An Explanatory Text to Accompany the Geologic Map of California

Scale 1:750,000

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Scale 1:750,000

Original Compilation by

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1977

Updated Version by

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Digital Preparation by

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2010

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INTRODUCTION

This edition of the Geologic Map of California was prepared in recognition of the California Geological Survey's 150th Anniversary. It is an all-digital product built on the original compilation of C.W. Jennings published in 1977. The detail depicted in the Geologic Atlas Series (Bishop, 1964; Burnett and Jennings, 1962; Gay and Aune, 1958; Jennings, 1959a; Jennings, 1959b; Jennings, 1961; Jennings, 1962; Jennings, 1967; Jennings and Burnett, 1961; Jennings and others, 1963; Jennings and Strand, 1959; Jennings and Strand, 1960; Jennings and Strand, 1969; Koenig, 1963a; Koenig, 1963b; Lydon and others, 1960; Matthews and Burnett, 1966; Rogers, 1966a; Rogers, 1966b; Rogers, 1969; Smith, 1965; Strand, 1962a; Strand, 1962b; Strand, 1964; Strand, 1967; Strand and Koenig, 1966; Streitz and Stinson, 1977), along with other additions, served as the sources for Jennings' compilation. A thorough discussion of the original compilation, including source maps, bibliographic references, and acknowledgements was published as California Geological Survey Bulletin 201 (Jennings, 1985). The digital version of the Jennings (1977) compilation was released in 2000 (Saucedo and others, 2000) and serves as the base digital geologic data layer for this map with additions and modifications described below.

Correction of Spatial Errors

During preparation of the original digital data set, that included digitizing and editing scanned mylar copies of the Jennings 1977 publication plates, it was noted that the north and south parts of the map were presented at slightly different scales (Saucedo and others, 2000). This inconsistency was likely inherited during the preparation of the original base map used in printing the 1977 edition. The base was a composite of the north and south halves of the 1:500,000-scale U.S. Geological Survey state map series, photographically reduced to publication scale (1:750,000), and spliced together. Although an attempt was made to correct this problem while georeferencing the scanned image, spatial errors of up to 1 km remained in the original data set, especially near the seam between the north and south halves and along the coast.

In an attempt to eliminate or at least minimize the spatial error, the digital file was warped using features common to the geologic map and a precisely registered hydrologic data set. Features such as the coastline, and lakes were used for this purpose. The resulting file still contains location errors but they have been reduced significantly and are largely within the National Map Accuracy Standards for this scale of map.

Base Materials

The base map for the new Geologic Map of California consists of a shaded relief image and a combination of cultural, political, transportation, geographic, and hydrologic features. The onshore shaded relief image was derived from 90-meter Digital Elevation Models (DEM) available from the National Elevation Data Set (http://ned.usgs.gov). The bathymetric shaded relief image shown in the offshore region was derived from DEMs available from the California Department of Fish and Game (http://dfg.ca.gov/biogeodata/gis/mr_bathy.asp). The cultural, political, transportation, geographic and hydrologic features depicted in the base map were largely derived from data obtained from the Cal-Atlas Geospatial Clearinghouse (http://atlas.ca.gov). Select geographic features throughout the state and in the offshore region were digitized from USGS 1:500,000-scale topographic maps. Projection

of the base map layers is Teale Albers, 1983 North American Datum.

Modifications to Faults

The 2010 edition of the Geologic Map of California includes modifications to the fault traces depicted on the original map by Jennings (1977). Many faults have been added (Figure 1), modified, or deleted (Figure 2) for consistency with the 2010 edition of the Fault Activity Map of California (Jennings and Bryant, 2010), which is a companion to this geologic map. The new version of the Fault Activity Map of California presents a much more detailed depiction of faults in California than previous versions. Faults active in the Quaternary (2.6 Ma) were digitized from their original sources in order to preserve as much of the original detail as possible. The faults in the offshore region of the geologic map were replaced with un-simplified fault traces from the new fault map. However, due to the complexity of the onshore geologic data depicted on the Geologic Map of California, it was not technically feasible to incorporate the new detailed fault data in its entirety. A comparison of the datasets was made and numerous fault traces identified as either poorly mapped or mislocated on the original geologic map were replaced with simplified fault traces based on the new fault map (Appendix A). In addition, several faults that have been mapped since the compilation of the original geologic map were also identified and added, and traces no longer believed to be faults were removed. Although the modification of faults in some areas necessitated the modification of bedrock geology adjacent to those faults, the distribution of bedrock geologic units compiled by Jennings (1977) has otherwise not been updated. In general, the Quaternary faults shown in the onshore region of this map are intended to be a simplified representation of the faults depicted on the Fault Activity Map.

Modifications to Quaternary Alluvium

The depiction of Quaternary geologic units on the original map by Jennings (1977) was simplified by the author who noted that "various surficial deposits of Quaternary age are lumped into the unit 'Q'." Since Jennings' work, subdivisions of these deposits have been found to have very different potential for liquefaction and for amplification of seismic shaking. Relative age of Quaternary alluvial fan deposits have also been found to correlate with potential for flooding. Since these units are important for evaluation of geologic hazards, the 2010 update of the geologic map includes a subdivision of Jennings "Q" into younger alluvium "Q" and older alluvium "Qoa" (Figure 3). In general, younger alluvium was deposited in Holocene time and represents the modern deposition in flood plains and on alluvial fans. Older alluvium is generally of Pleistocene age and represents depositional systems that are not currently active. Boundaries of older and younger alluvium were digitized from the 1:250,000 scale *Geologic Atlas of California*, compiled from 1958 to 1974 and the *Regional Geologic Map* series, compiled from 1981 to 1992 (Bortugno and Spittler, 1986; Saucedo and Wagner, 1992; Wagner and Bortugno, 1982; Wagner and Saucedo, 1987; Wagner and others, 1981; 1990). These boundaries were digitized for a statewide map showing geologic units that have different potential to amplify seismic shaking (Wills and others, 2000). Boundaries between younger and older alluvium were included in this update of the geologic map by extracting the polygons designated "older alluvium" from the "preliminary site conditions map of California" (Wills and others, 2000). Those polygons were then incorporated into the geologic map by replacing or subdividing the preexisting "Q" polygons.

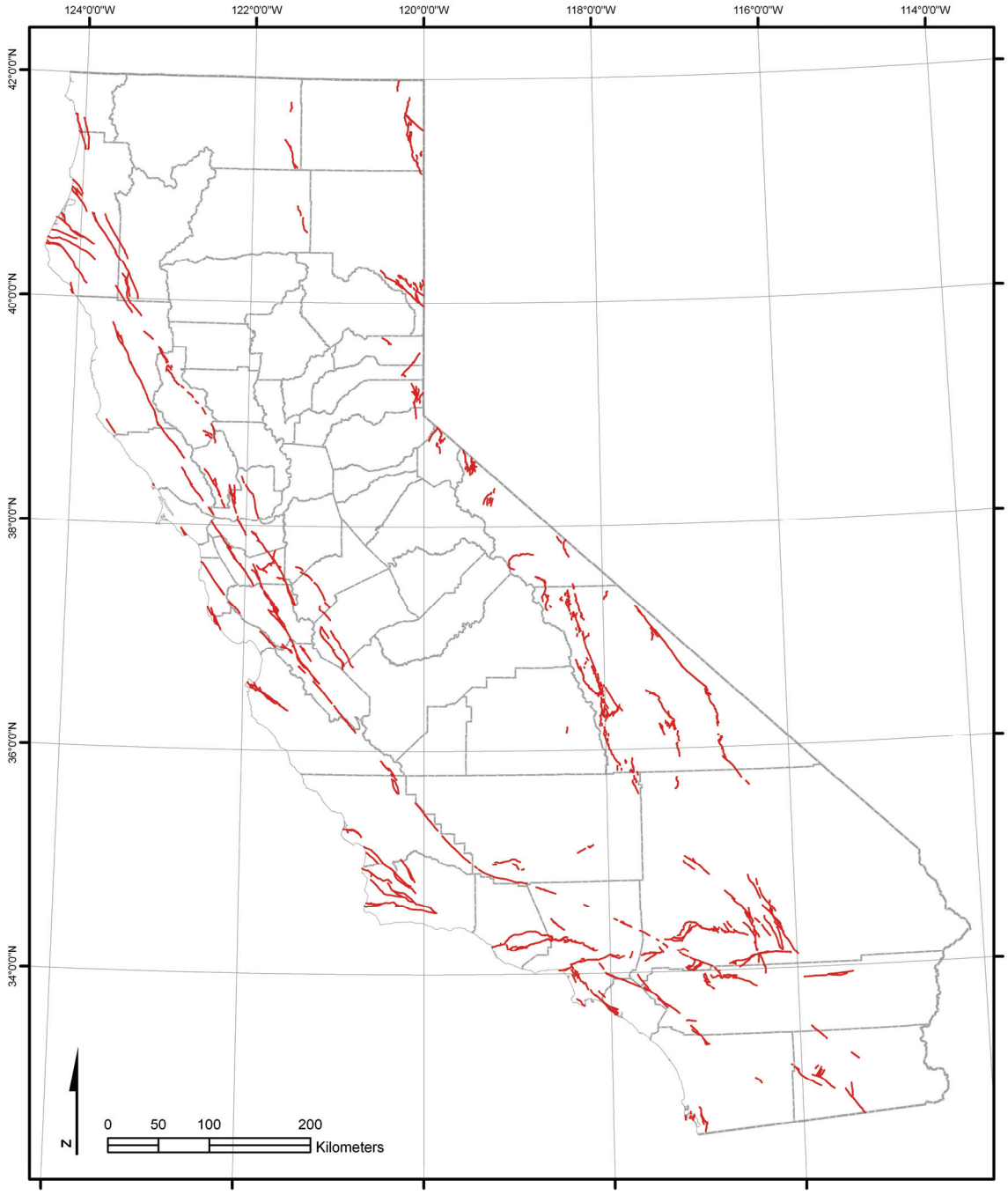

Figure 1. Map showing fault traces added to the onshore region of the Geologic Map of California.

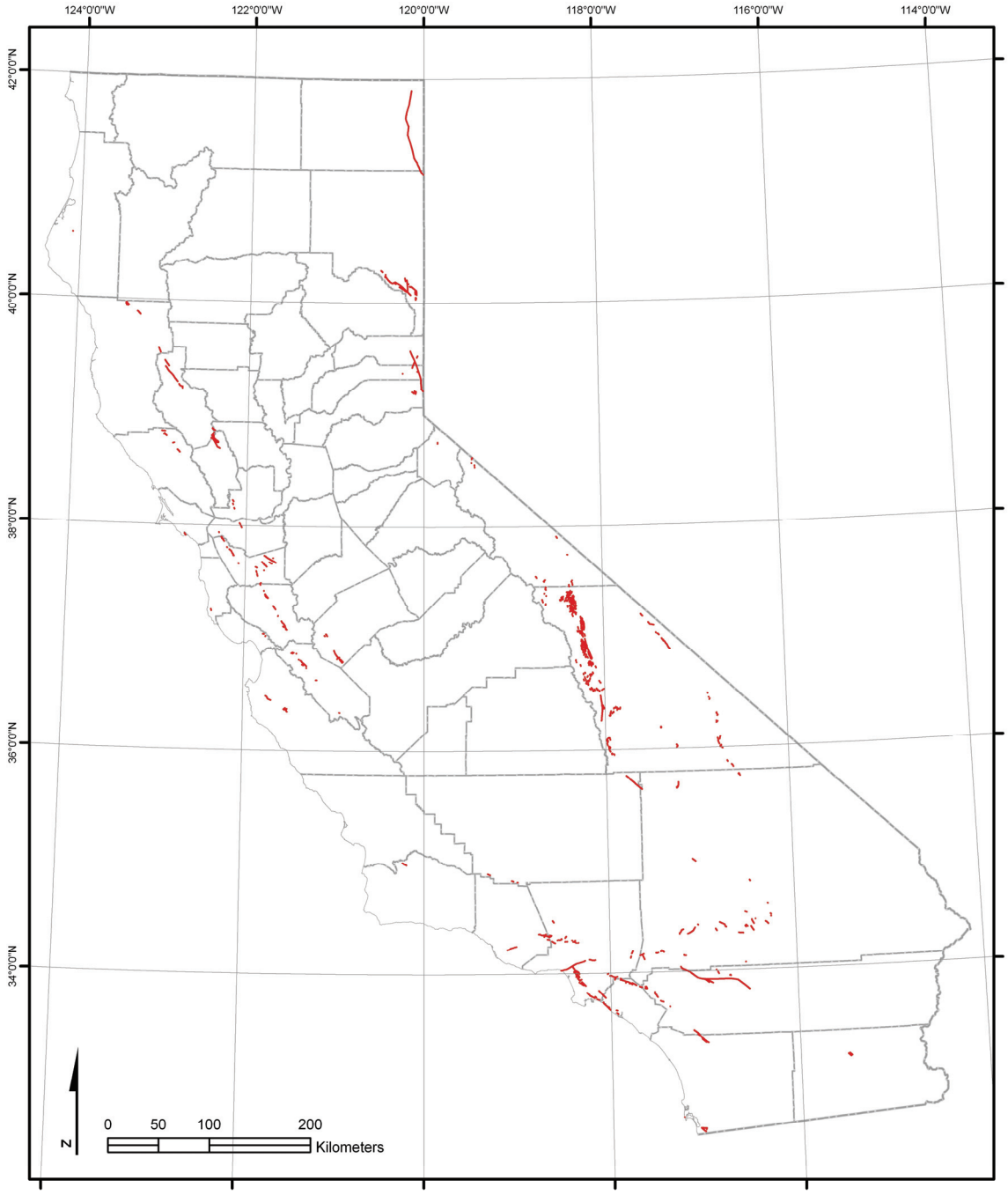

Figure 2. Map showing fault traces that were removed from the onshore region of the Geologic Map of California.

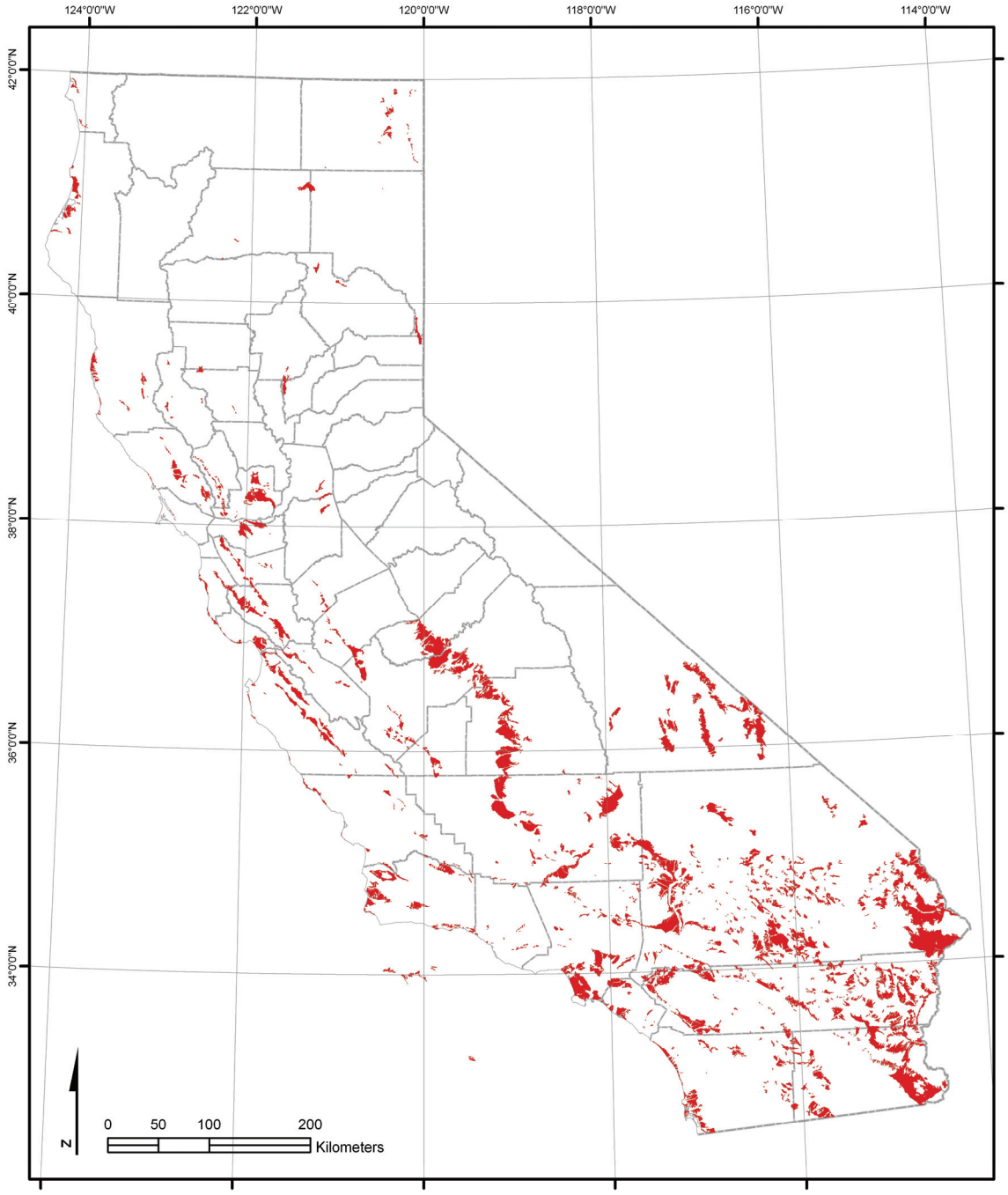

Figure 3. Map showing distribution of older alluvium (Qoa) polygons added to the Geologic Map of California.

REFERENCES

Belcher, E., 1839, Geological plan for the port of San Francisco [map], *in* the geology section by W. Buckland, *in* The zoology of Captain Beechey's voyage: London, Henry G. Bohn, p. 157-180.

Bishop, C.C., 1964, Needles Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

Blake, W.P., 1857, Geological report, *in* Williamson, R.S., Report of explorations in California for railroad routes (from Mississippi River to the Pacific Ocean) 1853 [Senate Ex. Doc. No. 78], v. 5, pt. 2, 310 p.

Bortugno, E.J., and Spittler, T.E., 1986, Geologic map of the San Bernardino quadrangle: California Division of Mines and Geology Regional Geologic Map Series, Map 3A, scale 1:250,000.

Burnett, J.L., and Jennings, C.W., 1962, Chico Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

Gay, T.E., and Aune, Q.A., 1958, Alturas Sheet, Geologic Map of California: California Division of Mines, scale 1:250,000.

Guillemin-Tarayre, E., 1871, Description des anciennes possessions mexicaines du nord: Paris, France, Mission Sci. au Mexique et dans l'Amérique Centrale, Geologie, pt. 2, 216 p.

Irelan, W., Jr., 1891, Preliminary Mineralogical and Geological Map of the State of California, 1:750,000: California State Mining Bureau.

Jenkins, O.P., 1938, Geologic Map of California, 1:500,000: California Division of Mines.

Jennings, C.W., 1959a, San Luis Obispo Sheet, Geologic Map of California: California Division of Mines, scale 1:250,000.

_____1959b, Santa Maria Sheet, Geologic Map of California: California Division of Mines, scale 1:250,000.

_____1961, Geologic Kingman Sheet, Geologic Map of California: California Division of Mines, scale 1:250,000.

_____1962, Long Beach Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

_____1967, Salton Sea Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

_____1977, Geologic Map of California: California Division of Mines and Geology, Geologic Data Map Series No. 2, scale 1:750,000.

Jennings, C.W., and Bryant, W.A., 2010, Fault activity map of California: California Geological Survey, Geologic Data Map Series No. 6, map scale 1:750,000.

Jennings, C.W., and Burnett, J.L, 1961, San Francisco Sheet, Geologic Map of California: California Division of Mines, scale 1:250,000.

Jennings, C.W., Burnett, J.L., and Troxel, B.W., 1963, Trona Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

Jennings, C.W., and Strand, R.G., 1959, Santa Cruz Sheet, Geologic Map of California: California Division of Mines, scale 1:250,000.

_____1960, Ukiah Sheet, Geologic Map of California: California Division of Mines, scale 1:250,000.

_____1969, Los Angeles Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

Koenig, J.B., 1963a, Santa Rosa Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

_____1963b, Walker Lake Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

Lydon, P.A., Gay, T.E., and Jennings, C.W., 1960, Westwood Sheet, Geologic Map of California: California Division of Mines, scale 1:250,000.

Marcou, J., 1883, Note sur la géologie de la Californie: Soc. Géol. France Bull., 3d ser., v. 11, p. 407-435.

Matthews, R.A., and Burnett, J.L., 1966, Fresno Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

Rogers, T.H., 1966a, San Jose Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

Rogers, T.H., 1966b, Santa Ana Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

Rogers, T.H., 1969, San Bernardino Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

Saucedo, G.J., Bedford, D.R., Raines, G.L., Miller, R.J., and Wentworth, C.M., 2000, GIS data for the geologic map of California: California Division of Mines and Geology CD 2000-007.

Saucedo, G.J., and Wagner, D.L., 1992, Geologic map of the Chico quadrangle: California Division of Mines and Geology Regional Geologic Map Series, Map 7A, scale 1:250,000.

Smith, A.R., 1965, Bakersfield Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

Smith, J.P., 1916, The geologic formations of California with reconnaissance geologic map: California State Mining Bureau Bulletin No. 72, 47 p.

Strand, R.G., 1962a, Redding Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

_____1962b, San Diego – El Centro Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

_____1964, Weed Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

_____1967, Mariposa Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

Strand, R.G., and Koenig, J.B., 1966, Sacramento Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

Streitz, R.L., and Stinson, M.C., 1977, Death Valley Sheet, Geologic Map of California: California Division of Mines and Geology, scale 1:250,000.

Wagner, D.L., and Bortugno, E.J., 1982, Geologic map of the Santa Rosa quadrangle: California Division of Mines and Geology Regional Geologic Map Series, Map 2A, scale 1:250,000.

Wagner, D.L., Bortugno, E.J., and McJunkin, R.D., 1990, Geologic map of the San Francisco – San Jose quadrangle: California Division of Mines and Geology Regional Geologic Map Series, Map 5A, scale 1:250,000.

Wagner, D.L., Jennings, C.W., Bedrossian, T.L., and Bortugno, E.J., 1981, Geologic map of the Sacramento quadrangle: California Division of Mines and Geology Regional Geologic Map Series, Map 1A, scale 1:250,000.

Wagner, D.L., and Saucedo, G.J., 1987, Geologic map of the Weed quadrangle: California Division of Mines and Geology Regional Geologic Map Series, Map 4A, scale 1:250,000.

Wald, D.J., Quitoriano, V., Heaton, T.H., Kanamori, H., Scrivner, C.W., and Worden, C.B., 1999, TriNet ``ShakeMaps": Rapid generation of instrumental ground motion and intensity maps for earthquakes in southern California: Earthquake Spectra, 15, no. 3, p. 537-556.

Wills, C.J., Petersen, M.D., Bryant, W.A., Reichle, M.S., Saucedo, G.J., Tan, S.S, Taylor, G.C, and Treiman J.A., 2000, A site conditions map for California based on geology and shear wave velocity: Bulletin of the Seismological Society of America, v. 90, no. 6b, p S187-S208.

APPENDIX A

The following table contains a list of faults from the digital version of the Jennings compilation (Saucedo and others, 2000) that were modified and faults that were not originally included. New fault traces added to this map were derived from the Fault Activity Map (FAM) (Jennings and Bryant, 2010). The table includes fault names, the magnitude of horizontal error (LOCATION ERROR) relative to the corresponding trace in the FAM, and comments regarding the quality of the preexisting fault trace and the action taken to improve it.

FAULT NAME	LOCATION ERROR	COMMENTS
SAN ANDREAS FAULT ZONE		
a) Shelter Cove area		Fault was incorrectly/incompletely mapped. It was replaced with simplified traces based on the FAM.
b) Offshore Shelter Cove to Point Arena	2 km	Fault traces were mislocated. They were replaced with simplified traces based on the FAM.
c) Bodega Bay area	700 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
d) Inverness to Bolinas	400 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
e) SF South and Montara Mtn. quads	400 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
f) Woodside	600 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
g) Los Gatos, Laurel, Loma Prieta area	400 m	Faults depicted had local location errors. They were replaced with simplified traces based on the FAM.
h) Lonoak quad		Fault was incorrectly mapped. It was replaced with simplified traces based on the FAM.
i) La Panza NE quad		Fault was incorrectly mapped. It was replaced with simplified traces based on the FAM.
j) Panorama Hills quad		Fault was incorrectly mapped. It was replaced with simplified traces based on the FAM.
k) Santiago Creek quad		Fault was incorrectly mapped as discontinuous. It was replaced with simplified traces based on the FAM.
l) La Liebre Ranch quad	600 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
m) San Gorgonio Pass area	400 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
San Gorgonio Pass fault		Fault was mostly not mapped. Simplified traces based on the FAM have been added.
Garnet Hill fault	800 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
Surpur Creek and Lost Man faults (Humboldt Co.)		Faults were not mapped. Simplified traces based on the FAM have been added.
Mad River fault zone		Fault was incompletely mapped, especially the western extent. Simplified traces based on the FAM have been added.
Little Salmon fault	600 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
Faults in SW Humboldt County (Russ, Bear River, Petrolia, Whale Gulch, Briceland, Garberville)		These faults were not shown previously. Simplified traces based on the FAM have been added.
Maacama fault		Most of the fault zone was not shown. It was updated with simplified traces based on the FAM.
Rodgers Creek fault	500m	Fault was locally mislocated. It was replaced with simplified traces based on the FAM.

FAULT NAME	LOCATION ERROR	COMMENTS
Bartlett Springs fault system	1 km	Lake Mountain fault was not shown. Faults in Lake Pillsbury area were mislocated by up to 1 km. Faults have been replaced with simplified traces based on the FAM.
Hunting Creek fault zone		Faults were not mapped previously. Simplified traces based on the FAM have been added.
Cordelia Fault		Faults were not mapped previously. Simplified traces based on the FAM have been added.
Green Valley fault		Northern part was incorrectly mapped. It was replaced with simplified traces based on the FAM.
Vaca fault		Fault was not mapped. Simplified traces based on the FAM have been added.
Concord fault	600 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
Greenville fault	900 m	Fault was poorly mapped. It was replaced with simplified traces based on the FAM.
West Napa Fault		Fault was mostly not mapped. Simplified traces based on the FAM have been added.
Los Positas fault		Fault was not mapped. Simplified traces based on the FAM have been added.
Verona fault		Fault was locally mislocated. It was replaced with simplified traces based on the FAM.
Ortigalita fault zone		Fault was locally mislocated. It was replaced with simplified traces based on the FAM.
San Joaquin fault		Fault was not mapped. Simplified traces based on the FAM have been added.
O'Neil Forebay fault		Fault was not mapped. Simplified traces based on the FAM have been added.
CALAVERAS FAULT ZONE		
a) Lick Observatory and Morgan Hill quads	600 m	San Felipe and Madrone Springs faults were mislocated by about the same amount. They were replaced with simplified traces based on the FAM.
b) south of Coyote Lake	800 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
c) Hollister area	500 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
d) Coyote Creek and East Branch Coyote Creek fault	500m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
Quien Sabe fault		Fault was incorrectly shown as concealed. Simplified traces based on the FAM now shown as well-located where appropriate.
Paicines fault	500 m	Fault was locally mis-mapped. It was replaced with simplified traces based on the FAM.
Sargent fault		Southern part near Santa Clara/San Benito County line was incorrectly mapped. It was replaced with simplified traces based on the FAM.
Hayward fault	600 m	Fault was locally mislocated and had some continuity issues. Fault has been replaced with simplified traces based on the FAM.
San Gregorio fault	600 - 800 m	Frijoles fault was not mapped; offshore faults were not correct. Faults have been replaced with simplified traces based on the FAM.
FAULTS IN THE MONTEREY AREA		
a) Tularcitos fault		Fault was not mapped correctly. It was replaced with simplified traces based on the FAM.
b) Navy fault		Fault was not mapped previously. Simplified traces based on the FAM have been added.

FAULT NAME	LOCATION ERROR	COMMENTS
c) Sylvan Thrust and Hatton Canyon faults		Fault was not mapped previously. Simplified traces based on the FAM have been added.
Los Osos fault		Active trace was not mapped previously. Simplified traces based on the FAM have been added.
Kern Canyon fault zone		Tertiary volcanic unit was incorrectly shown as concealing fault. Simplified traces based on the FAM now shown as well-located where appropriate.
East Huasna fault		In the Tepusquet Canon quad, fault was not shown as continuous to north. It was replaced with simplified traces based on the FAM.
Faults in San Luis Obispo area		The following faults were not shown: Orcutt, Casmalia, Los Alamos, Santa Ynez River, Baseline, Lions Head, Garey, Oceano, Wilmar Avenue, Foxen Canyon, Santa Maria River faults. Simplified traces based on the FAM have been added.
Oak Ridge fault	1.6 km	Western end of fault was mislocated. It was replaced with simplified traces based on the FAM.
Santa Susana fault	1 km	Fault was not mapped correctly. It was replaced with simplified traces based on the FAM.
Simi-Santa Rosa fault zone	700 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
Springville fault	1 km	Fault was mislocated. It was replaced with simplified traces based on the FAM.
Camarillo fault		Fault was not mapped. Simplified traces based on the FAM have been added.
Newport-Inglewood fault zone		Faults traces did not reflect more recent mapping. They were replaced with simplified traces based on the FAM.
Hollywood and Santa Monica faults	1.4 km	Hollywood fault was mislocated; both faults reflected outdated mapping. Faults have been replaced with simplified traces based on the FAM.
Raymond fault	600 m	Fault was locally mislocated. It was replaced with simplified traces based on the FAM.
San Gabriel fault zone (Newhall area)	600 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
San Fernando fault zone	500 m	Fault was locally mislocated. It was replaced with simplified traces based on the FAM.
San Dimas Canyon fault (Sierra Madre fault zone)	500 m	Fault was poorly mapped and locally shown as discontinuous. Fault has been replaced with simplified traces based on the FAM.
Cucamonga fault	500 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
North Frontal Fault System (NFFS)	500 m	Western section was mislocated. It was replaced with simplified traces based on the FAM.
Silver Reef fault		Fault was incorrectly shown as concealed. Simplified traces based on the FAM now shown as well-located where appropriate.
Helendale fault		Southern section of fault was incorrectly shown to offset North Frontal Fault System. Fault has been updated with simplified traces based on the FAM.
Southern Johnson Valley fault		Fault was not mapped. Simplified traces based on the FAM have been added.
Harper Lake fault	500 m	Fault was mislocated in Barstow quad. It was replaced with simplified traces based on the FAM.
Mt. General fault	500 m	Fault was mislocated in Barstow quad and incorrectly shown as concealed. Simplified traces based on the FAM now shown as well-located where appropriate.
Northern Emerson fault		Fault was incorrectly shown as concealed. Simplified traces based on the FAM now shown as well-located where appropriate.

FAULT NAME	LOCATION ERROR	COMMENTS
Homestead Valley fault		Some traces were incorrectly shown as concealed. Simplified traces based on the FAM now shown as well-located where appropriate.
Pinto Mtn. fault	900 m	Central section was mislocated and incorrectly shown as concealed. Western end was mislocated up to 700m for both Pinto Mountain and Morongo Valley faults. Simplified traces based on the FAM now shown as well-located where appropriate.
Hidalgo fault	700 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
Mesquite Lake fault	400 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
"Fault A" (just east of Hidalgo fault)	700 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
East Bullion fault	500 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
West and East Bullion faults		Fault was incompletely mapped in Deadman Lake NW quad. It was replaced with simplified traces based on the FAM.
Lavic Lake fault		Fault was not mapped north of Bullion Mountains. Simplified traces based on the FAM have been added.
Pisgah fault	600 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
North striking faults south of Pinto Mountain fault (Burnt Mtn.; Eureka Peak; Long Canyon; East Wide Canyon)		These faults were not mapped. Simplified traces based on the FAM have been added.
Brawley fault		Fault was not mapped. Simplified traces based on the FAM have been added.
Elmore Ranch fault		Fault was not mapped. Simplified traces based on the FAM have been added.
Cleghorn fault	400 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
Tunnel Ridge and Arrastre Narrows faults		Fault was mislocated. It was replaced with simplified traces based on the FAM.
Chicken Hill fault		Fault was incompletely mapped. It was replaced with simplified traces based on the FAM.
Western Heights fault	400 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.
East Montebello fault		Fault was incompletely mapped. It was replaced with simplified traces based on the FAM.
Whittier fault	800 m	Two traces were shown in the Montebello quad (only one shown on FAM) and were up to 800 m in error. Fault has been replaced with simplified traces based on the FAM.
Chino Hills fault	500 m	Some areas were incorrectly shown as concealed and the northern strand was mislocated. Simplified traces based on the FAM now shown as well-located where appropriate.
ELSINORE FAULT ZONE		
a) Main Street fault		Fault was mostly not mapped. Simplified traces based on the FAM have been added.
b) Glen Ivy North fault		SE corner of Corona S quad was incorrectly mapped. It was replaced with simplified traces based on the FAM.
c) Willard fault		Trace near Lake Elsinore was incorrectly mapped. It was replaced with simplified traces based on the FAM.
d) Glen Ivy North fault	800 m	Southern end was mislocated. It was replaced with simplified traces based on the FAM.
e) Murrettia Hot Springs fault	500 m	Fault was mislocated. It was replaced with simplified traces based on the FAM.

FAULT NAME	LOCATION ERROR	COMMENTS
f) Wildomar fault		Southern end was incorrectly mapped. It was replaced with simplified traces based on the FAM.
La Nacion fault	400 m	Fault had local mislocations. It was replaced with simplified traces based on the FAM.
Silver Strand, Spanish Bight, and Coronado faults		Fault was incompletely mapped. Simplified traces based on the FAM have been added.
Downtown Graben		Fault was incompletely mapped. Simplified traces based on the FAM have been added.
Point Loma fault		Fault was not mapped correctly. Simplified traces based on the FAM have been added.
GARLOCK FAULT ZONE		
a) Monolith quad		Fault was incompletely mapped. Simplified traces based on the FAM have been added.
b) West end of Fremont Valley	400 m	Fault was locally mislocated. It was replaced with simplified traces based on the FAM.
Wheeler Ridge fault		Fault was not mapped. Simplified traces based on the FAM have been added.
Pleito fault		Fault was incorrectly shown as concealed in eastern section. Simplified traces based on the FAM now shown as well-located where appropriate.
Panamint Valley fault		Ballarat area was poorly mapped - principal trace was not mapped; northern Panamint Valley traces were mislocated. Faults have been replaced with simplified traces based on the FAM.
Ash Hill fault		Fault was locally mislocated. It was replaced with simplified traces based on the FAM.
Cascadia megathrust		Fault was incompletely mapped. Simplified traces based on the FAM have been added.
Blue Cut fault		Fault was shown as concealed along most of trace. However, fault does offset some Qal. Fault has been updated with simplified traces based on the FAM to show fault as well-located where appropriate.
Tank Canyon fault	400 m	Fault was incompletely mapped. Simplified traces based on the FAM have been added.
Red Hill fault (part of San Juan fault zone)		Fault was not mapped. Simplified traces based on the FAM have been added.
Beaumont Plains faults		Fault was not mapped. Simplified traces based on the FAM have been added.
Independence fault	800 m	Fault was incorrectly shown as concealed and did not form bedrock/alluvium contact. It has been updated with simplified traces based on the FAM. Fault now forms the bedrock/alluvium contact and is shown as approximately- or well-located.
Owens Valley lineaments		Map previously depicted a multitude of lineaments. Lineaments have been replaced with simplified traces based on the FAM.
Owens Valley fault zone		Fault was shown as non-continuous and did not reflect more recent mapping. It was replaced with simplified traces based on the FAM.
Southern Sierra Nevada		Fault was locally shown as concealed. It was updated with simplified traces based on the FAM and now depicts faults as approximately- and well-located.
DEATH VALLEY FAULT SYSTEM (DVFS)		
a) Black Mountain fault (DVFS)		Fault was poorly mapped. It was replaced with simplified traces based on the FAM.
b) Northern Death Valley fault zone		Fault was locally mislocated. It was replaced with simplified traces based on the FAM.

FAULT NAME	LOCATION ERROR	COMMENTS
Deep Springs fault		Northern section was poorly mapped. It was replaced with simplified traces based on the FAM.
White Mountains fault zone	2.4 km	Northern section was mislocated. It was replaced with simplified traces based on the FAM.
Long Valley Caldera margin	2.5 km	Northwest margin was mislocated. It was replaced with simplified traces based on the FAM.
Faults in Bridgeport Basin	2 km	Fault was poorly, or not mapped, especially faults in the basin. Fault has been replaced with simplified traces based on the FAM.
Antelope Valley fault	800 m	Fault was incorrectly shown as concealed. Simplified traces based on the FAM now shown as well located.
Genoa fault	1.2 km	Fault was incorrectly shown as concealed. Simplified traces based on the FAM now shown as well located.
Round Valley fault	1.5 km	Northern section was mislocated. It was replaced with simplified traces based on the FAM.
Faults in Lake Tahoe area		Recent mapping had not been incorporated. They were updated with simplified traces based on the FAM.
Dog Valley fault	3.5 km	Fault traces were outdated. They were updated with simplified traces based on the FAM.
Honey Lake, Ft. Sage, and Warm Springs faults	800 m	Honey Lake fault was incorrectly shown as concealed. Simplified traces based on the FAM now shown as well located.
Surprise Valley fault zone	1.1 km	Fault was incorrectly shown as concealed. Simplified traces based on the FAM now shown as well located.
Goose Lake fault		Entire fault was incorrectly shown as concealed. Simplified traces based on the FAM now shown as well-located where appropriate.
Gillem fault		Fault did not extend far enough to the south. Simplified traces based on the FAM have been added.
Mayfield fault		Fault was incorrectly mapped in southern section. It was replaced with simplified traces from the FAM.
Hat Creek fault		Fault was incorrectly mapped as concealed along southern section. Simplified traces based on the FAM now shown as well located on southern section.
Offshore faults statewide		Fault traces depicted in the offshore region were outdated, especially the San Diego area. Faults in the offshore region have been replaced with the faults depicted in the offshore region of the FAM.