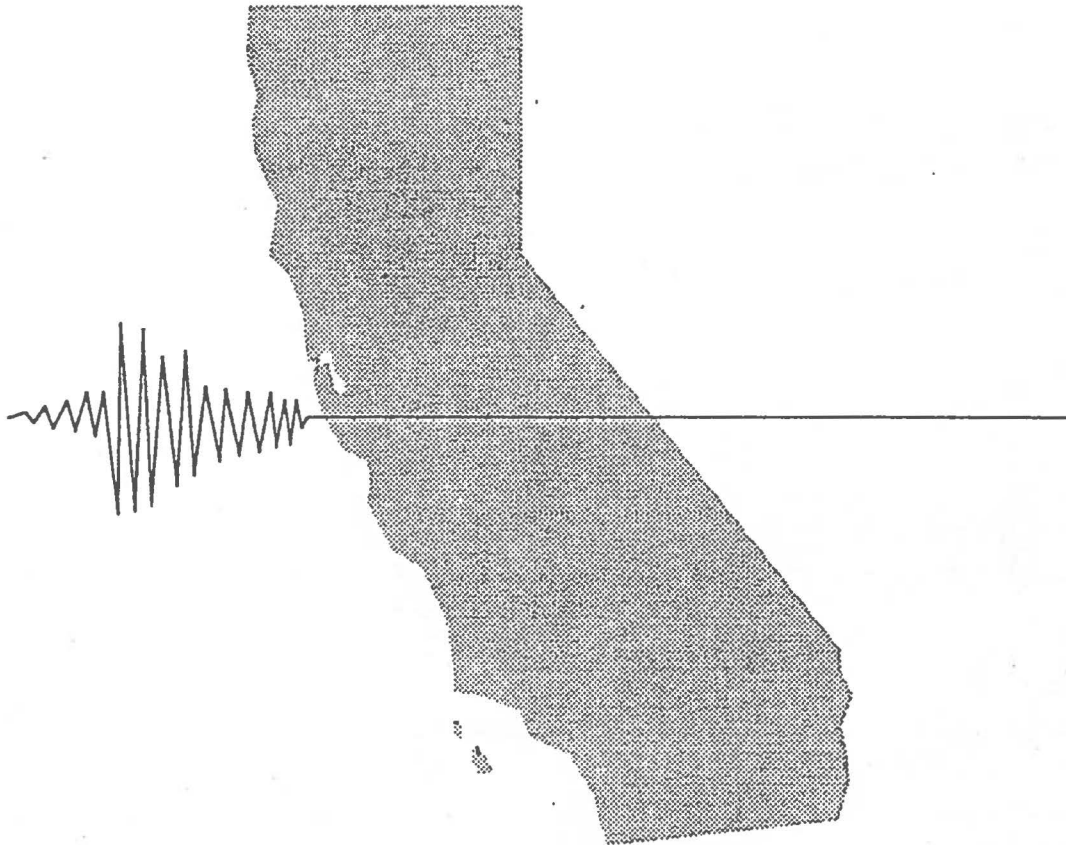


Senate Bill 1250

Seismic Safety Commission
State of California



Seismic Retrofit Cost
Estimates For
State Owned Buildings

January 1990

**Seismic Retrofit Cost Estimates
For
State Owned Buildings**

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Background

During the Assembly Ways and Means Committee meeting on November 3, 1989, the committee requested the Seismic Safety Commission to estimate the seismic retrofit cost required to reduce earthquake hazards in existing facilities that would be eligible for SB1250 bond money. The subject of the hearing at the time was Assembly Bill 17x (Cortese) which is the same as Senate Bills 13x and 1250 (Torres). Senate Bill 1250 is expected to be heard by the Assembly Ways and Means on January 24, 1990.

In response to your request we have worked with the University of California, the California State University System, the Department of General Services, and the Office of Emergency Services to develop the attached estimates. We have compiled this information into a single list which draws on existing information derived from the Commission report titled "Seismic Hazard Survey - State of California Buildings", SSC-604, April 1981, by Degenkolb and Associates and preliminary (and not always consistent) estimates by the four agencies. The inconsistencies between agencies are not critical at this stage since this information is preliminary.

The 1981 report surveyed 1350 University of California, California State University, and other state office buildings and listed building size, age and type of construction, number of occupants, and ranked the buildings according to a ratio that considered the cost and possible lessening of life loss. Those buildings with the highest ranking generally are in greatest need of further seismic hazards evaluation. They are not necessarily the only buildings that should be strengthened however, because many other factors, including the results of further hazards evaluation, disruption to occupants, and future plans for the buildings, will influence a building's priority for seismic retrofit.

Development of Cost Estimates

Cost estimates are based upon the following information provided by University of California, California State University, Office of the State Architect and the Office of Emergency Services to the Seismic Safety Commission:

1. The preliminary costs are for seismic retrofit only, and do not include other project costs such as fire and safety measures which are required in the buildings such as asbestos abatement, or occupant relocation costs and improvements. Costs for other health and safety hazard reduction can be comparable to seismic retrofit costs. For example, the University of California indicates that seismic costs represented an average of 38 percent of total costs of renovating several buildings. It is the intention of the author to limit the use of the bond moneys to seismic retrofit costs only, and obtain other funds, when needed, for the other costs.
2. Costs are for state buildings and portions of buildings supported by the General Fund. Buildings, or portions of buildings that are eligible for revenue bonds, are not included in this cost estimate.
3. Costs for state buildings with seismic retrofit projects completed or underway are not included in this estimate, since it is assumed other sources of funds have been committed in capital outlay plans.
4. Estimates for University of California buildings are based on the 1981 Degenkolb survey costs and are escalated to present day costs.
5. Estimates for California State University buildings include only the buildings ranked in the top third, or top 450 buildings, of the 1981 survey. CSU costs are based on the past history of seismic retrofit costs for CSU buildings

escalated to present day costs.

7. Estimates for state office buildings are indexed to July 1992 by the Office of the State Architect. Their estimate differentiates costs between pre- and post-1955 buildings. Only 200 of the 1350 buildings in the 1981 Degenkolb Report are state-owned, non-university buildings. The report did not include State Hospitals, National Guard facilities, State Park buildings, or State Prisons, and the bill's language allows for changes in retrofit priorities if other state buildings are found to be a greater hazard.
8. Estimates for local government essential services buildings by OES are approximate present-day costs.

Differences in the cost estimates provided by the individual state agencies involved are the results of their different estimating methods, however, these differences should be expected at this stage of project development. Estimates on individual buildings may vary by as much as fifty percent from these estimates once specific seismic retrofit projects are considered.

Conclusions

The estimates to improve seismic safety in public buildings give an indication of the scope of the problem. Based upon the information provided by University of California, California State University, Office of the State Architect and the Office of Emergency Services the combined data indicates that the bond funds could result in a substantial improvement in seismic safety for public buildings.

For example, \$300,000,000 in bond funds will pay for the seismic retrofit of approximately 60 to 75 state office buildings. Approximately 25 to 30 University of California buildings on 7 campuses, can be retrofitted for \$175,000,000. Approximately 60 to 70 California State University buildings on 18 campuses can be retrofitted with an additional \$175,000,000. Approximately 750 local government essential services buildings and facilities can be retrofitted with \$300,000,000.

The bond monies will cover about 72 percent of the state office buildings total seismic retrofit needs, 48 percent of the University of California's need, 31 percent of the California State University's need, and 75 percent of the local government's need. Additional funds will be needed after these funds are exhausted to complete the effort.

Draft Summary of Earthquake Hazard Survey
of State Office, UC and CSU Buildings

Estimated Seismic Retrofit Costs (Note a)

State Office Buildings Cost	\$419,204,456	
UC Buildings Cost	\$361,432,630	
CSU Buildings Cost	\$560,326,130	(Note b)
<u>Total Estimated Seismic Retrofit Cost</u>	<u>\$1,340,963,216</u>	(Note c)

Buildings with no Known Seismic Retrofit Progress	959
Buildings with Seismic Retrofits in Progress	24
Buildings with Seismic Retrofits Completed	8
Buildings Determined to have Lower Priority	19
<u>Total Buildings in Database</u>	<u>1010</u>

State Office Buildings with Assigned Seismic Cost.	90
UC Buildings with Assigned Seismic Costs	84
CSU Buildings with Assigned Seismic Costs	229
<u>Total Buildings with Assigned Seismic Costs</u>	<u>403</u>

Total Square Footage with Assigned Seismic Costs	29,694,638
Average Seismic Retrofit Cost per Square Foot	\$45.16

Notes:

- a) Based on survey data from the 1981 Degenkolb Survey, SSC Report No. 604 and recent cost estimates from OSA, UC, and CSU.
- b) Reflects seismic retrofit costs for the CSU buildings ranked in the top third of the 1981 Degenkolb Survey.
- c) Excludes those projects which are funded in the 1990-91 budget.

Draft Summary of Earthquake Hazard
Reduction Costs in Local Government
Essential Services Buildings
and Facilities

Estimating costs for local essential services facilities is difficult because no single survey exists which provides information about these facilities. The following information is based on a study of San Francisco's Fire Houses in 1988. For the fifty three fire houses studied, costs for seismic retrofit averaged \$63 per square foot for structural work and \$3.31 for equipment bracing. The average size of the fire houses in this study was 9648 square feet.

There are approximately 600 fire departments in the State's Seismic Hazard Zone 4. Assuming each fire department has an average of 5 buildings, there are approximately 3000 fire houses in high seismic risk areas.

Each county also has an emergency operations center (EOC) for a total of 58 EOC's statewide. The approximate number of local essential services buildings at risk statewide is then 3058.

If one third of these buildings are assumed to require seismic retrofit, which is consistent with assumptions about state buildings, approximately 1000 buildings may be eligible for the subject bond fund. At an assumed average building size of 8000 square feet, and at \$66 per square feet, the approximate scope of the need for seismic retrofit of local essential services buildings is \$528,000,000. This estimate does not include police facilities which are also eligible for SB1250 bond money.

APPENDIX A

DRAFT SUMMARY OF THE EARTHQUAKE HAZARD SURVEY
OF STATE OFFICE,
UNIVERSITY OF CALIFORNIA,
AND CALIFORNIA STATE UNIVERSITY
BUILDINGS

APPENDIX B

DRAFT SUMMARY OF EARTHQUAKE HAZARD REDUCTION NEEDS FOR LOCAL GOVERNMENT ESSENTIAL SERVICES BUILDINGS AND FACILITIES

Rank	Building Name & Address	Owner	Underway	Complete	Low Priority	Remarks	(Sq. Ft.)	Cost per SF	St. Offices	UC System	CSU System
1	Art Gallery (Old)	UCB			1	Occupancy Reduced	4,018				
2	Powell Library	UCLA	1			Preliminary Plans Underway	208,140				
3	Morris Dailey Auditor	SJSU			1	Strengthened in 1964	9,422				
4	Physical Science	SDSU		1		Strengthened in 1988	32,122				
5	South Hall	UCB		1		Strengthened in 1988	30,256				
6	Wheeler Hall	UCB	1			Strengthening in Progress	126,444				
7	Moore Hall	UCLA	1			Studies Underway	80,631	\$65.00		\$5,241,015	
8	East Commons	SDSU					47,143	\$35.00			\$1,650,005
9	DOC/2229 Grove St/Oakland	CAL		1		Demolished	14,286				
10	California	UCB	1			Studies Underway	57,280				
11	Undergraduate Science	UCSD	1			Preliminary Plans Underway	101,491				
12	SPN Soils and Plant Nut	UCR	1			Preliminary Plans Underway	10,377				
13	Ackerman Union	UCLA	1			Studies Underway	171,212				
14	GS/540 Van Ness Ave/SF	CAL				Modified and Strengthened in 1938	10,136	\$69.90	\$708,506		
15	Caltrans/703 B/Marysville	CAL					63,621	\$69.90	\$4,447,108		
16	Police Bldg	UCR					3,697				
17	Music Classrooms	SDSU					78,769	\$35.00			\$2,756,915
18	Rolfe Hall	UCLA	1			Studies Underway	77,619				
19	Haines Hall	UCLA	1			Studies Underway	136,000	\$65.00		\$8,840,000	
20	Founders Hall	HSU	1			Working Drwgs Underway	66,153				
21	Greek Theater	UCB					11,910	\$65.00		\$774,150	
22	Dramatic Arts	SDSU			1	Lower Ranking	62,507	\$35.00			\$2,187,745
23	Harmon Gym	UCB	1			Studies Underway	169,588	\$65.00		\$11,023,220	
24	Student Union	SJSU					135,000	\$35.00			\$4,725,000
25	Oviatt Library	CSUN			1	Lower Ranking	192,775	\$35.00			\$6,747,125
26	Caltrans/Higuer/San Luis	CAL					8,451	\$69.90	\$590,725		
27	Moss Landing Marine L	SJSU			1	Remodeled in 1982	11,583				
28	Royce Hall	UCLA	1			Studies Underway	218,343	\$65.00		\$14,192,295	
29	Hearst Gymnasium	UCB	1			Studies Underway - Lower Ranking	124,197				
30	Hearst Mining Bldg	UCB			1	Occupancy Reduced/Studies Underway	130,295	\$65.00		\$8,469,175	
31	N Wilcox Ave/Montebello	CAL					20,050	\$31.10	\$623,555		
32	SPN Soils and Plant Nut	UCR			1	Occupancy Reduced	24,167				
33	Aztec Center	SDSU					91,740	\$35.00			\$3,210,900
34	Jespersen Hall	CPSUS					7,400	\$35.00			\$259,000
35	Heron Hall	CPSUS					7,400	\$35.00			\$259,000
36	Kinsey Hall	UCLA	1			Studies Underway	129,568	\$65.00		\$8,421,920	
37	Fish&Game/Sacramento	CAL		1		Demolished	14,506	\$69.90	\$1,013,969		
38	2521 Channing Way	UCB					26,150				
39	Doe Library	UCB	1			Preliminary Plans Underway	424,543				
40	2220 Piedmont Ave	UCB					10,900				

Draft State Office, UC and CSU Buildings - Earthquake Hazard Survey

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Bldg Size (Sq. Ft.)	Retrofit Cost per SF	Estimated Funds Needed		
			Underway	Complete	Low Priority				St. Offices	UC System	CSU System
41	Women's PE	UCLA	1			Studies Underway	76,500	\$65.00		\$4,972,500	
42	Univ Student Union	CSULB			1	Lower Ranking?	108,340	\$35.00			\$3,791,900
43	Law Bldg	UCLA	1			Studies Underway	132,289				
44	A L Acker Gym	CSUC			1	Lower Ranking?	70,673	\$35.00			\$2,473,555
45	Performing Arts Centers	CSUC			1	Lower Ranking?	116,674	\$35.00			\$4,083,590
46	2251 College Ave	UCB					12,340				
47	Univ Student Union	CSULA				Slightly Lower Ranking	121,374	\$35.00			\$4,248,090
48	Stadium	CSUFR			1	Lower Ranking	22,032	\$35.00			\$771,120
49	Women's Gym	SDSU		1		Strengthened in 1989	44,858				
50	Humanities-Muir	UCSD					85,020				
51	Men's Gym	UCLA	1			Studies Underway	104,340	\$65.00		\$6,782,100	
52	Crawford Hall	UCI					57,437				
53	Clark Library	UCLA	1			Studies Underway	14,140	\$65.00		\$919,100	
54	Hum/Lang&Literature	SFSU	1			Studies Underway	126,917				
55	Field House East	UCSC					27,165	\$65.00		\$1,765,725	
56	Music	CSUN			1	Lower Ranking	73,208	\$35.00			\$2,562,280
57	Engineering	UCSB				Severely Cracked in 78 Quake	99,354				
58	Moffitt Library	UCB	1			Preliminary Plans Underway	122,000				
59	Chemistry	UCSB				Falling Hazards Identified	90,368	\$65.00		\$5,873,920	
60	Stevenson Academic	UCSC					19,965				
61	Speech-Drama Bldg	CSUFR			1	Lower Ranking	73,958	\$35.00			\$2,588,530
62	Broida Hall	UCSB					130,691				
63	Administration Bldg	UCI					101,022	\$65.00		\$6,566,430	
64	Olson Hall	UCB					55,872	\$65.00		\$3,631,680	
65	Administration	SJSU					38,750	\$35.00			\$1,356,250
66	Social Science	CSUFR					31,107	\$35.00			\$1,088,745
67	Life Science	SDSU		1		Strengthened in 1988	43,940				
68	Mathematical Sciences	UCLA	1			Studies Underway	76,100	\$65.00		\$4,946,500	
69	Cafeteria	CSUH		1		Strengthened in 1983	36,774				
70	Humanities-University	UCR					113,373	\$65.00		\$7,369,245	
71	Humanities Library	UCSD					112,674	\$65.00		\$7,323,810	
72	Chemistry	UCD					125,675				
73	Love Library	SDSU				Only Slightly Lower Ranking	310,000	\$35.00			\$10,850,000
74	School of Engineering	SDSU			1	Nonseismic Studies Underway	92,514	\$35.00			\$3,237,990
75	Gymnasium	UCSD					51,534	\$65.00		\$3,349,710	
76	DMV/595 Shwr/Mtn View	CAL					10,774	\$31.10	\$335,071		
77	Walker Engrg Bldg	UCD					44,415				
78	Campbell Lecture Hall	UCSB		1		Strengthened In 1975	14,509				
79	Cafeteria	CSCST					26,483	\$35.00			\$926,905
80	Gymnasium	CSUDH					65,752	\$35.00			\$2,301,320

Rank	Building Name & Address	Owner	Underway	Complete	Low Priority	Remarks	(Sq. Ft.)	Cost per SF	St. Offices	UC System	CSU System
81	Social Science	SDSU			1	Lower Ranking	102,000	\$35.00			\$3,570,000
82	Humanities Bldg	SDSU			1	Lower Ranking	86,470	\$35.00			\$3,026,450
83	Educ/Psych	CSUFR					40,611	\$35.00			\$1,421,385
84	Dorm A	CSCB					10,437	\$35.00			\$365,295
85	Dorm B	CSCB					10,437	\$35.00			\$365,295
86	Dorm C	CSCB					10,437	\$35.00			\$365,295
87	Dorm D	CSCB					10,437	\$35.00			\$365,295
88	Dorm E	CSCB					10,437	\$35.00			\$365,295
89	Dorm F	CSCB					10,437	\$35.00			\$365,295
90	H M Bell Memorial Uni	CSUC					52,468	\$35.00			\$1,836,380
91	JFKennedy Mem Library	CSULA			1	Minor Damage in Quake Lower ranked	347,287				
92	Physical Education	CSUN	1			Preliminary Plans Underway	113,036				
93	Dickson Art Ctr	UCLA	1			Studies Underway	146,885				
94	Dudley Morehead Hall	SJSU					134,819	\$35.00			\$4,718,665
95	Library	UCSB					209,610				
96	Butte Hall	CSUC					81,040	\$35.00			\$2,836,400
97	Industrial Arts Building	CSUFR			1	Lower Ranking	104,264	\$35.00			\$3,649,240
98	Davis	UCB					189,144				
99	AP Taylor Hall	CSUC					32,964	\$35.00			\$1,153,740
100	Aztec Shops Bookstore	SDSU			1	Lower Ranking	29,600	\$35.00			\$1,036,000
101	Franz Hall	UCLA					105,000	\$65.00		\$6,825,000	
102	Old Science	SJSU					72,483	\$35.00			\$2,536,905
103	Art-Homemaking Bldg	CSUFR					39,341	\$35.00			\$1,376,935
104	Mt Hamilton Observato	UCSC					21,867				
105	H F Langdon Eng Ctr	CSUS					58,047	\$35.00			\$2,031,645
106	Los Olivos Commons	CSPUP					28,210	\$35.00			\$987,350
107	Lewis Hall	UCB					58,512				
108	Student Union	CSUF					63,083	\$35.00			\$2,207,905
109	Teaching Labs	UCSD					22,197				
110	A&E Office	UCLA					11,837				
111	School of Business #1	CSULB					63,000	\$35.00			\$2,205,000
112	Extension	UCLA					97,709				
113	Everson Hall	UCD					47,622				
114	Music Studio/FAV	UCI					11,443	\$65.00		\$743,795	
115	Palmitas Hall	CSPUP					30,700	\$35.00			\$1,074,500
116	Cedritos Hall	CSPUP					30,700	\$35.00			\$1,074,500
117	University Commons	CSUFU					37,355	\$35.00			\$1,307,425
118	*Rehabilitation CTR	UCLA					123,778	\$65.00		\$8,045,570	
119	Cook House	UCSC					3,606				
120	Environmental Design	CSPUP					47,505	\$35.00			\$1,662,675

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Bldg Size (Sq. Ft.)	Retrofit Cost per SF	Estimated Funds Needed		
			Underway	Complete	Low Priority				St. Offices	UC System	CSU System
121	Cheadle Hall	UCSB					67,847	\$65.00		\$4,410,055	
122	Cafeteria	CSUN					45,451	\$35.00			\$1,590,785
123	Douglass Hall	CSUSA					22,700	\$35.00			\$794,500
124	Lecture Halls-Third C	UCSD					10,735				
125	Hardy Memorial Tower	SDSU					45,506	\$35.00			\$1,592,710
126	Humanities Hall	UCI					45,023	\$65.00		\$2,926,495	
127	Sculpture Studies/FAV	UCI					10,730	\$65.00		\$697,450	
128	Zura Hall	SDSU					128,000	\$35.00			\$4,480,000
129	South Library	CSUN					90,619	\$35.00			\$3,171,665
130	Jenkin's Hall	HSU					19,560	\$35.00			\$684,600
131	Humanities Office Bld	UCI					40,933	\$65.00		\$2,660,645	
132	Salazar Hall/Simpson	CSULA					176,883	\$35.00			\$6,190,905
133	Commons Cafeteria	SSU					18,500	\$35.00			\$647,500
134	Applied Physics & Mat	UCSD					187,231				
135	Wurster Hall	UCB					215,580				
136	Medical Lecture Hall	UCI					8,000				
137	Engineering	CSUSA					66,391	\$35.00			\$2,323,685
138	Biology Bldg	UCSD					76,852	\$65.00		\$4,995,380	
139	Student Serv/Adm Bldg	CSULB					121,942	\$35.00			\$4,267,970
140	Health Center	CSULA					33,410	\$35.00			\$1,169,350
141	Meiklejohn Hall	CSUH					82,846	\$35.00			\$2,899,610
142	Univ Gym East	CSULB					59,280	\$35.00			\$2,074,800
143	Psychology Linguistic	UCSD					103,269				
144	Physical Sciences Lec	UCB					14,246				
145	Natural Science 2	UCSC					86,372				
146	Sierra Hall	CSUN					310,597	\$35.00			\$10,870,895
147	Borrows Hall	UCB					191,957				
148	Fine Arts #2/Ceramics	CSULB					2,074	\$35.00			\$72,590
149	Bunche	UCLA					207,000	\$65.00		\$13,455,000	
150	*School of Dentistry	UCLA					195,428	\$65.00		\$12,702,820	
151	University Hall	UCB					150,796	\$65.00		\$9,801,740	
152	Library	CSUFU					227,388	\$35.00			\$7,958,580
153	Education Classrooms	CSUFU					96,492	\$35.00			\$3,377,220
154	Evans Hall	UCB					276,206				
155	Drama	UCD					46,550				
156	West Commons	SDSU					24,850	\$35.00			\$869,750
157	Art Building	SDSU					79,498	\$35.00			\$2,782,430
158	Math/History	CSUSA					30,880	\$35.00			\$1,080,800
159	Phelps Hall	UCSB					99,000	\$65.00		\$6,435,000	
160	Social Science	CSUSA					30,550	\$35.00			\$1,069,250

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	(Sq. Ft.)	Cost per SF	St. Offices	UC System	CSU System
			Underway	Complete	Low Priority						
161	Chemistry/Geology	SDSU					110,263	\$35.00			\$3,859,205
162	*Jules Stein Eye Inst	UCLA					89,814	\$65.00		\$5,837,910	
163	Music/Speech Drama	CSULA					79,100	\$35.00			\$2,768,500
164	Physical Education	CSUH					97,987	\$35.00			\$3,429,545
165	Life Science Addition	SDSU					137,000	\$35.00			\$4,795,000
166	Art & Education Bldg	CSUH					116,048	\$35.00			\$4,061,680
167	Shasta Hall	CSUC					36,530	\$35.00			\$1,278,550
168	Lassen Hall	CSUC					36,530	\$35.00			\$1,278,550
169	Humanities & Fine Art	CSUDH					70,331	\$35.00			\$2,461,585
170	Science Lecture Hall	UCI					11,452	\$65.00		\$744,380	
171	RFS 112	UCB					16,816				
172	Joe West Hall	SJSU					120,000	\$35.00			\$4,200,000
173	*OB GYN 16M	UCI					24,726				
174	Steinhaus Hall	UCI					107,521				
175	VMTH Animal Hospital	UCD					82,944				
176	Language Arts	CSULB					26,773	\$35.00			\$937,055
177	Old Scripps Bldg	UCSD					6,980	\$65.00		\$453,700	
178	Thimann Lab	UCSC					79,496				
179	Modoc Hall	CSUC					35,225	\$35.00			\$1,232,875
180	Central Heating & Con	SJSU					17,200	\$35.00			\$602,000
181	Liberal Arts #1	CSULB					38,593	\$35.00			\$1,350,755
182	Psychology	CSUSA					66,984	\$35.00			\$2,344,440
183	Library South	SJSU					40,994	\$35.00			\$1,434,790
184	Fine Arts	CSULA					86,880	\$35.00			\$3,040,800
185	Business Bldg	CSUFR					40,611	\$35.00			\$1,421,385
186	Science Bldg I	CSCB					40,309	\$35.00			\$1,410,815
187	Baker Hall Dormitory	CSUFR					39,102	\$35.00			\$1,368,570
188	Graves Hall Dorm	CSUFR					39,102	\$35.00			\$1,368,570
189	Homan Hall Dorm	CSUFR					39,102	\$35.00			\$1,368,570
190	Physical Science	CSUC					82,624	\$35.00			\$2,891,840
191	Plumas Hall	CSUC					64,015	\$35.00			\$2,240,525
192	Social & Behavioral Sci	CSUDH					81,000	\$35.00			\$2,835,000
193	Library	SFSU					257,879	\$35.00			\$9,025,765
194	Science Bldg II	CSCB					42,600	\$35.00			\$1,491,000
195	Administration	CSUN					129,435	\$35.00			\$4,530,225
196	Cafeteria	CSULA					31,728	\$35.00			\$1,110,480
197	Corporation Addition	SDSU					13,480	\$35.00			\$471,800
198	A.A.&S. Classrooms	CSULB					7,092	\$35.00			\$248,220
199	Campbell Hall	UCLA					55,447				
200	Speech-Drama	CSUN					82,712	\$35.00			\$2,894,920

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Bldg Size (Sq. Ft.)	Retrofit Cost per SF	Estimated Funds Needed		
			Underway	Complete	Low Priority				St. Offices	UC System	CSU System
201	Sproul Hall	UCD					45,140	\$65.00		\$2,934,100	
202	Marine Biology Bldg	UCSD					83,343				
203	CalTrans/20-50 Higue	CAL					9,145	\$69.90	\$639,236		
204	Earth Sciences	UCB					124,950	\$65.00		\$8,121,750	
205	Fine Arts	CSUN					116,832	\$35.00			\$4,089,120
206	North Hall	UCSB					32,500	\$65.00		\$2,112,500	
207	Science	CSUN					169,659	\$35.00			\$5,938,065
208	Commons	CSCSB					31,812	\$35.00			\$1,113,420
209	Le Conte Hall	UCB					148,032				
210	Knudsen Hall	UCLA					148,000	\$65.00		\$9,620,000	
211	Men's Gym Addition	SJSU					13,860	\$35.00			\$485,100
212	Central Univ Library	UCSD					157,000				
213	Stephens	UCB					56,602				
214	Biological Sciences	CSULA					125,454	\$35.00			\$4,390,890
215	Physical Sciences Lib	UCD					32,657				
216	Girvetz Hall	UCSB					46,306				
217	Humanities Office Bld	CSULB					40,675	\$35.00			\$1,423,625
218	CHP/2611 26th St	CAL					62,379	\$31.10	\$1,939,987		
219	Food Processing	CPSUS					31,260	\$35.00			\$1,094,100
220	Bodega Marine Lab	UCB					26,053				
221	Haviland Hall	UCB					51,020				
222	Counseling Center	CSULA					10,000	\$35.00			\$350,000
223	Science Bldg (New)	CSUFR					126,866	\$35.00			\$4,440,310
224	English	CPSUS					15,600	\$35.00			\$546,000
225	Multimedia Building	CSULB					6,400	\$35.00			\$224,000
226	Ellison Hall	UCSB					30,000	\$65.00		\$1,950,000	
227	Biochemistry	UCB					87,216	\$65.00		\$5,669,040	
228	Art Studio/FAV	UCI					10,406	\$65.00		\$676,390	
229	Warren Hall	UCLA					92,564				
230	Library Bldg	CSCST					61,057	\$35.00			\$2,136,995
231	Basic Science Bldg	UCSD					320,205				
232	Science Building #4	CSULB					47,498	\$35.00			\$1,662,430
233	Administration	UCR					46,000				
234	Klieber Hall	UCD					5,011				
235	Fine Arts Adm	UCI					8,608				
236	Engineering #1	CSULB					87,000	\$35.00			\$3,045,000
237	Fine Arts #4	CSULB					55,486	\$35.00			\$1,942,010
238	Commons	UCI					26,410				
239	Hepner Hall	SDSU					31,859	\$35.00			\$1,115,065
240	Buchanan	UCSB					26,935				

Rank	Building Name & Address	Owner	Integration Program			Remarks	(Sq. Ft.)	Cost per SF	St. Offices	UC System	CSU System
			Underway	Complete	Low Priority						
241	Boelter	UCLA					379,000				
242	Minor Hall	UCB					22,110				
243	Library	UCI					150,883				
244	Ritter Hall	UCSD					135,115	\$65.00		\$8,782,475	
245	Erhart Agriculture	CPSUS					55,202	\$35.00			\$1,932,070
246	South Hall	UCSB					63,000	\$65.00		\$4,095,000	
247	Journalism East	SJSU					17,478	\$35.00			\$611,730
248	Architecture & Engine	UCB					5,168				
249	Social Sciences Hall	UCI					3,728				
250	Kerr Hall	UCSC					77,970				
251	Urey Hall	UCSD					171,189				
252	Library	MSU					157,043	\$35.00			\$5,496,505
253	Library East	CSULB					91,850	\$35.00			\$3,214,750
254	Library	UCR					52,658	\$65.00		\$3,422,770	
255	Research Library	UCLA					296,400				
256	Science (North & South)	CSUH					203,648	\$35.00			\$7,127,680
257	Industrial Studies	SJSU					11,310	\$35.00			\$395,850
258	Keats Bldg	CSUFR					1,738	\$35.00			\$60,830
259	Hildebrand Hall	UCB					133,654				
260	North Education	SDSU					36,239	\$35.00			\$1,268,365
261	Liberal Art #4	CSULB					11,550	\$35.00			\$404,250
262	Library	CSUFR					217,971	\$35.00			\$7,628,985
263	Business Admin & Educ	CPSUS					46,810	\$35.00			\$1,638,350
264	Brain Research	UCLA					87,706				
265	Psychology	SFSU					46,061	\$35.00			\$1,612,135
266	Faculty Offices Bldg	CPSUS					37,020	\$35.00			\$1,295,700
267	Architecture	UCLA					70,819				
268	VMTH Cattle Surgery	UCD					13,824				
269	Primate Center Adm	UCD					10,010				
270	Phys Educ Bldg	UCR					63,096				
271	Dining Hall	SJSU					20,000	\$35.00			\$700,000
272	Sverdrup Hall	UCSD					2,200	\$65.00		\$143,000	
273	School of Public Health	UCLA					141,835	\$65.00		\$9,219,275	
274	Physics	UCR					98,654	\$65.00		\$6,412,510	
275	Maya Hall	SDSU					39,000	\$35.00			\$1,365,000
276	Olmecca Hall	SDSU					39,000	\$35.00			\$1,365,000
277	Tarastec Hall	SDSU					39,000	\$35.00			\$1,365,000
278	Toltec Hall	SDSU					39,000	\$35.00			\$1,365,000
279	Zapotec Hall	SDSU					39,000	\$35.00			\$1,365,000
280	Corporation Yd	SSU					25,900	\$35.00			\$906,500

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Bldg Size (Sq. Ft.)	Retrofit Cost per SF	Estimated Funds Needed		
			Underway	Complete	Low Priority				St. Offices	UC System	CSU System
281	Dwinelle Hall	UCB					227,640				
282	Computer Science	CPSUS					44,525	\$35.00			\$1,558,375
283	Mark Hall	UCD					91,720				
284	Joyal Adm Bldg	CSUFR					60,045	\$35.00			\$2,101,575
285	Space Sciences Bldg	UCB					44,316				
286	Math & Home Economics	CPSUS					43,297	\$35.00			\$1,515,395
287	Mayer Hall	UCSD					500	\$65.00		\$32,500	
288	DMV/303 E Palmer Ave	CAL					10,376	\$69.90	\$725,282		
289	Business Admin & Math	SDSU					145,965	\$35.00			\$5,108,775
290	Primate Center Lab	UCD					23,864				
291	Business Bldg Complex	SJSU					80,505	\$35.00			\$2,817,675
292	Bookstore-College Uni	CSCST					10,296	\$35.00			\$360,360
293	McHenry Library	UCSC					100,445				
294	Environmental Toxocol	UCD					19,454	\$65.00		\$1,264,510	
295	Business & Social Sci	SFSU					50,119	\$35.00			\$1,754,165
296	*Reed Research Ctr	UCLA					73,633				
297	Cafeteria	CSULB					35,305	\$35.00			\$1,235,675
298	Engineering Building	HSU					17,413	\$35.00			\$609,455
299	Chilling Plant	SDSU					5,000	\$35.00			\$175,000
300	Glannini Hall	UCB					68,891				
301	Gertz Hall	UCB					29,856				
302	Duncan Hall Phase I	SJSU					190,000	\$35.00			\$6,650,000
303	Duncan Hall Phase II	SJSU					144,320	\$35.00			\$5,051,200
304	Chemical Research	UCSD					52,030				
305	CHP/455 8th St	CAL					13,479	\$31.10	\$419,197		
306	Slichter Hall/Space S	UCLA					65,299	\$65.00		\$4,244,435	
307	Family Stud & cons Sci	SDSU					15,437	\$35.00			\$540,295
308	Performing Arts Conce	UCSC					4,789				
309	Moses Hall	UCB					40,835				
310	Physical Education	SDSU					14,560	\$35.00			\$509,600
311	Student Union	SFSU					140,000	\$35.00			\$4,900,000
312	Wellman Hall	UCD					47,238				
313	*Marion Davies Childr	UCLA					67,848				
314	Cowell Academic Bldg	UCSC					9,150				
315	University Student Un	CSUN					97,097	\$35.00			\$3,398,395
316	Science North	CPSUS					43,000	\$35.00			\$1,505,000
317	Martin L King Jr Hall	CSULA					302,284	\$35.00			\$10,579,940
318	Biology 2	UCSB					129,737				
319	Zellerbach Auditorium	UCB					153,118				
320	Corp-Boiler-Shop	SDSU					9,012	\$35.00			\$315,420

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	(Sq. Ft.)	Cost per SF	St. Offices	UC System	CSU System
			Underway	Complete	Low Priority						
321	Life Science Bldg	UCB					373,949				
322	*Student Union	UCB					105,630				
323	CTR for Regional & Co	CSUC					5,875	\$35.00			\$205,625
324	Draper Hall	CSUSA					38,212	\$35.00			\$1,337,420
325	Crocker Nuclear Lab	UCD					24,029				
326	Jenkins Hall	CSUSA					38,212	\$35.00			\$1,337,420
327	Foley Hall	CSUSA					38,212	\$35.00			\$1,337,420
328	Life Sciences Bldg	UCR					147,872				
329	*U C Clinics	UCSF					582,380				
330	Music	UCSB					78,034				
331	Classroom Bldg	CSCST					73,220	\$35.00			\$2,562,700
332	Fine Arts #1	CSULB					15,504	\$35.00			\$542,640
333	Memorial Activities	UCLA					23,327				
334	Creative Arts	SFSU					150,940	\$35.00			\$5,282,900
335	Veilmeyer Hall	UCD					26,845	\$65.00		\$1,744,925	
336	Education (Sweeney Hall)	SJSU					103,082	\$35.00			\$3,607,870
337	Liberal Arts #2	CSULB					11,464	\$35.00			\$401,240
338	Educational Resources	CSUDH					152,006	\$35.00			\$5,320,210
339	Morrison Music Bldg	UCB					40,706				\$0
340	Soc Sci/Public Affair	CSULB					57,951	\$35.00			\$2,028,285
341	Education	SFSU					91,862	\$35.00			\$3,215,170
342	Physics	SDSU					46,812	\$35.00			\$1,638,420
343	Liberal Arts #3	CSULB					11,800	\$35.00			\$413,000
344	Faculty Office #2	CSULB					10,296	\$35.00			\$360,360
345	Fisher Hall	CPSUS					71,896	\$35.00			\$2,516,360
346	Residence Dining Hall	SFSU					39,766	\$35.00			\$1,391,810
347	Verducci Hall	SFSU					139,062	\$35.00			\$4,867,170
348	Vaughan Hall	UCSD					14,410				
349	Old Library Addition	SDSU					82,800	\$35.00			\$2,898,000
350	Bainer Hall Engineeri	UCD					168,999				
351	Business Bldg	CSPUP					29,684	\$35.00			\$1,038,940
352	Dance-Studio/Fav	UCI					12,747				
353	Webber Hall East	UCR					105,244				
354	University Center	CSUFU					69,387	\$35.00			\$2,428,545
355	School of Nursing	UCSF					84,533				
356	Geology	UCR					100,850	\$65.00		\$6,555,250	
357	South Parking Facility	SJSU					621,963	\$35.00			\$21,768,705
358	Medical Student Ctr	UCI					4,800				
359	Merced Hall	SFSU					79,778	\$35.00			\$2,792,230
360	Dodd Hall	UCLA					77,944				

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Bldg Size (Sq. Ft.)	Retrofit Cost per SF	Estimated Funds Needed		
			Underway	Complete	Low Priority				St. Offices	UC System	CSU System
361	Commons Bldg	CSCB					13,769	\$35.00			\$481,915
362	Central Plant	UCI					24,951				
363	Library	CSCSB					167,816	\$35.00			\$5,873,560
364	Mary Ward Hall	SFSU					79,778	\$35.00			\$2,792,230
365	Science I Addition	SJSU					65,140	\$35.00			\$2,279,900
366	Cafeteria	CSUFR					19,754	\$35.00			\$691,390
367	Science Bldg	CSPUP					72,230	\$35.00			\$2,528,050
368	University Ctr I	UCI					42,000				
369	DMV/14920 Van Owen St	CAL					20,300	\$31.10	\$631,330		
370	Batchelor Hall	UCR					109,462				
371	Air Conditioning	CPSUS					23,300	\$35.00			\$815,500
372	College 5 Academic	UCSC					24,317				
373	North Parking Facility	SJSU					689,063	\$35.00			\$24,117,205
374	Insectory Bldg	UCR					8,783	\$65.00		\$570,895	
375	Electrical Engr	CSPUP					137,906	\$35.00			\$4,826,710
376	Boalt Hall	UCB					183,365				
377	Allen Hall	SJSU					38,332	\$35.00			\$1,341,620
378	Hoover Hall	SJSU					38,332	\$35.00			\$1,341,620
379	Markham Hall	SJSU					38,332	\$35.00			\$1,341,620
380	Moulder Hall	SJSU					38,332	\$35.00			\$1,341,620
381	Royce Hall	SJSU					38,332	\$35.00			\$1,341,620
382	Washburn Hall	SJSU					38,332	\$35.00			\$1,341,620
383	Sutter Hall	CSUSA					40,102	\$35.00			\$1,403,570
384	Central Services	UCSC					30,453				
385	Library West	CSULB					200,846	\$35.00			\$7,029,610
386	Cal Poly Theater	CPSUS					17,050	\$35.00			\$596,750
387	Science	SFSU					117,913	\$35.00			\$4,126,955
388	Durant Hall	UCB					23,735				
389	McLaughlin Hall	UCB					49,388				
390	Sierra Hall	CSUSA					41,662	\$35.00			\$1,458,170
391	Mulford Hall	UCB					75,488				
392	Redwood Hall	HSU					40,288	\$35.00			\$1,410,080
393	Sunset Hall	HSU					40,288	\$35.00			\$1,410,080
394	DMV/3500 S Hope St	CAL					96,057	\$69.90	\$6,714,384		
395	Bechtel Engineering C	UCB					55,000				
396	AG Classroom Bldg	CSPUP					43,155	\$35.00			\$1,510,425
397	Robinson Hall	CSUH					13,060	\$35.00			\$457,100
398	U C Hospital	UCSF					146,853	\$65.00		\$9,545,445	
399	Women's Gym	CSUFR					44,666	\$35.00			\$1,563,310
400	Little Theatre	SDSU					7,971	\$35.00			\$278,985

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Prog Cost (Sq. Ft.)	Total Cost per SF	St. Offices	UC System	CSU System
			Underway	Complete	Low Priority						
401	Music-Speech	SDSU					39,152	\$35.00			\$1,370,320
402	Schoenberg Hall/Music	UCLA					80,257				
403	Humanities & Social Sci	CSUFU					147,047	\$35.00			\$5,146,645
404	Tolman Hall	UCB					236,242				
405	Student Health Serv	SDSU					27,090	\$35.00			\$948,150
406	Faculty Office	SJSU					16,720	\$35.00			\$585,200
407	Noble Hall	UCSB					43,532				
408	Engineering West	CPSUS					132,844	\$35.00			\$4,649,540
409	Engineering #2	CSULB					19,040	\$35.00			\$666,400
410	Gilman Hall	UCB					43,689				
411	Arts Bldg	CSPUP					76,542	\$35.00			\$2,678,970
412	Old Art Building	SDSU					37,483	\$35.00			\$1,311,905
413	Moyan Hall	UCB					56,886				
414	Entomology Annex Inse	UCR					16,664	\$65.00		\$1,083,160	
415	Social Sciences Lab B	UCI					46,797				
416	Arch & Environ Design	CPSUS					70,218	\$35.00			\$2,457,630
417	Warren Hall	UCB					78,526				
418	Fernwald School (Univ	UCLA					10,938				
419	Etcheverry Hall	UCB					199,900				
420	Medical Research Bldg	UCSF					16,292	\$65.00		\$1,058,980	
421	Men's East Dorm	CSUFR					17,773	\$35.00			\$622,055
422	Kroeber Hall	UCB					117,814				
423	Resident Cafeteria	CSUF ASSOC					44,379	\$35.00			\$1,553,265
424	DMV/5300 Claremont	CAL					38,143	\$31.10	\$1,186,247		
425	Physics-Astronomy	SDSU					28,820	\$35.00			\$1,008,700
426	Physical Education	CSUFU					134,770	\$35.00			\$4,716,950
427	Cypress Hall	HSU					50,253	\$35.00			\$1,758,855
428	J A McPhee Univ Union	CPSUS					106,000	\$35.00			\$3,710,000
429	Graphics Arts	CPSUS					65,020	\$35.00			\$2,275,700
430	Women's Gym Annex	SDSU					8,100	\$35.00			\$283,500
431	Woodhouse Lab	UCSB					10,705				
432	Visual Arts Center Ad	CSUFU					33,388	\$35.00			\$1,168,580
433	Old Tax Bldg/1025 P S	CAL					153,129	\$69.90	\$10,703,717		
434	Latimer Hall	UCB					174,820				
435	Los Alamitos Hall	CSULB					38,192	\$35.00			\$1,336,720
436	Los Cerritos Hall	CSULB					38,192	\$35.00			\$1,336,720
437	Science Building #1	CSULB					84,169	\$35.00			\$2,945,915
438	*George C Edwards Fie	UCB					77,500				
439	Psychology	UCSB					48,186				
440	Education 2	CSULB					20,853	\$35.00			\$729,855

Draft State Office, UC and CSU Buildings - Earthquake Hazard Survey

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Bldg Size (Sq. Ft.)	Retrofit Cost per SF	Estimated Funds Needed		
			Underway	Complete	Low Priority				St. Offices	UC System	CSU System
441	Health	SJSU					36,708	\$35.00			\$1,284,780
442	Lawrence Hall of Scie	UCB					128,540				
443	*Cancer Research	UCLA					19,712				
444	A.A. & S. Offices	CSULB					10,930	\$35.00			\$382,550
445	Wickson hall	UCD					116,760				
446	Cory Hall	UCB					165,222				
447	Langsdorf Hall	CSUFU					139,830	\$35.00			\$4,894,050
448	Psychology	CSULB					85,147	\$35.00			\$2,980,145
449	DMV/1377 Fell St	CAL					35,834	\$31.10	\$1,114,437		
450	Music Bldg	CSUFR					29,280	\$35.00			\$1,024,800
451	Physical Education	CPSUS					68,848				
452	Campus Service Bldg 2	UCLA					17,833				
453	Entomology	UCR					17,345	\$65.00		\$1,127,425	
454	Science Building #2	CSULB					55,593				
455	Administration	SDSU					52,096				
456	Donner Lab	UCB					46,950				
457	Physical Science	SFSU					134,095				
458	Univ Elem School	UCLA					58,244				
459	Music Addition	SJSU					26,339				
460	Music	SJSU					36,465				
461	Glenn Hall	CSUC					40,928				
462	Medical Science Bldg	UCD					16,401				
463	Bookstore	CSUF ASSOC					26,017				
464	EDD/745 Franklin St	CAL					73,524	\$69.90	\$5,139,328		
465	Jolly Giant Commons	HSU					50,513				
466	Administration	CSULA					123,933				
467	Men's Gym & Rotc	CSUFR					85,679				
468	Roessler Hall	UCD					21,218				
469	Mandeville	UCSD					112,645				
470	Letters and Science	CSUFU					311,090				
471	School of Business #2	CSULB					26,000				
472	Education	CSUSA					59,488				
473	Agricultural Instruct	CSUFR					31,201				
474	Dorothy Donahoe Hall	CSCB					55,836				
475	SPN Soils & Plant Nut	UCR					12,681				
476	Concert Hall/Fav	UCI					8,631				
477	Robertson Gym	UCSB					71,449	\$65.00		\$4,644,185	
478	Botany	UCLA					35,698				
479	Marine Lab	UCSB					10,588				
480	Speech & Drama Addi	SJSU					71,213				

Rank	Building Name & Address	Owner	Underway	Complete	Low Priority	Remarks	(Sq. Ft.)	Cost per SF	St. Offices	UC System	CSU System
481	Nelson Hall West	HSU					12,414				
482	Murphy	UCLA					213,750				
483	Stanley/Molecular Bio	UCB					66,477				
484	Hoaglund Hall	UCD					52,140				
485	University Arts Ctr	UCB					102,794				
486	Art	SJSU					85,315				
487	Encinitas Hall	CSPUP					37,416				
488	Montecito Hall	CSPUP					37,416				
489	Alamitos Hall	CSPUP					37,416				
490	Aliso Hall	CSPUP					37,416				
491	Pauley Pavillion	UCLA					173,740				
492	Hilgard Hall	UCB					77,055				
493	Music Building	CSULB					23,600				
494	C R Laxson Auditorium	CSUC					27,092				
495	Geological Sciences	UCSB					43,582				
496	Watkins Hall/Social S	UCR					61,813				
497	Women's North Dorm	CSUFR					27,821				
498	Nuclear Reactor	UCLA					8,494				
499	MacGowan	UCLA					88,487				
500	Hesse Hall	UCLA					49,685				
501	Medical Teaching Faci	UCSD					92,371				
502	Shields Library	UCD					209,722				
503	Industrial Arts #2	CSULB					24,300				
504	Snidecor Hall	UCSB					51,622	\$65.00		\$3,355,430	
505	Birge Hall	UCB					97,618				
506	Women's East Dorm	CSUFR					28,997				
507	King Hall	UCD					89,674				
508	Animal Science	UCD					54,102				
509	CalTrans/120 S Spring	CAL					323,774	\$69.90	\$22,631,803		
510	Robert Kennedy Librar	CPSUS					159,541				
511	Experimental Aquarium	UCSD					7,295	\$65.00		\$474,175	
512	University Center	HSU					76,419				
513	Slemen's Hall	HSU					42,472				
514	CalTrans/247 W 3rd St	CAL					105,701	\$69.90	\$7,388,500		
515	Science	CPSUS					91,900				
516	Visual Arts Center	CSUFU					74,111				
517	Sproul	UCR					75,879				
518	Vesta Holt Hall	CSUC					129,052				
519	Student Health Center	CSUDH					20,046				
520	Briggs Hall Biologica	UCD					195,005				

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Bldg Size (Sq. Ft.)	Retrofit Cost per SF	Estimated Funds Needed		
			Underway	Complete	Low Priority				St. Offices	UC System	CSU System
521	CalTrans/150 Oak St	CAL				Minor Damage in 10/17/89 Earthquake	163,930	\$69.90	\$11,458,707		
522	Administration Bldg	CSPUP					82,012				
523	Nat Res Sci Bldg	HSU					34,300				
524	J C Ayres Hall	CSUC					42,499				
525	CalTrans/1656 Union S	CAL					64,355	\$69.90	\$4,498,415		
526	Home Economics Rehabi	SJSU					34,241				
527	Aero Engineering	CSPUP					53,845				
528	Business Bldg Complex	SJSU					53,116				
529	Physical Education	CSULA					109,618				
530	Cowell Faculty Wing	UCSC					3,920				
531	University Tower Apar	CSUN					146,724				
532	Peterson Gym	SDSU					77,874				
533	Campbell	UCB					63,719				
534	Univ Dining Complex	CPSUS					57,321				
535	Science Building #3	CSULB					110,232				
536	Music/Business	CSUH					83,494				
537	Arts & Industry	SFSU					81,766				
538	Cowell Student Health	UCSC					23,564				
539	Studio Theatre	CSULB					49,236				
540	Minor Hall Addition	UCB					55,516				
541	School of Dentistry	UCSF					128,403				
542	Physical Science	CSCSB					51,450				
543	Franciscan	SFSU					13,680				
544	W G Young Hall	UCLA					293,979				
545	Performing Arts Theat	UCSC					30,872				
546	Initial Buildings	CSUDH					78,194				
547	Industrial Technology	CSULB					67,143				
548	Applied Science	UCSC					157,806				
549	EDD/297 W Hedding St	CAL				Earthquake Damage 10/17/89	38,559	\$31.10	\$1,199,185		
550	DMV/2570 24th St	CAL					265,279	\$69.90	\$18,543,002		
551	Media Bldg	UCSD					36,132				
552	University Theatre	CSULB					17,652				
553	CalTrans/4075 Taylor	CAL					141,673	\$69.90	\$9,902,943		
554	455 Golden Gate	CAL					362,874	\$31.10	\$11,285,381		
555	EDD/1313 Pine Ave	CAL					44,643	\$69.90	\$3,120,546		
556	Learning Activities R	CSUC					257,181				
557	Engineering	CSUFU					71,946				
558	Davidson Music Center	CPSUS					29,390				
559	Medical Science Bldg	UCD					59,584				
560	Tower Hall	SJSU					13,096				

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Prog Size (Sq. Ft.)	Cost per SF	St. Offices	UC System	CSU System
			Underway	Complete	Low Priority						
561	EDD/346 Front St/Salinas	CAL				Minor Damage 10/17/89 Earthquake	16,334	\$69.90	\$1,141,747		
562	Natatorium	UCSD					11,750				
563	*Clinical Science	UCSF					107,647				
564	Univ Gym West	CSULB					99,106				
565	North Gate Hall	UCB					22,377				
566	Library North	SJSU					121,069				
567	Science Bldg (Old)	CSUFR					122,652				
568	Engineering	UCLA					118,707				
569	O'Brien Hall	UCB					34,880				
570	Reserve Bookroom	SJSU					13,000				
571	*Laundry Storehouse	UCSF					40,662				
572	Science Complex	HSU					104,670				
573	Engineering-Industria	CSULA					189,986				
574	EDD/1207 E Green St	CAL					21,086	\$31.10	\$655,775		
575	Walter F. Dexter Bldg	CPSUS					110,410				
576	Monterey Hall	CSUN					40,328				
577	Journalism West	SJSU					20,542				
578	Young Hall	UCD					87,134				
579	EDD/1924 Q	CAL					29,316	\$69.90	\$2,049,188		
580	Statistics & Computer	UCR					42,096				
581	EDD/1440 Marin	CAL					13,603	\$31.10	\$423,053		
582	Industrial Arts #1	CSULB					44,768				
583	Theatre	CSULA					47,800				
584	Shop B/Physical Plant	UCLA					28,320				
585	Audio-Visual Addition	SJSU					12,794				
586	Parking Structure	SDSU					594,933				
587	Physiological Research	UCSD					19,653				
588	Gov/Pln/Res/1400 10th	CAL					27,571	\$69.90	\$1,927,213		
589	Sather Tower	UCB					11,664				
590	Bookstore	CSUSA					17,550				
591	Student Health Servic	SFSU					22,213				
592	Administration	SFSU					168,451				
593	Justice/Narcotics	CAL					12,250	\$31.10	\$380,975		
594	Trinity Hall	CSUC					20,704				
595	Boiler PLant	CSCST					9,900				
596	Belltower Carillon to	UCR					4,774	\$65.00		\$310,310	
597	CHP/2490 1st Ave	CAL					53,271	\$69.90	\$3,723,643		
598	Library Central	SJSU					54,544				
599	Conner Hall	UCSD					129,749				
600	CalTrans/1976 E Chart	CAL					70,804	\$31.10	\$2,202,004		

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Bldg Size (Sq. Ft.)	Retrofit Cost per SF	Estimated Funds Needed		
			Underway	Complete	Low Priority				St. Offices	UC System	CSU System
601	Physical Education	CSUSA					81,587				
602	CalTrans/1120 N St	CAL					473,531	\$69.90	\$33,099,817		
603	Biological Sciences	CSCSB					52,700				
604	CalTrans/1352 W Olive	CAL					53,571	\$69.90	\$3,744,613		
605	Industrial Arts	SDSU					26,730				
606	Natural Sciences & Math	CSUDH					85,450				
607	Biological Sciences	CSUSA					24,908				
608	Engineering	SDSU					13,307				
609	Life Science	UCLA					219,496				
610	Webber Hall	UCR					49,570				
611	Natatorium	CPSUS					5,184				
612	Production Studies/FA	UCI					5,182				
613	Theater	CSUH					49,978				
614	women's Gym Addition	SJSU					25,830				
615	Aeronautics	SJSU					42,000				
616	Yosemite Hall	CSCST					35,980				
617	Art Gallery/Fav	UCI					3,544				
618	Educ/721 Capitol Mall	CAL					158,579	\$69.90	\$11,084,672		
619	Music Complex	HSU					33,895				
620	Faculty Office Bldg	UCI					26,788				
621	Speech Arts	SDSU					13,301				
622	Student Service Ctr	CSUSA					79,165				
623	Medical Science I	UCI					150,844				
624	Geology	UCLA					172,625				
625	Archives/1020 O St	CAL					117,379	\$69.90	\$8,204,792		
626	Language Arts Building	HSU					62,185				
627	Speech-Drama	CSUSA					62,667				
628	CalTrans/1657 Riversi	CAL					49,424	\$69.90	\$3,454,738		
629	Hunt Hall	UCD					64,042				
630	Eckart Library	UCSD					42,759				
631	Marchant SCM Bldg	UCB					500,000				
632	ABC/FD & AGR/1215 O St	CAL					113,503	\$69.90	\$7,933,860		
633	University Union	CSUSA					59,907				
634	Central Plant	CSUDH					12,840				
635	PERS/801 Capitol Mall	CAL					77,564	\$69.90	\$5,421,724		
636	Seawater Test Facilit	UCSD					16,044				
637	Conley Art Bldg	CSUFR					41,820				
638	Art	UCD					50,900				
639	Student Health Ctr	CSUC					18,300				
640	Sierra Madre Hall	CPSUS					10,400				

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Bldg Size (Sq. Ft.)	Retrofit Cost per SF	Estimated Funds Needed		
			Underway	Complete	Low Priority				St. Offices	UC System	CSU System
641	Library	CSUSA					211,835				
642	Biomedical Cyclotron	UCLA					4,252				
643	CHP/19700 Hamilton Av	CAL					12,821	\$31.10	\$398,733		
644	Wellman Agriculture H	UCB					45,622				
645	Social Serv/716 O St	CAL					17,114	\$31.10	\$532,245		
646	Agricultural Engineer	CPSUS					43,750				
647	Kerr Hall	UCSB					40,010				
648	Ives Hall	SSU					48,500				
649	Voorheis Hall	UCD					48,816				
650	Gist Hall	HSU					52,281				
651	Trinity Hall	CPSUS					31,327				
652	Santa Lucia Hall	CPSUS					31,327				
653	Muir Hall	CPSUS					31,327				
654	Sequoia Hall	CPSUS					31,327				
655	Fremont Hall	CPSUS					31,327				
656	Tenaya Hall	CPSUS					31,327				
657	Kellogg West	CSPUP					42,594				
658	DMV/49 S Rosemead Blv	CAL					18,471	\$31.10	\$574,448		
659	Science Library	UCSC					12,189				
660	University Theatre	CSUDH					25,201				
661	Faculty Office #1	CSULB					6,776				
662	Social Sciences Tower	UCI					83,844				
663	OB-3/Annex/1020 N St	CAL					314,396	\$69.90	\$21,976,280		
664	Food Serv/Classrooms	CSUSA					40,198				
665	Plant Physiology Bldg	UCLA					23,162				
666	Bookstore	CSULB					28,994				
667	Stadium	UCSB					18,580				
668	Stores Hall	UCD					91,708				
669	CB-1/915 Capitol Mall	CAL					168,643	\$69.90	\$11,788,146		
670	Print PL/344 N 7th St	CAL					16,123	\$69.90	\$1,126,998		
671	Yosemite Hall	CPSUS					106,000				
672	Phys Educ & Rec Bldg	SJSU					80,605				
673	Chemical Biodynamica	UCB					35,955				
674	Nursing Building	CSULB					13,307				
675	Shasta Hall	CPSUS					10,598				
676	Diablo Hall	CPSUS					10,598				
677	Palomar Hall	CPSUS					10,598				
678	Whitney Hall	CPSUS					10,598				
679	Lassen Hall	CPSUS					10,598				
680	Veterinary Medicine U	UCD					41,140				

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Bldg Size (Sq. Ft.)	Retrofit Cost per SF	Estimated Funds Needed		
			Underway	Complete	Low Priority				St. Offices	UC System	CSU System
681	Engineering Addition	SJSU					196,000				
682	Engineering	SJSU					247,000				
683	Service Bldg	UCB					96,132				
684	CHP/4902 Pacific Way	CAL					14,283	\$31.10	\$444,201		
685	DMV/2627 Pacific Way	CAL					17,851	\$31.10	\$555,166		
686	DMV/111 W Alma Ave	CAL				Fallen Ceiling, Roof Leak 10/17/89 Quake	26,053	\$31.10	\$810,248		
687	Science	CSUSA					191,137				
688	Kerr Hall	UCD					54,932				
689	Faculty Lounge Senate	SDSU					4,070				
690	FD&Agric/1220 N St	CAL					128,471	\$69.90	\$8,980,123		
691	Music	CSUSA					84,722				
692	Ag Engineering	CSPUP					26,184				
693	Engineering (East)	CSUFR					45,687				
694	EDD/629 12th St	CAL					19,134	\$31.10	\$595,067		
695	Glen Kendall Hall	CSUC					48,535				
696	Medical Sciences	UCSF					374,669				
697	Library Addition	CSCB					30,228				
698	Music	UCD					18,000				
699	San Ramon #1	CSUFR					12,960				
700	Freeborn Hall	UCD					52,268				
701	Storke Publications	UCSB					9,226				
702	Haring Hall	UCD					152,782				
703	Cowell Student Health	UCD					40,653				
704	Oakes Academic Bldg	UCSC					23,006				
705	Pierce Hall	UCR					110,182				
706	Engineering East	CPSUS					57,830				
707	GS/2550 Mariposa St	CAL					165,977	\$31.10	\$5,161,885		
708	GS/1111 Jackson St	CAL					149,686	\$31.10	\$4,655,235		
709	Chemistry/Biology Lab	UCSB					7,340				
710	DMV/3120 F St	CAL					16,383	\$31.10	\$509,511		
711	*South Parking HSC	UCLA					617,200				
712	Nichols Hall	SSU					30,700				
713	Boiler Plant	CSUH					6,145				
714	Creative Arts	CSCSB					44,400				
715	DMV/9520 E Artesia	CAL					19,230	\$31.10	\$598,053		
716	Gymnasium	SFSU					127,139				
717	Dwinelle Annex	UCB					8,357				
718	Stevenson Hall	SSU					128,600				
719	Gymnasium	CSPUP					114,087				
720	EDD/2348 Baldwin Ave	CAL					7,316	\$31.10	\$227,528		

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	(Sq. Ft.)	Cost per SF	St. Offices	UC System	CSU System
			Underway	Complete	Low Priority						
721	Beiden Field Complex	CSUFR					1,619				
722	DMV/1330 E 1st St.	CAL					29,143	\$31.10	\$906,347		
723	Health Sciences West	UCSF					157,304				
724	*Carriage Hall	UCSC					8,029				
725	Health Services	CSULB					32,803				
726	Temp Fine Arts Office	CSULB					960				
727	Handball Court	UCB					10,100				
728	Chemistry Annex	UCD					97,905				
729	DMV/1310 N Waterman A	CAL					15,750	\$31.10	\$489,825		
730	Performing Arts Cente	CSUFU					150,727				
731	Observatory	CSCST					520				
732	Chemistry Annex	UCSB					6,140				
733	Library	CSPUP					140,643				
734	Physical Education	CSPUP					31,735				
735	Hutchison Hall	UCD					113,440				
736	Boiler/Chiller Plant	CSUC					13,710				
737	University Union	CSPUP					69,402				
738	Darwin Hall	SSU					111,800				
739	VMTH Large Animal War	UCD					17,280				
740	Forbes Phys Ed Comple	HSU					134,041				
741	2538 Channing Way	UCB					15,497				
742	Science Bldg	CSCST					50,880				
743	Fine Arts #3	CSULB					22,910				
744	*Health Sciences	UCLA					1,302,235				
745	Medical Surge 1	UCI					21,386				
746	Phys Educ Field House	CSUH					9,250				
747	Medical Surge 2	UCI					60,238				
748	Medical Surge Library	UCI					18,959				
749	Heating Plant	UCB					9,000				
750	Health Sciences East	UCSF					168,540				
751	Surge Bldg	UCSF					11,220				
752	Naval Architecture	UCB					11,354				
753	Bodega Agua	UCB					16,585				
754	DMV/425 N Bayshore Av	CAL					12,866	\$31.10	\$400,133		
755	Griffith Hall	HSU					25,841				
756	Theater/Fav	UCI					20,377				
757	Physics - Geology	UCD					109,766				
758	Macquarrie Hall	SJSU					107,186				
759	Melnitz Hall	UCLA					60,198				
760	Communications Bldg	UCSC					38,205				

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Bldg Size (Sq. Ft.)	Retrofit Cost per SF	Estimated Funds Needed		
			Underway	Complete	Low Priority				St. Offices	UC System	CSU System
761	Administration	CPSUS					56,500				
762	GS/31 E Channel St	CAL					3,000	\$31.10	\$93,300		
763	Scripps Cottage	SDSU					1,990				
764	Graduate School Mgmt	UCLA					197,830				
765	Campus Service Bldg 1	UCLA					50,200				
766	EDD/344 21st St	CAL					27,594	\$31.10	\$858,173		
767	Telephone Services (TE	UCD					7,122				
768	EDD/1220 Engracia Ave	CAL					13,541	\$31.10	\$421,125		
769	Engineering	CSUN					164,240				
770	CHP/437 S Vermont	CAL					40,000	\$69.90	\$2,796,000		
771	Central Utilities Pla	UCR					19,437				
772	Asmundson Poultry Hus	UCD					25,502				
773	Library	CSUH					213,017				
774	Student Health center	CSUFU					24,361				
775	EDD/83-151 Requa St	CAL					10,836	\$69.90	\$757,436		
776	Robbins Hall	UCD					80,544				
777	Theater Barn	UCSC					5,942				
778	Material Service B	UCLA					20,800				
779	Engineering #4	CSULB					16,800				
780	2607 Hearst Ave	UCB					9,880				
781	2420 Bowditch	UCB					5,540				
782	EDD/100 N Imperial Av	CAL					11,727	\$31.10	\$364,710		
783	Physical Sciences	UCI					196,057				
784	Creuss Hall	UCD					53,442				
785	DMV/600 N Sta Cruz	CAL				Broken Glass 10/17/89 Earthquake	12,993	\$31.10	\$404,082		
786	EDD/4546 W Century Bl	CAL					32,849	\$69.90	\$2,296,145		
787	Engineering Bldg	UCI					113,941				
788	Engineering #3	CSULB					18,560				
789	Med Heating Plant	UCLA					5,922				
790	Shop Barn	UCSC					14,229				
791	Whitney Hall	CSUC					116,950				
792	Lib/CTS/916 Capitol M	CAL					222,019	\$69.90	\$15,519,128		
793	Resid Housing&Commons	CSULB					94,077				
794	Gianque Lab	UCB					27,102				
795	ARB/9520 Telstar Ave	CAL					40,867	\$31.10	\$1,270,964		
796	Student Health	UCSB					41,088				
797	Greenhouse #1	CSULB					400				
798	Ruben Salazar Library	SSU					116,300				
799	RFS 484	UCB					14,133				
800	Computer Science Bldg	UCI					60,678				

Rank	Building Name & Address	Owner	Underway	Complete	Low Priority	Remarks	(Sq. Ft.)	Cost per SF	St. Offices	UC System	CSU System
801	Public Safety	UCSB					14,122				
802	Arts Bldg	UCSB					76,347				
803	EDD/6725 Sta Monica B	CAL					42,811	\$69.90	\$2,992,489		
804	Sumner Auditorium	UCSD					3,239				
805	Dental Clinic Bldg An	UCSF					6,167	\$65.00		\$400,855	
806	Student Health Center	CSUN					27,257				
807	Storage Barn	UCSC					14,002				
808	DMV/523 S McClellan	CAL					6,296	\$31.10	\$195,806		
809	Building U	CSUC					1,176				
810	Women's Old Gym	SJSU					17,455				
811	DOH/2151 Berkeley Way	CAL				Minor Cracks in 10/17/89 Earthquake	177,576	\$69.90	\$12,412,562		
812	Meats Lab	CPSUS					4,004				
813	Medical Science Bldg	UCD					8,976				
814	Dining Commons	CSUSA					22,371				
815	2224 Piedmont	UCB					6,900				
816	EDD/1225 4th Ave	CAL				Fallen Ceiling Lights 10/17/89 Earthquake	35,269	\$31.10	\$1,096,866		
817	1486-88 5th Ave	UCSF					3,015				
818	CalTrans/1615 S Wall	CAL					11,927	\$31.10	\$370,930		
819	*1308-10 3rd Ave	UCSF					3,208				
820	2536A Channing Way	UCB					5,000				
821	Custodial & Grounds H	UCR					6,919				
822	ABC/303 W 3rd St	CAL					99,579	\$31.10	\$3,096,907		
823	Matthews 509	UCSD					11,556	\$65.00		\$751,140	
824	745 Parnassus	UCSF					7,639				
825	Mt Hamilton Lab	UCSC					8,212				
826	1483 4th Ave	UCSF					2,773				
827	1320 3rd Ave	UCSF					4,330				
828	Poultry Husbandry	UCB					7,600				
829	Meteorology Bldg	CSUFR					248				
830	EDD/419 10th St	CAL					18,557	\$69.90	\$1,297,134		
831	Gym -PE Bldg	UCD					81,217				
832	EDD/233 E Commonwealt	CAL					16,956	\$69.90	\$1,185,224		
833	Clinical Teaching Fac	UCSD					117,573				
834	S10 T43 Shop Bldg	UCSD					3,498	\$65.00		\$227,370	
835	1362 3rd Ave	UCSF					2,666				
836	Physical Sciences	CSULA					218,000				
837	Handball Bldg	UCI					11,145				
838	DMV/233 N Imperial Av	CAL					6,521	\$31.10	\$202,803		
839	Bio - Science	SFSU					151,736				
840	1490 5th Ave	UCSF					2,523				

Draft State Office, UC and CSU Buildings - Earthquake Hazard Survey

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Bldg Size (Sq. Ft.)	Retrofit Cost per SF	Estimated Funds Needed		
			Underway	Complete	Low Priority				St. Offices	UC System	CSU System
841	350 Mc Allister	CAL				Studies in Progress, Damaged 10/17/89	187,676	\$69.90	\$13,118,552		
842	1482 5th Ave	UCSF					2,617				
843	2515 Channing Way	UCB					7,000				
844	Headhouse	UCI					6,455				
845	1326 3rd Ave	UCSF					3,421				
846	1344 3rd Ave	UCSF					2,907				
847	Mahr House	CSUFU					4,721				
848	*1332 3rd Ave	UCSF					2,647				
849	Air Pollution Lab	UCR					3,479				
850	Campus Center	CSPUP					43,167				
851	1487 4th Ave	UCSF					3,231				
852	South Hall	UCD					24,748				
853	North Hall	UCD					17,000				
854	Louis Factor HS Bldg	UCLA					198,000				
855	2234 Piedmont Ave	UCB					4,100				
856	Garage/122 S Hill St	CAL					194,000	\$31.10	\$6,033,400		
857	Metabolic Research	UCSF					7,137				
858	EDD/480 Mtnview Ave	CAL					22,676	\$69.90	\$1,585,052		
859	735 Parnassus	UCSF					2,766				
860	RFS 480	UCB					7,036				
861	*1376-78 3rd Ave	UCSF					2,480				
862	1322-24 3rd Ave	UCSF					2,648				
863	San Ramon #4	CSUFR					19,616				
864	Agricultural Ext/Dire	UCR					5,693				
865	Mt Hamilton 120 Inch	UCSC					24,520				
866	Building R	CSUC					30,552				
867	Greenhouse-Aboretum	CSUFU					2,023				
868	Greenhouse	HSU					2,738				
869	1442 5th Ave	UCSF					3,800				
870	San Ramon #3	CSUFR					10,101				
871	Lab Bldg Physics	UCLA					12,869				
872	Telephone	UCR					4,000				
873	145 Irvine	UCSF					8,028	\$65.00		\$521,820	
874	San Ramon #5	CSUFR					18,441				
875	1479 4th Ave	UCSF					2,381				
876	Animal/Greenhouse	CSCSB					9,370				
877	*SMC County Health	UCD					22,090				
878	Merrill Library-Study	UCSC					4,105				
879	P O Administration of	CSUC					5,800				
880	30 Kirkham	UCSF					1,851				

Rank	Building Name & Address	Owner	Underway	Complete	Low Priority	Remarks	(Sq. Ft.)	Cost per SF	St. Offices	UC System	CSU System
881	Fawcett Lab (Air Pollu	UCR					17,950				
882	Greenhouse #2	CSULB					984				
883	Newsom House	CSUFU					3,529				
884	Heritage House	CSUFU					1,425				
885	2232 Piedmont Ave	UCB					5,800				
886	OB-8/Health/714 P St	CAL					299,671	\$31.10	\$9,319,768		
887	1475 4th Ave	UCSF					2,796				
888	Sutter Hall	CSUC					21,760				
889	San Ramon #2	CSUFR					12,903				
890	OB-9/Health/744 P St	CAL					301,871	\$31.10	\$9,388,188		
891	24 Kirkham	UCSF					1,851				
892	*1356 3rd Ave	UCSF					2,604				
893	GS/31 E Channel St	CAL					54,407	\$31.10	\$1,692,058		
894	Shop A/Physical Plant	UCLA					15,048				
895	Innovative Project Ct	CSCST					3,600				
896	*SMC Professional Bld	UCD					72,541				
897	Greenhouse #3	CSULB					1,220				
898	Genl Svcs/Records Mg	CAL					40,000	\$31.10	\$1,244,000		
899	Educ'l Opportunity Pr	CSUC					2,848				
900	Building H	CSUC					2,856				
901	Financial Aids	CSUC					3,232				
902	Counseling & Career P	CSUC					7,040				
903	West Field House	SJSU					4,609				
904	Univ Hosp Surge Lab	UCSD					15,215				
905	Cent Stores/1108 R St	CAL					85,811	\$69.90	\$5,998,189		
906	Architects & Engineer	UCD					10,160				
907	Wyatt Pavillion Theat	UCD					6,168	\$65.00		\$400,920	
908	DMV/2415 1st Ave	CAL					702,601	\$31.10	\$21,850,891		
909	Molecular Biology	UCLA					141,422				
910	Plant Growth Faciliti	CSUFU					6,373				
911	Steam Plant	UCLA					27,324				
912	central Utilities	UCSD					13,845				
913	P O Maintenace Shop	CSUC					17,957				
914	Consrv/466 N 5th St	CAL					2,266	\$69.90	\$158,393		
915	Old Power Plant	CPSUS					3,412				
916	Physical Plant	UCD					26,818				
917	P E Bldg 2	UCSD					14,838				
918	Oxford Research Unit	UCB					66,240				
919	Student Emp & Vet Aff	CSUC					862				
920	Sierra Hall & Annex	CSUC					4,001				

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Bldg Size (Sq. Ft.)	Retrofit Cost per SF	Estimated Funds Needed		
			Underway	Complete	Low Priority				St. Offices	UC System	CSU System
921	Boiler Plant	SSU					11,500				
922	Matthews 239	UCSD					9,672	\$65.00		\$628,680	
923	E Guy Warren Hall	CSUH					137,396				
924	Central Stores/Genl S	CAL					85,811	\$69.90	\$5,998,189		
925	*1472-74 5th Ave	UCSF					3,939	\$65.00		\$256,035	
926	Medical Science	UCD					253,166	\$65.00		\$16,455,790	
927	Oyster Point Warehouse	UCSF					113,303	\$65.00		\$7,364,695	
928	Mechanical-Sewage	UCD					6,698	\$65.00		\$435,370	
929	Vivarium	UCLA					115,541	\$65.00		\$7,510,165	
930	Student Health Center	CSUSA					273,313				
931	Health Sciences Cr	UCSF					26,998	\$65.00		\$1,754,870	
932	Physical Plant Shop	UCD					25,500	\$65.00		\$1,657,500	
933	Greenhouse	CSUC					749				
934	Agri Greenhouse	CSUC					1,330				
935	2240 Piedmont Ave	UCB					7,900				
936	Tropical Greenhouse	CSUC					1,660				
937	Project Greenhouse	CSUC					1,660				
938	Educational Services	CSCST					10,000				
939	Art	CSUSA					46,184				
940	Business-Public Admin	CSUSA					64,764				
941	Per/1416 9th St.	CAL					708,921	\$31.10	\$22,047,443		
942	Mech 2-Heating Plant	UCD					10,299	\$65.00		\$669,435	
943	Classroom Bldg	CSCB									
944	Fine Arts	CSCB									
945	Lecture Bldg	CSCB									
946	Perf Arts Bldg	CSCB									
947	Student Services	CSCB									
948	Faculty Office Bldg	CSCB									
949	Counseling Testing CE	CSCB									
950	Academic Admin Bldg	CSCB									
951	Admin Bldg	CSCB									
952	Library	CSCB									
953	Plant Operations	CSCB									
954	P. E. Bldg	CSCB									
955	Support Services	CSCB									
956	Temp Classrooms	CSCB									
957	Nursing Bldg	CSCB									
958	Physical Education	CSCB									
959	Student Health Center	CSCB									
960	Initial Corp Yard	CSCB									

Rank	Building Name & Address	Owner	Underway	Complete	Low Priority	Remarks	(Sq. Ft.)	Cost per SF	St. Offices	UC System	CSU System
961	Cafeteria Bldg	CSCB									
962	Fine Arts Bldg	CSCB									
963	P. E. Storage Bldg	CSCB									
964	Physical Plant Admin	CSUFU									
965	Child Care Center	CSUFU									
966	Mail Room/Shop	CSUFU									
967	Child Care Center	CSUFU									
968	Property Control/Shop	CSUFU									
969	Stockroom/Shops	CSUFU									
970	Assembly Hall/Shop	CSUFU									
971	Grounds Equip Storage	CSUFU									
972	Auto&Equip Repair	CSUFU									
973	Shipping &Receiving	CSUFU									
974	Public Safety	CSUFU									
975	Physical Plant Storage	CSUFU									
976	Office Equip Repair	CSUFU									
977	T-14	CSUFU									
978	McTitan's	CSUFU									
979	Maint-Arboretum	CSUFU									
980	Sales Office-Arboretum	CSUFU									
981	Field House	CSUDH									
982	Casa Dominguez	CSUDH									
983	Athletic Equip Bldg	CSUDH									
984	Plant Operations	CSUDH									
985	Art Complex	HSU									
986	Forestry Building	HSU									
987	Wildlife Building	HSU									
988	Telonicher Marine Lab	HSU									
989	Child Development La	HSU									
990	Wildlife Facilities	HSU									
991	Fish Hatchery	HSU									
992	Student Health Center	HSU									
993	Plant Operations	HSU									
994	Karshner House	HSU									
995	Pepperwood Hall	HSU									
996	Tan Oak Hall	HSU									
997	Maple Hall	HSU									
998	Madrone Hall	HSU									
999	Hemlock Hall	HSU									
1000	Chinquapin Hall	HSU									

Rank	Building Name & Address	Owner	Mitigation Program			Remarks	Bldg Size (Sq. Ft.)	Retrofit Cost per SF	Estimated Funds Needed		
			Underway	Complete	Low Priority				St. Offices	UC System	CSU System
	#601 Matthews Tank	UCSD					6,346	\$65.00		\$412,490	
	#605 Matthews Tank	UCSD					9,915	\$65.00		\$644,475	
	Revelle Provosts Office	UCSD					4,513	\$65.00		\$293,345	
	Soledad Laboratory	UCSD					4,663	\$65.00		\$303,095	
	SMC Camelia Cottages	UCD				Not Listed in Degenkolb 1981 Survey	12,160	\$65.00		\$790,400	
	N/S Wings - Hospital	UCD				Not Listed in Degenkolb 1981 Survey	394,024	\$65.00		\$25,611,560	
	Med/Dent. Bldgs 10 & 11	UCD				Not Listed in Degenkolb 1981 Survey	14,190	\$65.00		\$922,350	
	Deep Sea Drilling Building	UCSD				Not Listed in Degenkolb 1981 Survey	14,131	\$65.00		\$918,515	
	UCIMC Building 10	UCI				Not Listed in Degenkolb 1981 Survey	27,645	\$65.00		\$1,796,925	
	Mt. Hamilton Library Add'n	UCSC				Not Listed in Degenkolb 1981 Survey	5,184	\$65.00		\$336,960	

Agency or Campus

Abbreviation

California State College Bakersfield
 California State University Chico
 California State University Dominguez Hills
 California State University Fresno
 California State University Hayward
 California State University Fullerton
 California State University Long Beach
 California State University Los Angeles
 California State University Northridge
 California State Polytechnical University Pomona
 California State University Sacramento
 California State College San Bernadino

CSCB
 CSUC
 CSUDH
 CSUFR
 CSUH
 CSUFU
 CSULB
 CSULA
 CSUN
 CSPUP
 CSUSA
 CSUSB

Agency or Campus

Abbreviation

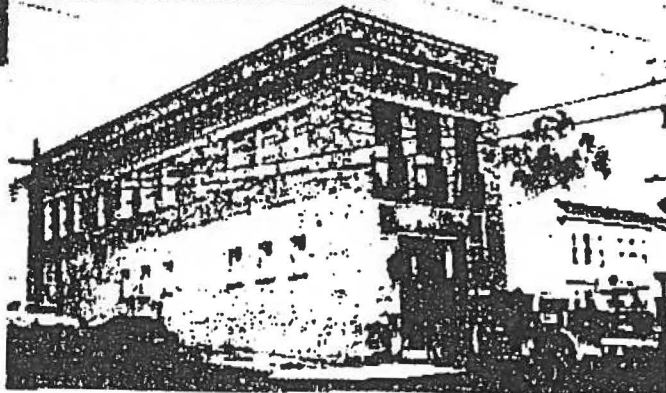
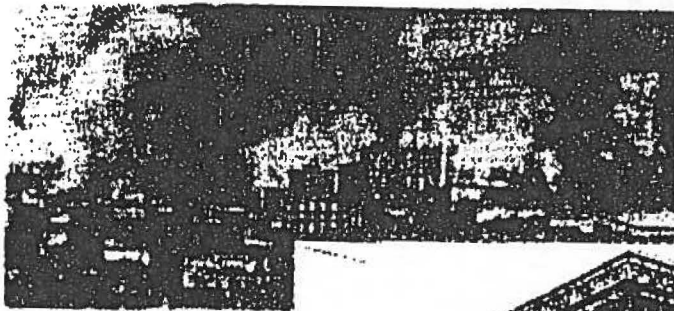
San Diego State University
 San Francisco State University
 San Jose State University
 California Polytechnic State University San Luis Obispo
 Sonoma State University
 California State College Stanislaus
 University of California Berkeley
 University of California Davis
 University of California Irvine
 University of California Los Angeles
 University of California Riverside
 University of California San Diego
 University of California San Francisco
 University of California Santa Barbara
 University of California Santa Cruz
 State Office Building

SDSU
 SFSU
 SJSU
 CPSUS
 SSU
 CSCST
 UCB
 UCD
 UCI
 UCLA
 UCR
 UCSD
 UCSF
 UCSB
 UCSC
 CAL

EQE/AGS

SAN FRANCISCO FIRE DEPARTMENT FACILITIES SEISMIC EVALUATION STUDY

SUMMARY REPORT



PREPARED BY EQE/AGS UNDER CONTRACT TO:

**DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO
FOR
SAN FRANCISCO FIRE COMMISSION**

MAY 1989

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EXECUTIVE SUMMARY

This report presents the results of an engineering evaluation for the effects of earthquakes on 55 facilities, including 40 fire stations, Headquarters, all elements of the Auxiliary Water Supply System (AWSS), and miscellaneous buildings operated by the San Francisco Fire Department (SFFD). The evaluation addresses all SFFD facilities except two: one that has been previously reviewed, and another that has been funded for reconstruction. The purpose of the evaluation was to:

- Determine the likely performance of SFFD facilities in a major earthquake
- Recommend conceptual strengthening and/or other mitigation measures
- Provide preliminary construction cost estimates, where strengthening or other measures are recommended

The evaluation criteria were that satisfactory performance is non-impairment of SFFD post-earthquake functionality. Project criteria, developed in conjunction with SFFD and the Department of Public Works (DPW), were that all active facilities are essential, that is, they must remain operational during and after the maximum credible earthquake (a Magnitude 8+ event on the San Andreas Fault). Unsatisfactory performance was defined as impairment of post-earthquake functionality resulting either directly from structural damage or from evacuation of a facility pending inspection by a structural engineer.

The scope of work for this study included the following:

- Review of regional seismicity and geology and existing geotechnical reports
- Limited scope field-geotechnical exploration
- On-site facility inspections
- Drawing reviews
- Structural engineering calculations
- Development of conceptual mitigation schemes
- Preliminary construction cost estimates

EQE/AGS

The primary project team consisted of EQE Engineering and ASS, Inc., with major participation by Faye Bernstein & Associates and other consultants.

Strong earthquakes originating on the San Andreas Fault, which passes 3 miles to the west of San Francisco, and the Hayward Fault, 8 miles to the east, have caused extensive structural damage in the Bay Area. Movement of these faults can produce future damaging ground shaking in the city with peak horizontal accelerations ranging from 30% to 60% of gravity. Although fault rupture does not appear to be a significant hazard in San Francisco, important potential problems for a large number of SFFD facilities are ground settlement, soil liquefaction, and landsliding. Ground settlement is possible at 19 facilities, 15 of which could also be subject to liquefaction. Landsliding could affect 3 facilities. These effects may intensify damage to several of the facilities and disrupt access to other facilities. Available mitigation measures include relocation of selected facilities to stable sites, ground stabilization techniques, and reconstruction of facilities to resist ground failure. Based on historical records, it appears unlikely that local earthquakes would produce a tsunami or seiche in the Bay Area. Should either occur, however, several SFFD facilities could be subject to inundation.

Structural analyses indicate that eleven facilities (1, 8, 24, 31, 37, 44, the Arson Task Force, Chief's Official Residence, X-Stat on 4, and Old Stations 16 and 21) have major deficiencies that can result in collapse in a maximum credible earthquake. Thirteen facilities (stations 2, 11, 15, 18, 23, 29, 34, 36, 40, 41, the Bureau of Equipment, Headquarters, and Ashbury Tank House) have deficiencies that can result in extensive damage and possibly in collapse. Other facilities are also likely to be damaged, possibly to an extent requiring temporary evacuation. It is highly unlikely that all these facilities would be simultaneously damaged to this maximum extent. However, in the present condition, substantial reduction of overall facility functionality and department response capability immediately following a major earthquake is very likely. Correction of these deficiencies can generally be accomplished by structural strengthening, primarily through addition of shear walls, bracing, and wall reinforcement.

Eleven SFFD facilities, including Headquarters, the Chief's Residence, and the Jones Street Tank are adjacent to potentially hazardous buildings that could, with varying degree of probability, collapse, resulting in substantial damage to the SFFD facility and/or loss of access. Other proximate hazards, including elevated power lines, also exist at many facilities. Since most of these proximate hazards are privately owned, direct mitigation may be difficult. Relocation of selected SFFD facilities and radio control of the Auxiliary Water Supply System (AWSS) are viable alternatives.

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FROM

Nonstructural components (equipment, contents, and architectural elements) in the facilities are generally unanchored and unbraced and are likely to sustain damage in even a moderately strong earthquake. Of particular concern is the inadequate seismic design of key components of the Auxiliary Water Supply System (AWSS).

The net effect of these structural, nonstructural, and geologic hazards is shown in Figure 1, which indicates the overall risk of functionality loss for San Francisco Fire Department facilities following a major earthquake. In this figure, high risk indicates that the particular facility's function is expected to be heavily impaired, with high likelihood; moderate risk indicates heavy impairment with moderate likelihood, and so on. The location of facilities with high risk of impairment is such that Battalion 3 would be seriously impaired, and Battalions 6, 7, 10, and Headquarters at serious risk. The Central Business, Mission, and Richmond districts are especially likely to be without fire department service following a major earthquake. Overall, following a major earthquake, a significant portion of SFFD resources could be temporarily impaired from deployment.

Substantial reduction of the high seismic risk assessed for the SFFD facilities is quite feasible through a phased prioritized program of improvements. This program should first address the very high priority facilities that are vulnerable to extensive damage in even a moderately strong earthquake. These include the six active facilities with the highest collapse potential and the five AWSS facilities, vital to department functionality. This first phase program would require approximately \$8,000,000, and should be implemented as soon as possible. The second phase should address other active facilities; because loss of functionality for these facilities is less likely, this phase can progress over a somewhat more extended period of time, although still with high priority. Strengthening of the structures and essential nonstructural components for these 38 facilities would cost approximately \$20,000,000. The third phase could address the six inactive stations for a total cost of \$5,000,000, although these are not a high priority. All of the above costs are in third quarter, 1983 dollars. They include the cost of design and construction but not the City's internal program administration, planning, management, and financing costs. These phases are summarized in the table below.

Seismic risk reduction programs implemented in a phased prioritized approach similar to this have been successfully executed in both the public and private sectors. Such approaches have proven to be satisfactory methods for cost effectively reducing the very real risks posed by earthquakes. Due to the critical importance of SFFD facilities in the emergency response to a major earthquake, it is strongly recommended that a phased prioritized program of improvements such as this be adopted.

PHASED PROGRAM OF IMPROVEMENTS,
SFFD FACILITIES

Phase	Priority	Facility	Total Cost \$ Millions	Average Cost Per Facility \$ Millions
1A	Very high	Six active stations (Facility nos. 1, 8, 24, 31, 37, and 44)	\$7.6	\$1.5
1B	Very high	AWSS (Facility nos. 56-60)	\$1.2	\$0.3
2	High	34 active stations and 4 administrative/support	\$20.3	\$0.5
3	Low	Six inactive stations	\$4.8	\$0.8

Note: Cost of equipment and nonstructural bracing included in each phase.
Costs as of Third Quarter, 1968.

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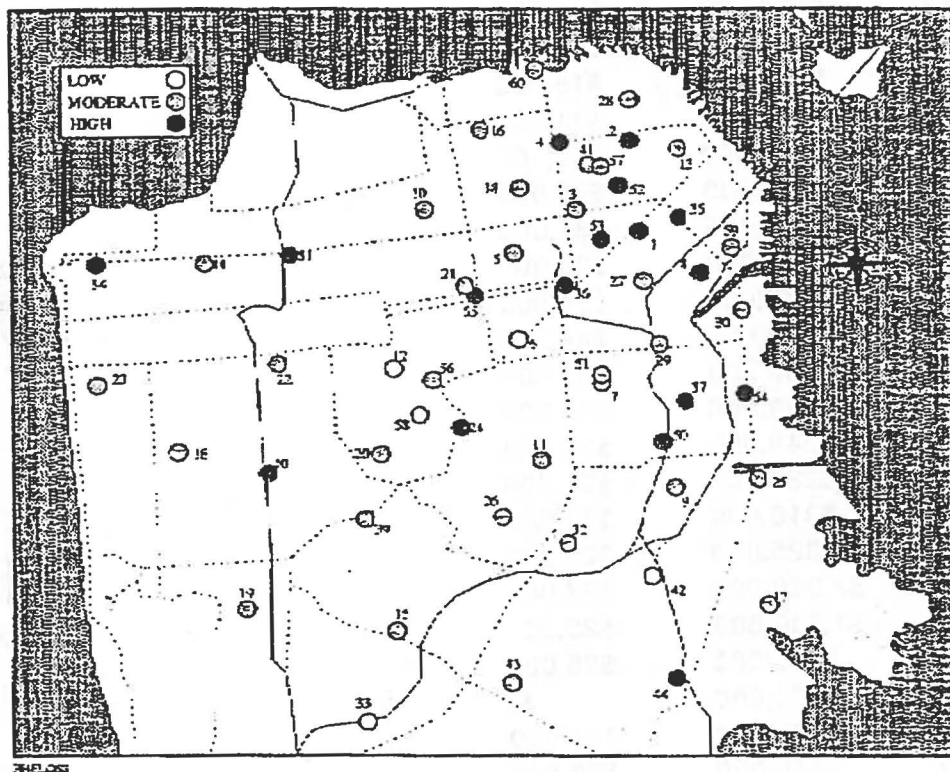


Figure 1: Risk of SFFD Facility Post-earthquake Function Loss

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SF Firehouse costs

1988 Preliminary Cost Estimates for San Francisco Firehouse Seismic Retrofits

Estimated Seismic Estimated Seismic

Facility	Floor	Space(SqFt)	Structural Cost	Equipment Cost
1		11,250	\$2,210,000	\$52,000
2		11,420	\$2,165,000	\$23,000
3		9,600	\$185,000	\$23,000
4		7,100	\$1,470,000	\$0
5		12,600	\$210,000	\$23,000
6		13,500	\$55,000	\$15,000
7		15,800	\$390,000	\$40,000
8		8,000	\$750,000	\$14,000
9		12,800	\$130,000	\$34,000
10		14,300	\$405,000	\$18,000
11		14,000	\$265,000	\$24,000
12		11,300	\$80,000	\$48,000
13		18,790	\$510,000	\$36,000
14		10,900	\$610,000	\$31,000
15		12,138	\$365,000	\$39,000
16		8,800	\$570,000	\$24,000
17		12,100	\$120,000	\$42,000
18		10,900	\$1,095,000	\$30,000
19		11,500	\$240,000	\$33,000
20		10,300	\$340,000	\$26,000
21		8,000	\$235,000	\$26,000
22		5,900	\$310,000	\$33,000
23		7,500	\$325,000	\$25,000
24		5,100	\$1,090,000	\$27,000
25		8,600	\$1,300,000	\$25,000
26		8,700	\$225,000	\$25,000
27		12,750	\$420,000	\$0
28		5,350	\$105,000	\$34,000
29		9,300	\$150,000	\$29,000
30		5,500	\$1,300,000	\$0
31		8,500	\$1,375,000	\$36,000
32		7,400	\$470,000	\$22,000
33		5,900	\$60,000	\$20,000
34		4,400	\$705,000	\$21,000
35		9,600	\$260,000	\$21,000
36		16,100	\$445,000	\$27,000
37		4,700	\$1,100,000	\$21,000
38		13,400	\$280,000	\$41,000
39		5,800	\$350,000	\$32,000
40		4,700	\$800,000	\$28,000
41		6,400	\$345,000	\$29,000
42		6,200	\$105,000	\$20,000
43		10,800	\$585,000	\$24,000
44		5,800	\$1,100,000	\$18,000