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## Hazus: Earthquake Global Risk Report

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**Region Name:** SoCalShakeOut

**Earthquake Scenario:** sclegacyardentsentry2015\_se

**Print Date:** May 02, 2024

**Disclaimer:**

*Totals only reflect data for those census tracts/blocks included in the user's study region.*

*The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, geotechnical, and observed ground motion data.*

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## General Description of the Region

Hazus-MH is a regional earthquake loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences. The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The earthquake loss estimates provided in this report was based on a region that includes 15 county(ies) from the following state(s):

California

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 82,867.57 square miles and contains 5,938 census tracts. There are over 8,599 thousand households in the region which has a total population of 25,855,212 people. The distribution of population by Total Region and County is provided in Appendix B.

There are an estimated 7,375 thousand buildings in the region with a total building replacement value (excluding contents) of (millions of dollars). Approximately 90.00 % of the buildings (and % of the building value) are associated with residential housing.

The replacement value of the transportation and utility lifeline systems is estimated to be 313,975 and 227,545 (millions of dollars) , respectively.

## Building and Lifeline Inventory

### Building Inventory

Hazus estimates that there are 7,375 thousand buildings in the region which have an aggregate total replacement value of (millions of dollars) . Appendix B provides a general distribution of the building value by Total Region and County.

In terms of building construction types found in the region, wood frame construction makes up 87% of the building inventory. The remaining percentage is distributed between the other general building types.

### Critical Facility Inventory

Hazus breaks critical facilities into two (2) groups: essential facilities and high potential loss facilities (HPL). Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 369 hospitals in the region with a total bed capacity of 68,087 beds. There are 8,398 schools, 1,526 fire stations, 525 police stations and 134 emergency operation facilities. With respect to high potential loss facilities (HPL), there are no dams identified within the inventory. The inventory also includes no hazardous material sites, no military installations and no nuclear power plants.

### Transportation and Utility Lifeline Inventory

Within Hazus, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven (7) transportation systems that include highways, railways, light rail, bus, ports, ferry and airports. There are six (6) utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications. The lifeline inventory data are provided in Tables 1 and 2.

The total value of the lifeline inventory is over 541,520.00 (millions of dollars). This inventory includes over 14,041.12 miles of highways, 13,404 bridges, 300,868.46 miles of pipes.

**Table 1: Transportation System Lifeline Inventory**

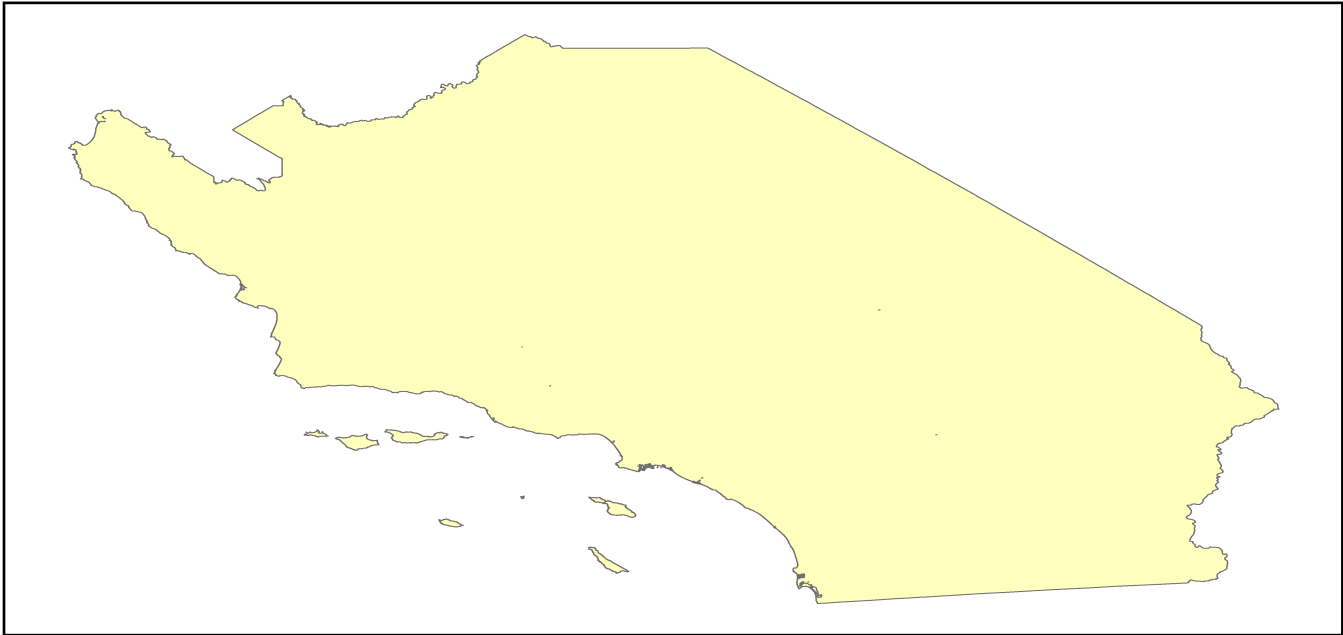
System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
<b>Highway</b>	Bridges	13,404	72063.0196
	Segments	10,797	140091.5881
	Tunnels	65	586.0681
	<b>Subtotal</b>		<b>212740.6758</b>
<b>Railways</b>	Bridges	2,319	13195.1100
	Facilities	126	335.5380
	Segments	2,222	70327.2831
	Tunnels	0	0.0000
	<b>Subtotal</b>		<b>83857.9311</b>
<b>Light Rail</b>	Bridges	51	13.2750
	Facilities	149	3200.8000
	Segments	8	5399.1047
	Tunnels	0	0.0000
	<b>Subtotal</b>		<b>8613.1797</b>
<b>Bus</b>	Facilities	55	119.7095
	<b>Subtotal</b>		<b>119.7095</b>
<b>Ferry</b>	Facilities	22	29.2820
	<b>Subtotal</b>		<b>29.2820</b>
<b>Port</b>	Facilities	357	1360.8285
	<b>Subtotal</b>		<b>1360.8285</b>
<b>Airport</b>	Facilities	181	5013.8658
	Runways	206	2239.9548
	<b>Subtotal</b>		<b>7253.8206</b>
		<b>Total</b>	<b>313,975.40</b>

**Table 2: Utility System Lifeline Inventory**

System	Component	# Locations / Segments	Replacement value (millions of dollars)
<b>Potable Water</b>	Distribution Lines	NA	5976.3859
	Facilities	53	2082.5820
	Pipelines	0	0.0000
		<b>Subtotal</b>	<b>8058.9679</b>
<b>Waste Water</b>	Distribution Lines	NA	3585.8315
	Facilities	149	25620.8182
	Pipelines	0	0.0000
		<b>Subtotal</b>	<b>29206.6497</b>
<b>Natural Gas</b>	Distribution Lines	NA	2390.5543
	Facilities	45	1617.5273
	Pipelines	455	21452.9073
		<b>Subtotal</b>	<b>25460.9889</b>
<b>Oil Systems</b>	Facilities	69	8.1420
	Pipelines	0	0.0000
		<b>Subtotal</b>	<b>8.1420</b>
<b>Electrical Power</b>	Facilities	704	164743.9548
		<b>Subtotal</b>	<b>164743.9548</b>
<b>Communication</b>	Facilities	562	66.3160
		<b>Subtotal</b>	<b>66.3160</b>
	<b>Total</b>		<b>227,545.00</b>

## Earthquake Scenario

Hazus uses the following set of information to define the earthquake parameters used for the earthquake loss estimate provided in this report.



<b>Scenario Name</b>	sclegacyardentsentry2015_se
<b>Type of Earthquake</b>	User-defined
<b>Fault Name</b>	NA
<b>Historical Epicenter ID #</b>	NA
<b>Probabilistic Return Period</b>	NA
<b>Longitude of Epicenter</b>	NA
<b>Latitude of Epicenter</b>	NA
<b>Earthquake Magnitude</b>	7.80
<b>Depth (km)</b>	NA
<b>Rupture Length (Km)</b>	NA
<b>Rupture Orientation (degrees)</b>	NA
<b>Attenuation Function</b>	NA

## Direct Earthquake Damage

### Building Damage

Hazus estimates that about 368,743 buildings will be at least moderately damaged. This is over 5.00 % of the buildings in the region. There are an estimated 28,165 buildings that will be damaged beyond repair. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 below summarizes the expected damage by general building type.

### Damage Categories by General Occupancy Type

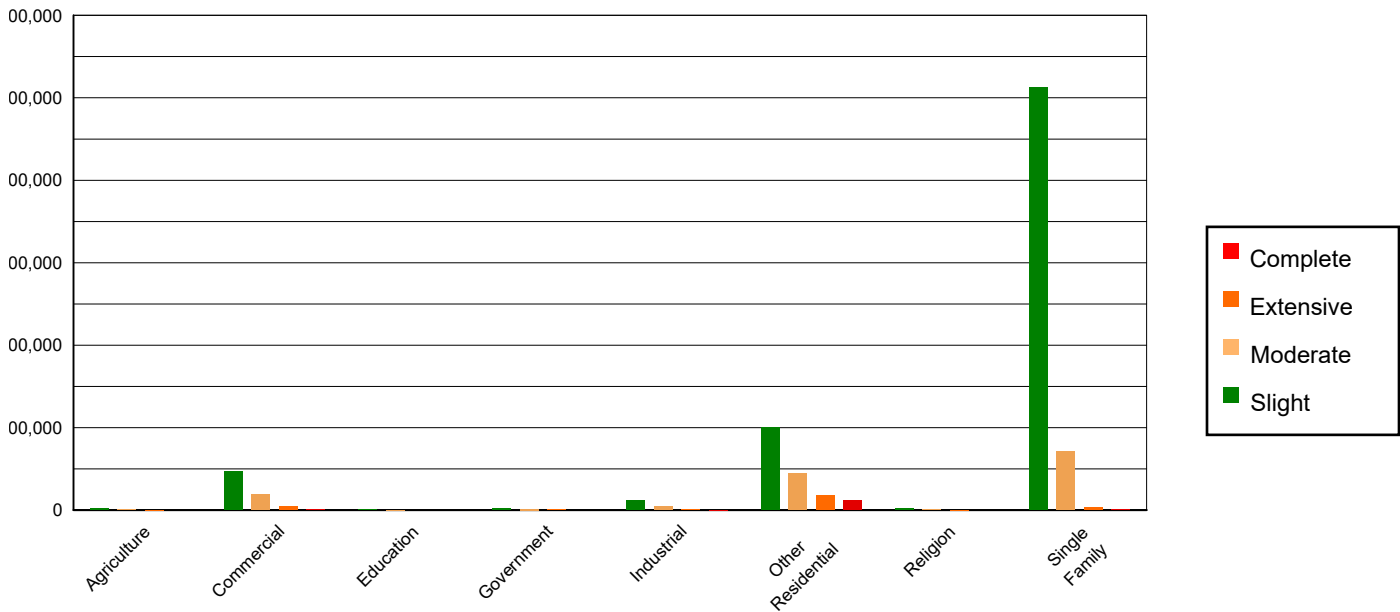


Table 3: Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
<b>Agriculture</b>	18280.63	0.32	4060.44	0.30	1498.75	0.53	343.44	0.62	96.74	0.34
<b>Commercial</b>	360506.55	6.38	94594.59	6.97	37160.97	13.05	8747.16	15.68	2531.73	8.99
<b>Education</b>	12144.37	0.21	1366.05	0.10	454.69	0.16	96.73	0.17	14.16	0.05
<b>Government</b>	28352.83	0.50	4217.71	0.31	2699.92	0.95	743.93	1.33	183.61	0.65
<b>Industrial</b>	94434.81	1.67	23641.63	1.74	9673.64	3.40	2193.40	3.93	451.53	1.60
<b>Other Residential</b>	791063.27	14.00	199746.67	14.72	88632.42	31.12	35852.97	64.28	22996.66	81.65
<b>Religion</b>	18561.60	0.33	4882.86	0.36	2289.89	0.80	650.76	1.17	192.89	0.68
<b>Single Family</b>	4326851.74	76.58	1024263.73	75.49	142389.26	50.00	7150.42	12.82	1697.83	6.03
<b>Total</b>	<b>5,650,196</b>		<b>1,356,774</b>		<b>284,800</b>		<b>55,779</b>		<b>28,165</b>	

**Table 4: Expected Building Damage by Building Type (All Design Levels)**

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
<b>Wood</b>	5074991.90	89.82	1196218.83	88.17	167486.70	58.81	6806.04	12.20	820.59	2.91
<b>Steel</b>	81695.65	1.45	29174.37	2.15	20914.79	7.34	6202.78	11.12	1394.95	4.95
<b>Concrete</b>	94147.23	1.67	26204.76	1.93	12759.29	4.48	3861.79	6.92	562.99	2.00
<b>Precast</b>	49039.70	0.87	12718.29	0.94	4679.53	1.64	659.20	1.18	130.28	0.46
<b>RM</b>	258834.67	4.58	39659.34	2.92	15524.95	5.45	5620.46	10.08	1926.29	6.84
<b>URM</b>	8234.86	0.15	9286.86	0.68	9992.62	3.51	3236.06	5.80	1924.31	6.83
<b>MH</b>	83251.79	1.47	43511.23	3.21	53441.65	18.76	29392.48	52.69	21405.76	76.00
<b>Total</b>	<b>5,650,196</b>		<b>1,356,774</b>		<b>284,800</b>		<b>55,779</b>		<b>28,165</b>	

\*Note:

- RM Reinforced Masonry
- URM Unreinforced Masonry
- MH Manufactured Housing

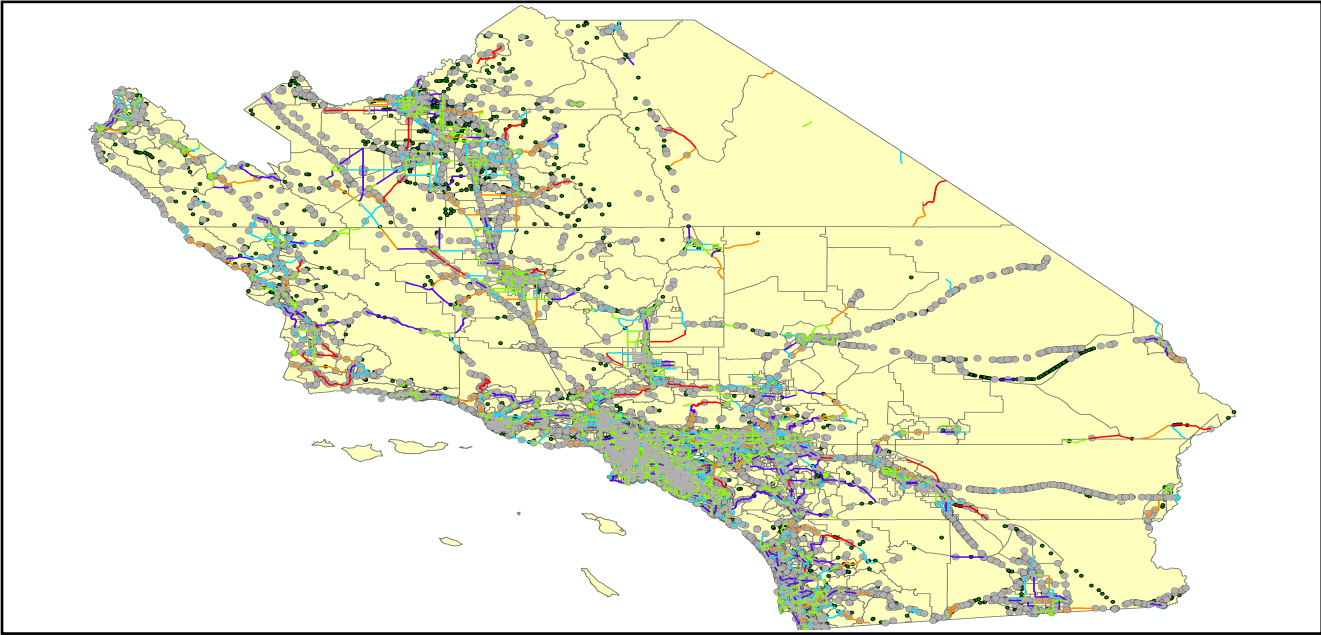
## Essential Facility Damage

Before the earthquake, the region had 68,087 hospital beds available for use. On the day of the earthquake, the model estimates that only 49,430 hospital beds (73.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 86.00% of the beds will be back in service. By 30 days, 97.00% will be operational.

**Table 5: Expected Damage to Essential Facilities**

Classification	Total	# Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on day 1
Hospitals	369	38	2	284
Schools	8,398	926	53	6,179
EOCs	134	19	1	99
PoliceStations	525	54	6	411
FireStations	1,526	112	5	1,201

Transportation Lifeline Damage



**Table 6: Expected Damage to the Transportation Systems**

System	Component	Number of Locations_				
		Locations/ Segments	With at Least Mod. Damage	With Complete Damage	With Functionality > 50 %	
					After Day 1	After Day 7
Highway	Segments	10,797	0	0	10,797	10,797
	Bridges	13,404	435	23	12,994	13,233
	Tunnels	65	0	0	65	65
Railways	Segments	2,222	0	0	2,222	2,222
	Bridges	2,319	66	0	2,253	2,314
	Tunnels	0	0	0	0	0
	Facilities	126	5	0	125	126
Light Rail	Segments	8	0	0	8	8
	Bridges	51	0	0	51	51
	Tunnels	0	0	0	0	0
	Facilities	149	0	0	149	149
Bus	Facilities	55	5	0	55	55
Ferry	Facilities	22	0	0	22	22
Port	Facilities	357	0	0	357	357
Airport	Facilities	181	7	0	181	181
	Runways	206	0	0	206	206

Table 6 provides damage estimates for the transportation system.

Note: Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.

Tables 7-9 provide information on the damage to the utility lifeline systems. Table 7 provides damage to the utility system facilities. Table 8 provides estimates on the number of leaks and breaks by the pipelines of the utility systems. For electric power and potable water, Hazus performs a simplified system performance analysis. Table 9 provides a summary of the system performance information.

**Table 7 : Expected Utility System Facility Damage**

System	# of Locations				
	Total #	With at Least Moderate Damage	With Complete Damage	with Functionality > 50 %	
				After Day 1	After Day 7
Potable Water	53	9	0	42	53
Waste Water	149	14	0	102	149
Natural Gas	45	8	0	35	45
Oil Systems	69	0	0	69	69
Electrical Power	704	313	29	468	615
Communication	562	81	0	506	562

**Table 8 : Expected Utility System Pipeline Damage (Site Specific)**

System	Total Pipelines Length (miles)	Number of Leaks	Number of Breaks
Potable Water	185,678	516724	129181
Waste Water	111,407	259564	64891
Natural Gas	3,785	0	0
Oil	0	0	0

**Table 9: Expected Potable Water and Electric Power System Performance**

	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water	8,599,247	6,762,731	6,722,457	6,640,389	6,179,904	5,211,754
Electric Power		642,384	446,553	211,975	28,457	816

## Induced Earthquake Damage

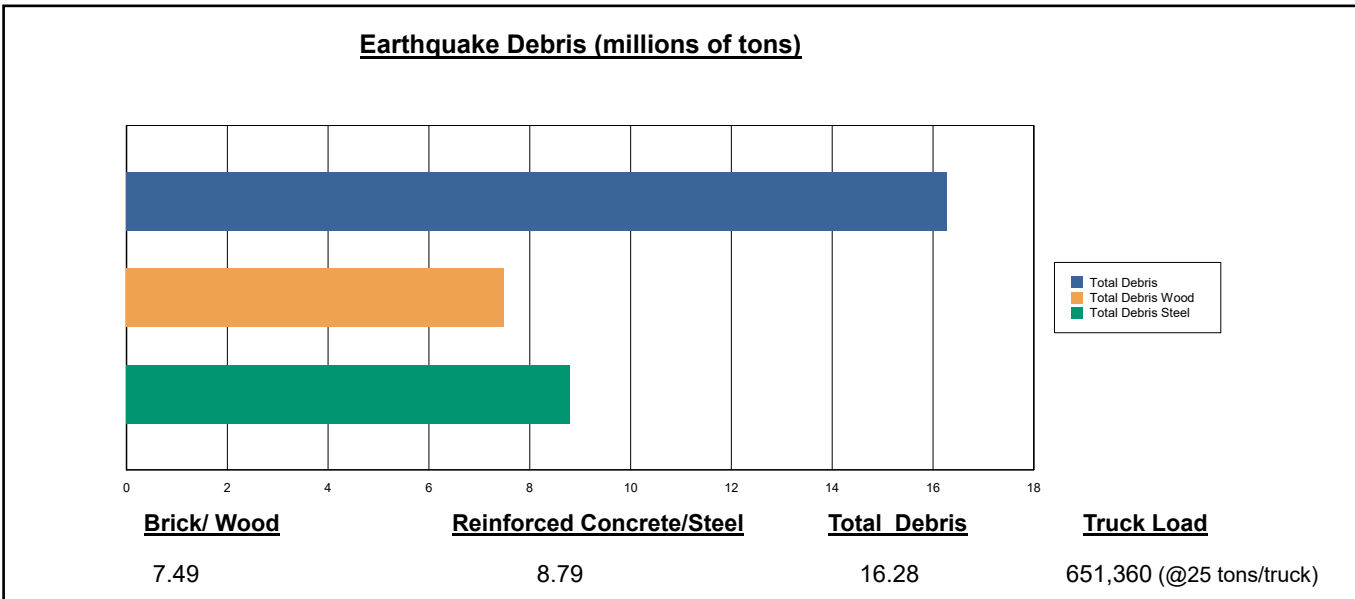
### Fire Following Earthquake

Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. Hazus uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area. For this scenario, the model estimates that there will be 117 ignitions that will burn about 1.64 sq. mi (0.00 % of the region's total area.) The model also estimates that the fires will displace about 17,610 people and burn about 1,996 (millions of dollars) of building value.

### Debris Generation

Hazus estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

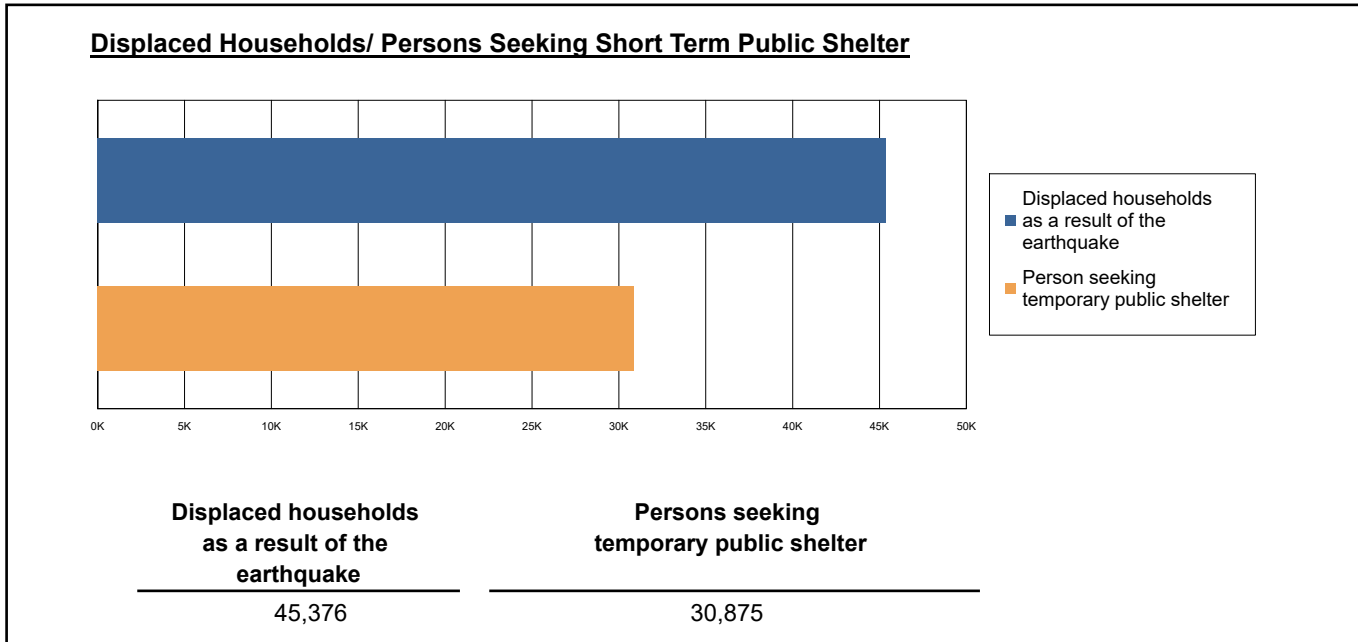
The model estimates that a total of 16,284,000 tons of debris will be generated. Of the total amount, Brick/Wood comprises 46.00% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 651,360 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.



## Social Impact

### Shelter Requirement

Hazus estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 45,376 households to be displaced due to the earthquake. Of these, 30,875 people (out of a total population of 25,855,212) will seek temporary shelter in public shelters.



### Casualties

Hazus estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

- Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
- Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
- Severity Level 3: Injuries will require hospitalization and can become life threatening if not promptly treated.
- Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Table 10 provides a summary of the casualties estimated for this earthquake

**Table 10: Casualty Estimates**

		Level 1	Level 2	Level 3	Level 4
<b>2 AM</b>	Commercial	110.04	21.59	2.74	5.36
	Commuting	1.65	2.29	3.75	0.73
	Educational	0.00	0.00	0.00	0.00
	Hotels	4.82	0.71	0.06	0.13
	Industrial	99.09	18.19	2.12	4.12
	Other-Residential	7890.24	1519.97	113.95	202.56
	Single Family	3334.72	325.59	30.46	59.88
	<b>Total</b>	<b>11,441</b>	<b>1,888</b>	<b>153</b>	<b>273</b>
<b>2 PM</b>	Commercial	7721.22	1541.96	198.99	386.06
	Commuting	14.81	20.61	33.75	6.59
	Educational	3100.20	585.32	73.18	141.14
	Hotels	0.93	0.14	0.01	0.02
	Industrial	727.82	134.11	15.73	30.33
	Other-Residential	2554.44	501.44	38.90	67.90
	Single Family	986.15	104.21	10.46	19.64
	<b>Total</b>	<b>15,106</b>	<b>2,888</b>	<b>371</b>	<b>652</b>
<b>5 PM</b>	Commercial	5542.44	1123.60	147.56	282.24
	Commuting	263.17	366.46	599.90	117.11
	Educational	607.69	113.10	14.49	27.78
	Hotels	1.44	0.21	0.02	0.04
	Industrial	454.89	83.82	9.83	18.96
	Other-Residential	2901.00	560.26	43.81	76.63
	Single Family	1246.95	128.83	12.75	23.94
	<b>Total</b>	<b>11,018</b>	<b>2,376</b>	<b>828</b>	<b>547</b>

## Economic Loss

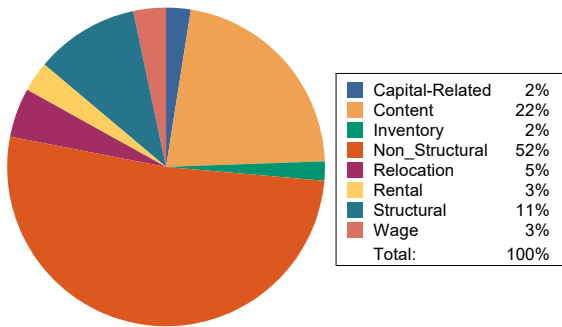
The total economic loss estimated for the earthquake is 160,991.81 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

## Building-Related Losses

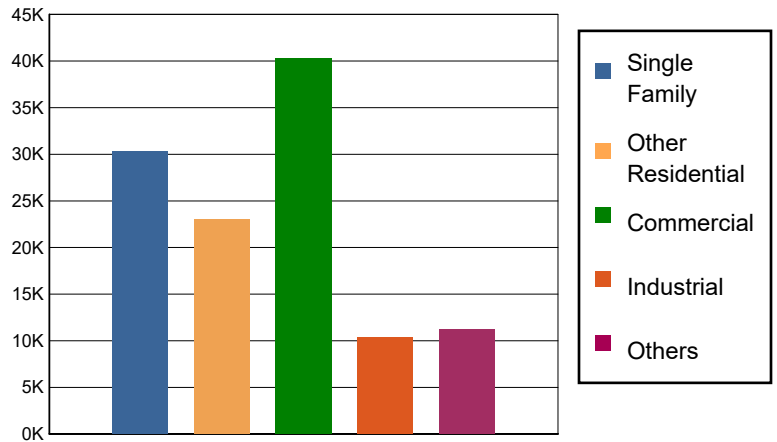
The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building-related losses were 115,185.56 (millions of dollars); 14 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 46 % of the total loss. Table 11 below provides a summary of the losses associated with the building damage.

Earthquake Losses by Loss Type (\$ millions)



Earthquake Losses by Occupancy Type (\$ millions)



**Table 11: Building-Related Economic Loss Estimates**  
(Millions of dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
<b>Income Losses</b>							
	Wage	0.0000	496.1820	2754.3794	120.0047	325.2777	3,695.8438
	Capital-Related	0.0000	211.0071	2490.8848	75.9831	88.5026	2,866.3776
	Rental	337.3996	1135.9230	1589.8234	60.2265	164.4978	3,287.8703
	Relocation	1087.5691	1056.4760	2249.6007	295.9139	1159.1175	5,848.6772
	<b>Subtotal</b>	<b>1424.9687</b>	<b>2899.5881</b>	<b>9084.6883</b>	<b>552.1282</b>	<b>1737.3956</b>	<b>15698.7689</b>
<b>Capital Stock Losses</b>							
	Structural	3078.0318	2680.6953	4366.5398	1065.0505	1251.9718	12,442.2892
	Non_Structural	19027.6960	14058.4166	16081.7656	4827.2503	5385.8004	59,380.9289
	Content	6830.7156	3369.4476	9014.3445	3371.4073	2659.2090	25,245.1240
	Inventory	0.0000	0.0000	1695.5849	514.3529	208.5113	2,418.4491
	<b>Subtotal</b>	<b>28936.4434</b>	<b>20108.5595</b>	<b>31158.2348</b>	<b>9778.0610</b>	<b>9505.4925</b>	<b>99486.7912</b>
	<b>Total</b>	<b>30361.41</b>	<b>23008.15</b>	<b>40242.92</b>	<b>10330.19</b>	<b>11242.89</b>	<b>115185.56</b>

### Transportation and Utility Lifeline Losses

For the transportation and utility lifeline systems, Hazus computes the direct repair cost for each component only. There are no losses computed by Hazus for business interruption due to lifeline outages. Tables 12 & 13 provide a detailed breakdown in the expected lifeline losses.

**Table 12: Transportation System Economic Losses**  
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	140091.5881	0.0000	0.00
	Bridges	72063.0196	1369.1042	1.90
	Tunnels	586.0681	2.9441	0.50
	<b>Subtotal</b>	<b>212740.6758</b>	<b>1372.0483</b>	
Railways	Segments	70327.2831	0.0000	0.00
	Bridges	13195.1100	272.5353	2.07
	Tunnels	0.0000	0.0000	0.00
	Facilities	335.5380	44.6914	13.32
	<b>Subtotal</b>	<b>83857.9311</b>	<b>317.2267</b>	
Light Rail	Segments	5399.1047	0.0000	0.00
	Bridges	13.2750	0.0156	0.12
	Tunnels	0.0000	0.0000	0.00
	Facilities	3200.8000	306.4250	9.57
	<b>Subtotal</b>	<b>8613.1797</b>	<b>306.4406</b>	
Bus	Facilities	119.7095	15.7687	13.17
	<b>Subtotal</b>	<b>119.7095</b>	<b>15.7687</b>	
Ferry	Facilities	29.2820	1.8918	6.46
	<b>Subtotal</b>	<b>29.2820</b>	<b>1.8918</b>	
Port	Facilities	1360.8285	96.8663	7.12
	<b>Subtotal</b>	<b>1360.8285</b>	<b>96.8663</b>	
Airport	Facilities	5013.8658	577.9116	11.53
	Runways	2239.9548	0.0000	0.00
	<b>Subtotal</b>	<b>7253.8206</b>	<b>577.9116</b>	
<b>Total</b>		<b>313,975.43</b>	<b>2,688.15</b>	

**Table 13: Utility System Economic Losses**  
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.0000	0.0000	0.00
	Facilities	2082.5820	197.3806	9.48
	Distribution Lines	5976.3859	2325.2561	38.91
	<b>Subtotal</b>	<b>8058.9679</b>	<b>2522.6367</b>	
Waste Water	Pipelines	0.0000	0.0000	0.00
	Facilities	25620.8182	1684.5258	6.57
	Distribution Lines	3585.8315	1168.0356	32.57
	<b>Subtotal</b>	<b>29206.6497</b>	<b>2852.5614</b>	
Natural Gas	Pipelines	21452.9073	0.0000	0.00
	Facilities	1617.5273	146.2980	9.04
	Distribution Lines	2390.5543	400.1603	16.74
	<b>Subtotal</b>	<b>25460.9889</b>	<b>546.4583</b>	
Oil Systems	Pipelines	0.0000	0.0000	0.00
	Facilities	8.1420	0.3672	4.51
	<b>Subtotal</b>	<b>8.1420</b>	<b>0.3672</b>	
Electrical Power	Facilities	164743.9548	37186.3252	22.57
	<b>Subtotal</b>	<b>164743.9548</b>	<b>37186.3252</b>	
Communication	Facilities	66.3160	9.7083	14.64
	<b>Subtotal</b>	<b>66.3160</b>	<b>9.7083</b>	
	<b>Total</b>	<b>227,545.02</b>	<b>43,118.06</b>	

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## Appendix A: County Listing for the Region

Fresno,CA

Imperial,CA

Inyo,CA

Kern,CA

Kings,CA

Los Angeles,CA

Monterey,CA

Orange,CA

Riverside,CA

San Bernardino,CA

San Diego,CA

San Luis Obispo,CA

Santa Barbara,CA

Tulare,CA

Ventura,CA

## Appendix B: Regional Population and Building Value Data

State	County Name	Population	Building Value (millions of dollars)		
			Residential	Non-Residential	Total
California	Fresno	1,008,654	98,532	61,772	160,304
	Imperial	179,702	20,945	12,603	33,548
	Inyo	19,016	2,951	1,970	4,921
	Kern	909,235	87,567	59,168	146,736
	Kings	152,486	13,719	7,861	21,581
	Los Angeles	10,014,009	950,697	566,995	1,517,692
	Monterey	439,035	47,655	28,750	76,405
	Orange	3,186,989	363,381	176,806	540,188
	Riverside	2,418,185	281,482	137,249	418,731
	San Bernardino	2,181,654	225,045	152,557	377,602
	San Diego	3,298,634	375,834	193,238	569,072
	San Luis Obispo	282,424	41,720	20,896	62,616
	Santa Barbara	448,229	49,971	28,481	78,452
	Tulare	473,117	43,262	31,210	74,472
Ventura	843,843	99,299	52,072	151,371	
<b>Total Region</b>		<b>25,855,212</b>	<b>2,702,060</b>	<b>1,531,628</b>	<b>4,233,691</b>

## Building Damage by Count by General Occupancy

May 02, 2024

	# of Buildings					Total
	None	Slight	Moderate	Extensive	Complete	
<b>California</b>						
<b>Fresno</b>						
<i>Agriculture</i>	3,003	331	76	11	0	3,421
<i>Commercial</i>	19,968	869	197	19	1	21,054
<i>Education</i>	594	7	1	0	0	602
<i>Government</i>	273	15	3	0	0	291
<i>Industrial</i>	4,977	291	72	8	0	5,348
<i>Religion</i>	1,410	75	20	2	0	1,507
<i>Other Residential</i>	38,677	1,845	414	36	1	40,973
<i>Single Family</i>	222,221	4,168	36	0	0	226,425
<b>Imperial</b>						
<i>Agriculture</i>	86	35	16	1	0	138
<i>Commercial</i>	2,617	809	205	15	0	3,646
<i>Education</i>	88	10	1	0	0	99
<i>Government</i>	155	37	10	1	0	202
<i>Industrial</i>	384	144	47	5	0	580
<i>Religion</i>	207	68	18	2	0	295
<i>Other Residential</i>	3,134	1,592	1,822	895	75	7,518
<i>Single Family</i>	27,398	7,752	255	1	0	35,405
<b>Inyo</b>						

		# of Buildings					
		None	Slight	Moderate	Extensive	Complete	Total
<b>Kern</b>	<i>Agriculture</i>	32	0	0	0	0	32
	<i>Commercial</i>	721	0	0	0	0	721
	<i>Education</i>	41	0	0	0	0	41
	<i>Government</i>	101	0	0	0	0	101
	<i>Industrial</i>	257	0	0	0	0	257
	<i>Religion</i>	57	0	0	0	0	57
	<i>Other Residential</i>	4,048	2	0	0	0	4,050
	<i>Single Family</i>	4,446	0	0	0	0	4,446
	<i>Agriculture</i>	2,894	1,113	492	115	31	4,645
	<i>Commercial</i>	10,986	3,047	1,117	323	94	15,567
	<i>Education</i>	401	45	14	2	0	462
	<i>Government</i>	305	90	38	9	1	443
	<i>Industrial</i>	3,979	1,343	573	129	24	6,047
	<i>Religion</i>	1,010	287	149	56	22	1,524
<i>Other Residential</i>	36,344	9,365	5,471	2,757	584	54,520	
<i>Single Family</i>	162,410	39,670	2,975	81	3	205,139	
<b>Kings</b>	<i>Agriculture</i>	230	58	16	2	0	306
	<i>Commercial</i>	1,830	331	125	29	3	2,318
	<i>Education</i>	96	6	1	0	0	103
	<i>Government</i>	61	9	2	0	0	72
	<i>Industrial</i>	418	97	34	5	0	555
	<i>Religion</i>	162	33	12	3	0	210
	<i>Other Residential</i>	3,262	728	285	63	4	4,342

	# of Buildings					Total
	None	Slight	Moderate	Extensive	Complete	
<i>Single Family</i>	32,231	3,914	98	1	0	36,245
<b>Los Angeles</b>						
<i>Agriculture</i>	1,188	485	261	81	17	2,032
<i>Commercial</i>	124,862	42,859	18,819	3,873	448	190,861
<i>Education</i>	4,594	601	231	55	6	5,486
<i>Government</i>	1,891	709	340	81	9	3,031
<i>Industrial</i>	35,451	10,953	5,267	1,283	172	53,126
<i>Religion</i>	6,552	2,507	1,265	289	38	10,651
<i>Other Residential</i>	366,035	87,558	20,050	6,217	1,810	481,671
<i>Single Family</i>	1,397,562	367,457	36,522	1,472	127	1,803,140
<b>Monterey</b>						
<i>Agriculture</i>	1,551	182	69	13	1	1,815
<i>Commercial</i>	9,104	109	29	4	0	9,246
<i>Education</i>	238	1	0	0	0	239
<i>Government</i>	183	2	0	0	0	185
<i>Industrial</i>	1,805	35	9	1	0	1,850
<i>Religion</i>	567	9	3	0	0	580
<i>Other Residential</i>	19,194	407	195	12	0	19,809
<i>Single Family</i>	90,443	431	3	0	0	90,876
<b>Orange</b>						
<i>Agriculture</i>	862	195	62	14	2	1,135
<i>Commercial</i>	53,270	11,367	3,067	576	59	68,340
<i>Education</i>	1,744	119	21	5	1	1,890
<i>Government</i>	485	122	38	5	0	650
<i>Industrial</i>	14,066	3,552	1,040	123	14	18,795

	# of Buildings					Total
	None	Slight	Moderate	Extensive	Complete	
<i>Religion</i>	1,554	363	112	25	3	2,057
<i>Other Residential</i>	60,911	16,155	7,867	762	22	85,718
<i>Single Family</i>	617,153	87,193	1,837	28	1	706,212
<b>Riverside</b>						
<i>Agriculture</i>	1,081	442	151	29	10	1,713
<i>Commercial</i>	23,880	14,768	5,776	1,383	550	46,357
<i>Education</i>	709	211	59	9	2	990
<i>Government</i>	2,140	2,304	2,037	563	132	7,175
<i>Industrial</i>	3,836	1,821	601	116	36	6,409
<i>Religion</i>	666	408	179	48	18	1,319
<i>Other Residential</i>	36,716	33,970	25,265	13,093	13,757	122,799
<i>Single Family</i>	345,019	218,263	39,676	1,927	569	605,455
<b>San Bernardino</b>						
<i>Agriculture</i>	848	643	229	62	33	1,815
<i>Commercial</i>	15,421	14,491	6,465	2,309	1,355	40,041
<i>Education</i>	543	294	118	24	5	985
<i>Government</i>	536	404	176	82	41	1,238
<i>Industrial</i>	4,108	3,247	1,480	444	195	9,474
<i>Religion</i>	800	745	447	218	110	2,320
<i>Other Residential</i>	31,473	30,286	19,792	10,770	6,500	98,821
<i>Single Family</i>	219,951	241,059	59,725	3,635	997	525,367
<b>San Diego</b>						
<i>Agriculture</i>	2,162	25	4	0	0	2,190
<i>Commercial</i>	61,711	617	40	1	0	62,369
<i>Education</i>	1,926	6	0	0	0	1,932

	# of Buildings					Total
	None	Slight	Moderate	Extensive	Complete	
<i>Government</i>	20,584	321	19	0	0	20,924
<i>Industrial</i>	14,187	119	7	0	0	14,313
<i>Religion</i>	3,026	35	2	0	0	3,063
<i>Other Residential</i>	124,527	2,706	318	7	0	127,559
<i>Single Family</i>	758,971	4,004	45	1	0	763,020
<b>San Luis Obispo</b>						
<i>Agriculture</i>	292	88	32	7	1	421
<i>Commercial</i>	7,402	1,432	444	85	11	9,375
<i>Education</i>	166	14	2	0	0	182
<i>Government</i>	151	27	7	1	0	185
<i>Industrial</i>	1,926	462	140	24	5	2,556
<i>Religion</i>	280	57	19	4	0	360
<i>Other Residential</i>	13,185	3,760	2,242	801	228	20,216
<i>Single Family</i>	72,838	12,227	570	4	0	85,639
<b>Santa Barbara</b>						
<i>Agriculture</i>	374	69	18	2	0	464
<i>Commercial</i>	8,352	1,186	255	25	2	9,820
<i>Education</i>	283	14	2	0	0	299
<i>Government</i>	209	25	5	0	0	239
<i>Industrial</i>	2,311	407	108	13	1	2,840
<i>Religion</i>	527	76	17	2	0	621
<i>Other Residential</i>	17,168	4,712	2,104	124	3	24,111
<i>Single Family</i>	89,414	9,389	179	1	0	98,982
<b>Tulare</b>						
<i>Agriculture</i>	3,214	289	49	2	0	3,555

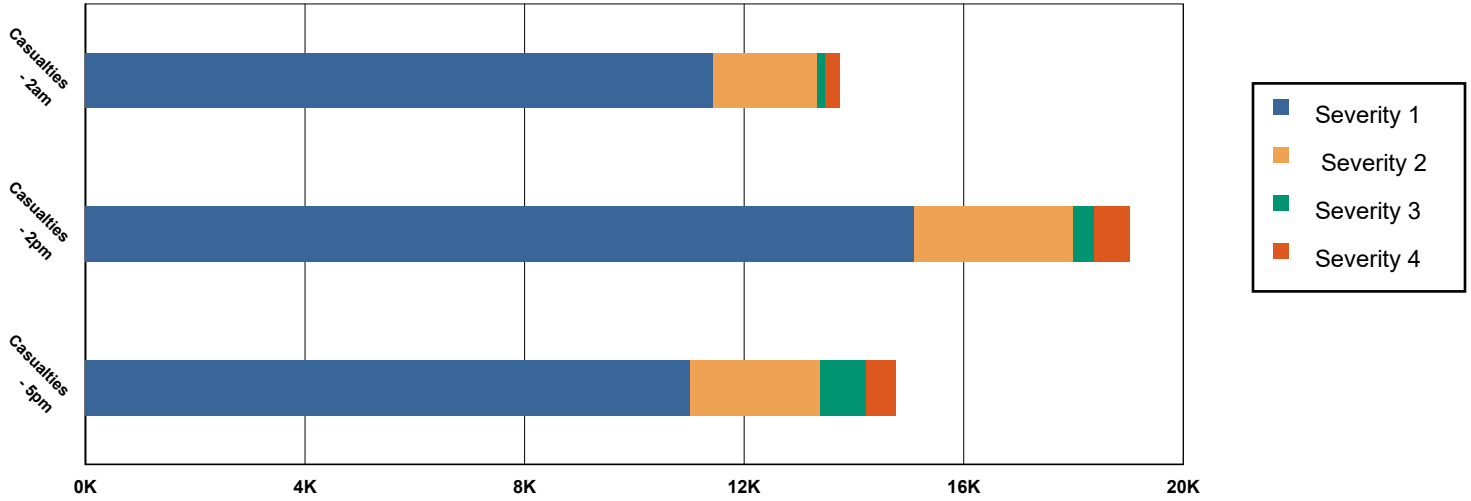
	# of Buildings					Total
	None	Slight	Moderate	Extensive	Complete	
<i>Commercial</i>	8,363	424	80	5	0	8,873
<i>Education</i>	265	3	0	0	0	269
<i>Government</i>	433	25	3	0	0	461
<i>Industrial</i>	2,003	120	23	2	0	2,148
<i>Religion</i>	786	35	6	0	0	827
<i>Other Residential</i>	18,186	1,475	348	12	0	20,022
<i>Single Family</i>	108,960	3,055	19	0	0	112,034
<b>Ventura</b>						
<i>Agriculture</i>	464	104	25	4	0	598
<i>Commercial</i>	12,019	2,284	543	99	8	14,953
<i>Education</i>	456	35	6	0	0	497
<i>Government</i>	847	129	22	2	0	1,001
<i>Industrial</i>	4,729	1,051	272	42	4	6,097
<i>Religion</i>	958	185	41	3	0	1,187
<i>Other Residential</i>	18,203	5,186	2,461	301	11	26,163
<i>Single Family</i>	177,834	25,683	450	0	0	203,968
<b>Total</b>	<b>5,650,196</b>	<b>1,356,774</b>	<b>284,800</b>	<b>55,779</b>	<b>28,165</b>	<b>7,375,713</b>
<b>Region Total</b>	<b>5,650,196</b>	<b>1,356,774</b>	<b>284,800</b>	<b>55,779</b>	<b>28,165</b>	<b>7,375,713</b>

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

### Casualties Summary Report

May 02, 2024

### Region Total Casualties



### Injury Severity Level

Severity 1	Severity 2	Severity 3	Severity 4	Total
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#### California

##### Fresno

##### Casualties - 2am

	Severity 1	Severity 2	Severity 3	Severity 4	Total
<i>Hotels</i>	0	0	0	0	0
<i>Educational</i>	0	0	0	0	0
<i>Industrial</i>	0	0	0	0	0
<i>Commercial</i>	0	0	0	0	0
<i>Other-Residential</i>	12	1	0	0	13
<i>Single Family</i>	7	0	0	0	7
<i>Commuting</i>	0	0	0	0	0
<b>Total Casualties - 2am</b>	<b>20</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>21</b>

##### Casualties - 2pm

<i>Commercial</i>	26	2	0	0	28
<i>Other-Residential</i>	4	0	0	0	4
<i>Industrial</i>	2	0	0	0	2
<i>Single Family</i>	2	0	0	0	2
<i>Hotels</i>	0	0	0	0	0
<i>Commuting</i>	0	0	0	0	0
<i>Educational</i>	5	0	0	0	6

	Injury Severity Level				Total
	Severity 1	Severity 2	Severity 3	Severity 4	
<b>California</b>					
<b>Fresno</b>					
<b>Total Casualties - 2pm</b>	<b>39</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>43</b>
<b>Casualties - 5pm</b>					
<i>Educational</i>	1	0	0	0	1
<i>Commuting</i>	0	0	0	0	1
<i>Hotels</i>	0	0	0	0	0
<i>Industrial</i>	1	0	0	0	1
<i>Single Family</i>	3	0	0	0	3
<i>Other-Residential</i>	4	0	0	0	5
<i>Commercial</i>	18	2	0	0	20
<b>Total Casualties - 5pm</b>	<b>27</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>30</b>
<b>Imperial</b>					
<b>Casualties - 2am</b>					
<i>Commercial</i>	0	0	0	0	0
<i>Other-Residential</i>	36	5	0	0	41
<i>Educational</i>	0	0	0	0	0
<i>Single Family</i>	16	0	0	0	17
<i>Commuting</i>	0	0	0	0	0
<i>Hotels</i>	0	0	0	0	0
<i>Industrial</i>	0	0	0	0	0
<b>Total Casualties - 2am</b>	<b>53</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>58</b>
<b>Casualties - 2pm</b>					
<i>Educational</i>	5	0	0	0	6
<i>Industrial</i>	1	0	0	0	2
<i>Hotels</i>	0	0	0	0	0
<i>Other-Residential</i>	12	2	0	0	14
<i>Single Family</i>	5	0	0	0	5
<i>Commercial</i>	20	1	0	0	21
<i>Commuting</i>	0	0	0	0	0
<b>Total Casualties - 2pm</b>	<b>43</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>48</b>
<b>Casualties - 5pm</b>					
<i>Single Family</i>	6	0	0	0	6
<i>Other-Residential</i>	13	2	0	0	15
<i>Commercial</i>	13	1	0	0	14
<i>Commuting</i>	1	1	3	0	6
<i>Educational</i>	0	0	0	0	0
<i>Hotels</i>	0	0	0	0	0
<i>Industrial</i>	1	0	0	0	1
<b>Total Casualties - 5pm</b>	<b>34</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>42</b>
<b>Inyo</b>					
<b>Casualties - 2am</b>					
<i>Single Family</i>	0	0	0	0	0

	Injury Severity Level				Total
	Severity 1	Severity 2	Severity 3	Severity 4	
<b>California</b>					
<b>Inyo</b>					
<b>Casualties - 2am</b>					
<i>Commercial</i>	0	0	0	0	0
<i>Commuting</i>	0	0	0	0	0
<i>Educational</i>	0	0	0	0	0
<i>Hotels</i>	0	0	0	0	0
<i>Other-Residential</i>	0	0	0	0	0
<i>Industrial</i>	0	0	0	0	0
<b>Total Casualties - 2am</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Casualties - 2pm</b>					
<i>Industrial</i>	0	0	0	0	0
<i>Hotels</i>	0	0	0	0	0
<i>Commercial</i>	0	0	0	0	0
<i>Other-Residential</i>	0	0	0	0	0
<i>Single Family</i>	0	0	0	0	0
<i>Commuting</i>	0	0	0	0	0
<i>Educational</i>	0	0	0	0	0
<b>Total Casualties - 2pm</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Casualties - 5pm</b>					
<i>Other-Residential</i>	0	0	0	0	0
<i>Single Family</i>	0	0	0	0	0
<i>Commercial</i>	0	0	0	0	0
<i>Educational</i>	0	0	0	0	0
<i>Hotels</i>	0	0	0	0	0
<i>Commuting</i>	0	0	0	0	0
<i>Industrial</i>	0	0	0	0	0
<b>Total Casualties - 5pm</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Kern</b>					
<b>Casualties - 2am</b>					
<i>Commercial</i>	4	1	0	0	5
<i>Commuting</i>	0	0	0	0	0
<i>Educational</i>	0	0	0	0	0
<i>Single Family</i>	75	2	0	0	77
<i>Other-Residential</i>	253	46	4	8	311
<i>Hotels</i>	0	0	0	0	0
<i>Industrial</i>	5	1	0	0	6
<b>Total Casualties - 2am</b>	<b>337</b>	<b>50</b>	<b>4</b>	<b>8</b>	<b>400</b>
<b>Casualties - 2pm</b>					
<i>Educational</i>	52	7	1	1	61
<i>Commuting</i>	0	0	0	0	1
<i>Single Family</i>	23	1	0	0	24
<i>Hotels</i>	0	0	0	0	0
<i>Other-Residential</i>	87	16	1	3	107

	Injury Severity Level				Total
	Severity 1	Severity 2	Severity 3	Severity 4	
<b>California</b>					
<b>Kern</b>					
<b>Casualties - 2pm</b>					
<i>Commercial</i>	301	61	8	16	387
<i>Industrial</i>	35	7	1	2	45
<b>Total Casualties - 2pm</b>	<b>499</b>	<b>93</b>	<b>12</b>	<b>21</b>	<b>624</b>
<b>Casualties - 5pm</b>					
<i>Single Family</i>	27	1	0	0	28
<i>Commercial</i>	215	45	6	12	277
<i>Other-Residential</i>	93	17	2	3	115
<i>Commuting</i>	3	5	8	2	18
<i>Educational</i>	7	1	0	0	8
<i>Hotels</i>	0	0	0	0	0
<i>Industrial</i>	22	4	1	1	28
<b>Total Casualties - 5pm</b>	<b>368</b>	<b>73</b>	<b>16</b>	<b>17</b>	<b>474</b>
<b>Kings</b>					
<b>Casualties - 2am</b>					
<i>Industrial</i>	0	0	0	0	0
<i>Other-Residential</i>	12	1	0	0	13
<i>Educational</i>	0	0	0	0	0
<i>Commuting</i>	0	0	0	0	0
<i>Commercial</i>	0	0	0	0	0
<i>Single Family</i>	7	0	0	0	7
<i>Hotels</i>	0	0	0	0	0
<b>Total Casualties - 2am</b>	<b>19</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>21</b>
<b>Casualties - 2pm</b>					
<i>Single Family</i>	2	0	0	0	2
<i>Other-Residential</i>	4	0	0	0	4
<i>Commercial</i>	16	2	0	0	19
<i>Educational</i>	3	0	0	0	3
<i>Commuting</i>	0	0	0	0	0
<i>Hotels</i>	0	0	0	0	0
<i>Industrial</i>	2	0	0	0	2
<b>Total Casualties - 2pm</b>	<b>27</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>31</b>
<b>Casualties - 5pm</b>					
<i>Single Family</i>	2	0	0	0	2
<i>Commercial</i>	13	2	0	0	15
<i>Commuting</i>	0	0	0	0	1
<i>Other-Residential</i>	4	0	0	0	5
<i>Educational</i>	0	0	0	0	0
<i>Hotels</i>	0	0	0	0	0
<i>Industrial</i>	1	0	0	0	1
<b>Total Casualties - 5pm</b>	<b>21</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>25</b>

## Injury Severity Level

Severity 1      Severity 2      Severity 3      Severity 4      Total

### California

#### Los Angeles

##### Casualties - 2am

	Severity 1	Severity 2	Severity 3	Severity 4	Total
<i>Hotels</i>	2	0	0	0	3
<i>Industrial</i>	43	7	1	1	52
<i>Educational</i>	0	0	0	0	0
<i>Single Family</i>	954	50	2	3	1,008
<i>Commuting</i>	0	0	1	0	1
<i>Other-Residential</i>	1,827	235	16	28	2,106
<i>Commercial</i>	40	6	0	1	47
<b>Total Casualties - 2am</b>	<b>2,866</b>	<b>298</b>	<b>19</b>	<b>34</b>	<b>3,217</b>

##### Casualties - 2pm

<i>Industrial</i>	315	50	5	9	380
<i>Other-Residential</i>	563	74	5	9	651
<i>Commercial</i>	2,735	403	37	70	3,245
<i>Commuting</i>	2	3	5	1	11
<i>Educational</i>	1,147	177	18	34	1,376
<i>Single Family</i>	265	15	1	1	281
<i>Hotels</i>	0	0	0	0	0
<b>Total Casualties - 2pm</b>	<b>5,027</b>	<b>721</b>	<b>70</b>	<b>125</b>	<b>5,944</b>

##### Casualties - 5pm

<i>Other-Residential</i>	691	90	6	11	798
<i>Industrial</i>	197	32	3	6	237
<i>Commuting</i>	40	55	90	18	203
<i>Single Family</i>	351	19	1	1	372
<i>Commercial</i>	1,946	294	28	53	2,322
<i>Hotels</i>	1	0	0	0	1
<i>Educational</i>	274	44	5	9	332
<b>Total Casualties - 5pm</b>	<b>3,499</b>	<b>534</b>	<b>134</b>	<b>98</b>	<b>4,265</b>

#### Monterey

##### Casualties - 2am

<i>Other-Residential</i>	3	0	0	0	3
<i>Commuting</i>	0	0	0	0	0
<i>Commercial</i>	0	0	0	0	0
<i>Single Family</i>	1	0	0	0	1
<i>Hotels</i>	0	0	0	0	0
<i>Educational</i>	0	0	0	0	0
<i>Industrial</i>	0	0	0	0	0
<b>Total Casualties - 2am</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>

##### Casualties - 2pm

<i>Commuting</i>	0	0	0	0	0
<i>Commercial</i>	6	1	0	0	6
<i>Single Family</i>	0	0	0	0	0
<i>Hotels</i>	0	0	0	0	0

	Injury Severity Level				Total
	Severity 1	Severity 2	Severity 3	Severity 4	
<b>California</b>					
<b>Monterey</b>					
<b>Casualties - 2pm</b>					
<i>Educational</i>	1	0	0	0	1
<i>Industrial</i>	0	0	0	0	0
<i>Other-Residential</i>	1	0	0	0	1
<b>Total Casualties - 2pm</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>8</b>
<b>Casualties - 5pm</b>					
<i>Commercial</i>	4	0	0	0	5
<i>Other-Residential</i>	1	0	0	0	1
<i>Industrial</i>	0	0	0	0	0
<i>Hotels</i>	0	0	0	0	0
<i>Educational</i>	0	0	0	0	0
<i>Commuting</i>	0	0	0	0	0
<i>Single Family</i>	0	0	0	0	0
<b>Total Casualties - 5pm</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>7</b>
<b>Orange</b>					
<b>Casualties - 2am</b>					
<i>Hotels</i>	0	0	0	0	0
<i>Commuting</i>	0	0	0	0	0
<i>Educational</i>	0	0	0	0	0
<i>Industrial</i>	9	1	0	0	10
<i>Other-Residential</i>	226	24	2	3	254
<i>Commercial</i>	5	1	0	0	6
<i>Single Family</i>	166	3	0	0	169
<b>Total Casualties - 2am</b>	<b>406</b>	<b>28</b>	<b>2</b>	<b>3</b>	<b>440</b>
<b>Casualties - 2pm</b>					
<i>Industrial</i>	66	8	1	1	76
<i>Other-Residential</i>	63	7	0	1	71
<i>Commuting</i>	0	0	1	0	1
<i>Commercial</i>	351	44	4	8	406
<i>Single Family</i>	44	1	0	0	45
<i>Hotels</i>	0	0	0	0	0
<i>Educational</i>	151	18	2	3	173
<b>Total Casualties - 2pm</b>	<b>674</b>	<b>77</b>	<b>7</b>	<b>13</b>	<b>772</b>
<b>Casualties - 5pm</b>					
<i>Hotels</i>	0	0	0	0	0
<i>Educational</i>	30	3	0	0	33
<i>Commuting</i>	6	7	12	2	28
<i>Single Family</i>	59	1	0	0	61
<i>Commercial</i>	250	32	3	6	291
<i>Other-Residential</i>	83	9	1	1	93
<i>Industrial</i>	41	5	0	1	47

	Injury Severity Level				Total
	Severity 1	Severity 2	Severity 3	Severity 4	
<b>California</b>					
<b>Orange</b>					
<b>Total Casualties - 5pm</b>	<b>469</b>	<b>57</b>	<b>17</b>	<b>10</b>	<b>553</b>
<b>Riverside</b>					
<b>Casualties - 2am</b>					
<i>Industrial</i>	9	2	0	0	12
<i>Commercial</i>	22	5	1	1	29
<i>Other-Residential</i>	2,856	634	43	74	3,608
<i>Educational</i>	0	0	0	0	0
<i>Commuting</i>	1	1	1	0	3
<i>Single Family</i>	773	90	10	19	892
<i>Hotels</i>	1	0	0	0	2
<b>Total Casualties - 2am</b>	<b>3,662</b>	<b>733</b>	<b>55</b>	<b>95</b>	<b>4,544</b>
<b>Casualties - 2pm</b>					
<i>Commercial</i>	1,486	335	47	92	1,961
<i>Other-Residential</i>	1,004	225	16	27	1,272
<i>Educational</i>	403	80	10	20	513
<i>Single Family</i>	253	32	3	7	294
<i>Commuting</i>	5	6	11	2	24
<i>Hotels</i>	0	0	0	0	0
<i>Industrial</i>	69	14	2	4	89
<b>Total Casualties - 2pm</b>	<b>3,220</b>	<b>692</b>	<b>89</b>	<b>151</b>	<b>4,152</b>
<b>Casualties - 5pm</b>					
<i>Industrial</i>	43	9	1	2	55
<i>Other-Residential</i>	1,027	228	16	27	1,299
<i>Educational</i>	35	4	0	1	40
<i>Single Family</i>	291	36	4	7	338
<i>Hotels</i>	0	0	0	0	0
<i>Commercial</i>	1,022	232	33	64	1,350
<i>Commuting</i>	81	108	183	35	407
<b>Total Casualties - 5pm</b>	<b>2,500</b>	<b>617</b>	<b>237</b>	<b>137</b>	<b>3,491</b>
<b>San Bernardino</b>					
<b>Casualties - 2am</b>					
<i>Hotels</i>	1	0	0	0	1
<i>Single Family</i>	1,250	179	19	38	1,486
<i>Commercial</i>	35	9	1	3	49
<i>Commuting</i>	1	1	2	0	4
<i>Educational</i>	0	0	0	0	0
<i>Other-Residential</i>	2,501	553	48	88	3,190
<i>Industrial</i>	29	7	1	2	39
<b>Total Casualties - 2am</b>	<b>3,817</b>	<b>750</b>	<b>72</b>	<b>130</b>	<b>4,769</b>
<b>Casualties - 2pm</b>					
<i>Industrial</i>	212	52	7	14	285

## Injury Severity Level

Severity 1	Severity 2	Severity 3	Severity 4	Total
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### California

#### San Bernardino

##### Casualties - 2pm

<i>Hotels</i>	0	0	0	0	0
<i>Commuting</i>	7	10	16	3	37
<i>Other-Residential</i>	767	171	16	28	981
<i>Educational</i>	1,288	300	43	83	1,713
<i>Single Family</i>	369	56	6	12	443
<i>Commercial</i>	2,599	673	101	197	3,570
<b>Total Casualties - 2pm</b>	<b>5,243</b>	<b>1,262</b>	<b>189</b>	<b>336</b>	<b>7,031</b>

##### Casualties - 5pm

<i>Other-Residential</i>	926	206	19	33	1,183
<i>Commercial</i>	1,936	502	76	145	2,660
<i>Single Family</i>	477	71	8	15	572
<i>Educational</i>	253	61	9	18	341
<i>Hotels</i>	0	0	0	0	0
<i>Commuting</i>	129	186	297	58	670
<i>Industrial</i>	133	32	5	9	178
<b>Total Casualties - 5pm</b>	<b>3,854</b>	<b>1,059</b>	<b>413</b>	<b>279</b>	<b>5,605</b>

#### San Diego

##### Casualties - 2am

<i>Commercial</i>	0	0	0	0	0
<i>Other-Residential</i>	8	0	0	0	8
<i>Commuting</i>	0	0	0	0	0
<i>Educational</i>	0	0	0	0	0
<i>Single Family</i>	6	0	0	0	6
<i>Industrial</i>	0	0	0	0	0
<i>Hotels</i>	0	0	0	0	0
<b>Total Casualties - 2am</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>

##### Casualties - 2pm

<i>Hotels</i>	0	0	0	0	0
<i>Educational</i>	3	0	0	0	3
<i>Commuting</i>	0	0	0	0	0
<i>Commercial</i>	29	1	0	0	30
<i>Other-Residential</i>	3	0	0	0	3
<i>Single Family</i>	2	0	0	0	2
<i>Industrial</i>	1	0	0	0	1
<b>Total Casualties - 2pm</b>	<b>37</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>38</b>

##### Casualties - 5pm

<i>Other-Residential</i>	3	0	0	0	3
<i>Commercial</i>	17	0	0	0	18
<i>Commuting</i>	0	0	0	0	0
<i>Single Family</i>	2	0	0	0	2
<i>Educational</i>	1	0	0	0	1

## Injury Severity Level

Severity 1      Severity 2      Severity 3      Severity 4      Total

### California

#### San Diego

##### Casualties - 5pm

	Severity 1	Severity 2	Severity 3	Severity 4	Total
<i>Hotels</i>	0	0	0	0	0
<i>Industrial</i>	0	0	0	0	1
<b>Total Casualties - 5pm</b>	<b>23</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>24</b>

#### San Luis Obispo

##### Casualties - 2am

	Severity 1	Severity 2	Severity 3	Severity 4	Total
<i>Commercial</i>	1	0	0	0	1
<i>Other-Residential</i>	63	10	1	1	75
<i>Industrial</i>	1	0	0	0	1
<i>Single Family</i>	17	0	0	0	17
<i>Commuting</i>	0	0	0	0	0
<i>Educational</i>	0	0	0	0	0
<i>Hotels</i>	0	0	0	0	0
<b>Total Casualties - 2am</b>	<b>81</b>	<b>11</b>	<b>1</b>	<b>1</b>	<b>94</b>

##### Casualties - 2pm

	Severity 1	Severity 2	Severity 3	Severity 4	Total
<i>Single Family</i>	5	0	0	0	5
<i>Educational</i>	5	0	0	0	6
<i>Other-Residential</i>	20	3	0	0	24
<i>Hotels</i>	0	0	0	0	0
<i>Commuting</i>	0	0	0	0	0
<i>Commercial</i>	49	8	1	2	60
<i>Industrial</i>	6	1	0	0	8
<b>Total Casualties - 2pm</b>	<b>86</b>	<b>13</b>	<b>1</b>	<b>2</b>	<b>103</b>

##### Casualties - 5pm

	Severity 1	Severity 2	Severity 3	Severity 4	Total
<i>Industrial</i>	4	1	0	0	5
<i>Other-Residential</i>	23	4	0	0	27
<i>Commuting</i>	1	2	3	1	7
<i>Single Family</i>	6	0	0	0	6
<i>Commercial</i>	32	5	1	1	39
<i>Hotels</i>	0	0	0	0	0
<i>Educational</i>	1	0	0	0	1
<b>Total Casualties - 5pm</b>	<b>67</b>	<b>12</b>	<b>4</b>	<b>2</b>	<b>85</b>

#### Santa Barbara

##### Casualties - 2am

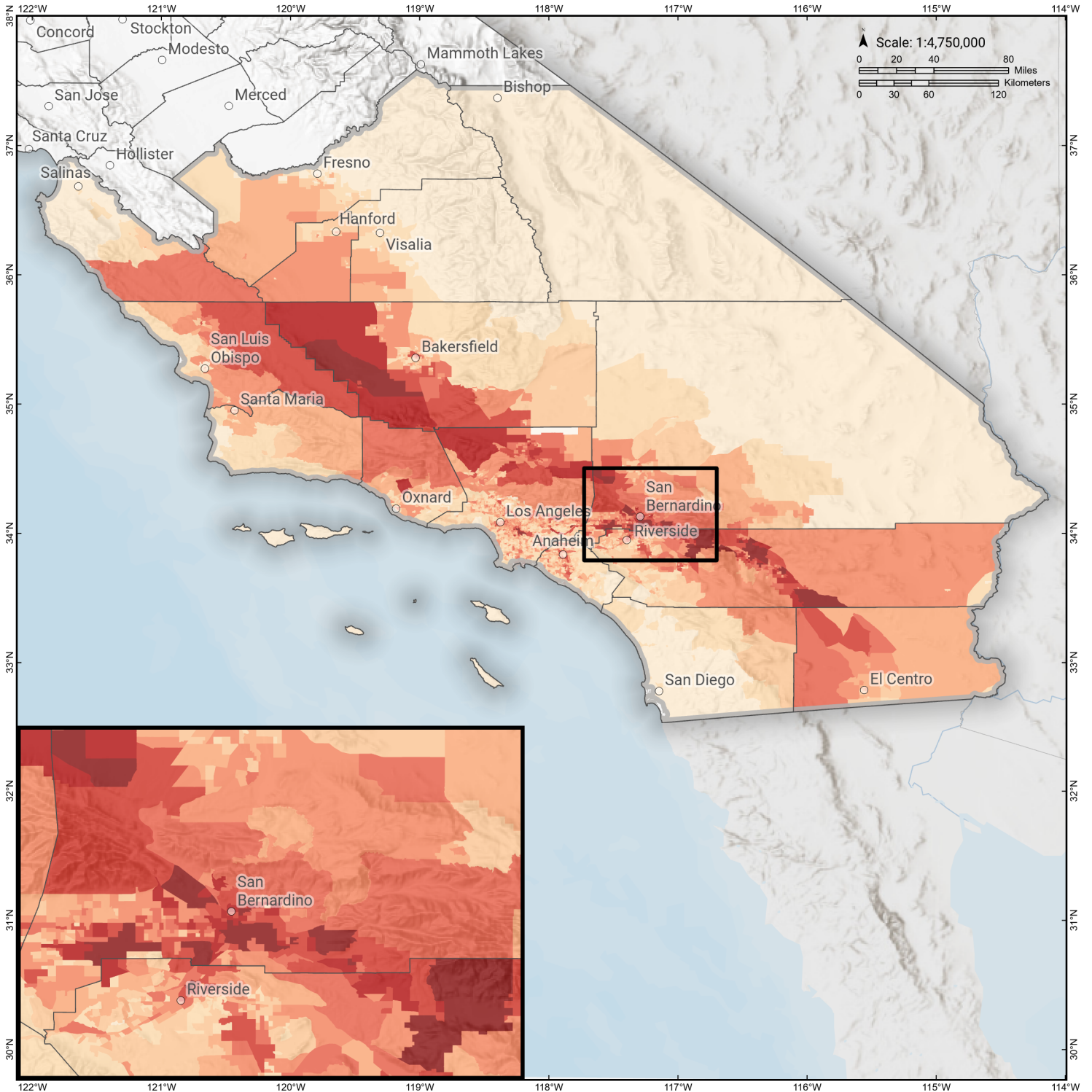
	Severity 1	Severity 2	Severity 3	Severity 4	Total
<i>Industrial</i>	1	0	0	0	1
<i>Commercial</i>	0	0	0	0	0
<i>Other-Residential</i>	32	3	0	0	36
<i>Commuting</i>	0	0	0	0	0
<i>Educational</i>	0	0	0	0	0
<i>Single Family</i>	15	0	0	0	15
<i>Hotels</i>	0	0	0	0	0

	Injury Severity Level				Total
	Severity 1	Severity 2	Severity 3	Severity 4	
<b>California</b>					
<b>Santa Barbara</b>					
<b>Total Casualties - 2am</b>	<b>48</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>52</b>
<b>Casualties - 2pm</b>					
<i>Commercial</i>	24	2	0	0	27
<i>Single Family</i>	4	0	0	0	4
<i>Other-Residential</i>	10	1	0	0	11
<i>Commuting</i>	0	0	0	0	0
<i>Educational</i>	10	1	0	0	10
<i>Hotels</i>	0	0	0	0	0
<i>Industrial</i>	4	0	0	0	4
<b>Total Casualties - 2pm</b>	<b>52</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>56</b>
<b>Casualties - 5pm</b>					
<i>Other-Residential</i>	12	1	0	0	13
<i>Single Family</i>	5	0	0	0	5
<i>Commercial</i>	17	1	0	0	19
<i>Commuting</i>	0	0	1	0	1
<i>Educational</i>	3	0	0	0	3
<i>Industrial</i>	2	0	0	0	3
<i>Hotels</i>	0	0	0	0	0
<b>Total Casualties - 5pm</b>	<b>39</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>44</b>
<b>Tulare</b>					
<b>Casualties - 2am</b>					
<i>Commercial</i>	0	0	0	0	0
<i>Commuting</i>	0	0	0	0	0
<i>Single Family</i>	5	0	0	0	5
<i>Educational</i>	0	0	0	0	0
<i>Hotels</i>	0	0	0	0	0
<i>Industrial</i>	0	0	0	0	0
<i>Other-Residential</i>	7	0	0	0	7
<b>Total Casualties - 2am</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>
<b>Casualties - 2pm</b>					
<i>Industrial</i>	1	0	0	0	1
<i>Hotels</i>	0	0	0	0	0
<i>Commercial</i>	10	1	0	0	11
<i>Other-Residential</i>	2	0	0	0	2
<i>Educational</i>	2	0	0	0	2
<i>Commuting</i>	0	0	0	0	0
<i>Single Family</i>	1	0	0	0	1
<b>Total Casualties - 2pm</b>	<b>17</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>18</b>
<b>Casualties - 5pm</b>					
<i>Other-Residential</i>	2	0	0	0	3
<i>Commercial</i>	7	0	0	0	8

	Injury Severity Level				Total
	Severity 1	Severity 2	Severity 3	Severity 4	
<b>California</b>					
<b>Tulare</b>					
<b>Casualties - 5pm</b>					
Single Family	2	0	0	0	2
Hotels	0	0	0	0	0
Commuting	0	0	0	0	1
Educational	0	0	0	0	0
Industrial	1	0	0	0	1
<b>Total Casualties - 5pm</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>13</b>
<b>Ventura</b>					
<b>Casualties - 2am</b>					
Educational	0	0	0	0	0
Commuting	0	0	0	0	0
Single Family	44	0	0	0	44
Hotels	0	0	0	0	0
Industrial	2	0	0	0	2
Commercial	1	0	0	0	1
Other-Residential	54	5	0	1	60
<b>Total Casualties - 2am</b>	<b>100</b>	<b>6</b>	<b>0</b>	<b>1</b>	<b>107</b>
<b>Casualties - 2pm</b>					
Industrial	12	1	0	0	14
Educational	25	2	0	0	28
Commuting	0	0	0	0	0
Hotels	0	0	0	0	0
Other-Residential	15	2	0	0	17
Commercial	69	7	1	1	78
Single Family	12	0	0	0	12
<b>Total Casualties - 2pm</b>	<b>133</b>	<b>13</b>	<b>1</b>	<b>2</b>	<b>149</b>
<b>Casualties - 5pm</b>					
Commuting	1	1	2	0	5
Other-Residential	20	2	0	0	22
Commercial	52	6	0	1	59
Hotels	0	0	0	0	0
Educational	3	0	0	0	3
Single Family	16	0	0	0	16
Industrial	8	1	0	0	9
<b>Total Casualties - 5pm</b>	<b>98</b>	<b>10</b>	<b>3</b>	<b>2</b>	<b>113</b>
<b>Region Total</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>

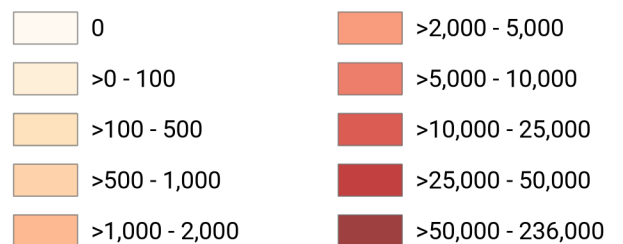
Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

# Southern California ShakeOut Debris Generated by Census Tract



**Study Region:** Southern California ShakeOut – M 7.8 on the Southern San Andreas Fault (2012 update)  
**Scenario:** sclegacyrdentsentry2015\_se

## Debris Generated (in tons)



## Debris Summary Report

May 02, 2024

All values are in thousands of tons.

	Brick, Wood & Others	Concrete & Steel	Total
<b>California</b>			
Fresno	20	32	52
Imperial	49	43	92
Inyo	0	0	0
Kern	253	437	690
Kings	12	20	32
Los Angeles	2,498	3,049	5,548
Monterey	4	7	11
Orange	273	498	771
Riverside	1,991	1,823	3,815
San Bernardino	2,225	2,585	4,810
San Diego	14	7	21
San Luis Obispo	75	79	154
Santa Barbara	33	41	74
Tulare	10	13	23
Ventura	74	117	191
<b>Total</b>	<b>7,532</b>	<b>8,752</b>	<b>16,284</b>
<b>Region Total</b>	<b>7,532</b>	<b>8,752</b>	<b>16,284</b>

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**Brick, Wood & Others**

**Concrete & Steel**

**Total**

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*Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.*

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## Direct Economic Losses For Buildings

May 2, 2024

All values are in thousands of dollars

	Capital Stock Losses				Loss Ratio %	Income Losses				Total Loss
	Cost Structural Damage	Cost Non-struct. Damage	Cost Contents Damage	Inventory Loss		Relocation Loss	Capital Related Loss	Wages Losses	Rental Income Loss	
<b>California</b>										
Inyo	3	88	52	7	0.00	0	1	1	1	153
Imperial	74,381	367,421	151,826	25,480	1.32	25,795	11,996	13,166	11,974	682,038
San Bernardino	3,828,379	17,805,375	7,122,700	821,385	5.73	1,929,574	763,295	1,103,420	1,014,396	34,388,525
Riverside	2,614,623	12,918,186	4,914,638	281,395	3.71	1,218,416	488,568	575,573	657,916	23,669,316
Fresno	47,415	284,172	157,367	28,387	0.21	14,138	12,449	12,975	9,679	566,582
Kings	27,527	148,944	72,139	8,923	0.82	10,215	8,370	10,244	5,939	292,300
San Luis Obispo	103,687	554,830	240,427	22,312	1.05	41,708	33,208	33,467	23,870	1,053,508
Tulare	23,298	169,518	95,360	21,053	0.26	5,677	4,430	5,104	3,851	328,291
Santa Barbara	66,108	460,427	227,800	25,307	0.67	23,031	13,321	16,999	14,907	847,899

	Capital Stock Losses				Loss Ratio %	Income Losses				Total Loss
	Cost Structural Damage	Cost Non-struct. Damage	Cost Contents Damage	Inventory Loss		Relocation Loss	Capital Related Loss	Wages Losses	Rental Income Loss	
<b>Kern</b>	511,734	2,035,284	928,714	166,368	1.74	183,698	102,431	120,510	90,016	4,138,754
<b>Ventura</b>	169,943	1,022,831	491,647	54,930	0.79	50,829	36,478	43,001	33,789	1,903,448
<b>Monterey</b>	12,033	42,002	23,821	7,254	0.07	2,637	980	1,037	1,131	90,896
<b>Orange</b>	662,095	3,709,707	1,786,001	162,334	0.81	235,047	176,886	206,455	163,682	7,102,205
<b>San Diego</b>	22,332	347,282	188,531	14,118	0.06	4,010	2,838	6,055	5,702	590,867
<b>Los Angeles</b>	4,278,731	19,514,862	8,844,100	779,199	1.57	2,103,904	1,211,129	1,547,837	1,251,017	39,530,778
<b>Total</b>	<b>12,442,289</b>	<b>59,380,929</b>	<b>25,245,124</b>	<b>2,418,449</b>	<b>1.25</b>	<b>5,848,677</b>	<b>2,866,378</b>	<b>3,695,844</b>	<b>3,287,870</b>	<b>115,185,562</b>
<b>Region Total</b>	<b>12,442,289</b>	<b>59,380,929</b>	<b>25,245,124</b>	<b>2,418,449</b>	<b>1.25</b>	<b>5,848,677</b>	<b>2,866,378</b>	<b>3,695,844</b>	<b>3,287,870</b>	<b>115,185,562</b>

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

## Direct Economic Loss For Transportation

May 02, 2024

All values are in thousands of dollars

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
<b>California</b>								
<b>Fresno</b>								
Segments	0	0	0					0
Bridges	3,803	182	0					3,985
Tunnels	0	0	0					0
Facilities		1,167	0	89	0	0	5,604	6,860
<b>Total</b>	<b>3,803</b>	<b>1,349</b>	<b>0</b>	<b>89</b>	<b>0</b>	<b>0</b>	<b>5,604</b>	<b>10,845</b>
<b>Imperial</b>								
Segments	0	0	0					0
Bridges	14,092	115,179	0					129,272
Tunnels	0	0	0					0
Facilities		983	0	0	0	0	6,806	7,790
<b>Total</b>	<b>14,092</b>	<b>116,162</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6,806</b>	<b>137,061</b>
<b>Inyo</b>								
Segments	0	0	0					0
Bridges	3	0	0					3
Tunnels	0	0	0					0
Facilities		0	0	0	0	0	575	575

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
<b>Total</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>575</b>	<b>577</b>
<b>Kern</b>								
Segments	0	0	0					0
Bridges	33,477	2,623	0					36,100
Tunnels	47	0	0					47
Facilities		2,063	0	950	0	0	14,079	17,092
<b>Total</b>	<b>33,524</b>	<b>4,686</b>	<b>0</b>	<b>950</b>	<b>0</b>	<b>0</b>	<b>14,079</b>	<b>53,239</b>
<b>Kings</b>								
Segments	0	0	0					0
Bridges	1,997	246	0					2,243
Tunnels	0	0	0					0
Facilities		1,192	0	476	0	0	3,002	4,670
<b>Total</b>	<b>1,997</b>	<b>1,438</b>	<b>0</b>	<b>476</b>	<b>0</b>	<b>0</b>	<b>3,002</b>	<b>6,913</b>
<b>Los Angeles</b>								
Segments	0	0	0					0
Bridges	318,486	26,651	16					345,152
Tunnels	2,268	0	0					2,268
Facilities		14,688	268,798	4,280	62,892	961	309,930	661,548
<b>Total</b>	<b>320,754</b>	<b>41,338</b>	<b>268,813</b>	<b>4,280</b>	<b>62,892</b>	<b>961</b>	<b>309,930</b>	<b>1,008,969</b>
<b>Monterey</b>								
Segments	0	0	0					0
Bridges	2,513	226	0					2,739
Tunnels	0	0	0					0
Facilities		109	0	703	110	0	2,338	3,261

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
<b>Total</b>	<b>2,514</b>	<b>335</b>	<b>0</b>	<b>703</b>	<b>110</b>	<b>0</b>	<b>2,338</b>	<b>6,000</b>
<b>Orange</b>								
<i>Segments</i>	0	0	0					0
<i>Bridges</i>	46,436	1,312	0					47,749
<i>Tunnels</i>	92	0	0					92
<i>Facilities</i>		2,170	0	0	4,736	402	46,111	53,419
<b>Total</b>	<b>46,528</b>	<b>3,482</b>	<b>0</b>	<b>0</b>	<b>4,736</b>	<b>402</b>	<b>46,111</b>	<b>101,259</b>
<b>Riverside</b>								
<i>Segments</i>	0	0	0					0
<i>Bridges</i>	326,233	65,829	0					392,063
<i>Tunnels</i>	0	0	0					0
<i>Facilities</i>		3,853	0	5,701	0	0	54,757	64,311
<b>Total</b>	<b>326,233</b>	<b>69,683</b>	<b>0</b>	<b>5,701</b>	<b>0</b>	<b>0</b>	<b>54,757</b>	<b>456,374</b>
<b>San Bernardino</b>								
<i>Segments</i>	0	0	0					0
<i>Bridges</i>	593,599	58,870	0					652,468
<i>Tunnels</i>	499	0	0					499
<i>Facilities</i>		13,375	0	1,533	0	0	76,043	90,952
<b>Total</b>	<b>594,098</b>	<b>72,245</b>	<b>0</b>	<b>1,533</b>	<b>0</b>	<b>0</b>	<b>76,043</b>	<b>743,919</b>
<b>San Diego</b>								
<i>Segments</i>	0	0	0					0
<i>Bridges</i>	2,420	27	0					2,447
<i>Tunnels</i>	1	0	0					1
<i>Facilities</i>		1,151	37,627	21	15,528	164	39,006	93,497

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
<b>Total</b>	<b>2,421</b>	<b>1,178</b>	<b>37,627</b>	<b>21</b>	<b>15,528</b>	<b>164</b>	<b>39,006</b>	<b>95,945</b>
<b>San Luis Obispo</b>								
Segments	0	0	0					0
Bridges	12,024	419	0					12,443
Tunnels	0	0	0					0
Facilities		1,086	0	480	2,838	0	5,600	10,004
<b>Total</b>	<b>12,024</b>	<b>1,506</b>	<b>0</b>	<b>480</b>	<b>2,838</b>	<b>0</b>	<b>5,600</b>	<b>22,447</b>
<b>Santa Barbara</b>								
Segments	0	0	0					0
Bridges	3,498	218	0					3,716
Tunnels	3	0	0					3
Facilities		1,380	0	871	3,132	164	6,644	12,190
<b>Total</b>	<b>3,501</b>	<b>1,598</b>	<b>0</b>	<b>871</b>	<b>3,132</b>	<b>164</b>	<b>6,644</b>	<b>15,909</b>
<b>Tulare</b>								
Segments	0	0	0					0
Bridges	1,403	265	0					1,668
Tunnels	0	0	0					0
Facilities		0	0	427	0	0	1,452	1,879
<b>Total</b>	<b>1,403</b>	<b>265</b>	<b>0</b>	<b>427</b>	<b>0</b>	<b>0</b>	<b>1,452</b>	<b>3,547</b>
<b>Ventura</b>								
Segments	0	0	0					0
Bridges	9,120	488	0					9,607
Tunnels	33	0	0					33
Facilities		1,474	0	239	7,630	202	5,963	15,508

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
<b>Total</b>	<b>9,153</b>	<b>1,961</b>	<b>0</b>	<b>239</b>	<b>7,630</b>	<b>202</b>	<b>5,963</b>	<b>25,149</b>
<b>Total</b>	<b>1,372,048</b>	<b>317,227</b>	<b>306,441</b>	<b>15,769</b>	<b>96,866</b>	<b>1,892</b>	<b>577,912</b>	<b>2,688,154</b>
<b>Region Total</b>	<b>1,372,048</b>	<b>317,227</b>	<b>306,441</b>	<b>15,769</b>	<b>96,866</b>	<b>1,892</b>	<b>577,912</b>	<b>2,688,154</b>

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## Direct Economic Loss For Utilities

May 02, 2024

All values are in thousands of dollars

	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total
<b>California</b>							
<b>Fresno</b>							
Facilities	0	6,097	3	467	581,312	97	587,977
Pipelines	34,433	17,297	0	0			51,730
<b>Total</b>	<b>34,433</b>	<b>23,394</b>	<b>3</b>	<b>467</b>	<b>581,312</b>	<b>97</b>	<b>639,707</b>
<b>Imperial</b>							
Facilities	10,920	185,610	0	0	2,621,244	226	2,818,000
Pipelines	61,666	30,976	0	0			92,642
<b>Total</b>	<b>72,586</b>	<b>216,586</b>	<b>0</b>	<b>0</b>	<b>2,621,244</b>	<b>226</b>	<b>2,910,643</b>
<b>Inyo</b>							
Facilities	0	0	0	0	10,861	0	10,862
Pipelines	1,513	760	0	0			2,273
<b>Total</b>	<b>1,513</b>	<b>760</b>	<b>0</b>	<b>0</b>	<b>10,861</b>	<b>0</b>	<b>13,134</b>
<b>Kern</b>							
Facilities	17,396	57,022	84	61,185	7,366,752	881	7,503,319

	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total
<i>Pipelines</i>	293,226	147,295	0	0			440,521
<b>Total</b>	310,622	204,317	84	61,185	7,366,752	881	7,943,840
<b>Kings</b>							
<i>Facilities</i>	0	0	3	12,418	315,293	29	327,743
<i>Pipelines</i>	34,461	17,310	0	0			51,771
<b>Total</b>	34,461	17,310	3	12,418	315,293	29	379,514
<b>Los Angeles</b>							
<i>Facilities</i>	51,553	208,173	231	38,031	11,778,382	1,980	12,078,350
<i>Pipelines</i>	499,138	250,730	0	0			749,867
<b>Total</b>	550,691	458,902	231	38,031	11,778,382	1,980	12,828,218
<b>Monterey</b>							
<i>Facilities</i>	0	1,107	0	0	75,143	67	76,316
<i>Pipelines</i>	19,599	9,845	0	0			29,444
<b>Total</b>	19,599	10,952	0	0	75,143	67	105,760
<b>Orange</b>							
<i>Facilities</i>	5,861	63,071	14	4,247	287,605	141	360,939
<i>Pipelines</i>	47,795	24,008	0	0			71,803
<b>Total</b>	53,656	87,079	14	4,247	287,605	141	432,742
<b>Riverside</b>							
<i>Facilities</i>	53,436	441,267	0	8,447	4,482,560	2,879	4,988,589
<i>Pipelines</i>	546,313	274,427	0	0			820,739

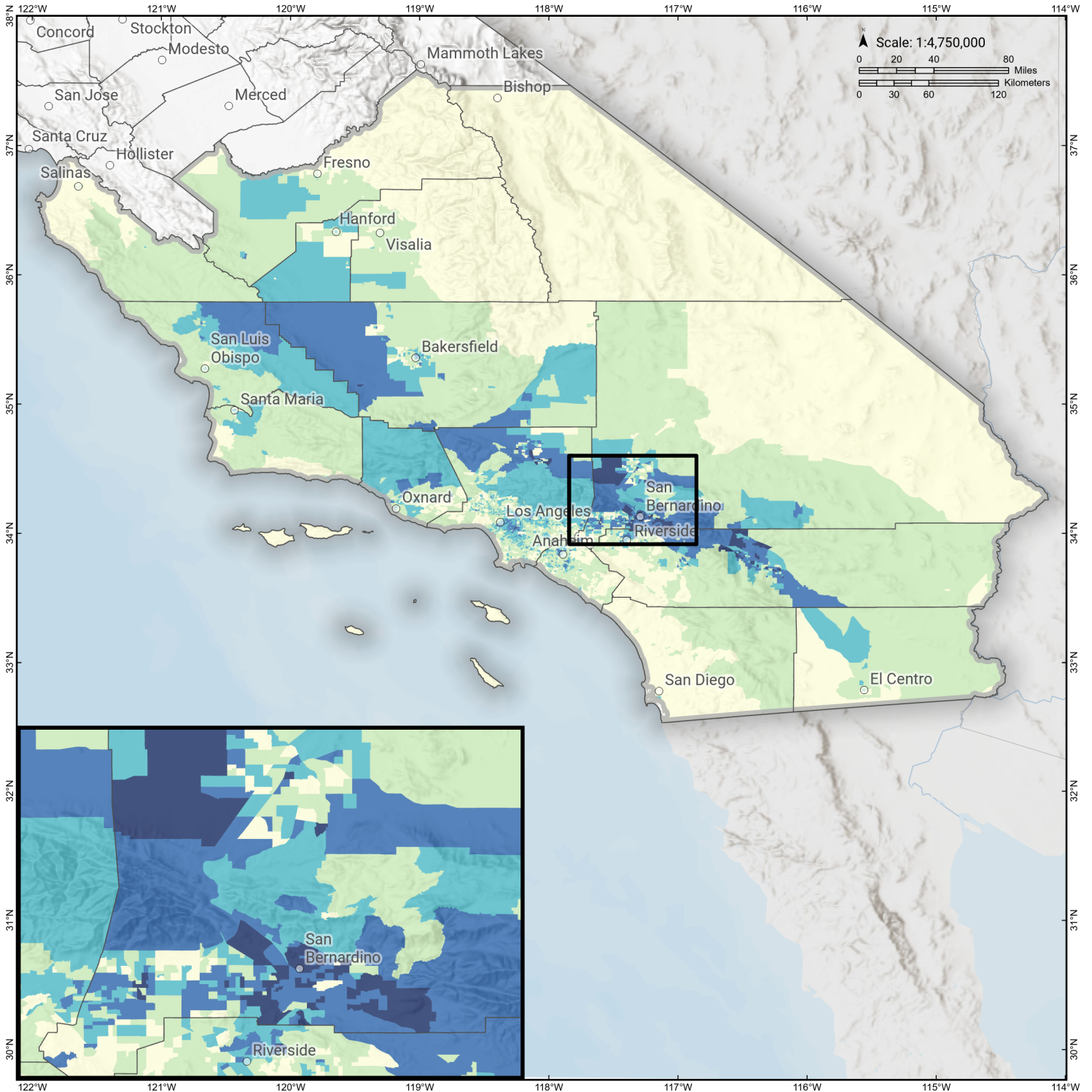
	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total
<b>Total</b>	599,749	715,694	0	8,447	4,482,560	2,879	5,809,328
<b>San Bernardino</b>							
<i>Facilities</i>	46,671	386,313	0	10,258	6,650,829	1,935	7,096,007
<i>Pipelines</i>	532,415	267,446	0	0			799,860
<b>Total</b>	579,086	653,758	0	10,258	6,650,829	1,935	7,895,867
<b>San Diego</b>							
<i>Facilities</i>	697	48,480	1	1,590	384,019	97	434,883
<i>Pipelines</i>	17,296	8,688	0	0			25,984
<b>Total</b>	17,993	57,168	1	1,590	384,019	97	460,867
<b>San Luis Obispo</b>							
<i>Facilities</i>	1,009	80,868	11	0	1,816,586	459	1,898,934
<i>Pipelines</i>	163,077	81,918	0	0			244,994
<b>Total</b>	164,086	162,786	11	0	1,816,586	459	2,143,928
<b>Santa Barbara</b>							
<i>Facilities</i>	0	81,725	9	5,974	89,242	481	177,431
<i>Pipelines</i>	21,837	10,969	0	0			32,806
<b>Total</b>	21,837	92,694	9	5,974	89,242	481	210,237
<b>Tulare</b>							
<i>Facilities</i>	348	7,464	0	0	139,625	69	147,506
<i>Pipelines</i>	14,334	7,200	0	0			21,535
<b>Total</b>	14,683	14,664	0	0	139,625	69	169,041

	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total
<b>Ventura</b>							
<i>Facilities</i>	9,489	117,330	11	3,680	586,872	367	717,748
<i>Pipelines</i>	38,156	19,167	0	0			57,322
<b>Total</b>	47,644	136,496	11	3,680	586,872	367	775,070
<b>Total</b>	<b>2,522,637</b>	<b>2,852,561</b>	<b>367</b>	<b>146,298</b>	<b>37,186,325</b>	<b>9,708</b>	<b>42,717,897</b>
<b>Region Total</b>	<b>2,522,637</b>	<b>2,852,561</b>	<b>367</b>	<b>146,298</b>	<b>37,186,325</b>	<b>9,708</b>	<b>42,717,897</b>

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# Southern California ShakeOut

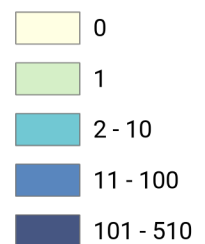
## Displaced Households by Census Tract



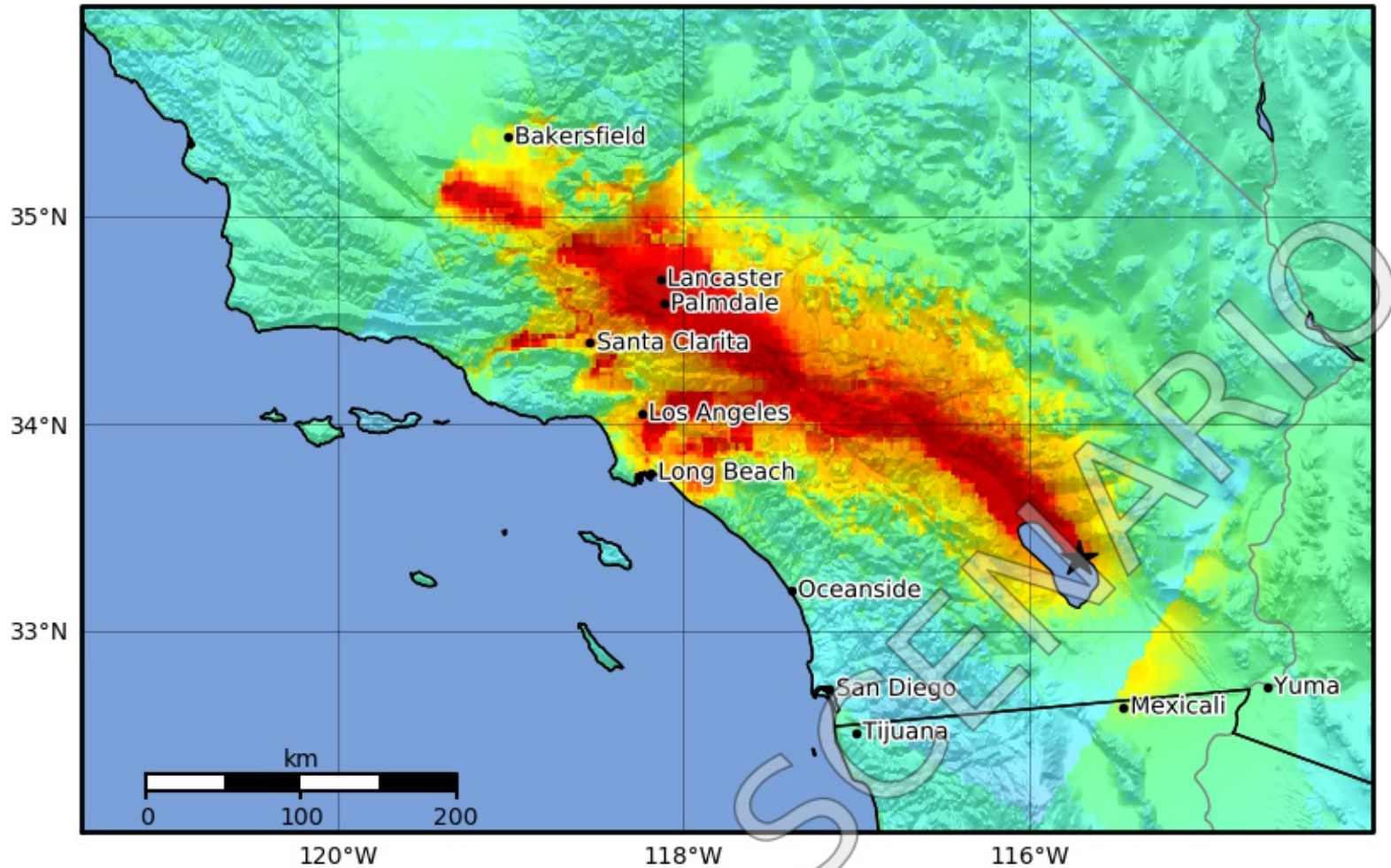
**Study Region:** Southern California ShakeOut – M 7.8 on the Southern San Andreas Fault (2012 update)  
**Scenario:** sclegacyrdentsentry2015\_se



### Displaced Households



Macroseismic Intensity Map  
 USGS ShakeMap: Ardent Sentry 2015 Scenario  
 Feb 27, 2015 00:00:00 UTC M7.8 N33.35 W115.71 Depth: 7.6km  
 ID:sclegacyardentsentry2015\_se



SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
DAMAGE	None	None	None	Very light	Light	Moderate	Moderate/heavy	Heavy	Very heavy
PGA(%g)	<0.1	0.49	2.35	6.73	12.6	23.7	44.4	83.3	>156
PGV(cm/s)	<0.07	0.37	1.93	5.8	11.3	21.9	42.5	82.5	>160
INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+

Scale based on Wald et al. (1999)

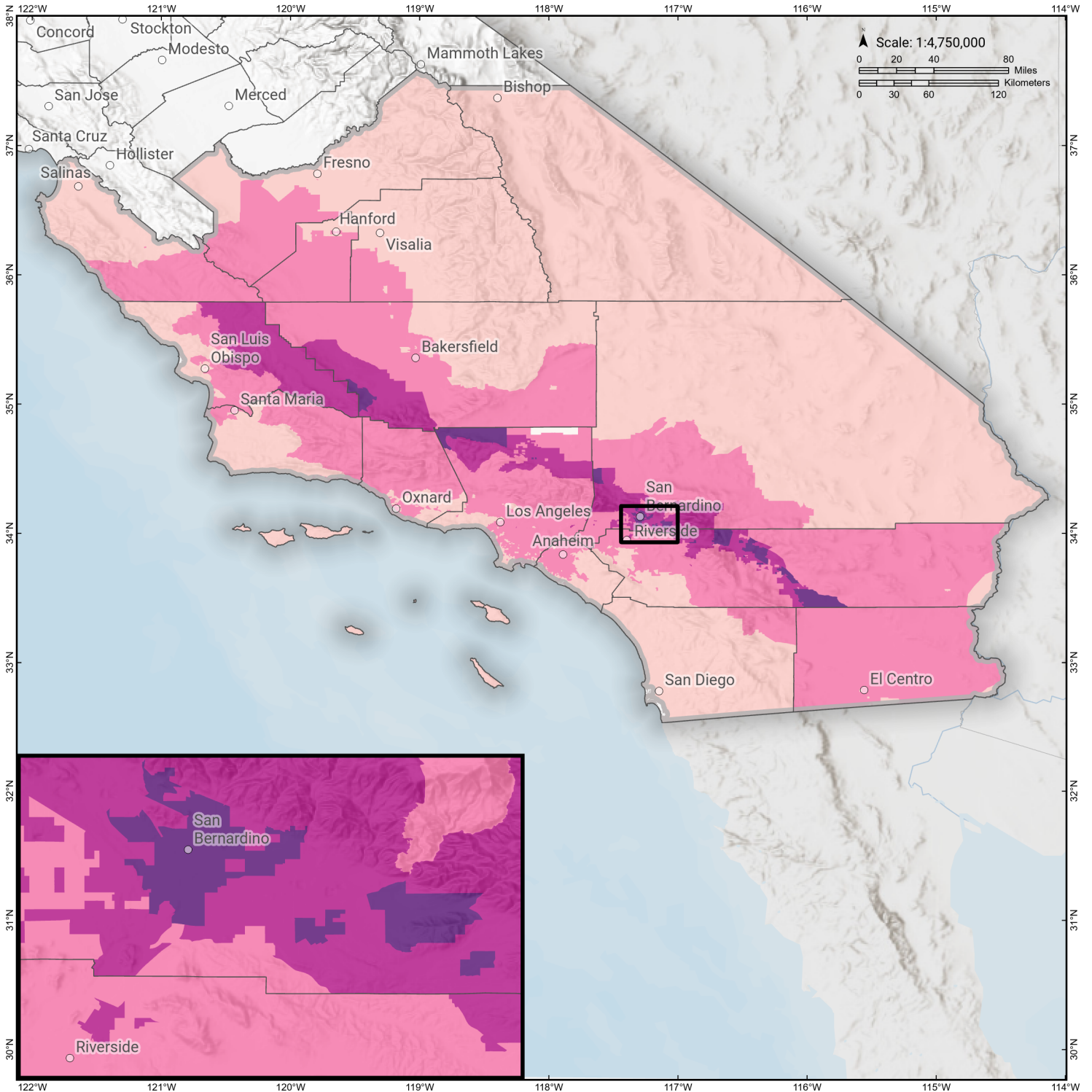
△ Seismic Instrument ○ Reported Intensity

★ Epicenter

Version 1: Processed 2019-08-11T18:16:33Z

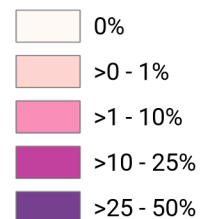
# Southern California ShakeOut

## Loss Ratio by Census Tract



**Study Region:** Southern California ShakeOut – M 7.8 on the Southern San Andreas Fault (2012 update)  
**Scenario:** sclegacyrdentsentry2015\_se

**Loss Ratio** (ratio of building related economic loss to exposed value of buildings)



## Hazus Quick Assessment Report

### Estimated Economic Loss (\$ Billions)

Category	Description	Range
General Building Stock	Building Damage	35.90 - 143.60
	Building Contents	4.40 - 17.70
	Business Interruption	7.80 - 31.40
Infrastructure	Lifelines Damage	
<b>Total</b>		57.60 - 230.40

### Preliminary Damage Assessment (PDA) Estimates

Description	Residential	Commercial	Other	Total
Affected		94,600	35,400	
Minor	231,000	37,200	15,300	283,500
Major	43,000	8,700	4,000	55,700
Destroyed	24,700	2,500	940	28,140
<b>Total</b>		143,000	55,640	

### Estimated Casualties : Night Time

Severity Level	Description	# Persons
Level 1	Medical Aid	6,000 - 23,000
Level 2	Hospital Care	900 - 4,000
Level 3	Life-threatening	80 - 300
Level 4	Fatalities	140 - 500

### Estimated Shelter Needs

Type	Households	People
Displaced Households	23,000 - 91,000	57,500 - 227,500
Public Shelter	12,350	30,880

Comments :

*\*Hazus damage estimates are presented using FEMA Preliminary Damage Assessment (PDA) categories. These estimates should be used for planning purposes and may not reflect actual observed damages from the PDA process.*

**Disclaimer:**

*The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, geotechnical, and observed ground motion data.*

### Earthquake Information

Location :

Origin Time:

Magnitude : 7.80

Epicenter Latitude/Longitude :  
/

Depth & Type : /U

Name :  
NA

Ground Motion /Attenuation :

Maximum PGA: 1.00

Information Sources:

Comments :

### Population and Building Exposure

Population: 25,855,212

### Building Exposure : (\$ Millions)

Residential	
Commercial	873,680
Other	657,954
Total	

Counties : See Appendix

Major Metro Area :

## Hazus Quick Assessment Report

### Estimated Economic Loss (\$ Billions)

Category	Description	Range
General Building Stock	Building Damage	35.90 - 143.60
	Building Contents	4.40 - 17.70
	Business Interruption	7.80 - 31.40
Infrastructure	Lifelines Damage	
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Major	43,000	8,700	4,000	55,700
Destroyed	24,700	2,500	940	28,140
<b>Total</b>		143,000	55,640	

### Estimated Casualties : Day Time

Severity Level	Description	# Persons
Level 1	Medical Aid	8,000 - 30,000
Level 2	Hospital Care	1,400 - 6,000
Level 3	Life-threatening	190 - 700
Level 4	Fatalities	300 - 1,300

### Estimated Shelter Needs

Type	Households	People
Displaced Households	23,000 - 91,000	57,500 - 227,500
Public Shelter	12,350	30,880

Comments :

\*Hazus damage estimates are presented using FEMA Preliminary Damage Assessment (PDA) categories. These estimates should be used for planning purposes and may not reflect actual observed damages from the PDA process.

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Epicenter Latitude/Longitude :  
/

Depth & Type : /U

Name :  
NA

Ground Motion /Attenuation :

Maximum PGA: 1.00

Information Sources:

Comments :

### Population and Building Exposure

Population: 25,855,212

### Building Exposure : (\$ Millions)

Residential	
Commercial	873,680
Other	657,954
Total	

Counties : See Appendix

Major Metro Area :

## Hazus Quick Assessment Report

### Estimated Economic Loss (\$ Billions)

Category	Description	Range
General Building Stock	Building Damage	35.90 - 143.60
	Building Contents	4.40 - 17.70
	Business Interruption	7.80 - 31.40
Infrastructure	Lifelines Damage	
<b>Total</b>		57.60 - 230.40

### Preliminary Damage Assessment (PDA) Estimates

Description	Residential	Commercial	Other	Total
Affected		94,600	35,400	
Minor	231,000	37,200	15,300	283,500
Major	43,000	8,700	4,000	55,700
Destroyed	24,700	2,500	940	28,140
<b>Total</b>		143,000	55,640	

### Estimated Casualties : Commute Time

Severity Level	Description	# Persons
Level 1	Medical Aid	6,000 - 22,000
Level 2	Hospital Care	1,200 - 5,000
Level 3	Life-threatening	400 - 1,700
Level 4	Fatalities	300 - 1,100

### Estimated Shelter Needs

Type	Households	People
Displaced Households	23,000 - 91,000	57,500 - 227,500
Public Shelter	12,350	30,880

Comments :

\*Hazus damage estimates are presented using FEMA Preliminary Damage Assessment (PDA) categories. These estimates should be used for planning purposes and may not reflect actual observed damages from the PDA process.

**Disclaimer:**

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, geotechnical, and observed ground motion data.

### Earthquake Information

Location :

Origin Time:

Magnitude : 7.80

Epicenter Latitude/Longitude :  
/

Depth & Type : /U

Name :  
NA

Ground Motion /Attenuation :

Maximum PGA: 1.00

Information Sources:

Comments :

### Population and Building Exposure

Population: 25,855,212

### Building Exposure : (\$ Millions)

Residential	
Commercial	873,680
Other	657,954
Total	

Counties : See Appendix

Major Metro Area :

## Shelter Summary Report

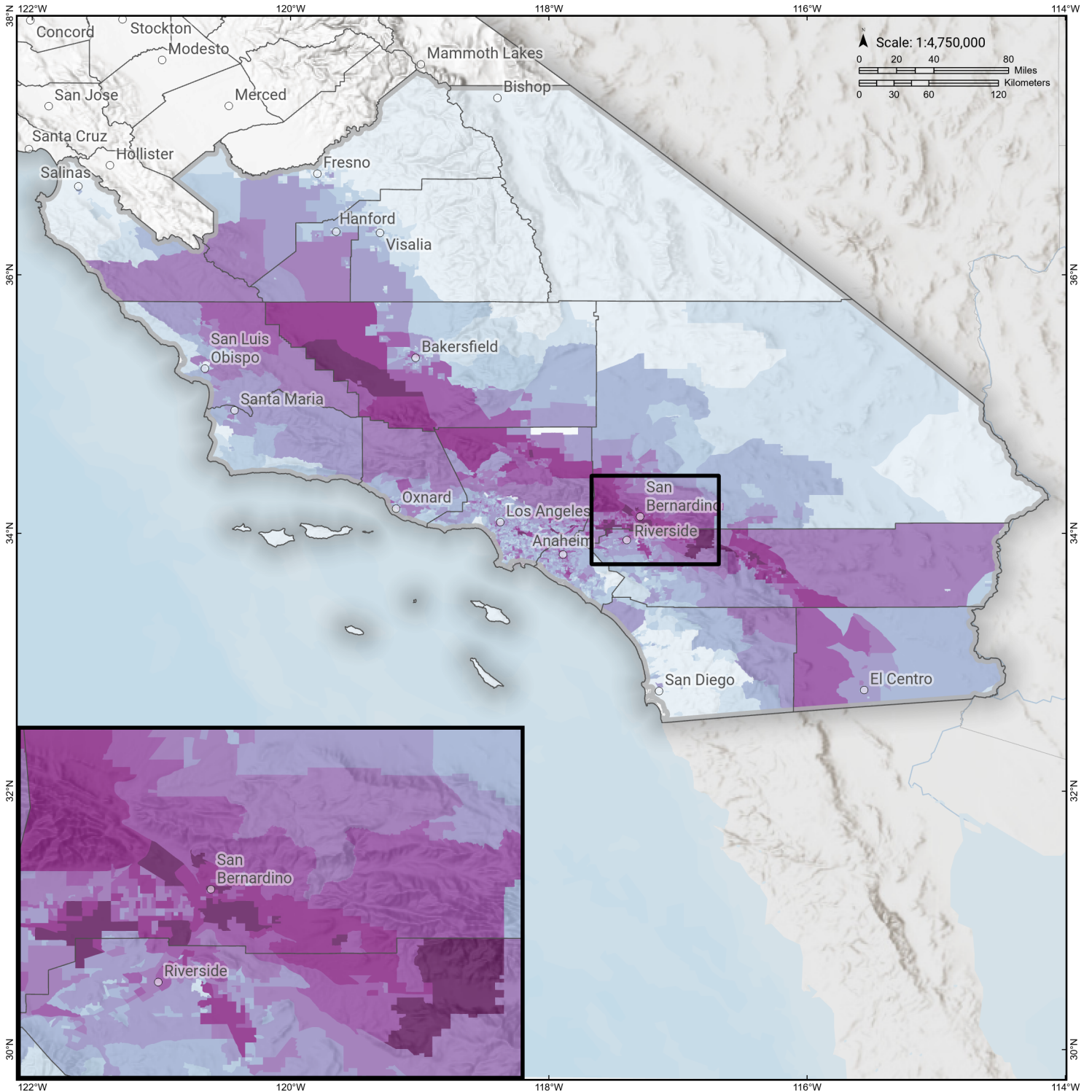
May 02, 2024

	# of Displaced Households	# of People Needing Short Term Shelter
<b>California</b>		
Fresno	41	31
Imperial	28	36
Inyo	0	0
Kern	912	730
Kings	37	26
Los Angeles	14,393	8,791
Monterey	4	3
Orange	992	666
Riverside	7,706	5,832
San Bernardino	20,732	14,451
San Diego	3	1
San Luis Obispo	140	69
Santa Barbara	83	58
Tulare	9	8
Ventura	296	174
<b>Total</b>	<b>45,376</b>	<b>30,876</b>
<b>Region Total</b>	<b>45,376</b>	<b>30,876</b>

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

# Southern California ShakeOut

## Total Building Related Economic Loss by Census Tract



**Study Region:** Southern California ShakeOut – M 7.8 on the Southern San Andreas Fault (2012 update)  
**Scenario:** sclegacydentsentry2015\_se



**Economic Loss** (in thousands of USD \$)

