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## Hazus: Earthquake Global Risk Report

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**Region Name:** PitasPointLowerW

**Earthquake Scenario:** pitaspointlowerweste\_m7p21\_se

**Print Date:** June 12, 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 10 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 36,540.71 square miles and contains 4,172 census tracts. There are over 5,949 thousand households in the region which has a total population of 17,758,021 people. The distribution of population by Total Region and County is provided in Appendix B.

There are an estimated 4,850 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 206,559 and 140,852 (millions of dollars) , respectively.

## Building and Lifeline Inventory

### Building Inventory

Hazus estimates that there are 4,850 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 256 hospitals in the region with a total bed capacity of 49,148 beds. There are 5,930 schools, 952 fire stations, 361 police stations and 96 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 347,411.00 (millions of dollars). This inventory includes over 8,812.28 miles of highways, 8,713 bridges, 182,400.35 miles of pipes.

**Table 1: Transportation System Lifeline Inventory**

System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
<b>Highway</b>	Bridges	8,713	48511.9526
	Segments	8,014	89386.4616
	Tunnels	57	543.9774
	<b>Subtotal</b>		<b>138442.3916</b>
<b>Railways</b>	Bridges	1,062	6042.7800
	Facilities	90	239.6700
	Segments	1,399	50752.3354
	Tunnels	0	0.0000
	<b>Subtotal</b>		<b>57034.7854</b>
<b>Light Rail</b>	Bridges	28	6.1737
	Facilities	80	2293.5200
	Segments	4	2829.7483
	Tunnels	0	0.0000
	<b>Subtotal</b>		<b>5129.4420</b>
<b>Bus</b>	Facilities	42	91.6353
	<b>Subtotal</b>		<b>91.6353</b>
<b>Ferry</b>	Facilities	19	25.2890
	<b>Subtotal</b>		<b>25.2890</b>
<b>Port</b>	Facilities	257	979.6441
	<b>Subtotal</b>		<b>979.6441</b>
<b>Airport</b>	Facilities	115	3535.7294
	Runways	112	1320.7212
	<b>Subtotal</b>		<b>4856.4506</b>
		<b>Total</b>	<b>206,559.60</b>

**Table 2: Utility System Lifeline Inventory**

System	Component	# Locations / Segments	Replacement value (millions of dollars)
<b>Potable Water</b>	Distribution Lines	NA	3627.8577
	Facilities	29	1139.5260
	Pipelines	0	0.0000
		<b>Subtotal</b>	<b>4767.3837</b>
<b>Waste Water</b>	Distribution Lines	NA	2176.7146
	Facilities	77	13240.2886
	Pipelines	0	0.0000
		<b>Subtotal</b>	<b>15417.0032</b>
<b>Natural Gas</b>	Distribution Lines	NA	1451.1431
	Facilities	34	1194.3480
	Pipelines	345	11681.9458
		<b>Subtotal</b>	<b>14327.4369</b>
<b>Oil Systems</b>	Facilities	68	8.0240
	Pipelines	0	0.0000
		<b>Subtotal</b>	<b>8.0240</b>
<b>Electrical Power</b>	Facilities	438	106286.5903
		<b>Subtotal</b>	<b>106286.5903</b>
<b>Communication</b>	Facilities	388	45.7840
		<b>Subtotal</b>	<b>45.7840</b>
	<b>Total</b>		<b>140,852.20</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>	pitaspoinlowerweste_m7p21_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>	7.21
<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 30,223 buildings will be at least moderately damaged. This is over 1.00 % of the buildings in the region. There are an estimated 1,339 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

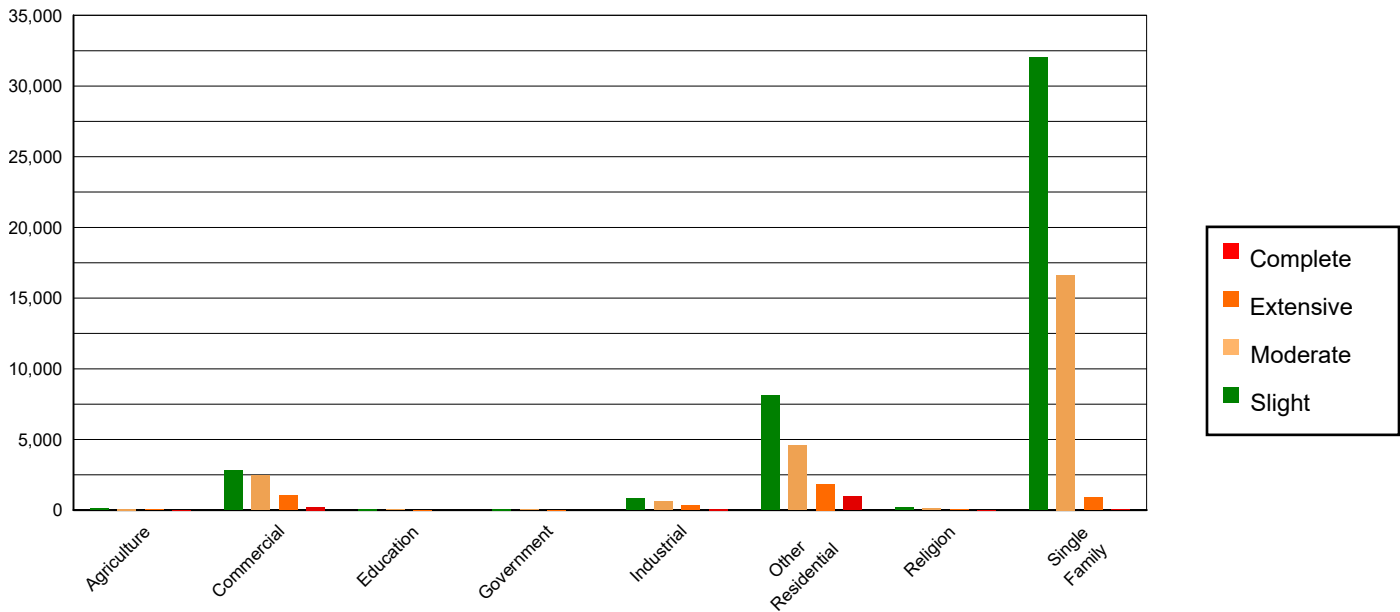


Table 3: Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
<b>Agriculture</b>	18127.84	0.38	134.63	0.30	82.54	0.34	36.92	0.86	10.07	0.75
<b>Commercial</b>	343896.24	7.20	2787.95	6.31	2447.70	9.95	1060.78	24.82	214.34	16.00
<b>Education</b>	9880.96	0.21	78.89	0.18	56.02	0.23	10.83	0.25	2.30	0.17
<b>Government</b>	6383.88	0.13	88.19	0.20	62.80	0.26	20.07	0.47	3.06	0.23
<b>Industrial</b>	97521.78	2.04	801.43	1.81	635.78	2.58	316.99	7.42	86.02	6.42
<b>Other Residential</b>	762071.16	15.96	8103.59	18.35	4559.89	18.53	1848.41	43.25	961.94	71.81
<b>Religion</b>	19167.58	0.40	158.03	0.36	125.63	0.51	59.54	1.39	13.22	0.99
<b>Single Family</b>	3519032.38	73.68	32018.88	72.49	16639.65	67.61	920.47	21.54	48.61	3.63
<b>Total</b>	<b>4,776,082</b>		<b>44,172</b>		<b>24,610</b>		<b>4,274</b>		<b>1,340</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>	4177762.82	87.47	38101.89	86.26	19822.64	80.55	1129.78	26.43	57.07	4.26
<b>Steel</b>	100050.10	2.09	906.91	2.05	849.72	3.45	519.25	12.15	147.32	11.00
<b>Concrete</b>	108299.20	2.27	942.49	2.13	970.65	3.94	495.25	11.59	120.12	8.97
<b>Precast</b>	55299.36	1.16	557.79	1.26	563.10	2.29	297.16	6.95	62.43	4.66
<b>RM</b>	219671.45	4.60	833.07	1.89	1150.83	4.68	588.15	13.76	65.32	4.88
<b>URM</b>	27943.03	0.59	433.78	0.98	70.62	0.29	50.96	1.19	54.53	4.07
<b>MH</b>	87055.86	1.82	2395.66	5.42	1182.45	4.80	1193.46	27.92	832.77	62.17
<b>Total</b>	<b>4,776,082</b>		<b>44,172</b>		<b>24,610</b>		<b>4,274</b>		<b>1,340</b>	

\*Note:

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

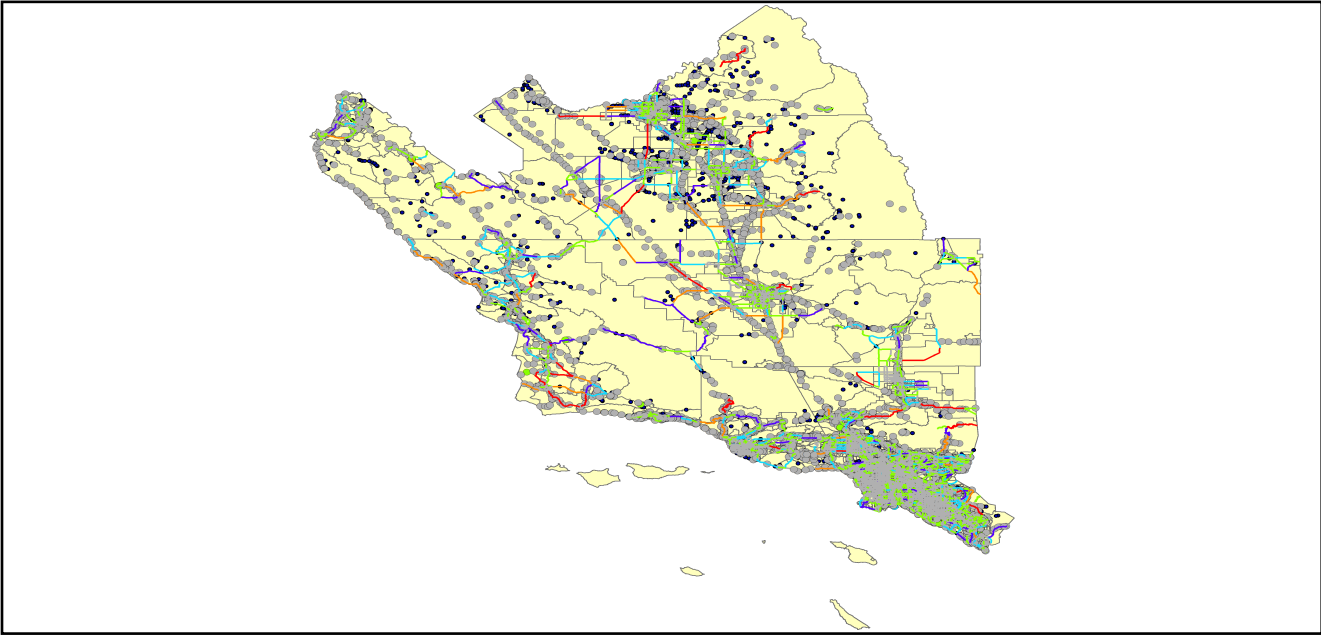
## Essential Facility Damage

Before the earthquake, the region had 49,148 hospital beds available for use. On the day of the earthquake, the model estimates that only 47,934 hospital beds (98.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 98.00% of the beds will be back in service. By 30 days, 99.00% 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	256	5	0	250
Schools	5,930	65	1	5,847
EOCs	96	1	0	95
PoliceStations	361	8	1	349
FireStations	952	16	1	930

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	8,014	0	0	8,014	8,014
	Bridges	8,713	51	1	8,672	8,709
	Tunnels	57	0	0	57	57
Railways	Segments	1,399	0	0	1,399	1,399
	Bridges	1,062	0	0	1,062	1,062
	Tunnels	0	0	0	0	0
	Facilities	90	2	0	89	90
Light Rail	Segments	4	0	0	4	4
	Bridges	28	0	0	28	28
	Tunnels	0	0	0	0	0
	Facilities	80	0	0	80	80
Bus	Facilities	42	1	0	42	42
Ferry	Facilities	19	0	0	19	19
Port	Facilities	257	6	0	253	257
Airport	Facilities	115	2	0	114	115
	Runways	112	0	0	112	112

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	29	0	0	29	29
Waste Water	77	3	0	72	76
Natural Gas	34	3	0	31	34
Oil Systems	68	1	0	67	67
Electrical Power	438	4	3	434	435
Communication	388	21	0	367	388

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

System	Total Pipelines Length (miles)	Number of Leaks	Number of Breaks
Potable Water	112,712	2118	529
Waste Water	67,627	1064	266
Natural Gas	2,061	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	5,949,268	30,786	24,479	12,521	0	0
Electric Power		61,223	49,507	29,529	6,365	70

## Induced Earthquake Damage

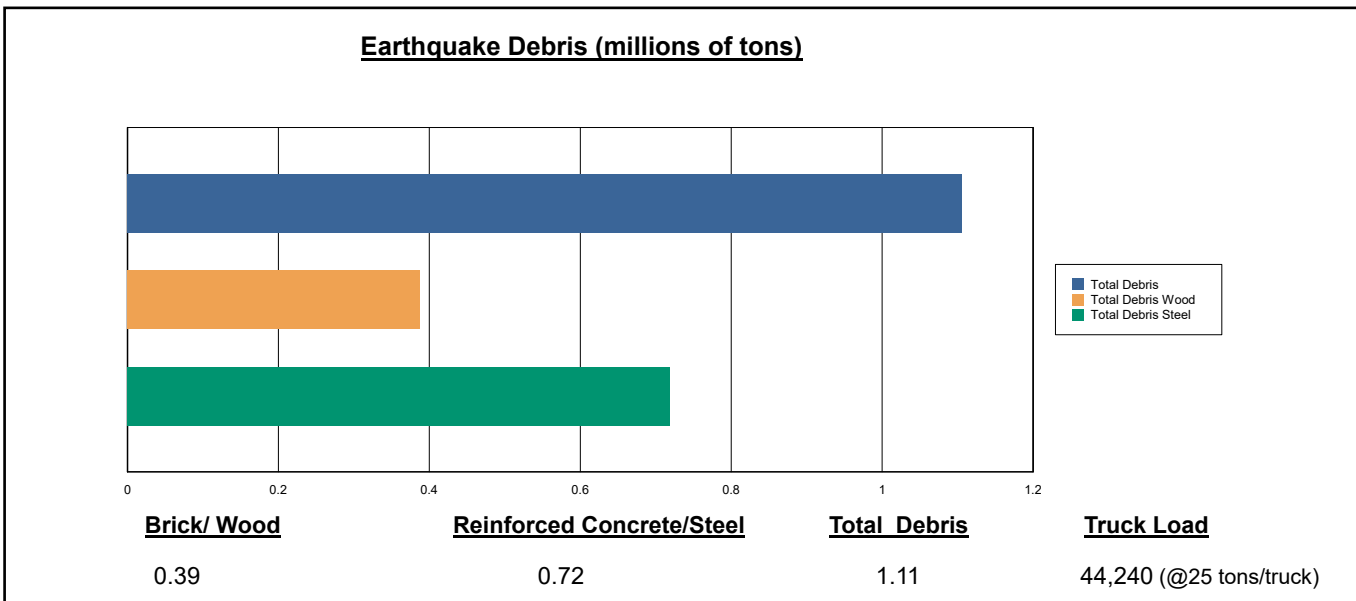
### Fire Following Earthquake

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 5 ignitions that will burn about 0.01 sq. mi (0.00 % of the region's total area.) The model also estimates that the fires will displace about 100 people and burn about 8 (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.

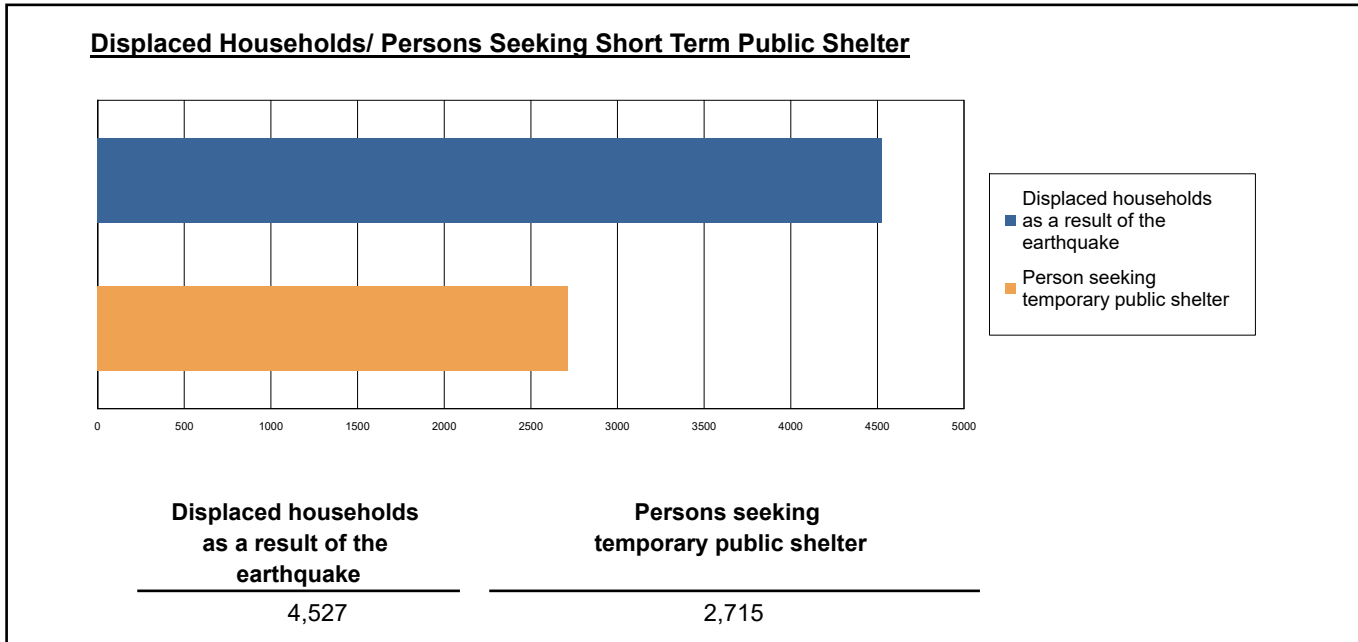
The model estimates that a total of 1,106,000 tons of debris will be generated. Of the total amount, Brick/Wood comprises 35.00% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 44,240 truckloads (@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 4,527 households to be displaced due to the earthquake. Of these, 2,715 people (out of a total population of 17,758,021) 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	8.84	1.93	0.26	0.51
	Commuting	0.11	0.21	0.28	0.06
	Educational	0.00	0.00	0.00	0.00
	Hotels	0.80	0.14	0.02	0.03
	Industrial	11.22	2.61	0.36	0.69
	Other-Residential	420.78	88.16	8.28	15.37
	Single Family	192.57	18.39	0.22	0.38
	<b>Total</b>	<b>634</b>	<b>111</b>	<b>9</b>	<b>17</b>
<b>2 PM</b>	Commercial	632.64	143.10	20.06	39.13
	Commuting	1.01	1.86	2.52	0.52
	Educational	267.61	45.54	4.67	9.01
	Hotels	0.15	0.03	0.00	0.01
	Industrial	82.40	19.17	2.62	5.08
	Other-Residential	142.85	29.90	2.93	5.35
	Single Family	64.17	6.23	0.09	0.14
	<b>Total</b>	<b>1,191</b>	<b>246</b>	<b>33</b>	<b>59</b>
<b>5 PM</b>	Commercial	435.78	100.55	14.39	27.71
	Commuting	19.74	35.96	49.04	10.09
	Educational	80.73	11.02	0.70	1.32
	Hotels	0.24	0.04	0.00	0.01
	Industrial	51.50	11.98	1.64	3.17
	Other-Residential	156.26	32.78	3.18	5.79
	Single Family	73.16	7.07	0.10	0.16
	<b>Total</b>	<b>817</b>	<b>199</b>	<b>69</b>	<b>48</b>

## Economic Loss

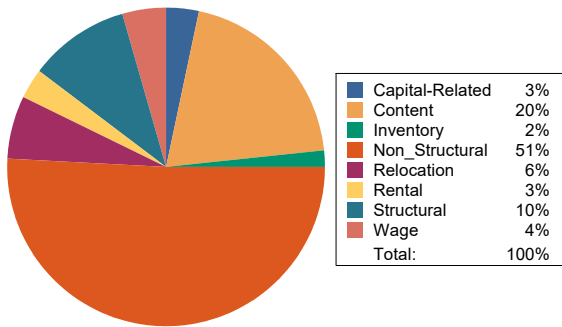
The total economic loss estimated for the earthquake is 9,867.45 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

## Building-Related Losses

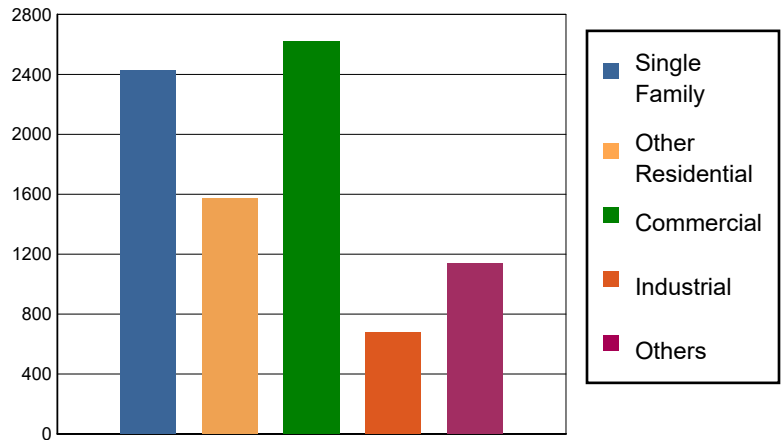
The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability 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 8,430.98 (millions of dollars); 17 % 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 47 % 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	93.3198	248.2423	8.2373	29.2132	379.0126
	Capital-Related	0.0000	39.6905	226.8784	5.1744	10.8083	282.5516
	Rental	36.1240	95.7433	105.0919	4.4447	15.5225	256.9264
	Relocation	137.9463	56.4861	159.5023	21.1588	145.0502	520.1437
	<b>Subtotal</b>	<b>174.0703</b>	<b>285.2397</b>	<b>739.7149</b>	<b>39.0152</b>	<b>200.5942</b>	<b>1438.6343</b>
<b>Capital Stock Losses</b>							
	Structural	264.5676	155.2607	274.7256	76.0045	102.1411	872.6995
	Non_Structural	1474.5350	914.3244	1006.7692	314.9134	593.8560	4,304.3980
	Content	511.9385	217.9749	514.4895	214.4419	229.4942	1,688.3390
	Inventory	0.0000	0.0000	83.1259	33.0866	10.6971	126.9096
	<b>Subtotal</b>	<b>2251.0411</b>	<b>1287.5600</b>	<b>1879.1102</b>	<b>638.4464</b>	<b>936.1884</b>	<b>6992.3461</b>
	<b>Total</b>	<b>2425.11</b>	<b>1572.80</b>	<b>2618.83</b>	<b>677.46</b>	<b>1136.78</b>	<b>8430.98</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	89386.4616	0.0000	0.00
	Bridges	48511.9526	90.1327	0.19
	Tunnels	543.9774	0.2349	0.04
	<b>Subtotal</b>	<b>138442.3916</b>	<b>90.3676</b>	
Railways	Segments	50752.3354	0.0000	0.00
	Bridges	6042.7800	40.5679	0.67
	Tunnels	0.0000	0.0000	0.00
	Facilities	239.6700	5.6294	2.35
	<b>Subtotal</b>	<b>57034.7854</b>	<b>46.1973</b>	
Light Rail	Segments	2829.7483	0.0000	0.00
	Bridges	6.1737	0.0000	0.00
	Tunnels	0.0000	0.0000	0.00
	Facilities	2293.5200	21.8911	0.95
	<b>Subtotal</b>	<b>5129.4420</b>	<b>21.8911</b>	
Bus	Facilities	91.6353	1.9684	2.15
	<b>Subtotal</b>	<b>91.6353</b>	<b>1.9684</b>	
Ferry	Facilities	25.2890	0.6953	2.75
	<b>Subtotal</b>	<b>25.2890</b>	<b>0.6953</b>	
Port	Facilities	979.6441	26.5524	2.71
	<b>Subtotal</b>	<b>979.6441</b>	<b>26.5524</b>	
Airport	Facilities	3535.7294	56.0230	1.58
	Runways	1320.7212	0.0000	0.00
	<b>Subtotal</b>	<b>4856.4506</b>	<b>56.0230</b>	
<b>Total</b>		<b>206,559.64</b>	<b>243.70</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	1139.5260	4.5522	0.40
	Distribution Lines	3627.8577	9.5309	0.26
	<b>Subtotal</b>	<b>4767.3837</b>	<b>14.0831</b>	
Waste Water	Pipelines	0.0000	0.0000	0.00
	Facilities	13240.2886	246.2754	1.86
	Distribution Lines	2176.7146	4.7876	0.22
	<b>Subtotal</b>	<b>15417.0032</b>	<b>251.0630</b>	
Natural Gas	Pipelines	11681.9458	0.0000	0.00
	Facilities	1194.3480	63.7243	5.34
	Distribution Lines	1451.1431	1.6402	0.11
	<b>Subtotal</b>	<b>14327.4369</b>	<b>65.3645</b>	
Oil Systems	Pipelines	0.0000	0.0000	0.00
	Facilities	8.0240	0.0727	0.91
	<b>Subtotal</b>	<b>8.0240</b>	<b>0.0727</b>	
Electrical Power	Facilities	106286.5903	860.4362	0.81
	<b>Subtotal</b>	<b>106286.5903</b>	<b>860.4362</b>	
Communication	Facilities	45.7840	1.7509	3.82
	<b>Subtotal</b>	<b>45.7840</b>	<b>1.7509</b>	
	<b>Total</b>	<b>140,852.22</b>	<b>1,192.77</b>	

---

## Appendix A: County Listing for the Region

Fresno,CA

Kern,CA

Kings,CA

Los Angeles,CA

Monterey,CA

Orange,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
	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
	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>17,758,021</b>	<b>1,795,803</b>	<b>1,034,011</b>	<b>2,829,817</b>

### Building Inspection Tagging (Counts)

<b>Inspected</b> Residential Commercial Industrial Agricultural Educational Government Religious	<b>Restricted</b> Residential Commercial Industrial Agricultural Educational Government Religious	<b>Unsafe</b> Residential Commercial Industrial Agricultural Educational Government Religious
---	--	--

### Total Economic Loss

Total:

Top Counties	State	Total

### Injuries & Fatalities

Total Day:  
Total Night:

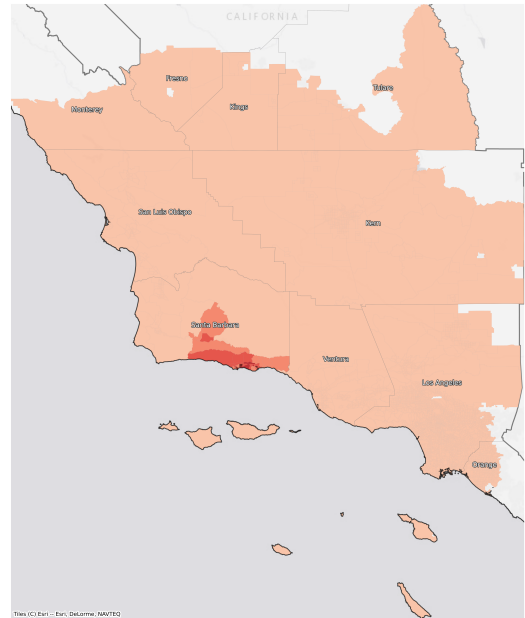
Top Counties	State	Injuries (day/night)	Fatalities (day/night)

### Displaced Households & Short-Term Shelter Needs

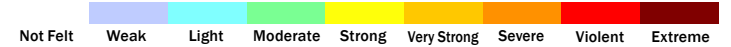
Total Displaced:  
Total Needing Shelter:

Top Counties	State	Displaced	Needing Shelter

### Economic Impacts by Census Tract



### Ground Shaking



### Debris

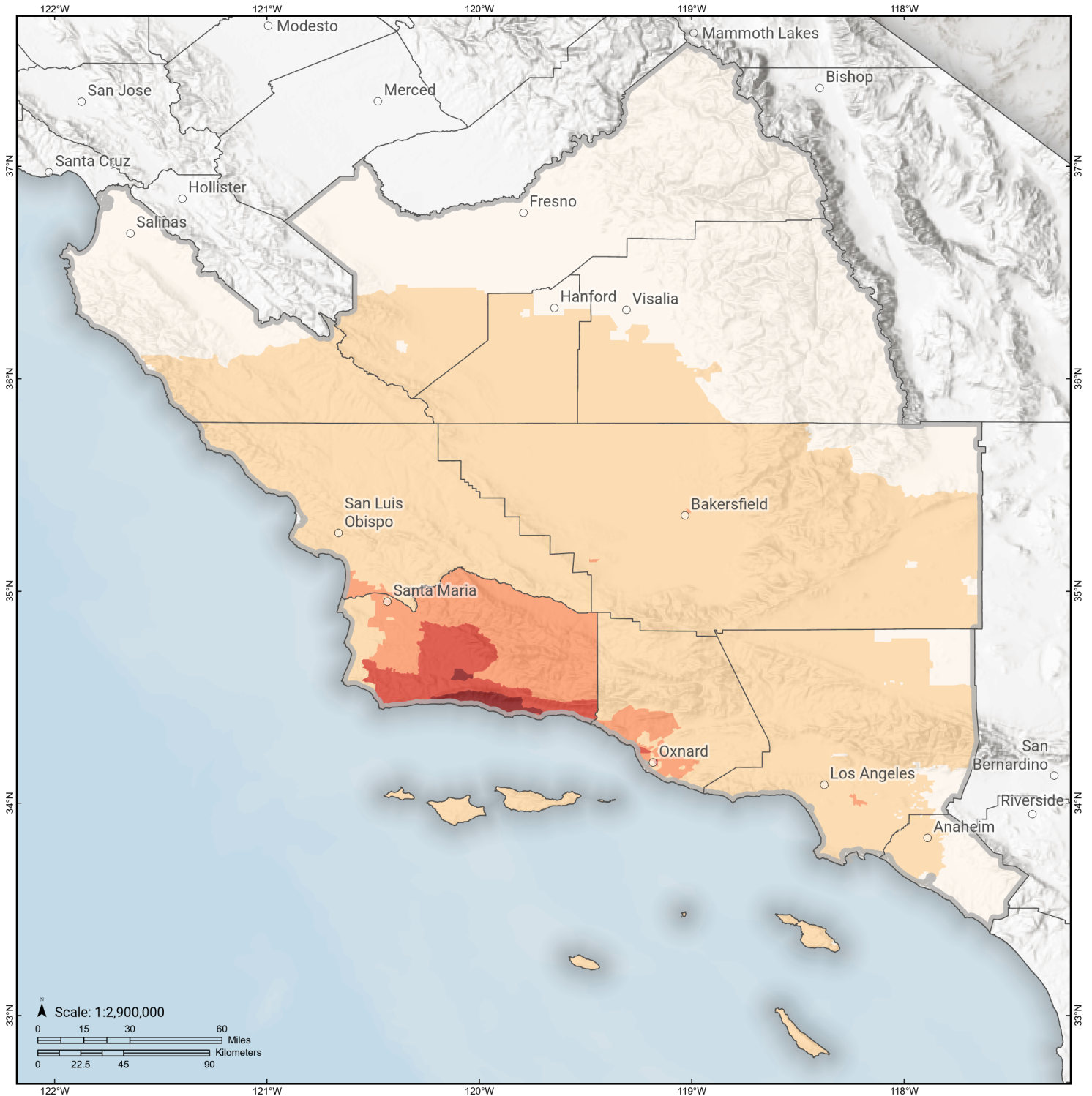
Total Tons:  
Total Truckloads:

Type	Tons

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.

# Pitas Point (Lower West)

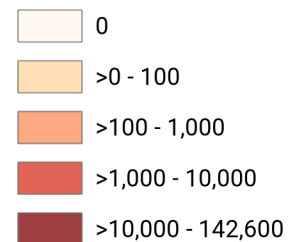
## Debris Generated by Census Tract



**Study Region:** Pitas Point (Lower West)  
**Scenario:** pitaspointlowerweste\_m7p21\_se



**Debris Generated (in tons)**



# Pitas Point (Lower West)

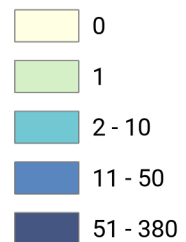
## Displaced Households by Census Tract



**Study Region:** Pitas Point (Lower West)  
**Scenario:** pitaspointlowerweste\_m7p21\_se

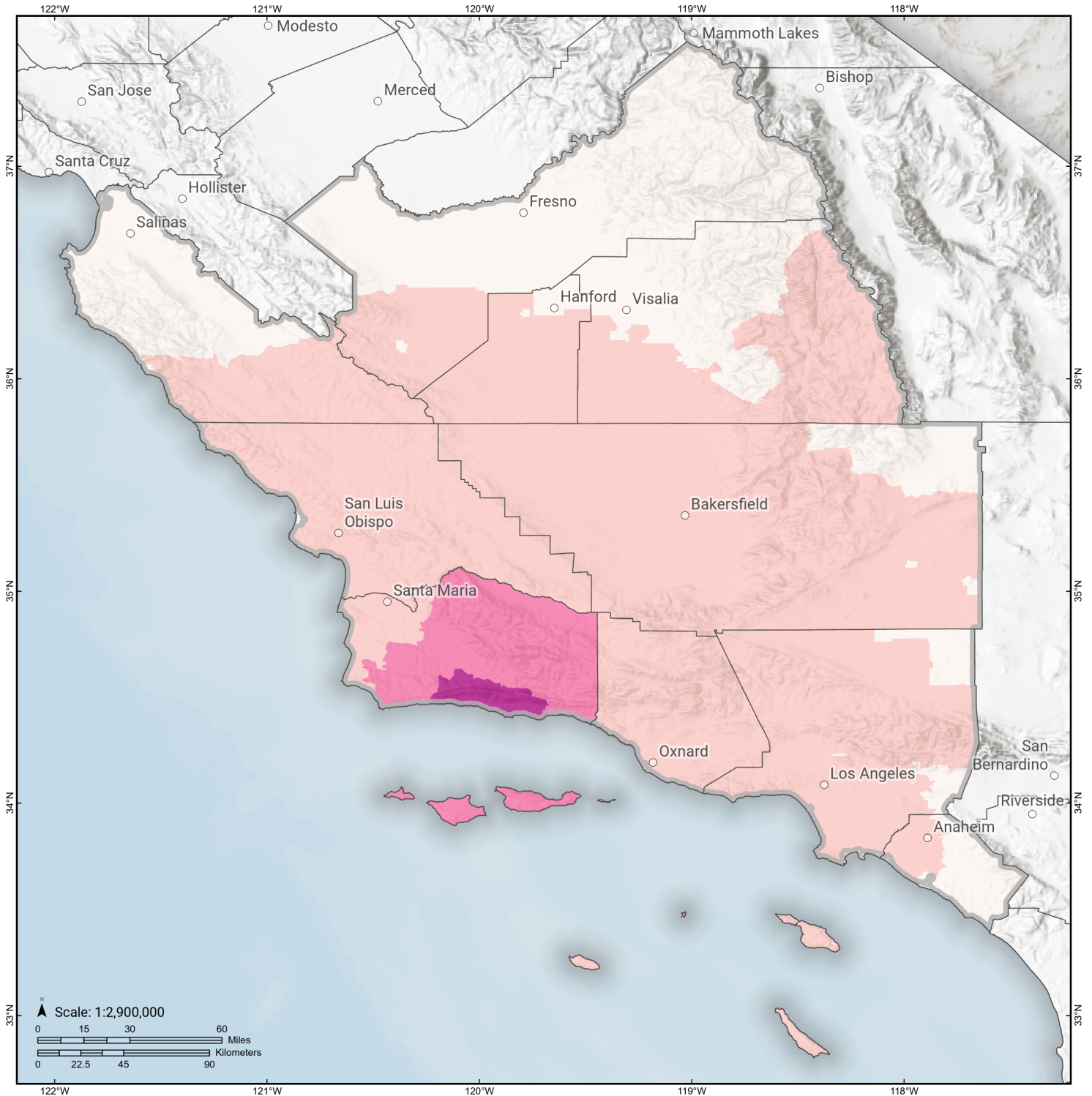


### Displaced Households



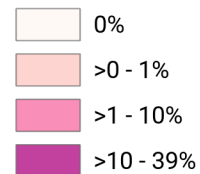
# Pitas Point (Lower West)

## Loss Ratio by Census Tract



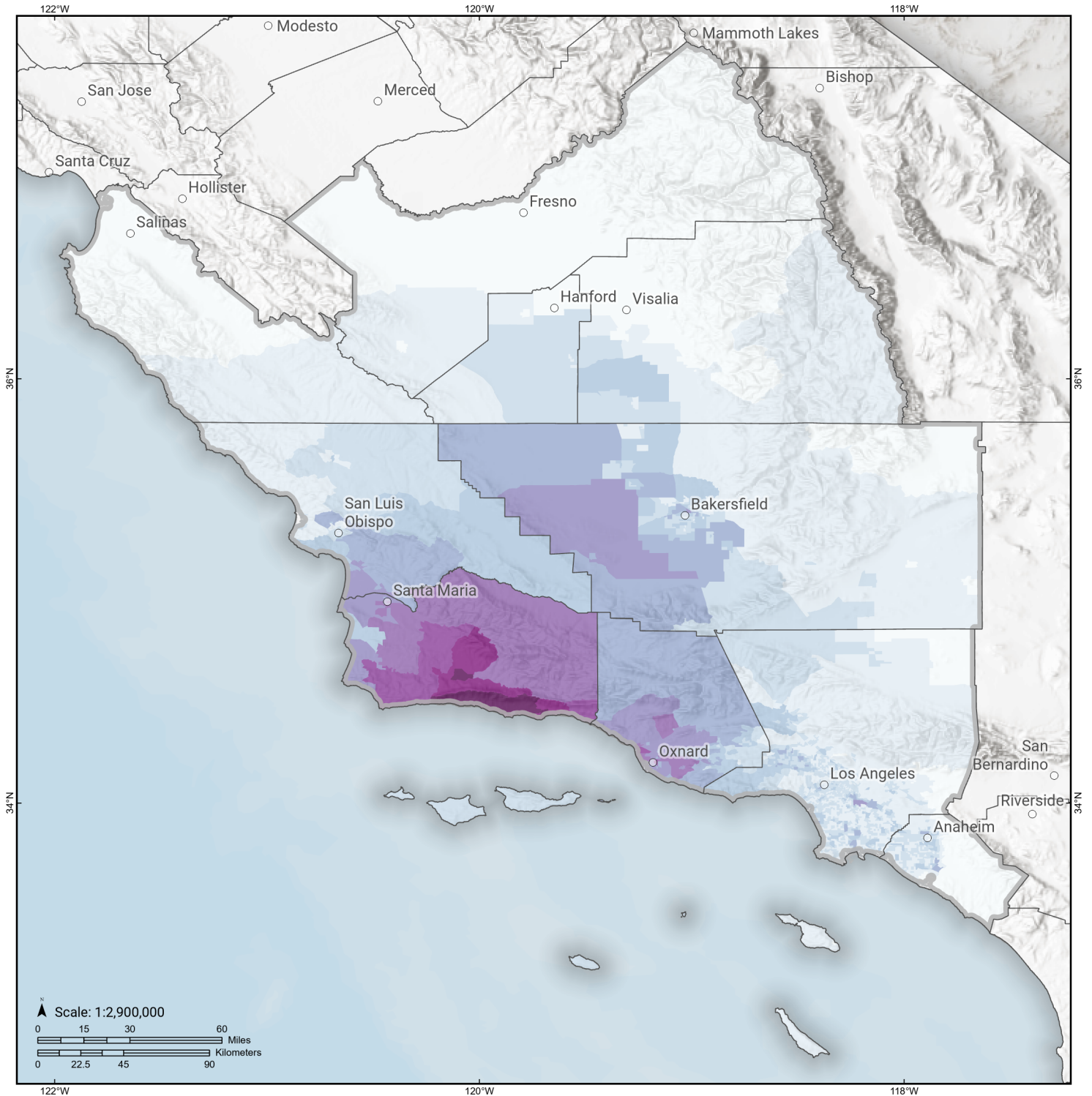
**Study Region:** Pitas Point (Lower West)  
**Scenario:** pitaspoinlowerweste\_m7p21\_se

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



# Pitas Point (Lower West)

## Total Building Related Economic Loss by Census Tract



**Study Region:** Pitas Point (Lower West)  
**Scenario:** pitaspoinlowerweste\_m7p21\_se

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

0	>1,000 - 5,000
>0 - 20	>5,000 - 10,000
>20 - 75	>10,000 - 50,000
>75 - 250	>50,000 - 100,000
>250 - 1,000	>100,000 - 600,000



## Building Damage by Count by General Occupancy

June 12, 2024

	# of Buildings					Total
	None	Slight	Moderate	Extensive	Complete	
<b>California</b>						
<b>Fresno</b>						
<i>Agriculture</i>	3,421	0	0	0	0	3,421
<i>Commercial</i>	21,054	0	0	0	0	21,054
<i>Education</i>	602	0	0	0	0	602
<i>Government</i>	291	0	0	0	0	291
<i>Industrial</i>	5,348	0	0	0	0	5,348
<i>Religion</i>	1,507	0	0	0	0	1,507
<i>Other Residential</i>	40,973	0	0	0	0	40,973
<i>Single Family</i>	226,425	0	0	0	0	226,425
<b>Kern</b>						
<i>Agriculture</i>	4,632	12	1	0	0	4,645
<i>Commercial</i>	15,531	34	2	0	0	15,567
<i>Education</i>	462	0	0	0	0	462
<i>Government</i>	442	1	0	0	0	443
<i>Industrial</i>	6,032	14	1	0	0	6,047
<i>Religion</i>	1,520	4	0	0	0	1,524
<i>Other Residential</i>	54,357	155	9	0	0	54,520
<i>Single Family</i>	205,060	79	0	0	0	205,139
<b>Kings</b>						

	# of Buildings					Total
	None	Slight	Moderate	Extensive	Complete	
<i>Agriculture</i>	306	0	0	0	0	306
<i>Commercial</i>	2,318	0	0	0	0	2,318
<i>Education</i>	103	0	0	0	0	103
<i>Government</i>	72	0	0	0	0	72
<i>Industrial</i>	555	0	0	0	0	555
<i>Religion</i>	210	0	0	0	0	210
<i>Other Residential</i>	4,341	1	0	0	0	4,342
<i>Single Family</i>	36,245	0	0	0	0	36,245
<b>Los Angeles</b>						
<i>Agriculture</i>	2,030	2	0	0	0	2,032
<i>Commercial</i>	190,644	209	8	0	0	190,861
<i>Education</i>	5,484	2	0	0	0	5,486
<i>Government</i>	3,028	3	0	0	0	3,031
<i>Industrial</i>	53,083	41	2	0	0	53,126
<i>Religion</i>	10,642	9	0	0	0	10,651
<i>Other Residential</i>	481,505	162	5	0	0	481,671
<i>Single Family</i>	1,802,992	146	3	0	0	1,803,140
<b>Monterey</b>						
<i>Agriculture</i>	1,815	0	0	0	0	1,815
<i>Commercial</i>	9,246	0	0	0	0	9,246
<i>Education</i>	239	0	0	0	0	239
<i>Government</i>	185	0	0	0	0	185
<i>Industrial</i>	1,850	0	0	0	0	1,850
<i>Religion</i>	580	0	0	0	0	580
<i>Other Residential</i>	19,809	0	0	0	0	19,809

	# of Buildings					Total
	None	Slight	Moderate	Extensive	Complete	
<b>Orange</b>						
<i>Single Family</i>	90,876	0	0	0	0	90,876
<i>Agriculture</i>	1,135	0	0	0	0	1,135
<i>Commercial</i>	68,328	12	0	0	0	68,340
<i>Education</i>	1,890	0	0	0	0	1,890
<i>Government</i>	650	0	0	0	0	650
<i>Industrial</i>	18,792	3	0	0	0	18,795
<i>Religion</i>	2,057	0	0	0	0	2,057
<i>Other Residential</i>	85,692	26	0	0	0	85,718
<i>Single Family</i>	706,209	3	0	0	0	706,212
<b>San Luis Obispo</b>						
<i>Agriculture</i>	419	2	0	0	0	421
<i>Commercial</i>	9,342	31	2	0	0	9,375
<i>Education</i>	182	0	0	0	0	182
<i>Government</i>	185	0	0	0	0	185
<i>Industrial</i>	2,546	10	1	0	0	2,556
<i>Religion</i>	359	1	0	0	0	360
<i>Other Residential</i>	20,008	192	16	0	0	20,216
<i>Single Family</i>	85,496	143	0	0	0	85,639
<b>Santa Barbara</b>						
<i>Agriculture</i>	238	101	79	37	10	464
<i>Commercial</i>	4,121	2,042	2,383	1,060	214	9,820
<i>Education</i>	159	71	55	11	2	299
<i>Government</i>	107	49	60	20	3	239
<i>Industrial</i>	1,311	519	608	317	86	2,840

	# of Buildings					Total
	None	Slight	Moderate	Extensive	Complete	
<i>Religion</i>	313	114	122	59	13	621
<i>Other Residential</i>	10,744	6,178	4,381	1,846	962	24,111
<i>Single Family</i>	53,236	28,157	16,620	920	49	98,982
<b>Tulare</b>						
<i>Agriculture</i>	3,555	0	0	0	0	3,555
<i>Commercial</i>	8,873	0	0	0	0	8,873
<i>Education</i>	269	0	0	0	0	269
<i>Government</i>	461	0	0	0	0	461
<i>Industrial</i>	2,148	0	0	0	0	2,148
<i>Religion</i>	827	0	0	0	0	827
<i>Other Residential</i>	20,021	1	0	0	0	20,022
<i>Single Family</i>	112,034	0	0	0	0	112,034
<b>Ventura</b>						
<i>Agriculture</i>	578	17	3	0	0	598
<i>Commercial</i>	14,439	460	53	1	0	14,953
<i>Education</i>	491	5	0	0	0	497
<i>Government</i>	963	35	3	0	0	1,001
<i>Industrial</i>	5,857	215	25	0	0	6,097
<i>Religion</i>	1,154	30	3	0	0	1,187
<i>Other Residential</i>	24,623	1,389	150	2	0	26,163
<i>Single Family</i>	200,459	3,492	17	0	0	203,968
<b>Total</b>	<b>4,776,082</b>	<b>44,172</b>	<b>24,610</b>	<b>4,274</b>	<b>1,340</b>	<b>4,850,477</b>
<b>Region Total</b>	<b>4,776,082</b>	<b>44,172</b>	<b>24,610</b>	<b>4,274</b>	<b>1,340</b>	<b>4,850,477</b>

---

<b># of Buildings</b>					
<b>None</b>	<b>Slight</b>	<b>Moderate</b>	<b>Extensive</b>	<b>Complete</b>	<b>Total</b>

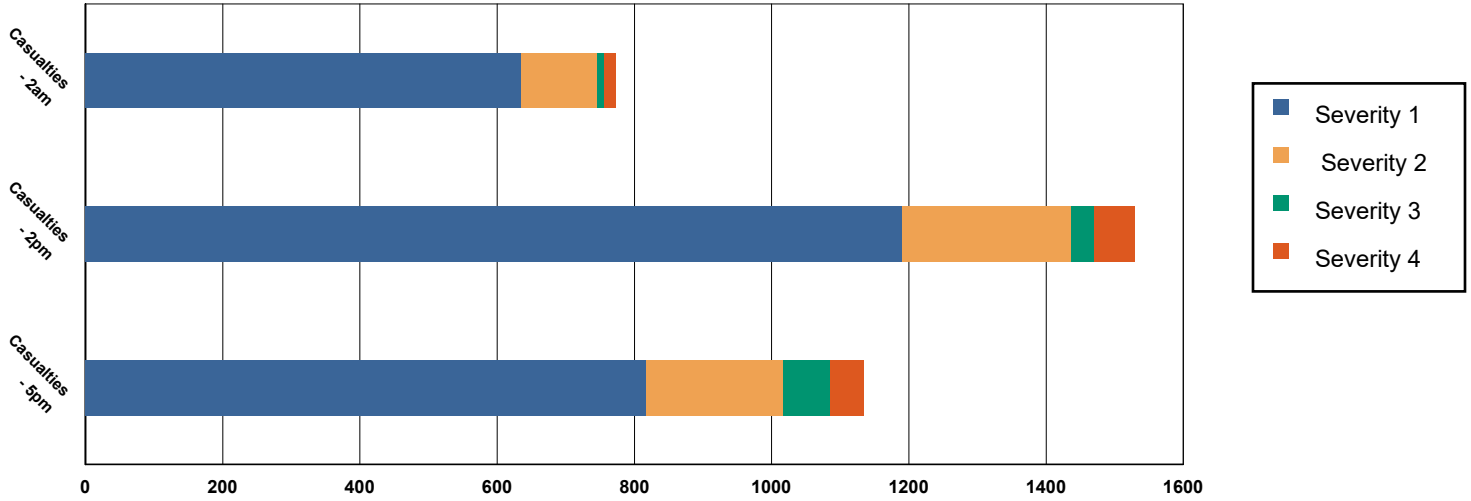
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*Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.*

### Casualties Summary Report

June 12, 2024

### Region Total Casualties



### Injury Severity Level

Severity 1      Severity 2      Severity 3      Severity 4      Total

#### California

##### Fresno

##### Casualties - 2am

	Severity 1	Severity 2	Severity 3	Severity 4	Total
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0

##### Total Casualties - 2am

0      0      0      0      0

##### Casualties - 2pm

	Severity 1	Severity 2	Severity 3	Severity 4	Total
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0

	Injury Severity Level				Total
	Severity 1	Severity 2	Severity 3	Severity 4	
<b>California</b>					
<b>Fresno</b>					
<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>Commuting</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>Industrial</i>	0	0	0	0	0
<i>Other-Residential</i>	0	0	0	0	0
<i>Single Family</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>Commuting</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>Industrial</i>	0	0	0	0	0
<i>Other-Residential</i>	0	0	0	0	0
<i>Single Family</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>Commuting</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>Industrial</i>	0	0	0	0	0
<i>Other-Residential</i>	0	0	0	0	0
<i>Single Family</i>	0	0	0	0	0
<b>Total Casualties - 2pm</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>Casualties - 5pm</b>					
<i>Commuting</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>Industrial</i>	0	0	0	0	0
<i>Other-Residential</i>	0	0	0	0	0
<i>Single Family</i>	0	0	0	0	0
<b>Total Casualties - 5pm</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>Kings</b>					
<b>Casualties - 2am</b>					
<i>Commuting</i>	0	0	0	0	0

	Injury Severity Level				Total
	Severity 1	Severity 2	Severity 3	Severity 4	
<b>California</b>					
<b>Kings</b>					
<b>Casualties - 2am</b>					
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	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>					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	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>					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	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>Los Angeles</b>					
<b>Casualties - 2am</b>					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	1	0	0	0	1
Single Family	0	0	0	0	0
<b>Total Casualties - 2am</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
<b>Casualties - 2pm</b>					
Commuting	0	0	0	0	0
Commercial	2	0	0	0	2
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0

	Injury Severity Level				Total
	Severity 1	Severity 2	Severity 3	Severity 4	
<b>California</b>					
<b>Los Angeles</b>					
<b>Casualties - 2pm</b>					
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
<b>Total Casualties - 2pm</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>
<b>Casualties - 5pm</b>					
Commuting	0	0	0	0	0
Commercial	1	0	0	0	1
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	1	0	0	0	1
Single Family	0	0	0	0	0
<b>Total Casualties - 5pm</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
<b>Monterey</b>					
<b>Casualties - 2am</b>					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	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>					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	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>					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	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>

	Injury Severity Level				Total
	Severity 1	Severity 2	Severity 3	Severity 4	
<b>California</b>					
<b>Orange</b>					
<b>Casualties - 2am</b>					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	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>					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	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>					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	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>San Luis Obispo</b>					
<b>Casualties - 2am</b>					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
<b>Total Casualties - 2am</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>Casualties - 2pm</b>					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0

	Injury Severity Level				Total
	Severity 1	Severity 2	Severity 3	Severity 4	
<b>California</b>					
<b>San Luis Obispo</b>					
<b>Casualties - 2pm</b>					
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	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>					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	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>Santa Barbara</b>					
<b>Casualties - 2am</b>					
Commuting	0	0	0	0	1
Commercial	9	2	0	1	11
Educational	0	0	0	0	0
Hotels	1	0	0	0	1
Industrial	11	3	0	1	15
Other-Residential	413	88	8	15	525
Single Family	186	18	0	0	205
<b>Total Casualties - 2am</b>	<b>620</b>	<b>111</b>	<b>9</b>	<b>17</b>	<b>758</b>
<b>Casualties - 2pm</b>					
Commuting	1	2	3	1	6
Commercial	623	143	20	39	825
Educational	265	45	5	9	324
Hotels	0	0	0	0	0
Industrial	81	19	3	5	108
Other-Residential	141	30	3	5	179
Single Family	62	6	0	0	69
<b>Total Casualties - 2pm</b>	<b>1,173</b>	<b>245</b>	<b>33</b>	<b>59</b>	<b>1,510</b>
<b>Casualties - 5pm</b>					
Commuting	20	36	49	10	115
Commercial	429	100	14	28	571
Educational	80	11	1	1	93
Hotels	0	0	0	0	0
Industrial	51	12	2	3	67
Other-Residential	154	33	3	6	195
Single Family	71	7	0	0	78

	Injury Severity Level				Total
	Severity 1	Severity 2	Severity 3	Severity 4	
<b>California</b>					
<b>Santa Barbara</b>					
<b>Total Casualties - 5pm</b>	<b>804</b>	<b>199</b>	<b>69</b>	<b>48</b>	<b>1,121</b>
<b>Tulare</b>					
<b>Casualties - 2am</b>					
<i>Commuting</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>Industrial</i>	0	0	0	0	0
<i>Other-Residential</i>	0	0	0	0	0
<i>Single Family</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>Commuting</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>Industrial</i>	0	0	0	0	0
<i>Other-Residential</i>	0	0	0	0	0
<i>Single Family</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>Commuting</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>Industrial</i>	0	0	0	0	0
<i>Other-Residential</i>	0	0	0	0	0
<i>Single Family</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>Ventura</b>					
<b>Casualties - 2am</b>					
<i>Commuting</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>Industrial</i>	0	0	0	0	0
<i>Other-Residential</i>	5	0	0	0	5
<i>Single Family</i>	6	0	0	0	6
<b>Total Casualties - 2am</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>
<b>Casualties - 2pm</b>					
<i>Commuting</i>	0	0	0	0	0

	Injury Severity Level				Total
	Severity 1	Severity 2	Severity 3	Severity 4	
<b>California</b>					
<b>Ventura</b>					
<b>Casualties - 2pm</b>					
<i>Commercial</i>	7	0	0	0	7
<i>Educational</i>	2	0	0	0	2
<i>Hotels</i>	0	0	0	0	0
<i>Industrial</i>	1	0	0	0	1
<i>Other-Residential</i>	1	0	0	0	2
<i>Single Family</i>	2	0	0	0	2
<b>Total Casualties - 2pm</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>
<b>Casualties - 5pm</b>					
<i>Commuting</i>	0	0	0	0	0
<i>Commercial</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>	1	0	0	0	1
<i>Other-Residential</i>	2	0	0	0	2
<i>Single Family</i>	2	0	0	0	2
<b>Total Casualties - 5pm</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>
<b>Region Total</b>	NA	NA	NA	NA	NA

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.

## Debris Summary Report



June 12, 2024

All values are in thousands of tons.

	Brick, Wood & Others	Concrete & Steel	Total
<b>California</b>			
Fresno	0	0	0
Kern	1	0	1
Kings	0	0	0
Los Angeles	5	1	5
Monterey	0	0	0
Orange	0	0	0
San Luis Obispo	1	0	1
Santa Barbara	368	714	1,082
Tulare	0	0	0
Ventura	9	7	17
<b>Total</b>	<b>384</b>	<b>723</b>	<b>1,107</b>
<b>Region Total</b>	<b>384</b>	<b>723</b>	<b>1,107</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 Losses For Buildings

June 12, 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>										
Fresno	0	4	3	1	0.00	0	0	0	0	8
Kings	2	117	78	13	0.00	0	0	0	0	211
San Luis Obispo	839	10,076	5,045	645	0.02	130	101	109	154	17,099
Tulare	4	160	120	56	0.00	0	0	0	0	341
Santa Barbara	850,418	4,066,202	1,562,202	111,480	6.27	516,298	278,667	374,297	251,840	8,011,404
Kern	949	11,796	6,690	1,300	0.01	124	144	164	176	21,341
Ventura	17,058	168,721	85,177	10,343	0.12	3,213	3,024	3,728	3,593	294,858
Monterey	0	2	1	1	0.00	0	0	0	0	4
Orange	132	5,869	3,951	474	0.00	12	24	26	40	10,528

	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	
Los Angeles	3,297	41,451	25,072	2,599	0.00	368	591	688	1,122	75,187
<b>Total</b>	<b>872,700</b>	<b>4,304,398</b>	<b>1,688,339</b>	<b>126,910</b>	<b>0.64</b>	<b>520,144</b>	<b>282,552</b>	<b>379,013</b>	<b>256,927</b>	<b>8,430,982</b>
<b>Region Total</b>	<b>872,700</b>	<b>4,304,398</b>	<b>1,688,339</b>	<b>126,910</b>	<b>0.64</b>	<b>520,144</b>	<b>282,552</b>	<b>379,013</b>	<b>256,927</b>	<b>8,430,982</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

June 12, 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	0	0	0					0
Tunnels	0	0	0					0
Facilities		0	0	0	0	0	6	6
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>6</b>
<b>Kern</b>								
Segments	0	0	0					0
Bridges	71	0	0					71
Tunnels	0	0	0					0
Facilities		180	0	62	0	0	978	1,219
<b>Total</b>	<b>71</b>	<b>180</b>	<b>0</b>	<b>62</b>	<b>0</b>	<b>0</b>	<b>978</b>	<b>1,290</b>
<b>Kings</b>								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		26	0	23	0	0	0	49

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
<b>Total</b>	<b>0</b>	<b>26</b>	<b>0</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>49</b>
<b>Los Angeles</b>								
Segments	0	0	0					0
Bridges	465	0	0					465
Tunnels	0	0	0					0
Facilities		1,160	21,891	297	7,252	105	24,579	55,284
<b>Total</b>	<b>465</b>	<b>1,160</b>	<b>21,891</b>	<b>297</b>	<b>7,252</b>	<b>105</b>	<b>24,579</b>	<b>55,748</b>
<b>Monterey</b>								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		0	0	5	0	0	62	67
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>62</b>	<b>68</b>
<b>Orange</b>								
Segments	0	0	0					0
Bridges	1	0	0					1
Tunnels	0	0	0					0
Facilities		134	0	0	424	40	1,040	1,638
<b>Total</b>	<b>1</b>	<b>134</b>	<b>0</b>	<b>0</b>	<b>424</b>	<b>40</b>	<b>1,040</b>	<b>1,640</b>
<b>San Luis Obispo</b>								
Segments	0	0	0					0
Bridges	148	1	0					149
Tunnels	0	0	0					0
Facilities		161	0	41	294	0	871	1,366

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
<b>Total</b>	<b>148</b>	<b>161</b>	<b>0</b>	<b>41</b>	<b>294</b>	<b>0</b>	<b>871</b>	<b>1,515</b>
<b>Santa Barbara</b>								
Segments	0	0	0					0
Bridges	88,558	40,539	0					129,097
Tunnels	235	0	0					235
Facilities		3,324	0	1,373	13,234	395	26,192	44,519
<b>Total</b>	<b>88,793</b>	<b>43,863</b>	<b>0</b>	<b>1,373</b>	<b>13,234</b>	<b>395</b>	<b>26,192</b>	<b>173,851</b>
<b>Tulare</b>								
Segments	0	0	0					0
Bridges	1	0	0					1
Tunnels	0	0	0					0
Facilities		0	0	5	0	0	11	16
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>16</b>
<b>Ventura</b>								
Segments	0	0	0					0
Bridges	888	28	0					916
Tunnels	0	0	0					0
Facilities		646	0	163	5,348	155	2,283	8,596
<b>Total</b>	<b>889</b>	<b>674</b>	<b>0</b>	<b>163</b>	<b>5,348</b>	<b>155</b>	<b>2,283</b>	<b>9,512</b>
<b>Total</b>	<b>90,368</b>	<b>46,197</b>	<b>21,891</b>	<b>1,968</b>	<b>26,552</b>	<b>695</b>	<b>56,023</b>	<b>243,695</b>
<b>Region Total</b>	<b>90,368</b>	<b>46,197</b>	<b>21,891</b>	<b>1,968</b>	<b>26,552</b>	<b>695</b>	<b>56,023</b>	<b>243,695</b>

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## Direct Economic Loss For Utilities

June 12, 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>							
<i>Facilities</i>	0	0	0	0	763	0	763
<i>Pipelines</i>	37	18	0	0			55
<b>Total</b>	<b>37</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>763</b>	<b>0</b>	<b>818</b>
<b>Kern</b>							
<i>Facilities</i>	433	1,770	1	782	166,107	14	169,108
<i>Pipelines</i>	411	206	0	0			617
<b>Total</b>	<b>843</b>	<b>1,977</b>	<b>1</b>	<b>782</b>	<b>166,107</b>	<b>14</b>	<b>169,724</b>
<b>Kings</b>							
<i>Facilities</i>	0	0	0	134	5,857	0	5,992
<i>Pipelines</i>	65	33	0	0			98
<b>Total</b>	<b>65</b>	<b>33</b>	<b>0</b>	<b>134</b>	<b>5,857</b>	<b>0</b>	<b>6,090</b>
<b>Los Angeles</b>							
<i>Facilities</i>	366	2,218	4	427	190,146	7	193,169

	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total
<i>Pipelines</i>	556	279	0	0			835
<b>Total</b>	923	2,498	4	427	190,146	7	194,004
<b>Monterey</b>							
<i>Facilities</i>	0	0	0	0	390	0	390
<i>Pipelines</i>	55	28	0	0			82
<b>Total</b>	55	28	0	0	390	0	472
<b>Orange</b>							
<i>Facilities</i>	2	502	0	61	6,653	1	7,219
<i>Pipelines</i>	161	81	0	0			241
<b>Total</b>	162	583	0	61	6,653	1	7,460
<b>San Luis Obispo</b>							
<i>Facilities</i>	28	2,385	2	0	97,705	8	100,128
<i>Pipelines</i>	219	110	0	0			329
<b>Total</b>	247	2,495	2	0	97,705	8	100,457
<b>Santa Barbara</b>							
<i>Facilities</i>	0	210,701	57	60,548	188,607	1,621	461,534
<i>Pipelines</i>	7,566	3,800	0	0			11,366
<b>Total</b>	7,566	214,502	57	60,548	188,607	1,621	472,900
<b>Tulare</b>							
<i>Facilities</i>	0	0	0	0	2,489	0	2,490
<i>Pipelines</i>	73	36	0	0			109

	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total
<b>Total</b>	73	36	0	0	2,489	0	2,599
<b>Ventura</b>							
<i>Facilities</i>	3,723	28,699	9	1,772	201,719	99	236,021
<i>Pipelines</i>	390	196	0	0			585
<b>Total</b>	4,113	28,894	9	1,772	201,719	99	236,607
<b>Total</b>	<b>14,083</b>	<b>251,063</b>	<b>73</b>	<b>63,724</b>	<b>860,436</b>	<b>1,751</b>	<b>1,191,130</b>
<b>Region Total</b>	<b>14,083</b>	<b>251,063</b>	<b>73</b>	<b>63,724</b>	<b>860,436</b>	<b>1,751</b>	<b>1,191,130</b>

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## Hazus Quick Assessment Report

### Estimated Economic Loss (\$ Billions)

Category	Description	Range
General Building Stock	Building Damage	2.60 - 10.40
	Building Contents	0.20 - 1.00
	Business Interruption	0.70 - 2.90
Infrastructure	Lifelines Damage	
<b>Total</b>		4.20 - 16.90

### Preliminary Damage Assessment (PDA) Estimates

Description	Residential	Commercial	Other	Total
Affected	40,100	2,800	1,200	44,100
Minor	21,200	2,400	920	24,520
Major	2,800	1,100	440	4,340
Destroyed	1,000	210	110	1,320
<b>Total</b>	65,100	6,510	2,670	74,280

### Estimated Casualties : Night Time

Severity Level	Description	# Persons
Level 1	Medical Aid	300 - 1,300
Level 2	Hospital Care	60 - 200
Level 3	Life-threatening	0 - 20
Level 4	Fatalities	10 - 30

### Estimated Shelter Needs

Type	Households	People
Displaced Households	2,000 - 9,000	5,000 - 22,500
Public Shelter	1,090	2,720

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 : 7.21

Epicenter Latitude/Longitude :  
/

Depth & Type : /U

Name :  
NA

Ground Motion /Attenuation :

Maximum PGA: 1.00

Information Sources:

Comments :

### Population and Building Exposure

Population: 17,758,021

### Building Exposure : (\$ Millions)

Residential	1,795,807
Commercial	581,771
Other	452,245
<b>Total</b>	<b>2,829,823</b>

Counties :

Major Metro Area :

## Hazus Quick Assessment Report

### Estimated Economic Loss (\$ Billions)

Category	Description	Range
General Building Stock	Building Damage	2.60 - 10.40
	Building Contents	0.20 - 1.00
	Business Interruption	0.70 - 2.90
Infrastructure	Lifelines Damage	
<b>Total</b>		4.20 - 16.90

### Preliminary Damage Assessment (PDA) Estimates

Description	Residential	Commercial	Other	Total
Affected	40,100	2,800	1,200	44,100
Minor	21,200	2,400	920	24,520
Major	2,800	1,100	440	4,340
Destroyed	1,000	210	110	1,320
<b>Total</b>	65,100	6,510	2,670	74,280

### Estimated Casualties : Day Time

Severity Level	Description	# Persons
Level 1	Medical Aid	600 - 2,000
Level 2	Hospital Care	120 - 500
Level 3	Life-threatening	20 - 70
Level 4	Fatalities	30 - 120

### Estimated Shelter Needs

Type	Households	People
Displaced Households	2,000 - 9,000	5,000 - 22,500
Public Shelter	1,090	2,720

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: 17,758,021

### Building Exposure : (\$ Millions)

Residential	1,795,807
Commercial	581,771
Other	452,245
<b>Total</b>	<b>2,829,823</b>

Counties :

Major Metro Area :

## Hazus Quick Assessment Report

### Estimated Economic Loss (\$ Billions)

Category	Description	Range
General Building Stock	Building Damage	2.60 - 10.40
	Building Contents	0.20 - 1.00
	Business Interruption	0.70 - 2.90
Infrastructure	Lifelines Damage	
<b>Total</b>		4.20 - 16.90

### Preliminary Damage Assessment (PDA) Estimates

Description	Residential	Commercial	Other	Total
Affected	40,100	2,800	1,200	44,100
Minor	21,200	2,400	920	24,520
Major	2,800	1,100	440	4,340
Destroyed	1,000	210	110	1,320
<b>Total</b>	65,100	6,510	2,670	74,280

### Estimated Casualties : Commute Time

Severity Level	Description	# Persons
Level 1	Medical Aid	400 - 1,600
Level 2	Hospital Care	100 - 400
Level 3	Life-threatening	30 - 140
Level 4	Fatalities	20 - 100

### Estimated Shelter Needs

Type	Households	People
Displaced Households	2,000 - 9,000	5,000 - 22,500
Public Shelter	1,090	2,720

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 : 7.21

Epicenter Latitude/Longitude :  
/

Depth & Type : /U

Name :  
NA

Ground Motion /Attenuation :

Maximum PGA: 1.00

Information Sources:

Comments :

### Population and Building Exposure

Population: 17,758,021

### Building Exposure : (\$ Millions)

Residential	1,795,807
Commercial	581,771
Other	452,245
<b>Total</b>	<b>2,829,823</b>

Counties :

Major Metro Area :

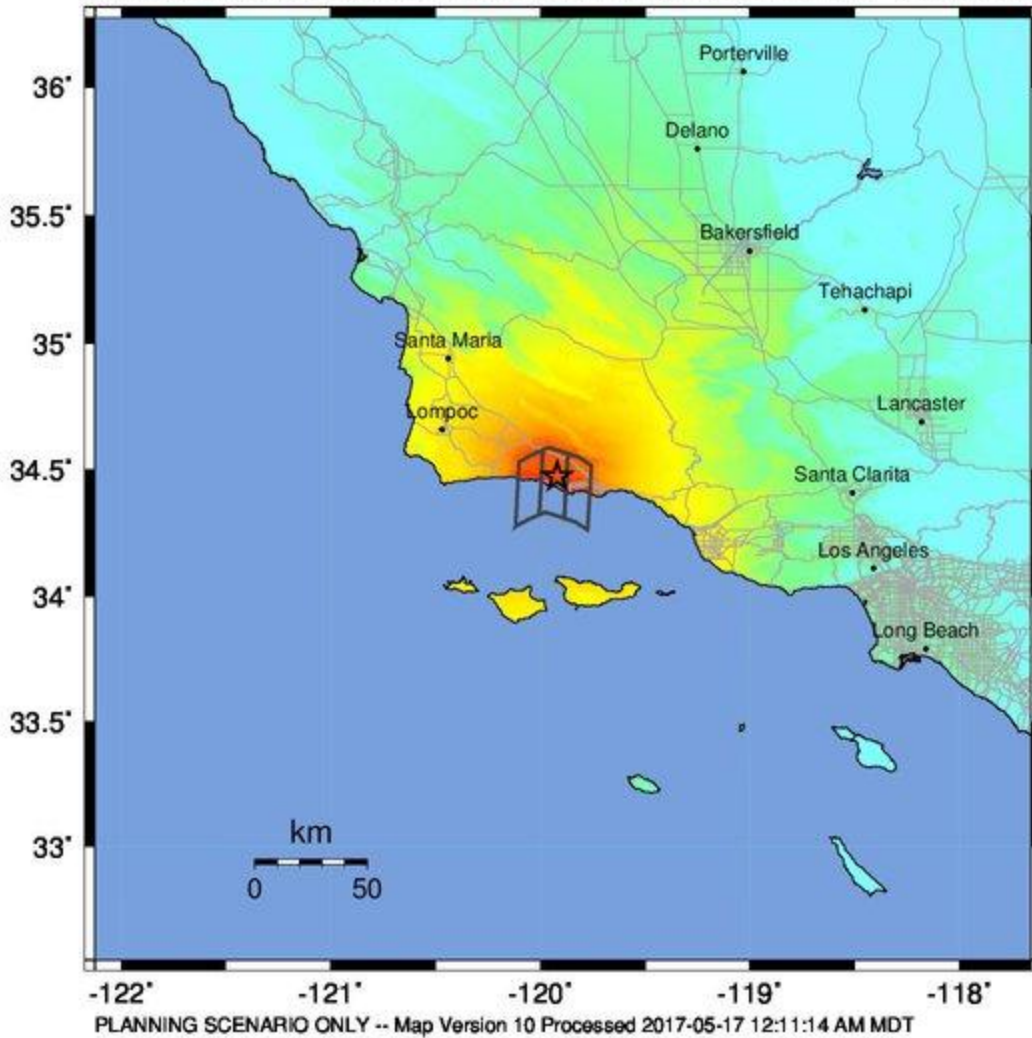
## Shelter Summary Report

June 12, 2024

	# of Displaced Households	# of People Needing Short Term Shelter
<b>California</b>		
Fresno	0	0
Kern	0	0
Kings	0	0
Los Angeles	0	0
Monterey	0	0
Orange	0	0
San Luis Obispo	0	0
Santa Barbara	4,524	2,714
Tulare	0	0
Ventura	4	2
<b>Total</b>	<b>4,527</b>	<b>2,716</b>
<b>Region Total</b>	<b>4,527</b>	<b>2,716</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.

-- Earthquake Planning Scenario --  
**ShakeMap for Pitas Point (Lower West) - Median ground motions Scenario**  
 Scenario Date: May 16, 2017 08:31:59 AM MDT M 7.2 N34.47 W119.92 Depth: 6.2km



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.05	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	<0.02	0.1	1.4	4.7	9.6	20	41	86	>178
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2012)