Hazus: Earthquake Global Risk Report

Region Name: KernCanyonNorth

Earthquake Scenario: kerncanyonnorthkern2_m7p1_se

Print Date: May 07, 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 13 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 69,127.57 square miles and contains 3,756 census tracts. There are over 5,155 thousand households in the region which has a total population of 15,563,998 peopleF. The distribution of population by Total Region and County is provided in Appendix B.

There are an estimated 4,326 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 200,194 and 173,873 (millions of dollars) , respectively.

Building and Lifeline Inventory

Building Inventory

Hazus estimates that there are 4,326 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 88% 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 238 hospitals in the region with a total bed capacity of 45,028 beds. There are 5,316 schools, 978 fire stations, 330 police stations and 81 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 374,067.00 (millions of dollars). This inventory includes over 10,161.90 miles of highways, 8,791 bridges, 224,825.70 miles of pipes.

Table 1: Transportation System Lifeline Inventory

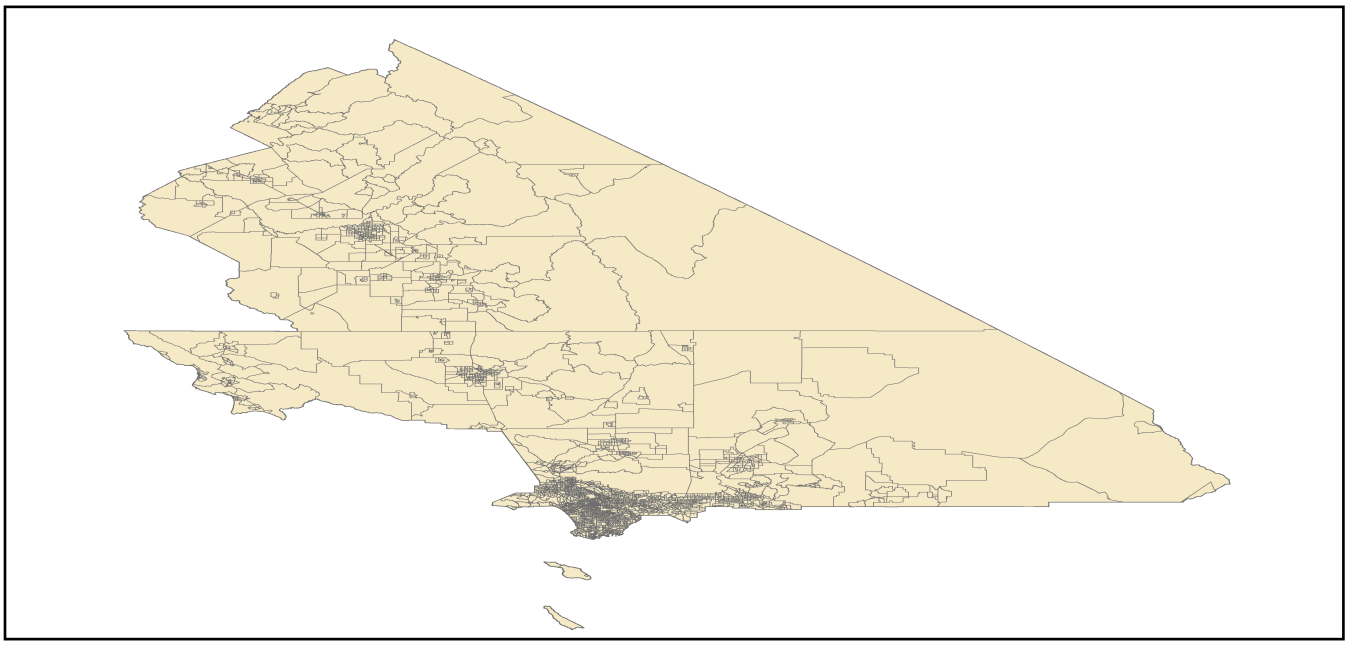
System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
Highway	Bridges	8,791	43059.2051
	Segments	7,268	95620.3593
	Tunnels	53	567.8111
		Subtotal	**139247.3755**
Railways	Bridges	1,522	8660.1800
	Facilities	94	250.3220
	Segments	1,619	41161.5591
	Tunnels	0	0.0000
		Subtotal	**50072.0611**
Light Rail	Bridges	28	6.1737
	Facilities	80	2293.5200
	Segments	4	2829.7483
	Tunnels	0	0.0000
		Subtotal	**5129.4420**
Bus	Facilities	39	84.6167
		Subtotal	**84.6167**
Ferry	Facilities	10	13.3100
		Subtotal	**13.3100**
Port	Facilities	210	800.4874
		Subtotal	**800.4874**
Airport	Facilities	136	3402.5792
	Runways	139	1444.5362
		Subtotal	**4847.1154**
		Total	**200,194.40**

Table 2: Utility System Lifeline Inventory

System	Component	# Locations / Segments	Replacement value (millions of dollars)
Potable Water	Distribution Lines	NA	4465.0831
	Facilities	28	1100.2320
	Pipelines	0	0.0000
		Subtotal	**5565.3151**
Waste Water	Distribution Lines	NA	2679.0498
	Facilities	63	10832.9634
	Pipelines	0	0.0000
		Subtotal	**13512.0132**
Natural Gas	Distribution Lines	NA	1786.0332
	Facilities	31	1192.0373
	Pipelines	361	16258.3058
		Subtotal	**19236.3763**
Oil Systems	Facilities	61	7.1980
	Pipelines	0	0.0000
		Subtotal	**7.1980**
Electrical Power	Facilities	516	135508.9805
		Subtotal	**135508.9805**
Communication	Facilities	369	43.5420
		Subtotal	**43.5420**
		Total	**173,873.40**

Earthquake Scenario

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



Scenario Name	kerncanyonnorthkern2_m7p1_se
Type of Earthquake	User-defined
Fault Name	NA
Historical Epicenter ID #	NA
Probabilistic Return Period	NA
Longitude of Epicenter	NA
Latitude of Epicenter	NA
Earthquake Magnitude	7.10
Depth (km)	NA
Rupture Length (Km)	NA
Rupture Orientation (degrees)	NA
Attenuation Function	NA

Direct Earthquake Damage

Building Damage

Hazus estimates that about 56 buildings will be at least moderately damaged. This is over 0.00 % of the buildings in the region. There are an estimated 0 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

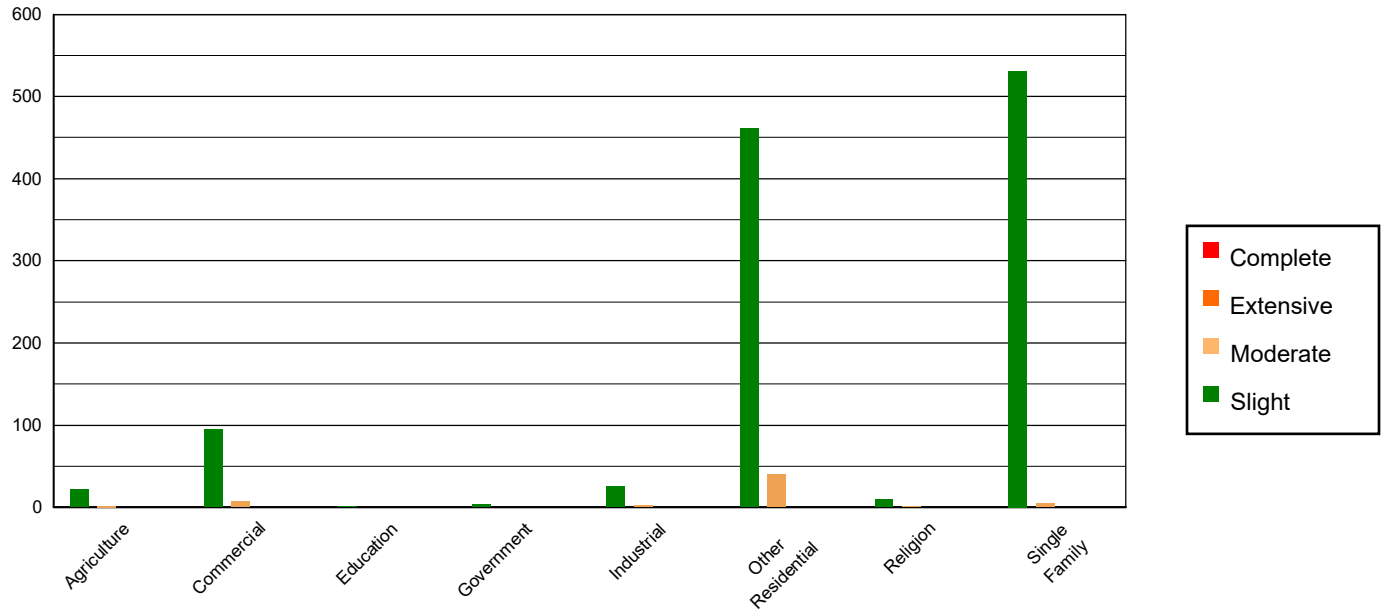


Table 3: Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	24746.84	0.57	21.65	1.89	1.51	2.69	0.01	1.95	0.00	0.00
Commercial	299285.81	6.92	95.09	8.28	7.05	12.59	0.04	11.80	0.00	0.00
Education	8512.11	0.20	0.80	0.07	0.09	0.16	0.00	0.13	0.00	0.00
Government	6294.63	0.15	3.17	0.28	0.19	0.35	0.00	0.13	0.00	0.00
Industrial	81994.10	1.90	24.87	2.17	2.02	3.60	0.02	5.44	0.00	0.00
Other Residential	748563.64	17.31	461.60	40.22	39.47	70.42	0.30	79.55	0.00	0.00
Religion	18099.07	0.42	9.28	0.81	0.65	1.16	0.00	0.40	0.00	0.00
Single Family	3137841.59	72.55	531.34	46.29	5.07	9.05	0.00	0.60	0.00	0.00
Total	**4,325,338**		**1,148**		**56**		**0**		**0**	

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

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Wood	3791167.83	87.65	593.94	51.75	5.23	9.34	0.00	0.00	0.00	0.00
Steel	85074.99	1.97	67.66	5.89	6.30	11.25	0.03	8.65	0.00	0.00
Concrete	83125.91	1.92	31.40	2.74	1.52	2.71	0.02	5.29	0.00	0.00
Precast	37673.75	0.87	26.78	2.33	1.87	3.34	0.01	1.64	0.00	0.00
RM	202674.50	4.69	13.00	1.13	0.77	1.38	0.00	0.78	0.00	0.00
URM	28371.83	0.66	53.48	4.66	5.09	9.09	0.04	9.80	0.00	0.00
MH	97248.96	2.25	361.56	31.50	35.26	62.90	0.28	73.84	0.00	0.00
Total	**4,325,338**		**1,148**		**56**		**0**		**0**	

*Note:

RM Reinforced Masonry
URM Unreinforced Masonry
MH Manufactured Housing

Essential Facility Damage

Before the earthquake, the region had 45,028 hospital beds available for use. On the day of the earthquake, the model estimates that only 44,988 hospital beds (100.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 100.00% of the beds will be back in service. By 30 days, 100.00% 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	238	0	0	238
Schools	5,316	0	0	5,314
EOCs	81	0	0	81
PoliceStations	330	0	0	330
FireStations	978	0	0	978

Transportation Lifeline Damage

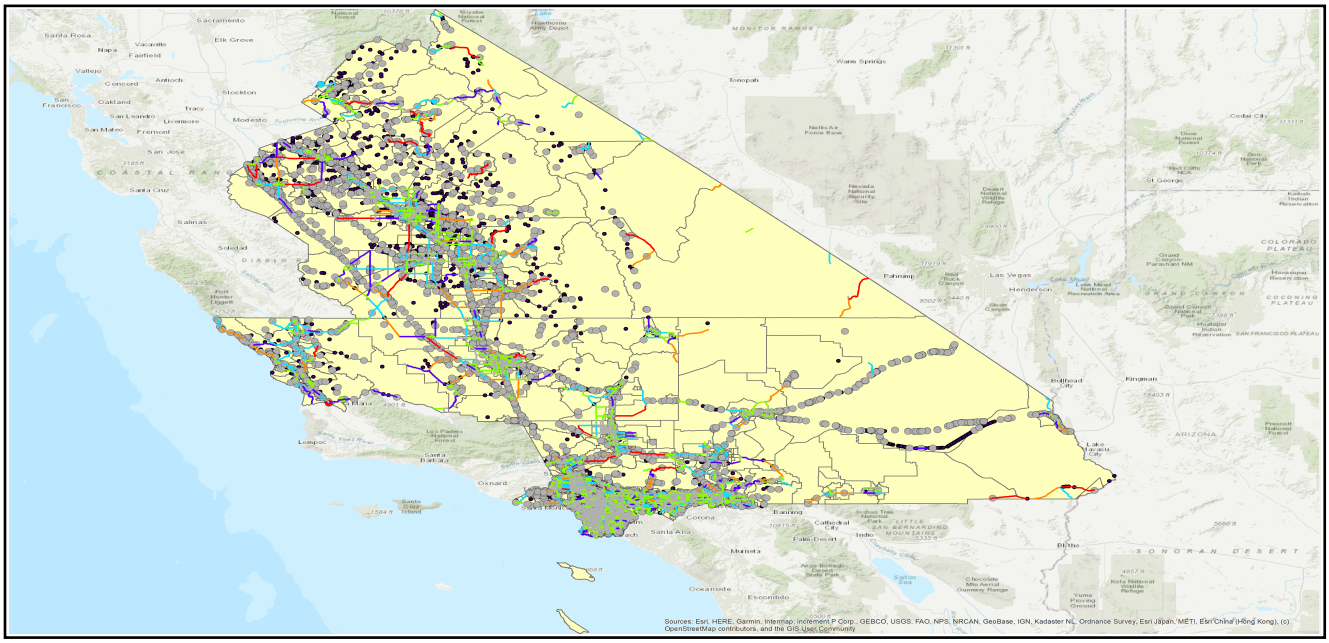


Table 6: Expected Damage to the Transportation Systems

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	7,268	0	0	7,268	7,268
	Bridges	8,791	0	0	8,791	8,791
	Tunnels	53	0	0	53	53
Railways	Segments	1,619	0	0	1,619	1,619
	Bridges	1,522	0	0	1,522	1,522
	Tunnels	0	0	0	0	0
	Facilities	94	0	0	94	94
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	39	0	0	39	39
Ferry	Facilities	10	0	0	10	10
Port	Facilities	210	0	0	210	210
Airport	Facilities	136	0	0	136	136
	Runways	139	0	0	139	139

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	28	0	0	28	28
Waste Water	63	0	0	63	63
Natural Gas	31	0	0	31	31
Oil Systems	61	0	0	61	61
Electrical Power	516	0	0	516	516
Communication	369	0	0	369	369

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

System	Total Pipelines Length (miles)	Number of Leaks	Number of Breaks
Potable Water	138,724	348	87
Waste Water	83,234	175	44
Natural Gas	2,868	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	5,155,816	0	0	0	0	0
Electric Power		0	0	0	0	0

Induced Earthquake Damage

Fire Following Earthquake

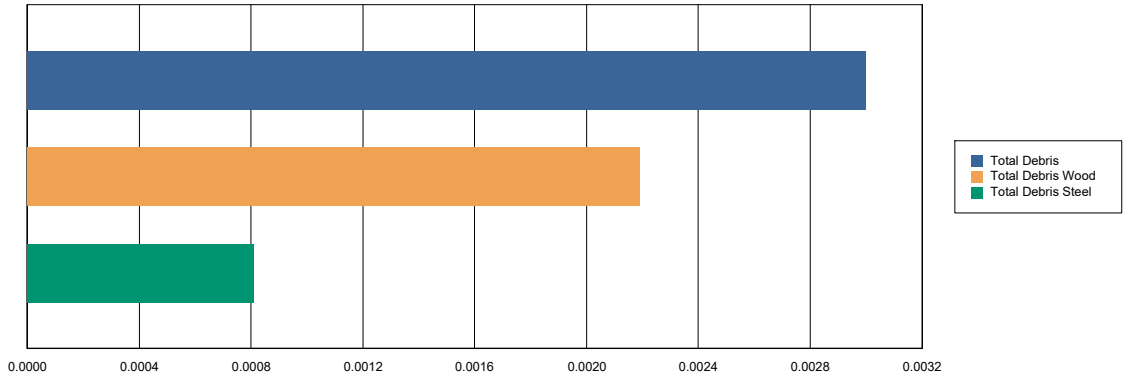
Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. Hazus uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area. For this scenario, the model estimates that there will be 0 ignitions that will burn about 0.00 sq. mi 0.00 % of the region's total area.) The model also estimates that the fires will displace about 0 people and burn about 0 (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 3,000 tons of debris will be generated. Of the total amount, Brick/Wood comprises 73.00% 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 120 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.

Earthquake Debris (millions of tons)



Brick/ Wood	Reinforced Concrete/Steel	Total Debris	Truck Load
0.00	0.00	0.00	120 (@25 tons/truck)

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 0 households to be displaced due to the earthquake. Of these, 0 people (out of a total population of 15,563,998) will seek temporary shelter in public shelters.

Displaced Households/ Persons Seeking Short Term Public Shelter

Displaced households as a result of the earthquake	Persons seeking temporary public shelter
0	0

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
2 AM	Commercial	0.02	0.00	0.00	0.00
	Commuting	0.00	0.00	0.00	0.00
	Educational	0.00	0.00	0.00	0.00
	Hotels	0.00	0.00	0.00	0.00
	Industrial	0.01	0.00	0.00	0.00
	Other-Residential	0.96	0.03	0.00	0.00
	Single Family	0.57	0.00	0.00	0.00
	Total	**2**	**0**	**0**	**0**
2 PM	Commercial	1.16	0.04	0.00	0.00
	Commuting	0.00	0.00	0.00	0.00
	Educational	0.24	0.01	0.00	0.00
	Hotels	0.00	0.00	0.00	0.00
	Industrial	0.11	0.00	0.00	0.00
	Other-Residential	0.30	0.01	0.00	0.00
	Single Family	0.17	0.00	0.00	0.00
	Total	**2**	**0**	**0**	**0**
5 PM	Commercial	0.81	0.03	0.00	0.00
	Commuting	0.01	0.01	0.01	0.00
	Educational	0.02	0.00	0.00	0.00
	Hotels	0.00	0.00	0.00	0.00
	Industrial	0.07	0.00	0.00	0.00
	Other-Residential	0.34	0.01	0.00	0.00
	Single Family	0.20	0.00	0.00	0.00
	Total	**1**	**0**	**0**	**0**

Economic Loss

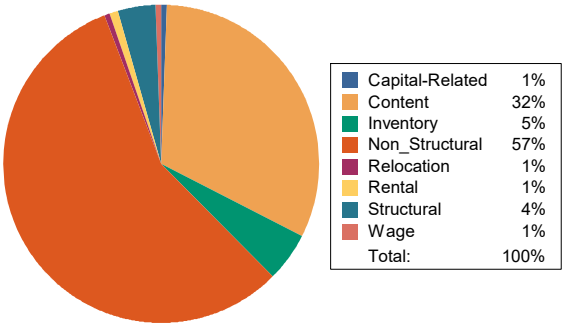
The total economic loss estimated for the earthquake is 366.86 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

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 69.55 (millions of dollars); 3 % 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 38 % 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)

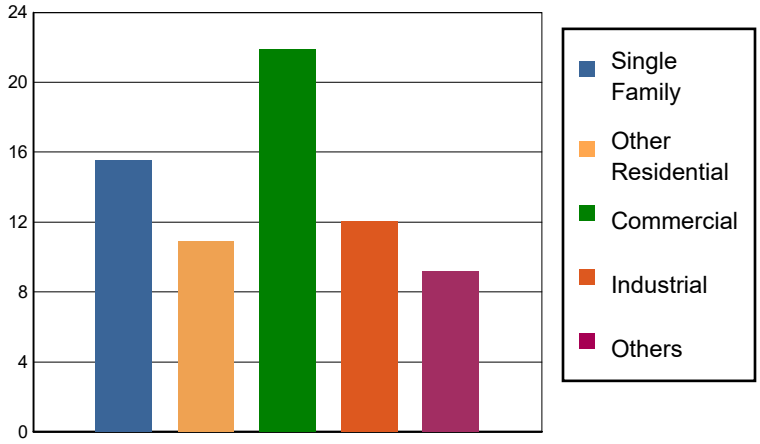


Table 11: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.0000	0.0052	0.3827	0.0251	0.0528	0.4658
	Capital-Related	0.0000	0.0022	0.3914	0.0154	0.0110	0.4200
	Rental	0.0398	0.1172	0.3282	0.0157	0.0142	0.5151
	Relocation	0.0300	0.1109	0.1875	0.0379	0.0581	0.4244
	Subtotal	**0.0698**	**0.2355**	**1.2898**	**0.0941**	**0.1361**	**1.8253**
Capital Stock Losses							
	Structural	0.7256	0.5013	0.7478	0.3147	0.3868	2.6762
	Non_Structural	10.0522	7.6313	10.8687	6.3783	4.4754	39.4059
	Content	4.6959	2.5357	7.4132	4.4809	3.0944	22.2201
	Inventory	0.0000	0.0000	1.5782	0.7543	1.0918	3.4243
	Subtotal	**15.4737**	**10.6683**	**20.6079**	**11.9282**	**9.0484**	**67.7265**
	Total	**15.54**	**10.90**	**21.90**	**12.02**	**9.18**	**69.55**

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	95620.3593	0.0000	0.00
	Bridges	43059.2051	0.1898	0.00
	Tunnels	567.8111	0.0000	0.00
	Subtotal	**139247.3755**	**0.1898**	
Railways	Segments	41161.5591	0.0000	0.00
	Bridges	8660.1800	0.0000	0.00
	Tunnels	0.0000	0.0000	0.00
	Facilities	250.3220	0.5955	0.24
	Subtotal	**50072.0611**	**0.5955**	
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	0.0000	0.00
	Subtotal	**5129.4420**	**0.0000**	
Bus	Facilities	84.6167	0.3323	0.39
	Subtotal	**84.6167**	**0.3323**	
Ferry	Facilities	13.3100	0.0000	0.00
	Subtotal	**13.3100**	**0.0000**	
Port	Facilities	800.4874	0.0000	0.00
	Subtotal	**800.4874**	**0.0000**	
Airport	Facilities	3402.5792	4.6692	0.14
	Runways	1444.5362	0.0000	0.00
	Subtotal	**4847.1154**	**4.6692**	
	Total	**200,194.41**	**5.79**	

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	1100.2320	0.0855	0.01
	Distribution Lines	4465.0831	1.5642	0.04
	Subtotal	**5565.3151**	**1.6497**	
Waste Water	Pipelines	0.0000	0.0000	0.00
	Facilities	10832.9634	1.1220	0.01
	Distribution Lines	2679.0498	0.7857	0.03
	Subtotal	**13512.0132**	**1.9077**	
Natural Gas	Pipelines	16258.3058	0.0000	0.00
	Facilities	1192.0373	0.0930	0.01
	Distribution Lines	1786.0332	0.2692	0.02
	Subtotal	**19236.3763**	**0.3622**	
Oil Systems	Pipelines	0.0000	0.0000	0.00
	Facilities	7.1980	0.0013	0.02
	Subtotal	**7.1980**	**0.0013**	
Electrical Power	Facilities	135508.9805	287.5491	0.21
	Subtotal	**135508.9805**	**287.5491**	
Communication	Facilities	43.5420	0.0549	0.13
	Subtotal	**43.5420**	**0.0549**	
	Total	**173,873.43**	**291.52**	

Appendix A: County Listing for the Region

Fresno,CA

Inyo,CA

Kern,CA

Kings,CA

Los Angeles,CA

Madera,CA

Mariposa,CA

Merced,CA

Mono,CA

San Bernardino,CA

San Luis Obispo,CA

Tulare,CA

Tuolumne,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
	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
	Madera	156,255	18,025	9,641	27,667
	Mariposa	17,131	3,299	1,141	4,441
	Merced	281,202	25,194	26,098	51,292
	Mono	13,195	3,293	1,083	4,377
	San Bernardino	2,181,654	225,045	152,557	377,602
	San Luis Obispo	282,424	41,720	20,896	62,616
	Tulare	473,117	43,262	31,210	74,472
	Tuolumne	55,620	8,964	3,507	12,471
Total Region		**15,563,998**	**1,522,268**	**943,899**	**2,466,172**

Kern Canyon (North Kern)

Building Inspection Tagging (Counts)

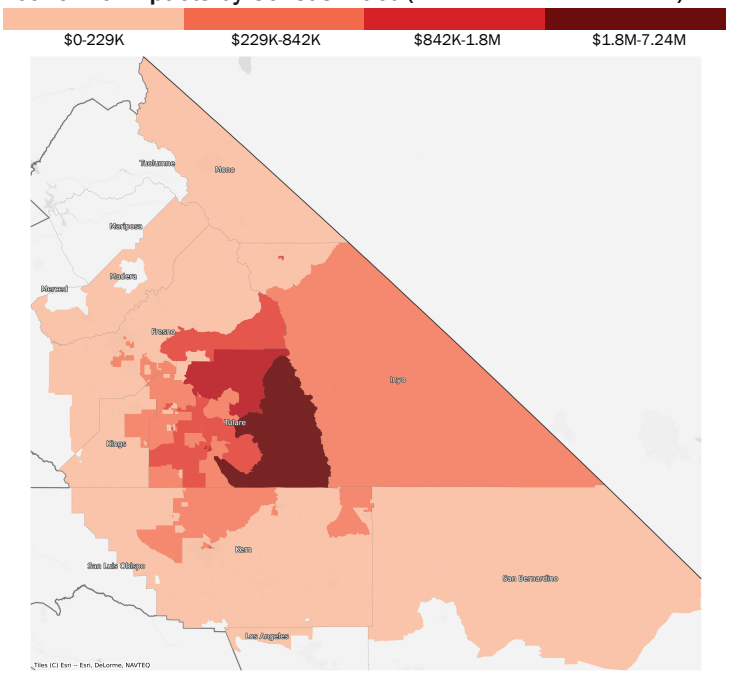
Inspected		Restricted		Unsafe	
Residential	44.5	Residential	0.3	Residential	0
Commercial	7.05	Commercial	0.0442	Commercial	0
Industrial	2.02	Industrial	0.0203	Industrial	0
Agricultural	1.51	Agricultural	0.00729	Agricultural	0
Educational	0.0885	Educational	0.0005	Educational	0
Government	0.194	Government	0.000499	Government	0
Religious	0.648	Religious	0.00149	Religious	0

Total Economic Loss

Total: $69.6M

Top Counties	State	Total
Tulare	CA	$46.4M
Fresno	CA	$11.1M
Kern	CA	$8.57M
Kings	CA	$1.63M
Inyo	CA	$1.53M
Madera	CA	$267K
San Bernardino	CA	$23.9K

Economic Impacts by Census Tract (615 Tracts with Losses)

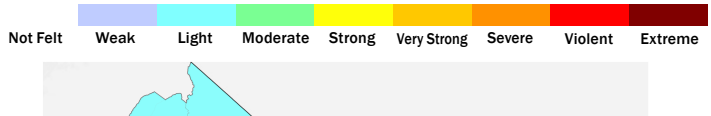


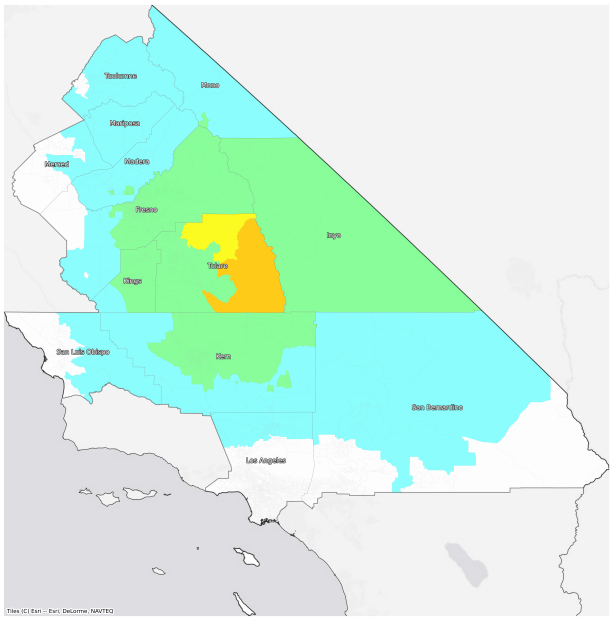
Injuries & Fatalities

Total Day: 2.04
Total Night: 1.59

Top Counties	State	Injuries (day/night)	Fatalities (day/night)
Tulare	CA	1.45/1.23	0.000213/0.000068
Kern	CA	0.283/0.156	0.000122/0.000029
Fresno	CA	0.215/0.129	0.000068/0.000017
Inyo	CA	0.0626/0.0524	0.000154/0.000021
Kings	CA	0.031/0.0191	0.000008/0.000001
Madera	CA	0.00242/0.00193	0.000001/0.000001
San Bernardino	CA	0.000155/0.000152	0/0

Ground Shaking





Displaced Households & Short-Term Shelter Needs

Total Displaced: 0.0535
Total Needing Shelter: 0.0438

Top Counties	State	Displaced	Needing Shelter
Tulare	CA	0.0493	0.0418
Inyo	CA	0.00379	0.00177
Fresno	CA	0.000356	0.000218
Kern	CA	0	0
Kings	CA	0	0
Los Angeles	CA	0	0
Madera	CA	0	0

Debris

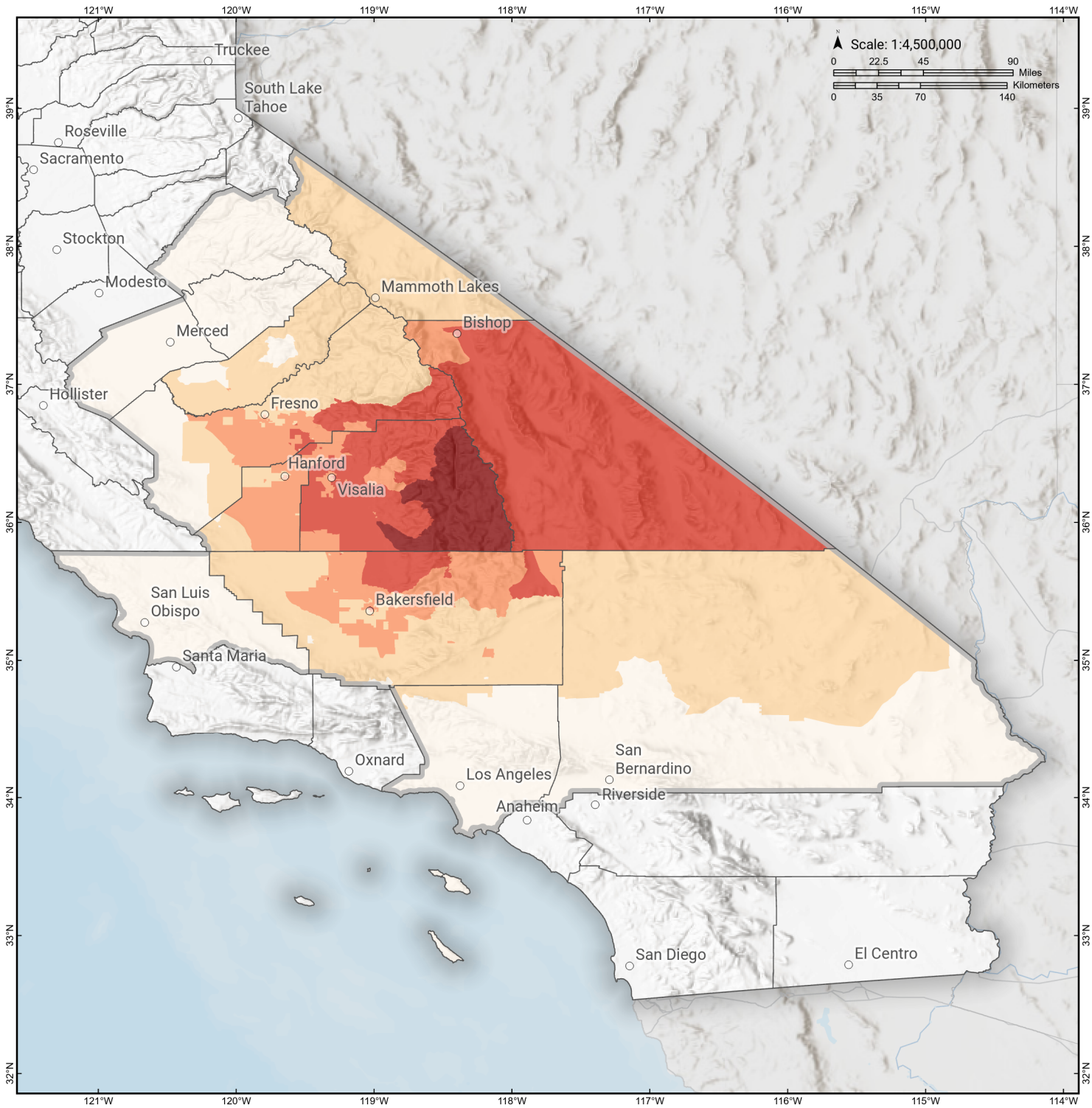
Total Tons: 3.2K
Total Truckloads: 128

Type	Tons
Brick, Wood, and Other	2.35K
Concrete & Steel	855

Kern Canyon (North Kern)

Debris Generated by Census Tract

California Department of Conservation
California Geological Survey



Study Region: Kern Canyon (North Kern)
Scenario: kerncanyonnorthkern2_m7p1_se

Debris Generated *(in tons)*

- 0
- >0 - 1
- >1 - 10
- >10 - 100
- >100 - 400

Kern Canyon (North Kern)

Displaced Households by Census Tract

California Department of Conservation
California Geological Survey

Study Region: Kern Canyon (North Kern)
Scenario: kerncanyonnorthkern2_m7p1_se

Displaced Households

- 0
- 1

Kern Canyon (North Kern)

Loss Ratio by Census Tract

California Department of Conservation
California Geological Survey

Study Region: Kern Canyon (North Kern)
Scenario: kerncanyonnorthkern2_m7p1_se

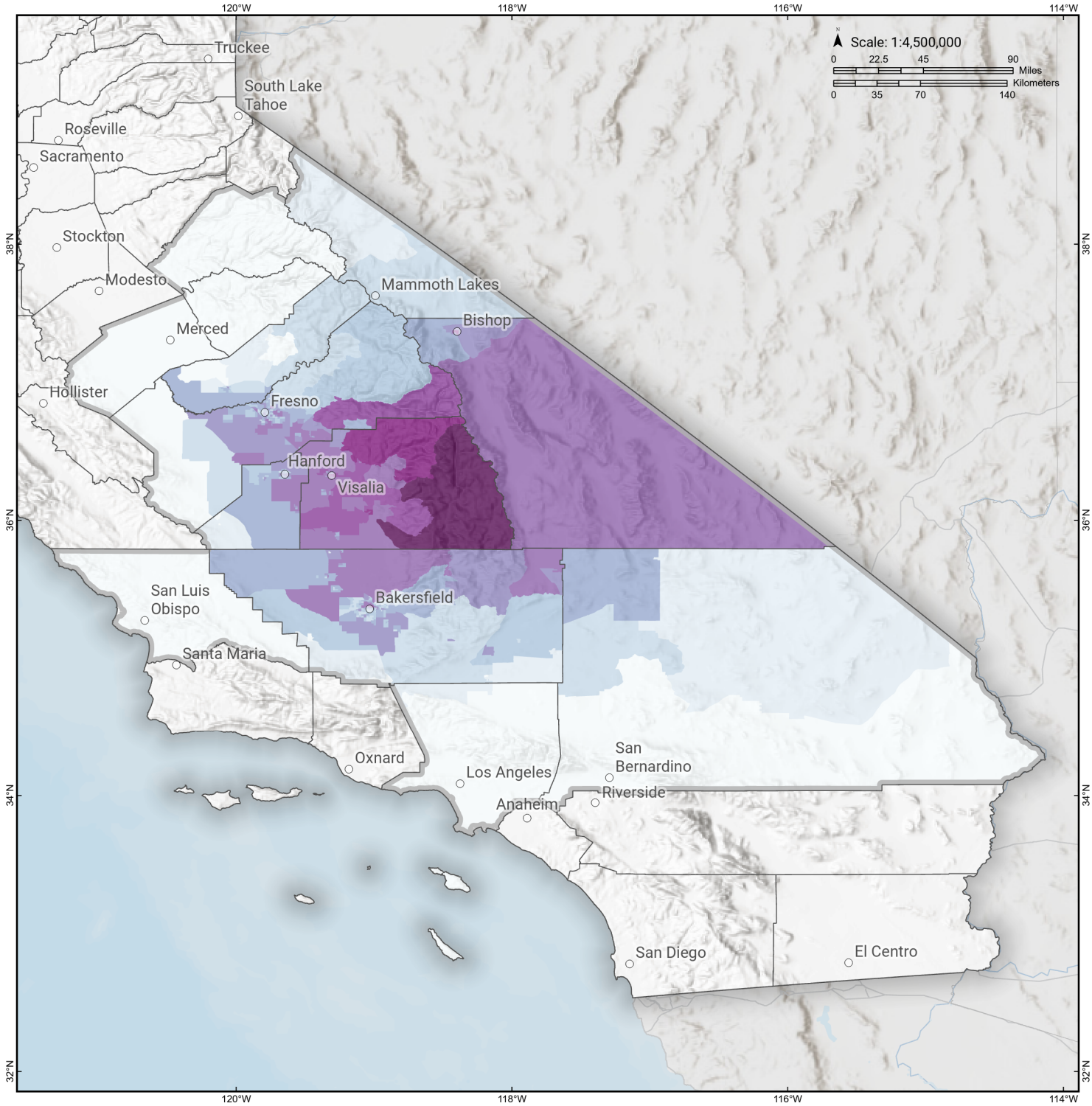
Loss Ratio *(ratio of building related economic loss to exposed value of buildings)*

- 0%
- >0 - 2%

Kern Canyon (North Kern)

Total Building Related Economic Loss by Census Tract

California Department of Conservation
California Geological Survey



Study Region: Kern Canyon (North Kern)
Scenario: kerncanyonnorthkern2_m7p1_se

Economic Loss *(in thousands of USD $)*

0	>50 - 100
>0 - 1	>100 - 500
>1 - 10	>500 - 1,000
>10 - 20	>1,000 - 3,000
>20 - 50	>3,000 - 7,250

Building Damage by Count by General Occupancy

RiskMAP
Increasing Resilience Together

May 07, 2024

	# of Buildings					
	None	Slight	Moderate	Extensive	Complete	Total
California						
Fresno						
Agriculture	3,419	2	0	0	0	3,421
Commercial	21,040	13	1	0	0	21,054
Education	602	0	0	0	0	602
Government	291	0	0	0	0	291
Industrial	5,344	4	0	0	0	5,348
Religion	1,505	2	0	0	0	1,507
Other Residential	40,923	47	2	0	0	40,973
Single Family	226,409	16	0	0	0	226,425
Inyo						
Agriculture	32	0	0	0	0	32
Commercial	716	4	0	0	0	721
Education	41	0	0	0	0	41
Government	101	0	0	0	0	101
Industrial	256	1	0	0	0	257
Religion	57	0	0	0	0	57
Other Residential	4,017	31	2	0	0	4,050
Single Family	4,442	4	0	0	0	4,446
Kern						

		# of Buildings					
		None	Slight	Moderate	Extensive	Complete	Total
	Agriculture	*4,643*	*2*	*0*	*0*	*0*	*4,645*
	Commercial	*15,553*	*13*	*1*	*0*	*0*	*15,567*
	Education	*462*	*0*	*0*	*0*	*0*	*462*
	Government	*443*	*0*	*0*	*0*	*0*	*443*
	Industrial	*6,043*	*4*	*0*	*0*	*0*	*6,047*
	Religion	*1,522*	*1*	*0*	*0*	*0*	*1,524*
	Other Residential	*54,441*	*77*	*3*	*0*	*0*	*54,520*
	Single Family	*205,126*	*13*	*0*	*0*	*0*	*205,139*
Kings							
	Agriculture	*306*	*0*	*0*	*0*	*0*	*306*
	Commercial	*2,316*	*2*	*0*	*0*	*0*	*2,318*
	Education	*103*	*0*	*0*	*0*	*0*	*103*
	Government	*72*	*0*	*0*	*0*	*0*	*72*
	Industrial	*554*	*1*	*0*	*0*	*0*	*555*
	Religion	*210*	*0*	*0*	*0*	*0*	*210*
	Other Residential	*4,338*	*4*	*0*	*0*	*0*	*4,342*
	Single Family	*36,243*	*2*	*0*	*0*	*0*	*36,245*
Los Angeles							
	Agriculture	*2,032*	*0*	*0*	*0*	*0*	*2,032*
	Commercial	*190,861*	*0*	*0*	*0*	*0*	*190,861*
	Education	*5,486*	*0*	*0*	*0*	*0*	*5,486*
	Government	*3,031*	*0*	*0*	*0*	*0*	*3,031*
	Industrial	*53,126*	*0*	*0*	*0*	*0*	*53,126*
	Religion	*10,651*	*0*	*0*	*0*	*0*	*10,651*
	Other Residential	*481,671*	*0*	*0*	*0*	*0*	*481,671*

	# of Buildings					
	None	Slight	Moderate	Extensive	Complete	Total
Single Family	*1,803,140*	*0*	*0*	*0*	*0*	*1,803,140*
Madera						
Agriculture	*634*	*0*	*0*	*0*	*0*	*634*
Commercial	*2,905*	*0*	*0*	*0*	*0*	*2,905*
Education	*115*	*0*	*0*	*0*	*0*	*115*
Government	*111*	*0*	*0*	*0*	*0*	*111*
Industrial	*903*	*0*	*0*	*0*	*0*	*903*
Religion	*119*	*0*	*0*	*0*	*0*	*119*
Other Residential	*6,635*	*0*	*0*	*0*	*0*	*6,635*
Single Family	*38,912*	*0*	*0*	*0*	*0*	*38,912*
Mariposa						
Agriculture	*29*	*0*	*0*	*0*	*0*	*29*
Commercial	*689*	*0*	*0*	*0*	*0*	*689*
Education	*27*	*0*	*0*	*0*	*0*	*27*
Government	*33*	*0*	*0*	*0*	*0*	*33*
Industrial	*94*	*0*	*0*	*0*	*0*	*94*
Religion	*36*	*0*	*0*	*0*	*0*	*36*
Other Residential	*307*	*0*	*0*	*0*	*0*	*307*
Single Family	*8,084*	*0*	*0*	*0*	*0*	*8,084*
Merced						
Agriculture	*7,653*	*0*	*0*	*0*	*0*	*7,653*
Commercial	*4,754*	*0*	*0*	*0*	*0*	*4,754*
Education	*163*	*0*	*0*	*0*	*0*	*163*
Government	*171*	*0*	*0*	*0*	*0*	*171*
Industrial	*1,022*	*0*	*0*	*0*	*0*	*1,022*

	# of Buildings					
	None	Slight	Moderate	Extensive	Complete	Total
Religion	*345*	*0*	*0*	*0*	*0*	*345*
Other Residential	*10,787*	*0*	*0*	*0*	*0*	*10,787*
Single Family	*63,598*	*0*	*0*	*0*	*0*	*63,598*
Mono						
Agriculture	*145*	*0*	*0*	*0*	*0*	*145*
Commercial	*654*	*0*	*0*	*0*	*0*	*654*
Education	*21*	*0*	*0*	*0*	*0*	*21*
Government	*18*	*0*	*0*	*0*	*0*	*18*
Industrial	*108*	*0*	*0*	*0*	*0*	*108*
Religion	*32*	*0*	*0*	*0*	*0*	*32*
Other Residential	*1,759*	*0*	*0*	*0*	*0*	*1,759*
Single Family	*7,704*	*0*	*0*	*0*	*0*	*7,704*
San Bernardino						
Agriculture	*1,815*	*0*	*0*	*0*	*0*	*1,815*
Commercial	*40,041*	*0*	*0*	*0*	*0*	*40,041*
Education	*985*	*0*	*0*	*0*	*0*	*985*
Government	*1,238*	*0*	*0*	*0*	*0*	*1,238*
Industrial	*9,474*	*0*	*0*	*0*	*0*	*9,474*
Religion	*2,320*	*0*	*0*	*0*	*0*	*2,320*
Other Residential	*98,821*	*0*	*0*	*0*	*0*	*98,821*
Single Family	*525,367*	*0*	*0*	*0*	*0*	*525,367*
San Luis Obispo						
Agriculture	*421*	*0*	*0*	*0*	*0*	*421*
Commercial	*9,375*	*0*	*0*	*0*	*0*	*9,375*
Education	*182*	*0*	*0*	*0*	*0*	*182*

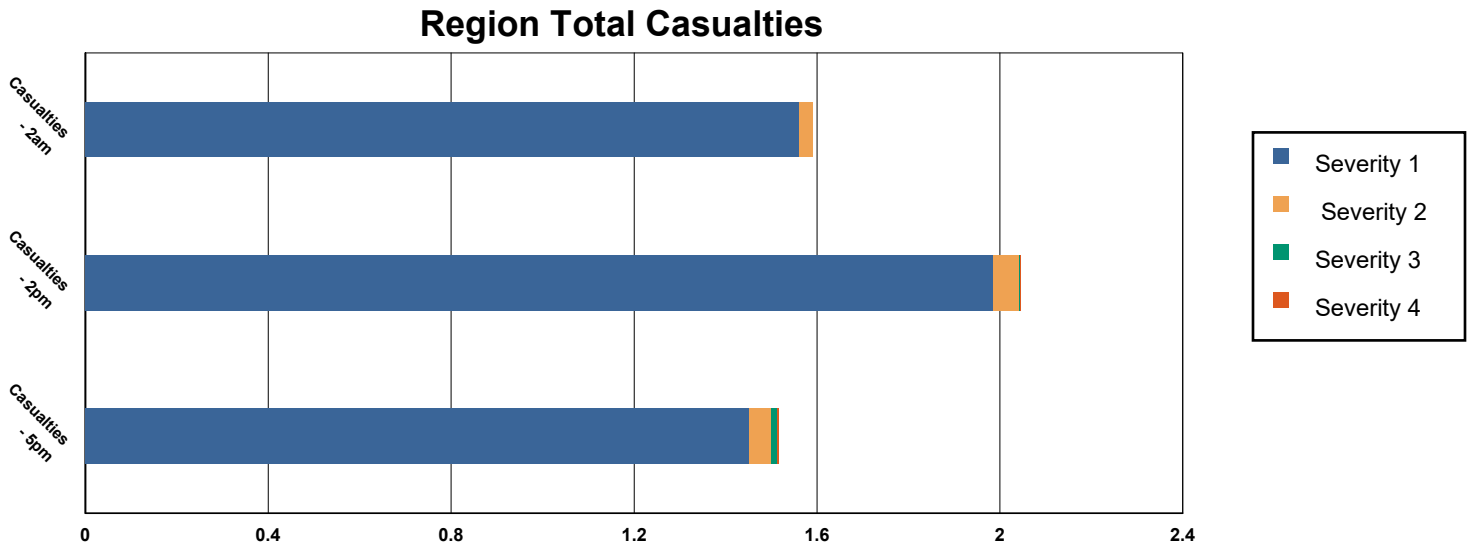
		# of Buildings					
		None	Slight	Moderate	Extensive	Complete	Total
	Government	*185*	*0*	*0*	*0*	*0*	*185*
	Industrial	*2,556*	*0*	*0*	*0*	*0*	*2,556*
	Religion	*360*	*0*	*0*	*0*	*0*	*360*
	Other Residential	*20,216*	*0*	*0*	*0*	*0*	*20,216*
	Single Family	*85,639*	*0*	*0*	*0*	*0*	*85,639*
Tulare							
	Agriculture	*3,537*	*17*	*1*	*0*	*0*	*3,555*
	Commercial	*8,805*	*62*	*5*	*0*	*0*	*8,873*
	Education	*268*	*1*	*0*	*0*	*0*	*269*
	Government	*458*	*3*	*0*	*0*	*0*	*461*
	Industrial	*2,131*	*16*	*2*	*0*	*0*	*2,148*
	Religion	*821*	*5*	*0*	*0*	*0*	*827*
	Other Residential	*19,686*	*303*	*33*	*0*	*0*	*20,022*
	Single Family	*111,533*	*496*	*5*	*0*	*0*	*112,034*
Tuolumne							
	Agriculture	*82*	*0*	*0*	*0*	*0*	*82*
	Commercial	*1,576*	*0*	*0*	*0*	*0*	*1,576*
	Education	*57*	*0*	*0*	*0*	*0*	*57*
	Government	*143*	*0*	*0*	*0*	*0*	*143*
	Industrial	*383*	*0*	*0*	*0*	*0*	*383*
	Religion	*121*	*0*	*0*	*0*	*0*	*121*
	Other Residential	*4,962*	*0*	*0*	*0*	*0*	*4,962*
	Single Family	*21,645*	*0*	*0*	*0*	*0*	*21,645*
Total		**4,325,338**	**1,148**	**56**	**0**	**0**	**4,326,542**

	# of Buildings					
	None	Slight	Moderate	Extensive	Complete	Total
Region Total	**4,325,338**	**1,148**	**56**	**0**	**0**	**4,326,542**

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 07, 2024



	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Fresno					
Casualties - 2am					
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					
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				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Fresno					
Total Casualties - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
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 - 5pm	**0**	**0**	**0**	**0**	**0**
Inyo					
Casualties - 2am					
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					
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 - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
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 - 5pm	**0**	**0**	**0**	**0**	**0**
Kern					
Casualties - 2am					
Commuting	0	0	0	0	0

	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Kern					
Casualties - 2am					
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					
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 - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
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 - 5pm	**0**	**0**	**0**	**0**	**0**
Kings					
Casualties - 2am					
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					
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

	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Kings					
Casualties - 2pm					
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
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 - 5pm	**0**	**0**	**0**	**0**	**0**
Los Angeles					
Casualties - 2am					
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					
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 - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
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 - 5pm	**0**	**0**	**0**	**0**	**0**

	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Madera					
Casualties - 2am					
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					
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 - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
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 - 5pm	**0**	**0**	**0**	**0**	**0**
Mariposa					
Casualties - 2am					
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					
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				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Mariposa					
Casualties - 2pm					
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
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 - 5pm	**0**	**0**	**0**	**0**	**0**
Merced					
Casualties - 2am					
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					
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 - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
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				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Merced					
Total Casualties - 5pm	**0**	**0**	**0**	**0**	**0**
Mono					
Casualties - 2am					
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					
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 - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
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 - 5pm	**0**	**0**	**0**	**0**	**0**
San Bernardino					
Casualties - 2am					
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					
Commuting	0	0	0	0	0

	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
San Bernardino					
Casualties - 2pm					
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 - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
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 - 5pm	**0**	**0**	**0**	**0**	**0**
San Luis Obispo					
Casualties - 2am					
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					
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 - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
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

	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
San Luis Obispo					
Casualties - 5pm					
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 5pm	**0**	**0**	**0**	**0**	**0**
Tulare					
Casualties - 2am					
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	1	0	0	0	1
Total Casualties - 2am	**1**	**0**	**0**	**0**	**1**
Casualties - 2pm					
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	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2pm	**1**	**0**	**0**	**0**	**1**
Casualties - 5pm					
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	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 5pm	**1**	**0**	**0**	**0**	**1**
Tuolumne					
Casualties - 2am					
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				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Tuolumne					
Total Casualties - 2am	**0**	**0**	**0**	**0**	**0**
Casualties - 2pm					
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 - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
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 - 5pm	**0**	**0**	**0**	**0**	**0**
Region Total	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

May 07, 2024

All values are in thousands of tons.

	Brick, Wood & Others	Concrete & Steel	Total
California			
Fresno	0	0	0
Inyo	0	0	0
Kern	0	0	0
Kings	0	0	0
Los Angeles	0	0	0
Madera	0	0	0
Mariposa	0	0	0
Merced	0	0	0
Mono	0	0	0
San Bernardino	0	0	0
San Luis Obispo	0	0	0
Tulare	2	1	2
Tuolumne	0	0	0
Total	**2**	**1**	**3**
Region Total	**2**	**1**	**3**

	Brick, Wood & Others	Concrete & Steel	Total

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

May 7, 2024

All values are in thousands of dollars

	Capital Stock Losses					Income Losses				
	Cost Structural Damage	Cost Non-struct. Damage	Cost Contents Damage	Inventory Loss	Loss Ratio %	Relocation Loss	Capital Related Loss	Wages Losses	Rental Income Loss	Total Loss
California										
Inyo	67	884	448	51	0.02	13	21	22	22	1,528
San Bernardino	0	13	9	2	0.00	0	0	0	0	24
Fresno	254	6,095	3,953	618	0.00	34	36	41	56	11,087
Kings	35	909	576	88	0.00	4	7	7	7	1,632
Tuolumne	0	0	0	0	0.00	0	0	0	0	0
San Luis Obispo	0	0	0	0	0.00	0	0	0	0	0
Tulare	2,071	26,533	14,288	2,190	0.04	336	309	337	368	46,432
Madera	3	150	100	13	0.00	0	0	0	1	267
Merced	0	0	0	0	0.00	0	0	0	0	0

	Capital Stock Losses					Income Losses				
	Cost Structural Damage	Cost Non-struct. Damage	Cost Contents Damage	Inventory Loss	Loss Ratio %	Relocation Loss	Capital Related Loss	Wages Losses	Rental Income Loss	Total Loss
Mono	0	8	5	0	0.00	0	0	0	0	13
Kern	246	4,814	2,842	463	0.00	37	47	58	62	8,570
Mariposa	0	0	0	0	0.00	0	0	0	0	0
Los Angeles	0	0	0	0	0.00	0	0	0	0	0
Total	**2,676**	**39,406**	**22,220**	**3,424**	**0.01**	**425**	**420**	**466**	**515**	**69,554**
Region Total	**2,676**	**39,406**	**22,220**	**3,424**	**0.01**	**425**	**420**	**466**	**515**	**69,554**

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 07, 2024

All values are in thousands of dollars

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
California								
Fresno								
Segments	0	0	0					0
Bridges	7	0	0					7
Tunnels	0	0	0					0
Facilities		231	0	21	0	0	992	1,244
Total	**7**	**231**	**0**	**21**	**0**	**0**	**992**	**1,251**
Inyo								
Segments	0	0	0					0
Bridges	109	0	0					109
Tunnels	0	0	0					0
Facilities		0	0	0	0	0	1,428	1,428
Total	**109**	**0**	**0**	**0**	**0**	**0**	**1,428**	**1,538**
Kern								
Segments	0	0	0					0
Bridges	10	0	0					10
Tunnels	0	0	0					0
Facilities		180	0	64	0	0	1,159	1,403

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
Total	**10**	**180**	**0**	**64**	**0**	**0**	**1,159**	**1,413**
Kings								
Segments	0	0	0					0
Bridges	2	0	0					2
Tunnels	0	0	0					0
Facilities		128	0	41	0	0	359	529
Total	**2**	**128**	**0**	**41**	**0**	**0**	**359**	**531**
Los Angeles								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		0	0	0	0	0	34	34
Total	**0**	**0**	**0**	**0**	**0**	**0**	**34**	**34**
Madera								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		26	0	21	0	0	11	58
Total	**0**	**26**	**0**	**21**	**0**	**0**	**11**	**58**
Mariposa								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		0	0	10	0	0	6	15

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
Total	**0**	**0**	**0**	**10**	**0**	**0**	**6**	**15**
Merced								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Mono								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		0	0	23	0	0	57	79
Total	**0**	**0**	**0**	**23**	**0**	**0**	**57**	**79**
San Bernardino								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		31	0	2	0	0	23	56
Total	**0**	**31**	**0**	**2**	**0**	**0**	**23**	**56**
San Luis Obispo								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		0	0	0	0	0	0	0

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Tulare								
Segments	0	0	0					0
Bridges	62	0	0					62
Tunnels	0	0	0					0
Facilities		0	0	150	0	0	588	738
Total	**62**	**0**	**0**	**150**	**0**	**0**	**588**	**800**
Tuolumne								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		0	0	0	0	0	11	11
Total	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**11**
Total	**190**	**596**	**0**	**332**	**0**	**0**	**4,669**	**5,787**
Region Total	**190**	**596**	**0**	**332**	**0**	**0**	**4,669**	**5,787**

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 Utilities

May 07, 2024

All values are in thousands of dollars

	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total
California							
Fresno							
Facilities	0	492	0	13	104,877	7	105,389
Pipelines	207	104	0	0			311
Total	207	596	0	13	104,877	7	105,700
Inyo							
Facilities	0	0	0	0	31,900	13	31,913
Pipelines	158	79	0	0			238
Total	158	79	0	0	31,900	13	32,150
Kern							
Facilities	57	248	1	67	98,219	9	98,603
Pipelines	371	186	0	0			558
Total	428	435	1	67	98,219	9	99,160
Kings							
Facilities	0	0	0	4	5,844	1	5,849

	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total
Pipelines	74	37	0	0			111
Total	74	37	0	4	5,844	1	5,960
Los Angeles							
Facilities	0	0	0	3	472	0	475
Pipelines	43	21	0	0			64
Total	43	21	0	3	472	0	539
Madera							
Facilities	0	0	0	0	13,444	0	13,444
Pipelines	60	30	0	0			90
Total	60	30	0	0	13,444	0	13,534
Mariposa							
Facilities	0	10	0	0	39	0	49
Pipelines	9	5	0	0			14
Total	9	15	0	0	39	0	63
Merced							
Facilities	0	0	0	0	0	0	0
Pipelines	16	8	0	0			25
Total	16	8	0	0	0	0	25
Mono							
Facilities	0	0	0	0	2,871	0	2,871
Pipelines	29	15	0	0			44

	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total
Total	29	15	0	0	2,871	0	2,915
San Bernardino							
Facilities	0	3	0	6	5,203	0	5,212
Pipelines	83	41	0	0			124
Total	83	44	0	6	5,203	0	5,336
San Luis Obispo							
Facilities	0	0	0	0	650	0	650
Pipelines	22	11	0	0			32
Total	22	11	0	0	650	0	683
Tulare							
Facilities	28	369	0	0	23,102	25	23,525
Pipelines	480	241	0	0			721
Total	508	610	0	0	23,102	25	24,245
Tuolumne							
Facilities	0	0	0	0	926	0	926
Pipelines	13	6	0	0			19
Total	13	6	0	0	926	0	946
Total	**1,650**	**1,908**	**1**	**93**	**287,549**	**55**	**291,256**
Region Total	**1,650**	**1,908**	**1**	**93**	**287,549**	**55**	**291,256**

	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total

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.

Hazus Quick Assessment Report

Estimated Economic Loss ($ Billions)

Category	Description	Range
General Building Stock	Building Damage	0.00 - 0.10
	Building Contents	< 0.1
	Business Interruption	< 0.1
Infrastructure	Lifelines Damage	
	Total	0.00 - 0.10

Preliminary Damage Assessment (PDA) Estimates

Description	Residential	Commercial	Other	Total
Affected	990	100	60	1,150
Minor	40	< 10	< 10	40
Major	0	0	0	0
Destroyed	0	0	0	0
Total	1,030	100	60	1,190

Estimated Casualties : Night Time

Severity Level	Description	# Persons
Level 1	Medical Aid	< 10
Level 2	Hospital Care	< 10
Level 3	Life-threatening	< 10
Level 4	Fatalities	< 10

Estimated Shelter Needs

Type	Households	People
Displaced Households	< 1.0	< 1.0
Public Shelter	0	0

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, goetechnical, and observed ground motion data.

Earthquake Information

Location :

Origin Time:

Magnitude : 7.10

Epicenter Latitude/Longitude :

/

Depth & Type : /U

Name :
NA

Ground Motion /Attenuation :

Maximum PGA: 0.00

Information Sources:

Comments :

Population and Building Exposure

Population: 15,563,998

Building Exposure : ($ Millions)

Residential	1,522,274
Commercial	530,430
Other	413,475
Total	2,466,179

Counties : See Appendix

Major Metro Area :

Time of report: May 07, 2024 9:28 pm

Hazus Quick Assessment Report

Estimated Economic Loss ($ Billions)

Category	Description	Range
General Building Stock	Building Damage	0.00 - 0.10
	Building Contents	< 0.1
	Business Interruption	< 0.1
Infrastructure	Lifelines Damage	
	Total	0.00 - 0.10

Preliminary Damage Assessment (PDA) Estimates

Description	Residential	Commercial	Other	Total
Affected	990	100	60	1,150
Minor	40	< 10	< 10	40
Major	0	0	0	0
Destroyed	0	0	0	0
Total	1,030	100	60	1,190

Estimated Casualties : Day Time

Severity Level	Description	# Persons
Level 1	Medical Aid	< 10
Level 2	Hospital Care	< 10
Level 3	Life-threatening	< 10
Level 4	Fatalities	< 10

Estimated Shelter Needs

Type	Households	People
Displaced Households	< 1.0	< 1.0
Public Shelter	0	0

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, goetechnical, and observed ground motion data.

Earthquake Information

Location :

Origin Time:

Magnitude : 7.10

Epicenter Latitude/Longitude :

/

Depth & Type : /U

Name :
NA

Ground Motion /Attenuation :

Maximum PGA: 0.00

Information Sources:

Comments :

Population and Building Exposure

Population: 15,563,998

Building Exposure : ($ Millions)

Residential	1,522,274
Commercial	530,430
Other	413,475
Total	2,466,179

Counties : See Appendix

Major Metro Area :

Time of report: May 07, 2024 9:29 pm

Hazus Quick Assessment Report

Estimated Economic Loss ($ Billions)

Category	Description	Range
General Building Stock	Building Damage	0.00 - 0.10
	Building Contents	< 0.1
	Business Interruption	< 0.1
Infrastructure	Lifelines Damage	
	Total	0.00 - 0.10

Preliminary Damage Assessment (PDA) Estimates

Description	Residential	Commercial	Other	Total
Affected	990	100	60	1,150
Minor	40	< 10	< 10	40
Major	0	0	0	0
Destroyed	0	0	0	0
Total	1,030	100	60	1,190

Estimated Casualties : Commute Time

Severity Level	Description	# Persons
Level 1	Medical Aid	< 10
Level 2	Hospital Care	< 10
Level 3	Life-threatening	< 10
Level 4	Fatalities	< 10

Estimated Shelter Needs

Type	Households	People
Displaced Households	< 1.0	< 1.0
Public Shelter	0	0

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, goetechnical, and observed ground motion data.

Earthquake Information

Location :

Origin Time:

Magnitude : 7.10

Epicenter Latitude/Longitude :

/

Depth & Type : /U

Name :
NA

Ground Motion /Attenuation :

Maximum PGA: 0.00

Information Sources:

Comments :

Population and Building Exposure

Population: 15,563,998

Building Exposure : ($ Millions)

Residential	1,522,274
Commercial	530,430
Other	413,475
Total	2,466,179

Counties : See Appendix

Major Metro Area :

Time of report: May 07, 2024 9:29 pm

HAZUS™

FEMA

RiskMAP
Increasing Resilience Together

Shelter Summary Report

May 07, 2024

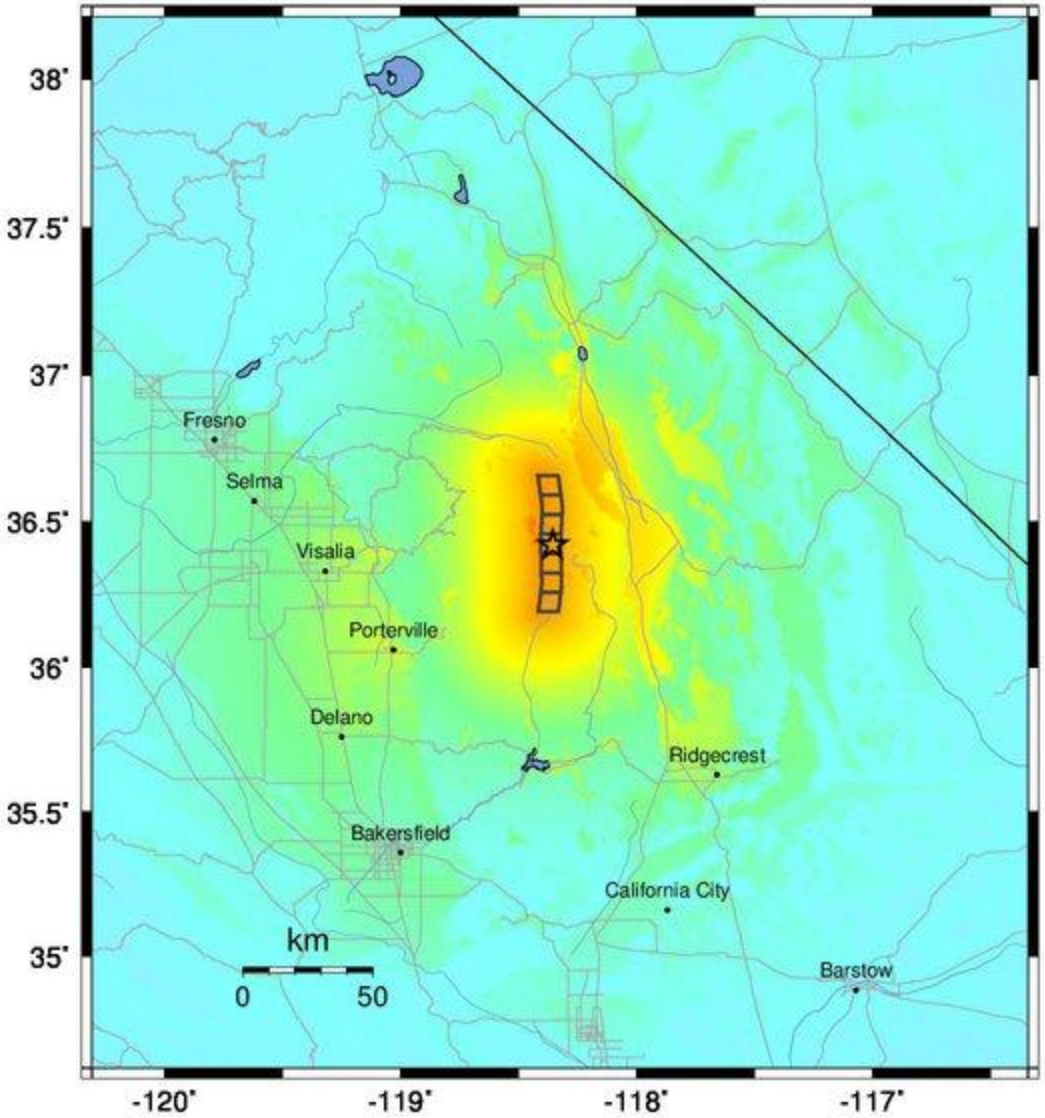
	# of Displaced Households	# of People Needing Short Term Shelter
California		
Fresno	0	0
Inyo	0	0
Kern	0	0
Kings	0	0
Los Angeles	0	0
Madera	0	0
Mariposa	0	0
Merced	0	0
Mono	0	0
San Bernardino	0	0
San Luis Obispo	0	0
Tulare	0	0
Tuolumne	0	0
Total	**0**	**0**
Region Total	**0**	**0**

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 Kern Canyon (North Kern) - Median ground motions Scenario

Scenario Date: May 16, 2017 08:32:03 AM MDT M 7.1 N36.42 W118.36 Depth: 9.3km



PLANNING SCENARIO ONLY -- Map Version 10 Processed 2017-05-16 08:13:29 PM MDT

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)