406,001)	(\$5,812,560)
12	Dairy cattle and milk production	\$0	(\$8,980,498)	(\$5,130,229)	(\$14,110,727)
13	Poultry and egg production	\$0	(\$4,180,244)	(\$1,568,473)	(\$5,748,717)
14	Animal production, except cattle and poultry and eggs	(\$94,395)	(\$711,896)	(\$408,921)	(\$1,215,212)
15	Forestry, forest products, and timber tract production	\$0	(\$204,395)	(\$24,602)	(\$228,998)
16	Commercial logging	\$0	(\$3,491,775)	(\$256,981)	(\$3,748,756)
17	Commercial fishing	\$0	(\$2,352,640)	(\$1,220,223)	(\$3,572,863)
18	Commercial hunting and trapping	(\$452,222)	(\$2,457)	(\$152,809)	(\$607,487)
19	Support activities for agriculture and forestry	(\$2,851,069)	(\$6,243,628)	(\$1,451,694)	(\$10,546,391)
20	Extraction of natural gas and crude petroleum	(\$112,634,194)	(\$162,964,866)	(\$6,700,544)	(\$282,299,604)
21	Extraction of natural gas liquids	\$0	(\$6,438,543)	(\$506,347)	(\$6,944,890)
22	Coal mining	\$0	(\$550,866)	(\$54,700)	(\$605,567)
23	Iron ore mining	(\$2,535,845)	(\$78,200)	(\$11,903)	(\$2,625,948)
24	Gold ore mining	\$0	(\$493,049)	(\$96,881)	(\$589,930)
25	Silver ore mining	\$0	\$0	\$0	\$0
26	Lead and zinc ore mining	\$0	\$0	\$0	\$0
27	Copper ore mining	\$0	(\$534,239)	(\$125,172)	(\$659,411)
28	Uranium-radium-vanadium ore mining	\$0	\$0	\$0	\$0
29	Other metal ore mining	\$0	(\$322,392)	(\$49,310)	(\$371,703)
30	Stone mining and quarrying	\$0	(\$481,690)	(\$232,612)	(\$714,302)
31	Sand and gravel mining	\$0	(\$3,282,158)	(\$574,156)	(\$3,856,314)
32	Other clay, ceramic, refractory minerals mining	\$0	(\$156,699)	(\$43,162)	(\$199,861)
33	Potash, soda, and borate mineral mining	\$0	(\$254,070)	(\$57,676)	(\$311,746)
34	Phosphate rock mining	\$0	\$0	\$0	\$0
35	Other chemical and fertilizer mineral mining	\$0	(\$4,274)	(\$1,117)	(\$5,391)
36	Other nonmetallic minerals	\$0	(\$175,388)	(\$61,800)	(\$237,188)
37	Drilling oil and gas wells	\$0	(\$77,250)	(\$3,976)	(\$81,226)
38	Support activities for oil and gas operations	(\$5,160,489)	(\$6,210,255)	(\$400,489)	(\$11,771,234)
39	Metal mining services	\$0	(\$40,013)	(\$3,345)	(\$43,358)
40	Other nonmetallic minerals services	\$0	(\$309,186)	(\$24,123)	(\$333,309)
41	Electric power generation - Hydroelectric	\$0	(\$51,342)	(\$33,191)	(\$84,533)
42	Electric power generation - Fossil fuel	(\$67,249,704)	(\$3,503,289)	(\$1,257,087)	(\$72,010,080)
43	Electric power generation - Nuclear	\$0	(\$774,000)	(\$500,362)	(\$1,274,362)
44	Electric power generation - Solar	(\$108,857,832)	(\$2,930,341)	(\$288,504)	(\$112,076,677)
45	Electric power generation - Wind	(\$259,247,023)	(\$7,065,792)	(\$696,960)	(\$267,009,775)
46	Electric power generation - Geothermal	\$0	(\$92,778)	(\$59,978)	(\$152,756)
47	Electric power generation - Biomass	(\$50,517,348)	(\$1,492,845)	(\$204,122)	(\$52,214,315)
48	Electric power generation - All other	(\$6,916,978)	(\$215,320)	(\$31,650)	(\$7,163,948)
49	Electric power transmission and distribution	(\$24,030,670)	(\$5,411,395)	(\$3,820,608)	(\$33,262,673)
50	Natural gas distribution	(\$2,260,341,351)	(\$24,219,230)	(\$23,576,930)	(\$2,308,137,510)
51	Water, sewage and other systems	(\$754,456,928)	(\$22,514,102)	(\$32,618,029)	(\$809,589,059)
52	Construction of new health care structures	\$0	\$0	\$0	\$0
53	Construction of new manufacturing structures	(\$20,580,557)	\$0	\$0	(\$20,580,557)
54	Construction of new power and communication structures	\$0	\$0	\$0	\$0
55	Construction of new educational and vocational structures	\$0	\$0	\$0	\$0
56	Construction of new highways and streets	(\$5,537,645)	\$0	\$0	(\$5,537,645)
57	Construction of new commercial structures, including farm structure:	(\$341,986,735)	\$0	\$0	(\$341,986,735)
58	Construction of other new nonresidential structures	(\$58,367,543)	\$0	\$0	(\$58,367,543)
59	Construction of new single-family residential structures	(\$6,114,999)	\$0	\$0	(\$6,114,999)
60	Construction of new multifamily residential structures	(\$1,286,254)	\$0	\$0	(\$1,286,254)
61	Construction of other new residential structures	(\$3,129,724)	\$0	\$0	(\$3,129,724)
62	Maintenance and repair construction of nonresidential structures	(\$95,496,388)	(\$218,584,889)	(\$38,983,411)	(\$353,064,688)

(Continued on the following page)

San Francisco Output at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
63	Maintenance and repair construction of residential structures	\$0	(\$8,715,715)	(\$58,536,844)	(\$67,252,559)
64	Maintenance and repair construction of highways, streets, bridges, &	\$0	\$0	\$0	\$0
65	Dog and cat food manufacturing	\$0	(\$17,758)	(\$328,976)	(\$346,733)
66	Other animal food manufacturing	\$0	(\$4,175,604)	(\$2,885,563)	(\$7,061,167)
67	Flour milling	\$0	(\$4,338,451)	(\$1,032,511)	(\$5,370,962)
68	Rice milling	\$0	(\$1,513,705)	(\$271,284)	(\$1,784,989)
69	Malt manufacturing	\$0	(\$8,902)	(\$3,367)	(\$12,269)
70	Wet corn milling	\$0	(\$2,675,587)	(\$763,556)	(\$3,439,143)
71	Soybean and other oilseed processing	\$0	(\$5,796,243)	(\$1,675,356)	(\$7,471,599)
72	Fats and oils refining and blending	(\$11,819,099)	(\$2,158,299)	(\$520,081)	(\$14,497,480)
73	Breakfast cereal manufacturing	\$0	(\$41,770)	(\$147,073)	(\$188,843)
74	Beet sugar manufacturing	\$0	(\$85,309)	(\$22,683)	(\$107,991)
75	Sugar cane mills and refining	\$0	(\$1,367,256)	(\$187,130)	(\$1,554,386)
76	Nonchocolate confectionery manufacturing	\$0	(\$308,477)	(\$378,716)	(\$687,193)
77	Chocolate and confectionery manufacturing from cacao beans	(\$17,358,610)	(\$1,715,497)	(\$510,207)	(\$19,584,314)
78	Confectionery manufacturing from purchased chocolate	\$0	(\$165,545)	(\$352,604)	(\$518,149)
79	Frozen fruits, juices and vegetables manufacturing	\$0	(\$2,105,946)	(\$727,848)	(\$2,833,794)
80	Frozen specialties manufacturing	(\$23,165,198)	(\$1,353,519)	(\$2,772,146)	(\$27,290,862)
81	Canned fruits and vegetables manufacturing	(\$15,472,836)	(\$3,718,389)	(\$2,389,494)	(\$21,580,719)
82	Canned specialties	\$0	(\$174,153)	(\$141,303)	(\$315,456)
83	Dehydrated food products manufacturing	\$0	(\$566,147)	(\$378,718)	(\$944,865)
84	Fluid milk manufacturing	(\$2,773,641)	(\$4,840,758)	(\$5,954,848)	(\$13,569,247)
85	Creamery butter manufacturing	\$0	(\$665,748)	(\$2,049,872)	(\$2,715,621)
86	Cheese manufacturing	\$0	(\$6,538,868)	(\$5,482,789)	(\$12,021,657)
87	Dry, condensed, and evaporated dairy product manufacturing	\$0	(\$1,454,865)	(\$1,377,222)	(\$2,832,087)
88	Ice cream and frozen dessert manufacturing	(\$2,094,066)	(\$1,428,823)	(\$1,494,642)	(\$5,017,530)
89	Animal, except poultry, slaughtering	\$0	(\$3,506,726)	(\$3,596,589)	(\$7,103,315)
90	Meat processed from carcasses	\$0	(\$714,634)	(\$6,023,078)	(\$6,737,712)
91	Rendering and meat byproduct processing	\$0	(\$604,735)	(\$375,887)	(\$980,622)
92	Poultry processing	\$0	(\$3,754,024)	(\$3,789,924)	(\$7,543,948)
93	Seafood product preparation and packaging	(\$434,154)	(\$1,760,906)	(\$2,434,208)	(\$4,629,267)
94	Bread and bakery product, except frozen, manufacturing	(\$36,281,420)	(\$4,161,145)	(\$9,562,953)	(\$50,005,518)
95	Frozen cakes and other pastries manufacturing	\$0	(\$229,777)	(\$385,820)	(\$615,597)
96	Cookie and cracker manufacturing	\$0	(\$409,272)	(\$546,355)	(\$955,626)
97	Dry pasta, mixes, and dough manufacturing	(\$1,450,424)	(\$567,465)	(\$812,678)	(\$2,830,567)
98	Tortilla manufacturing	\$0	(\$321,168)	(\$354,004)	(\$675,172)
99	Roasted nuts and peanut butter manufacturing	\$0	(\$890,199)	(\$905,306)	(\$1,795,505)
100	Other snack food manufacturing	\$0	(\$1,049,649)	(\$1,295,340)	(\$2,344,989)
101	Coffee and tea manufacturing	\$0	(\$1,118,233)	(\$845,631)	(\$1,963,864)
102	Flavoring syrup and concentrate manufacturing	\$0	(\$2,828,776)	(\$1,340,264)	(\$4,169,040)
103	Mayonnaise, dressing, and sauce manufacturing	\$0	(\$790,291)	(\$586,360)	(\$1,376,651)
104	Spice and extract manufacturing	\$0	(\$890,646)	(\$430,139)	(\$1,320,785)
105	All other food manufacturing	(\$104,022,814)	(\$4,127,443)	(\$2,285,185)	(\$110,435,442)
106	Bottled and canned soft drinks & water	(\$5,965,022)	(\$4,203,408)	(\$7,635,582)	(\$17,804,012)
107	Manufactured ice	\$0	(\$52,354)	(\$65,939)	(\$118,293)
108	Breweries	(\$73,648,524)	(\$3,554,235)	(\$23,972,459)	(\$101,175,219)
109	Wineries	(\$60,367,641)	(\$3,637,262)	(\$3,308,315)	(\$67,313,218)
110	Distilleries	(\$23,817,317)	(\$256,507)	(\$126,225)	(\$24,200,049)
111	Tobacco product manufacturing	\$0	(\$6)	(\$79,483)	(\$79,489)
112	Fiber, yarn, and thread mills	\$0	(\$80,017)	(\$28,057)	(\$108,074)
113	Broadwoven fabric mills	\$0	(\$84,593)	(\$40,042)	(\$124,635)
114	Narrow fabric mills and schiffli machine embroidery	(\$1,169,167)	(\$35,896)	(\$15,165)	(\$1,220,228)
115	Nonwoven fabric mills	\$0	(\$66,467)	(\$26,090)	(\$92,557)
116	Knit fabric mills	\$0	(\$41,435)	(\$33,324)	(\$74,759)
117	Textile and fabric finishing mills	\$0	(\$875,472)	(\$315,878)	(\$1,191,350)
118	Fabric coating mills	\$0	(\$65,759)	(\$24,824)	(\$90,582)
119	Carpet and rug mills	\$0	(\$65,960)	(\$87,780)	(\$153,740)
120	Curtain and linen mills	\$0	(\$449,065)	(\$475,284)	(\$924,349)
121	Textile bag and canvas mills	\$0	(\$352,375)	(\$371,820)	(\$724,195)
122	Rope, cordage, twine, tire cord and tire fabric mills	\$0	(\$19,571)	(\$13,401)	(\$32,971)
123	Other textile product mills	\$0	(\$373,922)	(\$251,370)	(\$625,292)
124	Hosiery and sock mills	\$0	(\$14,680)	(\$9,724)	(\$24,404)

(Continued on the following page)

San Francisco Output at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
125	Other apparel knitting mills	(\$681,240)	(\$131,580)	(\$189,946)	(\$1,002,766)
126	Cut and sew apparel contractors	\$0	(\$2,137,777)	(\$1,190,854)	(\$3,328,631)
127	Mens and boys cut and sew apparel manufacturing	\$0	(\$221,767)	(\$119,453)	(\$341,221)
128	Womens and girls cut and sew apparel manufacturing	\$0	(\$358,586)	(\$1,235,386)	(\$1,593,972)
129	Other cut and sew apparel manufacturing	\$0	(\$50,836)	(\$139,105)	(\$189,941)
130	Apparel accessories and other apparel manufacturing	\$0	(\$1,176,434)	(\$451,932)	(\$1,628,367)
131	Leather and hide tanning and finishing	\$0	(\$8,838)	(\$1,490)	(\$10,328)
132	Footwear manufacturing	\$0	(\$24)	(\$4,770)	(\$4,794)
133	Other leather and allied product manufacturing	(\$2,603,868)	(\$177,766)	(\$24,401)	(\$2,806,035)
134	Sawmills	\$0	(\$3,662,784)	(\$1,300,615)	(\$4,963,399)
135	Wood preservation	\$0	(\$1,019,601)	(\$350,649)	(\$1,370,250)
136	Veneer and plywood manufacturing	\$0	(\$342,409)	(\$125,683)	(\$468,092)
137	Engineered wood member and truss manufacturing	\$0	(\$1,421,773)	(\$513,393)	(\$1,935,167)
138	Reconstituted wood product manufacturing	\$0	(\$478,749)	(\$166,902)	(\$645,651)
139	Wood windows and door manufacturing	\$0	(\$5,313,127)	(\$2,516,885)	(\$7,830,012)
140	Cut stock, resawing lumber, and planing	\$0	(\$968,047)	(\$543,751)	(\$1,511,798)
141	Other millwork, including flooring	\$0	(\$3,550,455)	(\$1,508,814)	(\$5,059,269)
142	Wood container and pallet manufacturing	\$0	(\$1,258,860)	(\$645,820)	(\$1,904,680)
143	Manufactured home (mobile home) manufacturing	\$0	(\$3,517)	(\$655)	(\$4,172)
144	Prefabricated wood building manufacturing	\$0	(\$343,082)	(\$65,067)	(\$408,149)
145	All other miscellaneous wood product manufacturing	(\$432,308)	(\$1,825,772)	(\$507,882)	(\$2,765,961)
146	Pulp mills	\$0	(\$69,356)	(\$16,313)	(\$85,669)
147	Paper mills	\$0	(\$1,415,806)	(\$317,647)	(\$1,733,453)
148	Paperboard mills	\$0	(\$1,320,736)	(\$215,513)	(\$1,536,249)
149	Paperboard container manufacturing	\$0	(\$26,263,297)	(\$6,104,098)	(\$32,367,395)
150	Paper bag and coated and treated paper manufacturing	\$0	(\$4,465,526)	(\$699,614)	(\$5,165,140)
151	Stationery product manufacturing	\$0	(\$1,844,919)	(\$201,343)	(\$2,046,262)
152	Sanitary paper product manufacturing	\$0	(\$795,057)	(\$474,652)	(\$1,269,709)
153	All other converted paper product manufacturing	\$0	(\$683,849)	(\$222,491)	(\$906,340)
154	Printing	(\$101,621,599)	(\$66,252,723)	(\$9,056,952)	(\$176,931,274)
155	Support activities for printing	\$0	(\$8,996,271)	(\$523,781)	(\$9,520,052)
156	Petroleum refineries	(\$26,622,751)	(\$121,246,022)	(\$39,291,771)	(\$187,160,544)
157	Asphalt paving mixture and block manufacturing	\$0	(\$882,831)	(\$504,414)	(\$1,387,245)
158	Asphalt shingle and coating materials manufacturing	\$0	(\$405,193)	(\$286,749)	(\$691,942)
159	Petroleum lubricating oil and grease manufacturing	\$0	(\$3,002,051)	(\$634,364)	(\$3,636,415)
160	All other petroleum and coal products manufacturing	\$0	(\$888,412)	(\$189,102)	(\$1,077,514)
161	Petrochemical manufacturing	\$0	(\$28,229)	(\$5,260)	(\$33,489)
162	Industrial gas manufacturing	\$0	(\$4,199,153)	(\$781,752)	(\$4,980,905)
163	Synthetic dye and pigment manufacturing	\$0	(\$614,713)	(\$147,275)	(\$761,988)
164	Other basic inorganic chemical manufacturing	\$0	(\$3,729,866)	(\$776,371)	(\$4,506,237)
165	Other basic organic chemical manufacturing	(\$7,601,131)	(\$930,895)	(\$191,235)	(\$8,723,261)
166	Plastics material and resin manufacturing	\$0	(\$2,629,462)	(\$626,543)	(\$3,256,006)
167	Synthetic rubber manufacturing	\$0	(\$317,868)	(\$85,937)	(\$403,805)
168	Artificial and synthetic fibers and filaments manufacturing	\$0	(\$9,098)	(\$2,366)	(\$11,464)
169	Nitrogenous fertilizer manufacturing	\$0	(\$2,020,420)	(\$689,958)	(\$2,710,378)
170	Phosphatic fertilizer manufacturing	\$0	(\$1,625,074)	(\$559,987)	(\$2,185,061)
171	Fertilizer mixing	\$0	(\$1,459,287)	(\$507,998)	(\$1,967,285)
172	Pesticide and other agricultural chemical manufacturing	\$0	(\$454,079)	(\$188,962)	(\$643,041)
173	Medicinal and botanical manufacturing	(\$2,021,263)	(\$3,501,880)	(\$1,067,900)	(\$6,591,043)
174	Pharmaceutical preparation manufacturing	(\$174,720,202)	(\$9,651,540)	(\$38,297,833)	(\$222,669,574)
175	In-vitro diagnostic substance manufacturing	\$0	(\$959,425)	(\$2,497,363)	(\$3,456,788)
176	Biological product (except diagnostic) manufacturing	(\$507,478)	(\$3,707,317)	(\$1,782,241)	(\$5,997,036)
177	Paint and coating manufacturing	\$0	(\$5,484,329)	(\$1,381,703)	(\$6,866,032)
178	Adhesive manufacturing	\$0	(\$2,016,657)	(\$548,566)	(\$2,565,224)
179	Soap and other detergent manufacturing	\$0	(\$4,717,902)	(\$1,365,623)	(\$6,083,525)
180	Polish and other sanitation good manufacturing	\$0	(\$3,912,131)	(\$1,072,747)	(\$4,984,878)
181	Surface active agent manufacturing	\$0	(\$96,710)	(\$26,299)	(\$123,008)
182	Toilet preparation manufacturing	\$0	(\$981,896)	(\$2,942,585)	(\$3,924,481)
183	Printing ink manufacturing	\$0	(\$5,759,243)	(\$339,521)	(\$6,098,764)
184	Explosives manufacturing	\$0	(\$457,465)	(\$23,205)	(\$480,670)
185	Custom compounding of purchased resins	\$0	(\$1,795,787)	(\$224,617)	(\$2,020,404)
186	Photographic film and chemical manufacturing	\$0	(\$1,794,519)	(\$290,833)	(\$2,085,352)

(Continued on the following page)

San Francisco Output at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
187	Other miscellaneous chemical product manufacturing	\$0	(\$4,678,059)	(\$943,745)	(\$5,621,804)
188	Plastics packaging materials and unlaminated film and sheet manuf:	(\$1,146,035)	(\$5,719,746)	(\$1,437,236)	(\$8,303,016)
189	Unlaminated plastics profile shape manufacturing	\$0	(\$2,460,078)	(\$248,138)	(\$2,708,216)
190	Plastics pipe and pipe fitting manufacturing	\$0	(\$3,069,779)	(\$1,027,531)	(\$4,097,310)
191	Laminated plastics plate, sheet (except packaging), and shape man	(\$1,315,262)	(\$989,318)	(\$213,690)	(\$2,518,270)
192	Polystyrene foam product manufacturing	\$0	(\$1,905,892)	(\$809,399)	(\$2,715,291)
193	Urethane and other foam product (except polystyrene) manufacturin	(\$658,489)	(\$1,859,724)	(\$1,237,418)	(\$3,755,632)
194	Plastics bottle manufacturing	\$0	(\$1,411,107)	(\$621,612)	(\$2,032,719)
195	Other plastics product manufacturing	(\$6,155,695)	(\$10,876,177)	(\$4,159,134)	(\$21,191,006)
196	Tire manufacturing	\$0	(\$401,726)	(\$171,312)	(\$573,039)
197	Rubber and plastics hoses and belting manufacturing	\$0	(\$484,409)	(\$137,494)	(\$621,903)
198	Other rubber product manufacturing	\$0	(\$2,112,990)	(\$713,078)	(\$2,826,068)
199	Pottery, ceramics, and plumbing fixture manufacturing	\$0	(\$643,509)	(\$168,976)	(\$812,485)
200	Brick, tile, and other structural clay product manufacturing	\$0	(\$3,141,972)	(\$1,068,488)	(\$4,210,461)
201	Flat glass manufacturing	\$0	(\$451,127)	(\$39,622)	(\$490,749)
202	Other pressed and blown glass and glassware manufacturing	\$0	(\$1,348,813)	(\$379,985)	(\$1,728,797)
203	Glass container manufacturing	\$0	(\$6,275,316)	(\$1,314,080)	(\$7,589,397)
204	Glass product manufacturing made of purchased glass	\$0	(\$3,344,744)	(\$785,929)	(\$4,130,673)
205	Cement manufacturing	\$0	(\$2,800,576)	(\$672,998)	(\$3,473,575)
206	Ready-mix concrete manufacturing	\$0	(\$8,508,134)	(\$2,520,281)	(\$11,028,414)
207	Concrete block and brick manufacturing	\$0	(\$1,144,949)	(\$303,664)	(\$1,448,613)
208	Concrete pipe manufacturing	\$0	(\$316,321)	(\$39,622)	(\$355,943)
209	Other concrete product manufacturing	\$0	(\$9,356,149)	(\$898,184)	(\$10,254,332)
210	Lime manufacturing	\$0	(\$97,290)	(\$59,880)	(\$157,170)
211	Gypsum product manufacturing	\$0	(\$2,882,742)	(\$1,149,826)	(\$4,032,568)
212	Abrasive product manufacturing	\$0	(\$194,858)	(\$46,500)	(\$241,358)
213	Cut stone and stone product manufacturing	\$0	(\$423,685)	(\$293,119)	(\$716,803)
214	Ground or treated mineral and earth manufacturing	\$0	(\$370,082)	(\$145,862)	(\$515,944)
215	Mineral wool manufacturing	\$0	(\$873,172)	(\$907,247)	(\$1,780,419)
216	Miscellaneous nonmetallic mineral products manufacturing	\$0	(\$985,517)	(\$83,726)	(\$1,069,243)
217	Iron and steel mills and ferroalloy manufacturing	\$0	(\$7,178,352)	(\$1,113,894)	(\$8,292,245)
218	Iron, steel pipe and tube manufacturing from purchased steel	\$0	(\$1,836,026)	(\$296,338)	(\$2,132,363)
219	Rolled steel shape manufacturing	\$0	(\$605,408)	(\$94,386)	(\$699,794)
220	Steel wire drawing	\$0	(\$675,704)	(\$121,874)	(\$797,578)
221	Alumina refining and primary aluminum production	\$0	(\$254,857)	(\$37,752)	(\$292,609)
222	Secondary smelting and alloying of aluminum	\$0	(\$531,816)	(\$75,288)	(\$607,104)
223	Aluminum sheet, plate, and foil manufacturing	\$0	(\$214,402)	(\$41,236)	(\$255,638)
224	Other aluminum rolling, drawing and extruding	\$0	(\$1,726,821)	(\$401,844)	(\$2,128,665)
225	Nonferrous metal (exc aluminum) smelting and refining	\$0	(\$116,337)	(\$13,236)	(\$129,573)
226	Copper rolling, drawing, extruding and alloying	\$0	(\$235,193)	(\$33,332)	(\$268,524)
227	Nonferrous metal, except copper and aluminum, shaping	\$0	(\$294,257)	(\$50,784)	(\$345,041)
228	Secondary processing of other nonferrous metals	\$0	(\$982,339)	(\$140,402)	(\$1,122,741)
229	Ferrous metal foundries	\$0	(\$1,205,210)	(\$185,542)	(\$1,390,752)
230	Nonferrous metal foundries	\$0	(\$458,544)	(\$109,284)	(\$567,828)
231	Iron and steel forging	\$0	(\$1,110,751)	(\$200,365)	(\$1,311,117)
232	Nonferrous forging	\$0	(\$682,295)	(\$121,746)	(\$804,041)
233	Custom roll forming	\$0	(\$1,031,254)	(\$114,371)	(\$1,145,625)
234	Crown and closure manufacturing and metal stamping	\$0	(\$3,423,691)	(\$371,026)	(\$3,794,717)
235	Cutlery, utensil, pot, and pan manufacturing	\$0	(\$67,062)	(\$32,240)	(\$99,302)
236	Handtool manufacturing	(\$433,823)	(\$257,494)	(\$93,245)	(\$784,563)
237	Prefabricated metal buildings and components manufacturing	\$0	(\$2,143,436)	(\$380,376)	(\$2,523,812)
238	Fabricated structural metal manufacturing	\$0	(\$10,079,132)	(\$847,258)	(\$10,926,390)
239	Plate work manufacturing	\$0	(\$538,620)	(\$130,420)	(\$669,039)
240	Metal window and door manufacturing	\$0	(\$3,492,013)	(\$1,262,799)	(\$4,754,813)
241	Sheet metal work manufacturing	\$0	(\$7,639,044)	(\$1,855,251)	(\$9,494,295)
242	Ornamental and architectural metal work manufacturing	\$0	(\$3,745,959)	(\$540,308)	(\$4,286,268)
243	Power boiler and heat exchanger manufacturing	\$0	(\$48,817)	(\$10,288)	(\$59,105)
244	Metal tank (heavy gauge) manufacturing	\$0	(\$230,421)	(\$54,348)	(\$284,769)
245	Metal cans manufacturing	\$0	(\$6,265,830)	(\$1,765,123)	(\$8,030,954)
246	Metal barrels, drums and pails manufacturing	\$0	(\$539,396)	(\$135,495)	(\$674,891)
247	Hardware manufacturing	\$0	(\$1,231,078)	(\$592,764)	(\$1,823,842)
248	Spring and wire product manufacturing	(\$256,481)	(\$1,593,388)	(\$441,130)	(\$2,290,999)

(Continued on the following page)

San Francisco Output at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
249	Machine shops	\$0	(\$10,923,972)	(\$2,298,758)	(\$13,222,730)
250	Turned product and screw, nut, and bolt manufacturing	\$0	(\$4,292,497)	(\$796,199)	(\$5,088,697)
251	Metal heat treating	\$0	(\$1,602,330)	(\$424,431)	(\$2,026,761)
252	Metal coating and nonprecious engraving	\$0	(\$3,562,578)	(\$951,544)	(\$4,514,122)
253	Electroplating, anodizing, and coloring metal	(\$414,673)	(\$2,641,658)	(\$749,998)	(\$3,806,329)
254	Valve and fittings, other than plumbing, manufacturing	\$0	(\$17,032,830)	(\$745,096)	(\$17,777,925)
255	Plumbing fixture fitting and trim manufacturing	\$0	(\$1,969,062)	(\$1,005,485)	(\$2,974,547)
256	Ball and roller bearing manufacturing	\$0	(\$603,362)	(\$152,758)	(\$756,120)
257	Small arms ammunition manufacturing	\$0	(\$4,048)	(\$5,766)	(\$9,813)
258	Ammunition, except for small arms, manufacturing	\$0	(\$3,224)	(\$1,562)	(\$4,786)
259	Small arms, ordnance, and accessories manufacturing	\$0	(\$39,970)	(\$30,575)	(\$70,545)
260	Fabricated pipe and pipe fitting manufacturing	\$0	(\$898,510)	(\$324,378)	(\$1,222,888)
261	Other fabricated metal manufacturing	(\$366,329)	(\$5,637,540)	(\$1,067,856)	(\$7,071,725)
262	Farm machinery and equipment manufacturing	\$0	(\$378,527)	(\$122,775)	(\$501,301)
263	Lawn and garden equipment manufacturing	\$0	(\$50,547)	(\$67,417)	(\$117,965)
264	Construction machinery manufacturing	\$0	(\$203,444)	(\$22,167)	(\$225,611)
265	Mining machinery and equipment manufacturing	\$0	(\$34,736)	(\$2,249)	(\$36,985)
266	Oil and gas field machinery and equipment manufacturing	\$0	(\$356,566)	(\$32,778)	(\$389,344)
267	Food product machinery manufacturing	\$0	(\$118,220)	(\$81,552)	(\$199,772)
268	Semiconductor machinery manufacturing	\$0	(\$12,646,015)	(\$437,147)	(\$13,083,161)
269	Sawmill, woodworking, and paper machinery	(\$403,875)	(\$49,226)	(\$4,172)	(\$457,273)
270	Printing machinery and equipment manufacturing	\$0	(\$570,798)	(\$35,297)	(\$606,095)
271	All other industrial machinery manufacturing	(\$6,786,239)	(\$192,613)	(\$52,933)	(\$7,031,785)
272	Optical instrument and lens manufacturing	\$0	(\$153,420)	(\$13,649)	(\$167,069)
273	Photographic and photocopying equipment manufacturing	\$0	(\$259,060)	(\$71,490)	(\$330,550)
274	Other commercial service industry machinery manufacturing	\$0	(\$2,608,380)	(\$798,472)	(\$3,406,851)
275	Air purification and ventilation equipment manufacturing	\$0	(\$993,731)	(\$71,833)	(\$1,065,565)
276	Heating equipment (except warm air furnaces) manufacturing	\$0	(\$819,832)	(\$309,285)	(\$1,129,116)
277	Air conditioning, refrigeration, and warm air heating equipment manu	(\$12,742,594)	(\$3,960,047)	(\$931,981)	(\$17,634,621)
278	Industrial mold manufacturing	(\$4,861,160)	(\$243,441)	(\$20,785)	(\$5,125,387)
279	Special tool, die, jig, and fixture manufacturing	(\$496,109)	(\$143,563)	(\$19,245)	(\$658,916)
280	Cutting tool and machine tool accessory manufacturing	(\$2,460,688)	(\$381,883)	(\$32,108)	(\$2,874,679)
281	Machine tool manufacturing	\$0	(\$336,395)	(\$54,209)	(\$390,603)
282	Rolling mill and other metalworking machinery manufacturing	\$0	(\$30,219)	(\$12,436)	(\$42,655)
283	Turbine and turbine generator set units manufacturing	\$0	(\$492,527)	(\$7,779)	(\$500,306)
284	Speed changer, industrial high-speed drive, and gear manufacturing	\$0	(\$71,784)	(\$9,003)	(\$80,787)
285	Mechanical power transmission equipment manufacturing	\$0	(\$37,542)	(\$7,220)	(\$44,762)
286	Other engine equipment manufacturing	\$0	(\$32,279)	(\$12,512)	(\$44,791)
287	Pump and pumping equipment manufacturing	\$0	(\$417,919)	(\$225,583)	(\$643,502)
288	Air and gas compressor manufacturing	\$0	(\$117,115)	(\$47,790)	(\$164,905)
289	Measuring and dispensing pump manufacturing	\$0	(\$2,184)	(\$272)	(\$2,456)
290	Elevator and moving stairway manufacturing	\$0	(\$382,662)	(\$6,916)	(\$389,579)
291	Conveyor and conveying equipment manufacturing	\$0	(\$78,868)	(\$6,831)	(\$85,699)
292	Overhead cranes, hoists, and monorail systems manufacturing	\$0	(\$32,202)	(\$2,448)	(\$34,650)
293	Industrial truck, trailer, and stacker manufacturing	\$0	(\$151,624)	(\$33,907)	(\$185,531)
294	Power-driven handtool manufacturing	\$0	(\$39,047)	(\$12,741)	(\$51,788)
295	Welding and soldering equipment manufacturing	(\$6,863,384)	(\$273,141)	(\$54,866)	(\$7,191,391)
296	Packaging machinery manufacturing	\$0	(\$1,131,821)	(\$59,027)	(\$1,190,848)
297	Industrial process furnace and oven manufacturing	\$0	(\$11,112)	(\$3,101)	(\$14,213)
298	Fluid power cylinder and actuator manufacturing	\$0	(\$142,483)	(\$8,608)	(\$151,090)
299	Fluid power pump and motor manufacturing	\$0	(\$620,360)	(\$35,288)	(\$655,647)
300	Scales, balances, and miscellaneous general purpose machinery m	\$0	(\$485,289)	(\$40,630)	(\$525,919)
301	Electronic computer manufacturing	(\$572,296,248)	(\$48,420,372)	(\$11,964,818)	(\$632,681,439)
302	Computer storage device manufacturing	\$0	(\$41,399,105)	(\$859,900)	(\$42,259,005)
303	Computer terminals and other computer peripheral equipment manu	\$0	(\$15,175,930)	(\$982,076)	(\$16,158,006)
304	Telephone apparatus manufacturing	\$0	(\$4,432,374)	(\$721,670)	(\$5,154,044)
305	Broadcast and wireless communications equipment manufacturing	(\$41,659,638)	(\$24,554,147)	(\$2,007,829)	(\$68,221,613)
306	Other communications equipment manufacturing	\$0	(\$2,142,773)	(\$270,387)	(\$2,413,160)
307	Audio and video equipment manufacturing	(\$15,583,327)	(\$2,653,040)	(\$324,685)	(\$18,561,052)
308	Bare printed circuit board manufacturing	\$0	(\$5,942,080)	(\$209,244)	(\$6,151,324)
309	Semiconductor and related device manufacturing	(\$4,497,096)	(\$74,793,824)	(\$11,304,799)	(\$90,595,719)
310	Capacitor, resistor, coil, transformer, and other inductor manufacturi	(\$249,684)	(\$2,786,923)	(\$157,690)	(\$3,194,297)

(Continued on the following page)

San Francisco Output at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
311	Electronic connector manufacturing	\$0	(\$2,747,803)	(\$244,359)	(\$2,992,162)
312	Printed circuit assembly (electronic assembly) manufacturing	\$0	(\$17,514,000)	(\$627,058)	(\$18,141,058)
313	Other electronic component manufacturing	\$0	(\$8,116,545)	(\$422,115)	(\$8,538,659)
314	Electromedical and electrotherapeutic apparatus manufacturing	(\$1,178,176)	(\$81,579)	(\$116,481)	(\$1,376,236)
315	Search, detection, and navigation instruments manufacturing	\$0	(\$994,386)	(\$76,415)	(\$1,070,802)
316	Automatic environmental control manufacturing	\$0	(\$156,632)	(\$43,649)	(\$200,281)
317	Industrial process variable instruments manufacturing	(\$1,276,202)	(\$899,438)	(\$124,014)	(\$2,299,655)
318	Totalizing fluid meter and counting device manufacturing	\$0	(\$109,992)	(\$23,277)	(\$133,269)
319	Electricity and signal testing instruments manufacturing	(\$31,317,908)	(\$3,023,612)	(\$29,329)	(\$34,370,849)
320	Analytical laboratory instrument manufacturing	\$0	(\$2,222,568)	(\$303,245)	(\$2,525,813)
321	Irradiation apparatus manufacturing	\$0	(\$102,469)	(\$39,054)	(\$141,523)
322	Watch, clock, and other measuring and controlling device manufact	\$0	(\$229,232)	(\$60,459)	(\$289,690)
323	Blank magnetic and optical recording media manufacturing	\$0	(\$8,097,328)	(\$520,591)	(\$8,617,919)
324	Software and other prerecorded and record reproducing	\$0	(\$3,547,907)	(\$278,917)	(\$3,826,824)
325	Electric lamp bulb and part manufacturing	\$0	(\$378,779)	(\$102,357)	(\$481,136)
326	Lighting fixture manufacturing	(\$1,686,353)	(\$3,716,289)	(\$556,413)	(\$5,959,055)
327	Small electrical appliance manufacturing	\$0	(\$72,205)	(\$35,498)	(\$107,704)
328	Household cooking appliance manufacturing	\$0	(\$528,894)	(\$195,701)	(\$724,595)
329	Household refrigerator and home freezer manufacturing	\$0	(\$27,130)	(\$34,355)	(\$61,486)
330	Household laundry equipment manufacturing	\$0	(\$77,924)	(\$3,944,956)	(\$4,022,880)
331	Other major household appliance manufacturing	\$0	(\$392)	(\$903)	(\$1,294)
332	Power, distribution, and specialty transformer manufacturing	\$0	(\$834,396)	(\$105,271)	(\$939,667)
333	Motor and generator manufacturing	(\$359,753)	(\$1,335,658)	(\$451,440)	(\$2,146,851)
334	Switchgear and switchboard apparatus manufacturing	(\$1,911,360)	(\$3,000,442)	(\$401,201)	(\$5,313,003)
335	Relay and industrial control manufacturing	\$0	(\$857,037)	(\$118,265)	(\$975,302)
336	Storage battery manufacturing	\$0	(\$2,043,467)	(\$344,936)	(\$2,388,404)
337	Primary battery manufacturing	\$0	(\$394,571)	(\$48,203)	(\$442,774)
338	Fiber optic cable manufacturing	\$0	(\$6,194,861)	(\$822,748)	(\$7,017,609)
339	Other communication and energy wire manufacturing	\$0	(\$2,647,481)	(\$428,259)	(\$3,075,739)
340	Wiring device manufacturing	\$0	(\$3,622,657)	(\$1,273,002)	(\$4,895,660)
341	Carbon and graphite product manufacturing	\$0	(\$1,564,102)	(\$104,319)	(\$1,668,421)
342	All other miscellaneous electrical equipment and component manufc	(\$6,119,824)	(\$3,104,979)	(\$140,823)	(\$9,365,627)
343	Automobile manufacturing	\$0	(\$140,381)	(\$1,390,402)	(\$1,530,782)
344	Light truck and utility vehicle manufacturing	\$0	(\$769)	(\$70,525)	(\$71,294)
345	Heavy duty truck manufacturing	\$0	(\$29,678)	(\$17,085)	(\$46,763)
346	Motor vehicle body manufacturing	\$0	(\$12,558)	(\$15,848)	(\$28,406)
347	Truck trailer manufacturing	\$0	(\$1,050)	(\$2,065)	(\$3,115)
348	Motor home manufacturing	\$0	(\$465)	(\$11,048)	(\$11,513)
349	Travel trailer and camper manufacturing	\$0	(\$196,354)	(\$205,848)	(\$402,202)
350	Motor vehicle gasoline engine and engine parts manufacturing	\$0	(\$265,623)	(\$138,886)	(\$404,509)
351	Motor vehicle electrical and electronic equipment manufacturing	\$0	(\$853,140)	(\$409,668)	(\$1,262,807)
352	Motor vehicle steering, suspension component (except spring), and	\$0	(\$1,950,171)	(\$549,304)	(\$2,499,475)
353	Motor vehicle transmission and power train parts manufacturing	\$0	(\$114,099)	(\$36,978)	(\$151,077)
354	Motor vehicle seating and interior trim manufacturing	\$0	(\$16,261)	(\$11,542)	(\$27,803)
355	Motor vehicle metal stamping	\$0	(\$14,052)	(\$2,460)	(\$16,512)
356	Other motor vehicle parts manufacturing	\$0	(\$3,789,516)	(\$1,030,670)	(\$4,820,186)
357	Aircraft manufacturing	\$0	(\$118,424)	(\$34,174)	(\$152,598)
358	Aircraft engine and engine parts manufacturing	\$0	(\$27,855)	(\$3,190)	(\$31,045)
359	Other aircraft parts and auxiliary equipment manufacturing	\$0	(\$644,133)	(\$140,682)	(\$784,815)
360	Guided missile and space vehicle manufacturing	(\$7,695,628)	(\$1,646,356)	(\$51,955)	(\$9,393,940)
361	Propulsion units and parts for space vehicles and guided missiles m	\$0	(\$328,089)	(\$4,397)	(\$332,486)
362	Railroad rolling stock manufacturing	\$0	(\$452,959)	(\$77,275)	(\$530,234)
363	Ship building and repairing	\$0	(\$251,099)	(\$174,732)	(\$425,831)
364	Boat building	\$0	(\$6,774)	(\$79,695)	(\$86,470)
365	Motorcycle, bicycle, and parts manufacturing	\$0	(\$140,804)	(\$182,754)	(\$323,559)
366	Military armored vehicle, tank, and tank component manufacturing	\$0	(\$7,396)	(\$2,774)	(\$10,170)
367	All other transportation equipment manufacturing	\$0	(\$26,632)	(\$56,063)	(\$82,695)
368	Wood kitchen cabinet and countertop manufacturing	\$0	(\$2,616,422)	(\$2,786,443)	(\$5,402,865)
369	Upholstered household furniture manufacturing	\$0	(\$20,314)	(\$1,040,684)	(\$1,060,999)
370	Nonupholstered wood household furniture manufacturing	\$0	(\$31,233)	(\$581,279)	(\$612,511)
371	Other household nonupholstered furniture manufacturing	(\$3,618,993)	(\$509,797)	(\$183,267)	(\$4,312,057)
372	Institutional furniture manufacturing	(\$2,030,699)	(\$75,149)	(\$14,864)	(\$2,120,712)

(Continued on the following page)

San Francisco Output at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
373	Wood office furniture manufacturing	\$0	(\$6,766)	(\$2,452)	(\$9,218)
374	Custom architectural woodwork and millwork	\$0	(\$72,361)	(\$19,863)	(\$92,224)
375	Office furniture, except wood, manufacturing	\$0	(\$39,653)	(\$13,710)	(\$53,362)
376	Showcase, partition, shelving, and locker manufacturing	\$0	(\$2,037,989)	(\$283,945)	(\$2,321,934)
377	Mattress manufacturing	\$0	(\$52,476)	(\$479,713)	(\$532,189)
378	Blind and shade manufacturing	\$0	(\$108,779)	(\$68,479)	(\$177,258)
379	Surgical and medical instrument manufacturing	\$0	(\$1,176,152)	(\$4,389,608)	(\$5,565,760)
380	Surgical appliance and supplies manufacturing	(\$4,205,927)	(\$1,479,291)	(\$2,231,273)	(\$7,916,491)
381	Dental equipment and supplies manufacturing	\$0	(\$400,007)	(\$1,154,950)	(\$1,554,957)
382	Ophthalmic goods manufacturing	\$0	(\$12,025)	(\$159,289)	(\$171,314)
383	Dental laboratories	\$0	(\$517,491)	(\$1,504,584)	(\$2,022,075)
384	Jewelry and silverware manufacturing	\$0	(\$263,164)	(\$362,154)	(\$625,317)
385	Sporting and athletic goods manufacturing	(\$1,296,033)	(\$135,010)	(\$377,216)	(\$1,808,258)
386	Doll, toy, and game manufacturing	(\$9,678,276)	(\$85,654)	(\$1,467,587)	(\$11,231,517)
387	Office supplies (except paper) manufacturing	\$0	(\$453,887)	(\$47,191)	(\$501,079)
388	Sign manufacturing	(\$10,158,161)	(\$778,757)	(\$105,165)	(\$11,042,083)
389	Gasket, packing, and sealing device manufacturing	\$0	(\$741,594)	(\$241,579)	(\$983,174)
390	Musical instrument manufacturing	(\$1,414,581)	(\$179,332)	(\$249,270)	(\$1,843,183)
391	Fasteners, buttons, needles, and pins manufacturing	\$0	(\$70,056)	(\$41,279)	(\$111,335)
392	Broom, brush, and mop manufacturing	\$0	(\$492,653)	(\$130,987)	(\$623,640)
393	Burial casket manufacturing	\$0	(\$1,535)	(\$8,909)	(\$10,444)
394	All other miscellaneous manufacturing	(\$1,684,671)	(\$4,787,370)	(\$2,207,051)	(\$8,679,091)
395	Wholesale trade	(\$405,242,415)	(\$424,402,024)	(\$389,149,319)	(\$1,218,793,758)
396	Retail - Motor vehicle and parts dealers	(\$6,364,427)	(\$3,465,338)	(\$35,556,821)	(\$45,386,586)
397	Retail - Furniture and home furnishings stores	(\$18,372,769)	(\$3,331,580)	(\$30,811,524)	(\$52,515,873)
398	Retail - Electronics and appliance stores	(\$42,065,942)	(\$3,939,061)	(\$17,425,764)	(\$63,430,767)
399	Retail - Building material and garden equipment and supplies stores	(\$6,736,434)	(\$7,011,206)	(\$42,866,976)	(\$56,614,617)
400	Retail - Food and beverage stores	(\$34,507,352)	(\$1,119,160)	(\$127,924,912)	(\$163,551,424)
401	Retail - Health and personal care stores	(\$25,665,849)	(\$7,558,125)	(\$56,399,513)	(\$89,623,487)
402	Retail - Gasoline stores	(\$3,603,081)	(\$2,865,579)	(\$20,265,655)	(\$26,734,314)
403	Retail - Clothing and clothing accessories stores	(\$436,389,842)	(\$6,756,536)	(\$73,921,436)	(\$517,067,815)
404	Retail - Sporting goods, hobby, musical instrument and book stores	(\$9,561,180)	(\$2,602,065)	(\$23,836,048)	(\$35,999,293)
405	Retail - General merchandise stores	\$0	(\$3,762,836)	(\$102,825,952)	(\$106,588,788)
406	Retail - Miscellaneous store retailers	(\$21,103,817)	(\$4,348,796)	(\$35,468,721)	(\$60,921,334)
407	Retail - Nonstore retailers	(\$61,899,751)	(\$5,996,355)	(\$137,045,872)	(\$204,941,977)
408	Air transportation	\$0	(\$111,058,112)	(\$26,563,607)	(\$137,621,719)
409	Rail transportation	(\$20,733,956)	(\$10,853,328)	(\$3,938,358)	(\$35,525,641)
410	Water transportation	(\$11,715,976)	(\$5,898,072)	(\$13,274,961)	(\$30,889,010)
411	Truck transportation	(\$3,636,755)	(\$43,389,260)	(\$34,574,411)	(\$81,600,427)
412	Transit and ground passenger transportation	(\$14,157,776)	(\$38,016,982)	(\$27,377,485)	(\$79,552,242)
413	Pipeline transportation	(\$238,633)	(\$83,001,196)	(\$2,147,682)	(\$85,387,511)
414	Scenic and sightseeing transportation and support activities for tran	(\$70,688,945)	(\$102,633,715)	(\$25,955,274)	(\$199,277,934)
415	Couriers and messengers	(\$8,138,316)	(\$77,317,993)	(\$17,284,731)	(\$102,741,040)
416	Warehousing and storage	(\$2,106,035)	(\$43,501,744)	(\$17,111,536)	(\$62,719,315)
417	Newspaper publishers	(\$17,032,720)	(\$12,689,406)	(\$5,794,369)	(\$35,516,496)
418	Periodical publishers	(\$135,084,096)	(\$20,820,319)	(\$10,635,481)	(\$166,539,897)
419	Book publishers	(\$93,226,544)	(\$4,847,313)	(\$16,561,611)	(\$114,635,468)
420	Directory, mailing list, and other publishers	(\$42,137,144)	(\$4,109,059)	(\$1,545,206)	(\$47,791,410)
421	Greeting card publishing	\$0	(\$7,208)	(\$6,242)	(\$13,449)
422	Software publishers	(\$1,409,777,886)	(\$122,115,207)	(\$37,544,368)	(\$1,569,437,460)
423	Motion picture and video industries	(\$103,503,100)	(\$263,204,905)	(\$34,914,637)	(\$401,622,641)
424	Sound recording industries	(\$4,223,408)	(\$8,331,345)	(\$5,055,672)	(\$17,610,424)
425	Radio and television broadcasting	(\$549,983,394)	(\$97,267,059)	(\$10,396,483)	(\$657,646,936)
426	Cable and other subscription programming	(\$987,277,143)	(\$235,764,254)	(\$17,745,357)	(\$1,240,786,754)
427	Wired telecommunications carriers	\$0	(\$166,217,518)	(\$113,008,458)	(\$279,225,976)
428	Wireless telecommunications carriers (except satellite)	\$0	(\$189,527,411)	(\$128,864,390)	(\$318,391,801)
429	Satellite, telecommunications resellers, and all other telecommunica	(\$67,690,790)	(\$12,940,209)	(\$7,921,564)	(\$88,552,563)
430	Data processing, hosting, and related services	(\$713,776,831)	(\$174,955,270)	(\$21,159,501)	(\$909,891,601)
431	News syndicates, libraries, archives and all other information service	(\$604,060,869)	(\$21,139,017)	(\$15,545,391)	(\$640,745,277)
432	Internet publishing and broadcasting and web search portals	(\$26,416,494)	(\$354,438,813)	(\$63,390,742)	(\$444,246,049)
433	Monetary authorities and depository credit intermediation	(\$1,750,418,585)	(\$430,624,309)	(\$206,608,815)	(\$2,387,651,710)
434	Nondepository credit intermediation and related activities	(\$718,609,354)	(\$147,610,605)	(\$81,390,681)	(\$947,610,640)

(Continued on the following page)

San Francisco Output at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
435	Securities and commodity contracts intermediation and brokerage	(\$1,062,817,910)	(\$180,782,874)	(\$51,226,316)	(\$1,294,827,100)
436	Other financial investment activities	(\$2,183,495,915)	(\$502,308,634)	(\$187,124,174)	(\$2,872,928,723)
437	Insurance carriers	(\$1,320,449,500)	(\$229,651,011)	(\$192,277,406)	(\$1,742,377,917)
438	Insurance agencies, brokerages, and related activities	(\$788,626,808)	(\$965,827,830)	(\$90,321,856)	(\$1,844,776,494)
439	Funds, trusts, and other financial vehicles	(\$612,446,214)	(\$54,835,221)	(\$107,519,188)	(\$774,800,623)
440	Real estate	(\$2,022,239,481)	(\$836,969,249)	(\$500,229,240)	(\$3,359,437,970)
441	Owner-occupied dwellings	\$0	\$0	(\$1,088,559,326)	(\$1,088,559,326)
442	Automotive equipment rental and leasing	(\$5,979,569)	(\$22,425,383)	(\$15,780,213)	(\$44,185,165)
443	General and consumer goods rental except video tapes and discs	(\$12,814,556)	(\$6,357,871)	(\$6,704,490)	(\$25,876,916)
444	Video tape and disc rental	\$0	\$0	(\$2,439,780)	(\$2,439,780)
445	Commercial and industrial machinery and equipment rental and lease	(\$183,175,209)	(\$81,078,425)	(\$10,072,482)	(\$274,326,116)
446	Lessors of nonfinancial intangible assets	(\$284,771,971)	(\$163,839,046)	(\$17,863,368)	(\$466,474,385)
447	Legal services	(\$2,203,879,009)	(\$206,507,080)	(\$116,726,819)	(\$2,527,112,908)
448	Accounting, tax preparation, bookkeeping, and payroll services	(\$187,799,211)	(\$207,110,387)	(\$42,546,570)	(\$437,456,168)
449	Architectural, engineering, and related services	(\$1,532,262,077)	(\$230,635,140)	(\$35,444,482)	(\$1,798,341,699)
450	Specialized design services	(\$75,132,279)	(\$48,013,884)	(\$8,721,479)	(\$131,867,642)
451	Custom computer programming services	(\$1,131,122,682)	(\$10,016,014)	(\$1,135,864)	(\$1,142,274,560)
452	Computer systems design services	(\$300,265,214)	(\$87,652,778)	(\$11,620,890)	(\$399,538,883)
453	Other computer related services, including facilities management	(\$110,876,199)	(\$120,264,839)	(\$14,243,453)	(\$245,384,492)
454	Management consulting services	(\$900,715,279)	(\$304,884,461)	(\$36,974,592)	(\$1,242,574,332)
455	Environmental and other technical consulting services	(\$113,892,482)	(\$71,978,082)	(\$8,539,982)	(\$194,410,546)
456	Scientific research and development services	(\$16,110,626)	(\$7,283,021)	(\$5,665,080)	(\$29,058,727)
457	Advertising, public relations, and related services	(\$1,063,207,454)	(\$286,347,778)	(\$42,607,612)	(\$1,392,162,843)
458	Photographic services	(\$511,758)	(\$14,325,021)	(\$7,697,561)	(\$22,534,340)
459	Veterinary services	\$0	(\$235,284)	(\$10,580,076)	(\$10,815,361)
460	Marketing research and all other miscellaneous professional, scienti	(\$99,292,005)	(\$117,483,019)	(\$16,644,860)	(\$233,419,884)
461	Management of companies and enterprises	(\$63,502,858)	(\$374,057,281)	(\$82,478,658)	(\$520,038,796)
462	Office administrative services	(\$806,886,667)	(\$110,889,221)	(\$12,798,626)	(\$930,574,514)
463	Facilities support services	(\$3,868,901)	(\$31,036,412)	(\$4,203,452)	(\$39,108,766)
464	Employment services	(\$388,336,846)	(\$422,775,183)	(\$51,261,298)	(\$862,373,326)
465	Business support services	(\$51,442,346)	(\$86,199,335)	(\$14,084,444)	(\$151,726,125)
466	Travel arrangement and reservation services	(\$72,657,465)	(\$37,265,636)	(\$26,331,326)	(\$136,254,426)
467	Investigation and security services	(\$12,361,378)	(\$48,094,146)	(\$13,513,212)	(\$73,968,736)
468	Services to buildings	(\$316,603,977)	(\$74,123,274)	(\$39,878,614)	(\$430,605,865)
469	Landscape and horticultural services	(\$131,641)	(\$37,709,578)	(\$21,403,809)	(\$59,245,027)
470	Other support services	(\$56,841,939)	(\$40,756,017)	(\$6,302,206)	(\$103,900,163)
471	Waste management and remediation services	(\$60,795,441)	(\$45,740,936)	(\$21,886,195)	(\$128,422,571)
472	Elementary and secondary schools	(\$8,081,448)	\$0	(\$51,580,185)	(\$59,661,633)
473	Junior colleges, colleges, universities, and professional schools	(\$34,033,700)	(\$2,298,007)	(\$116,799,585)	(\$153,131,292)
474	Other educational services	(\$26,580,520)	(\$6,000,343)	(\$45,350,522)	(\$77,931,385)
475	Offices of physicians	(\$30,002,287)	\$0	(\$195,243,956)	(\$225,246,243)
476	Offices of dentists	(\$27,360,583)	\$0	(\$79,709,696)	(\$107,070,278)
477	Offices of other health practitioners	(\$10,955,132)	\$0	(\$68,888,958)	(\$79,844,090)
478	Outpatient care centers	(\$11,017,139)	\$0	(\$96,397,221)	(\$107,414,360)
479	Medical and diagnostic laboratories	(\$2,684,028)	(\$578,723)	(\$18,508,375)	(\$21,771,127)
480	Home health care services	(\$1,361,653)	\$0	(\$19,496,653)	(\$20,858,307)
481	Other ambulatory health care services	(\$6,682,399)	(\$1,029,050)	(\$14,381,039)	(\$22,092,488)
482	Hospitals	(\$97,299,772)	(\$83,264)	(\$326,657,325)	(\$424,040,361)
483	Nursing and community care facilities	(\$1,067,350)	\$0	(\$52,226,934)	(\$53,294,283)
484	Residential mental retardation, mental health, substance abuse and	(\$468,442)	\$0	(\$14,981,264)	(\$15,449,706)
485	Individual and family services	(\$2,070,034)	\$0	(\$66,212,867)	(\$68,282,901)
486	Community food, housing, and other relief services, including rehabi	(\$1,575,775)	\$0	(\$30,206,005)	(\$31,781,780)
487	Child day care services	(\$6,850,821)	\$0	(\$39,344,498)	(\$46,195,320)
488	Performing arts companies	(\$25,874,049)	(\$10,072,760)	(\$26,280,177)	(\$62,226,985)
489	Commercial Sports Except Racing	(\$914,735)	(\$91,726,780)	(\$15,401,246)	(\$108,042,762)
490	Racing and Track Operation	\$0	(\$9,014)	(\$110,947)	(\$119,960)
491	Promoters of performing arts and sports and agents for public figure	(\$8,678,470)	(\$42,134,128)	(\$18,584,710)	(\$69,397,309)
492	Independent artists, writers, and performers	(\$119,626,561)	(\$72,657,755)	(\$11,670,150)	(\$203,954,467)
493	Museums, historical sites, zoos, and parks	(\$35,601,000)	\$0	(\$8,858,061)	(\$44,459,061)
494	Amusement parks and arcades	(\$1,096,715)	(\$430,067)	(\$8,221,522)	(\$9,748,304)
495	Gambling industries (except casino hotels)	\$0	(\$20,697)	(\$59,584,773)	(\$59,605,470)
496	Other amusement and recreation industries	(\$5,193,654)	(\$7,940,947)	(\$16,924,162)	(\$30,058,763)

(Continued on the following page)

San Francisco Output at Risk, 66" SLR + 100-Year Flood (continued)

Sector	Description	Direct	Indirect	Induced	Total
497	Fitness and recreational sports centers	(\$23,704,743)	(\$8,487,764)	(\$19,342,652)	(\$51,535,159)
498	Bowling centers	(\$546,944)	(\$4,289)	(\$314,466)	(\$865,699)
499	Hotels and motels, including casino hotels	(\$534,399,283)	(\$18,577,136)	(\$7,781,449)	(\$560,757,869)
500	Other accommodations	(\$231,228)	(\$164,439)	(\$144,777)	(\$540,444)
501	Full-service restaurants	(\$237,638,564)	(\$103,346,500)	(\$153,916,634)	(\$494,901,697)
502	Limited-service restaurants	(\$113,066,738)	(\$74,712,534)	(\$227,599,376)	(\$415,378,647)
503	All other food and drinking places	(\$9,982,068)	(\$25,431,110)	(\$65,096,382)	(\$100,509,561)
504	Automotive repair and maintenance, except car washes	(\$673,152)	(\$29,262,593)	(\$1,389,276)	(\$81,325,021)
505	Car washes	(\$135,938)	(\$2,090,324)	(\$4,346,414)	(\$6,572,676)
506	Electronic and precision equipment repair and maintenance	(\$2,577,971)	(\$24,614,136)	(\$6,080,454)	(\$33,272,561)
507	Commercial and industrial machinery and equipment repair and mai	(\$1,062,998)	(\$46,317,583)	(\$10,257,943)	(\$57,638,523)
508	Personal and household goods repair and maintenance	(\$781,911)	(\$33,572,694)	(\$17,630,662)	(\$51,985,267)
509	Personal care services	(\$4,325,639)	(\$32,239)	(\$42,139,185)	(\$46,497,064)
510	Death care services	(\$593,569)	\$0	(\$2,578,973)	(\$3,172,542)
511	Dry-cleaning and laundry services	(\$1,201,693)	(\$4,521,503)	(\$7,977,498)	(\$13,700,694)
512	Other personal services	(\$24,084,372)	(\$9,427,823)	(\$29,335,498)	(\$62,847,693)
513	Religious organizations	(\$2,869,969)	\$0	(\$195,654,849)	(\$198,524,818)
514	Grantmaking, giving, and social advocacy organizations	(\$65,139,772)	(\$2,446,790)	(\$41,953,912)	(\$109,540,474)
515	Business and professional associations	(\$221,027,402)	(\$37,463,841)	(\$22,728,742)	(\$281,219,985)
516	Labor and civic organizations	(\$140,896,998)	(\$378,500)	(\$41,020,729)	(\$182,296,227)
517	Private households	\$0	\$0	(\$15,820,634)	(\$15,820,634)
518	Postal service	\$0	(\$59,995,475)	(\$15,232,749)	(\$75,228,224)
519	Federal electric utilities	\$0	\$0	\$0	\$0
520	Other federal government enterprises	\$0	(\$15,668,204)	(\$6,960,115)	(\$22,628,319)
521	State government passenger transit	\$0	\$0	\$0	\$0
522	State government electric utilities	\$0	\$0	\$0	\$0
523	Other state government enterprises	\$0	(\$4,392)	(\$8,090)	(\$12,482)
524	Local government passenger transit	\$0	(\$1,897,521)	(\$1,357,360)	(\$3,254,881)
525	Local government electric utilities	\$0	(\$4,601,704)	(\$2,975,061)	(\$7,576,765)
526	Other local government enterprises	\$0	(\$29,297,231)	(\$35,858,738)	(\$65,155,968)
527	* Not an industry (Used and secondhand goods)	\$0	\$0	\$0	\$0
528	* Not an industry (Scrap)	\$0	\$0	\$0	\$0
529	* Not an industry (Rest of world adjustment)	\$0	\$0	\$0	\$0
530	* Not an industry (Noncomparable foreign imports)	\$0	\$0	\$0	\$0
531	* Employment and payroll of state govt, non-education	\$0	\$0	\$0	\$0
532	* Employment and payroll of state govt, education	\$0	\$0	\$0	\$0
533	* Employment and payroll of local govt, non-education	\$0	\$0	\$0	\$0
534	* Employment and payroll of local govt, education	\$0	\$0	\$0	\$0
535	* Employment and payroll of federal govt, non-military	\$0	\$0	\$0	\$0
536	* Employment and payroll of federal govt, military	\$0	\$0	\$0	\$0

Sources: IMPLAN; BAE, 2017.