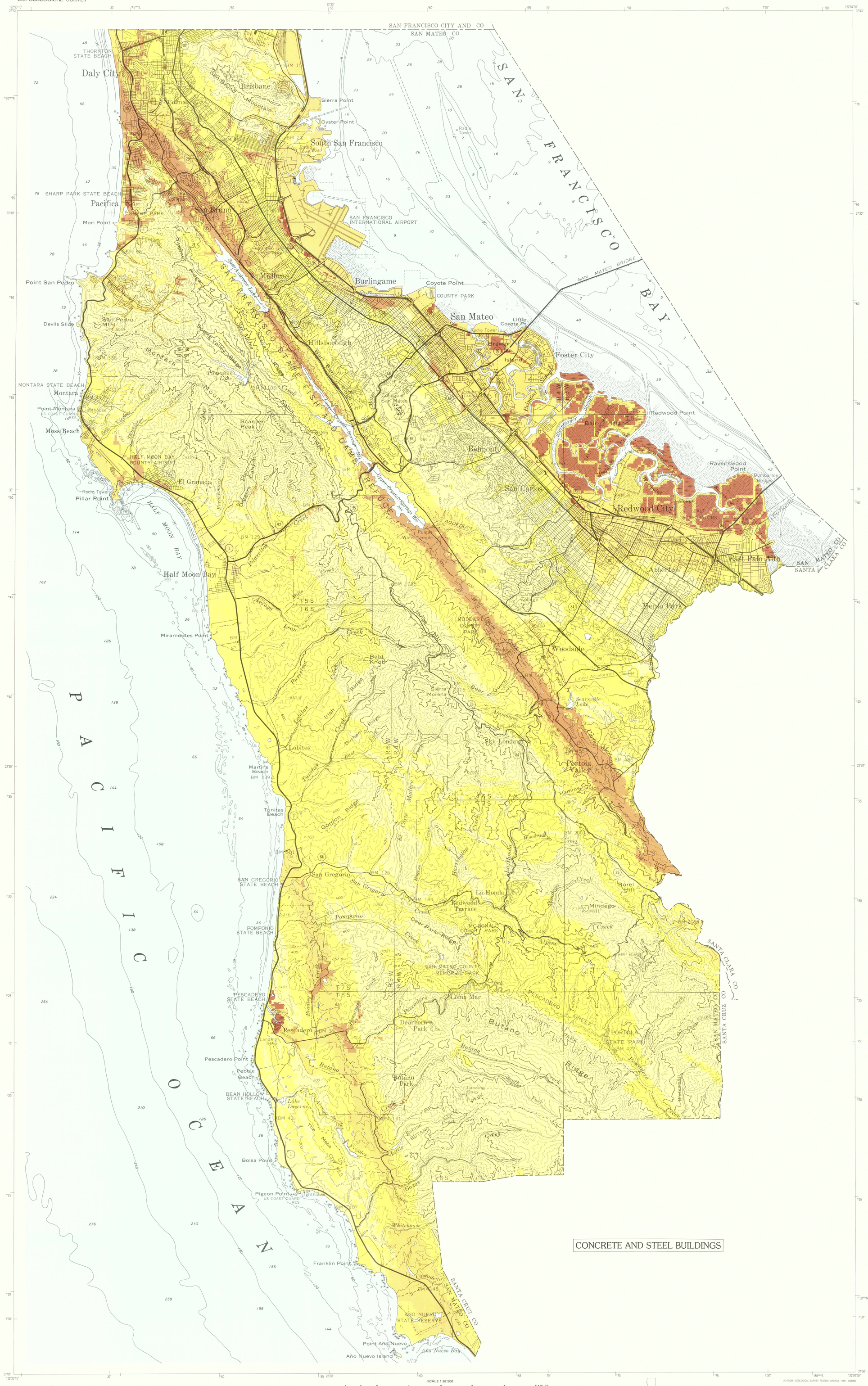


CONCRETE AND STEEL BUILDINGS

EXPLANATION

EXPECTED DAMAGE DISCOUNTED TO PRESENT VALUE—
Shown in percentage of cumulative damage potential

- Extremely high (greater than 6.0)
- Very high (5.1—6.0)
- High (4.1—5.0)
- Moderately high (3.1—4.0)
- Moderate (2.1—3.0)
- Moderately low (1.1—2.0)
- Low (0.3—1.0)
- Very low (0—0.2)

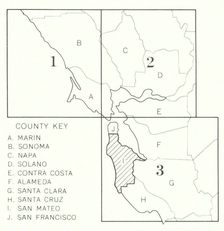
Table 1.—*Jurisdictional areas showing percentages of cummulative damage potential for concrete and steel-frame buildings*
[Values of jurisdictional areas in hectares]

Jurisdiction	Percentage of expected damage (discounted to present value)								
	0-0.2	0.3-1.0	1.1-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	>6.0	Total
Atherton	536	413	345	0	0	0	0	0	1,294
Belmont	964	98	156	0	0	2	7	0	1,227
Brisbane	130	7	427	0	0	0	0	0	564
Burlingame	286	424	418	75	10	0	4	0	1,217
Colma	6	451	24	0	0	0	0	0	481
Daly City	162	902	747	359	41	0	0	0	2,211
Foster City	0	0	921	0	0	78	0	0	999
Half Moon Bay	1,737	2,825	1,103	109	0	0	0	0	5,774
Hillsborough	1,037	624	17	3	1	0	0	0	1,682
Menlo Park	710	691	946	0	0	651	0	0	2,998
Millbrae	10	400	390	30	4	0	11	0	845
Pacifica	1,828	350	763	452	27	0	11	0	3,431
Portola Valley	295	1,194	971	835	0	0	0	0	3,295
Redwood City	1,243	398	2,645	0	0	1,577	16	0	5,879
San Bruno	9	410	576	454	49	0	28	0	1,526
San Carlos	1,190	343	224	0	0	1	2	0	1,760
San Mateo	1,341	632	1,480	81	0	17	6	0	3,557
So. San Francisco	279	864	1,074	259	17	0	0	0	2,493
Woodside	1,234	2,339	1,043	847	11	0	0	0	5,474
Unincorporated	32,079	28,775	7,438	1,149	61	109	1	0	69,612
Total	45,076	42,140	21,708	4,653	221	2,435	86	0	116,319

Table 2.—*Land use area showing percentages of cummulative damage potential for concrete and steel-frame buildings*
[Values of land-use area in hectares. DU, dwelling unit]

Land use	Percentage of expected damage (discounted to present value)								
	0-0.2	0.3-1.0	1.1-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	>6.0	Total
Residential									
1 or less DU per hectare	64	57	13	2	0	0	0	0	136
2–8 DU per hectare	2,291	2,272	1,282	722	1	0	0	0	6,568
9 or more DU per hectare	3,857	3,196	3,830	937	106	3	5	0	11,934
Commerical and services									
Retail and wholesale	287	713	1,028	93	2	9	4	0	2,136
Commercial outdoor recreation	22	12	85	5	0	1	0	0	125
Elementary and secondary schools	268	343	351	102	6	0	0	0	1,070
Colleges and universities	130	12	2	22	0	0	0	0	166
Other educational	46	1	16	0	0	0	0	0	63
Hospitals, rehabilitation centers, and other public facilities	22	34	48	3	0	0	0	0	107
Military installations	10	13	43	3	0	0	0	0	69
Other public institutions	25	31	47	7	0	0	0	0	110
Research centers	43	58	4	0	0	0	0	0	105
Industrial									
Light industry	59	177	485	9	0	4	2	0	736
Heavy industry	15	121	895	2	0	1,325	6	0	2,364
Transportation, communication, and utilities									
Unspecified	1	0	5	4	0	6	0	0	16
Highways	109	413	596	75	27	1	2	0	1,223
Railways	14	66	126	3	0	0	0	0	209
Airports	1	49	878	7	0	0	1	0	936
Port facilities	0	0	8	0	0	0	0	0	8
Power transmission	6	6	80	2	0	61	4	0	159
Sewage treatment plants	0	0	26	6	0	0	0	0	32
Commercial and industrial complexes	0	0	93	0	0	0	0	0	93
Mixed urban or built-up land	21	33	170	11	0	4	2	0	241
Other urban or built-up land									
Extensive recreation									
Unspecified	2	9	25	10	0	0	0	0	46
Golf courses	115	399	196	39	5	0	8	0	762
Race tracks	0	3	73	1	0	0	0	0	77
Cemeteries	30	343	97	0	0	0	0	0	470
Parks	49	60	97	18	0	1	0	0	225
Open space—urban	48	44	116	19	0	0	0	0	227
Not urban									
Greenhouses	12	57	91	0	0	0	0	0	160
Mines, quarries, and gravel pits	78	21	19	12	0	2	0	0	132
Sanitary landfills	6	8	136	0	0	25	0	0	175
Other	37,445	33,589	10,747	2,539	74	993	52	0	85,439
Total	45,076	42,140	21,708	4,653	221	2,435	86	0	116,319

These maps provide a way to compare the expected damage from earthquake shaking over a long period of time for specified types of buildings. The areas with larger percentage values are more likely to have greater earthquake shaking damage, and therefore, additional structural or subdivision design precautions are potentially worthwhile. The maps are NOT ADEQUATE for determining engineering design at a specific site.



INDEX MAP OF THE THREE SAN FRANCISCO BAY AREA REGION SHEETS SHOWING AREA OF THIS REPORT

Base from U.S. Geological Survey, San Francisco Bay Region, Sheet 3, 1:125,000, 1970. Park boundaries revised 1981
5000-meter Universal Transverse Mercator grid ticks, zone 10

APPROXIMATE MEAN DECLINATION, 1987

SCALE 1:62 500

CONTOUR INTERVAL 200 FEET
DOTTED LINES REPRESENT 40-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES IN FEET—DATUM IS MEAN LOWER LOW WATER
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS APPROXIMATELY 4 FEET IN THE PACIFIC OCEAN AND 5 FEET IN SAN FRANCISCO BAY

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1987
The data shown on this map were compiled for the U.S. Geological Survey under contract number 14-08-001-17751 and 14-08-001-21226

MAPS SHOWING CUMULATIVE DAMAGE POTENTIAL FROM EARTHQUAKE GROUND SHAKING, SAN MATEO COUNTY, CALIFORNIA

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1987

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