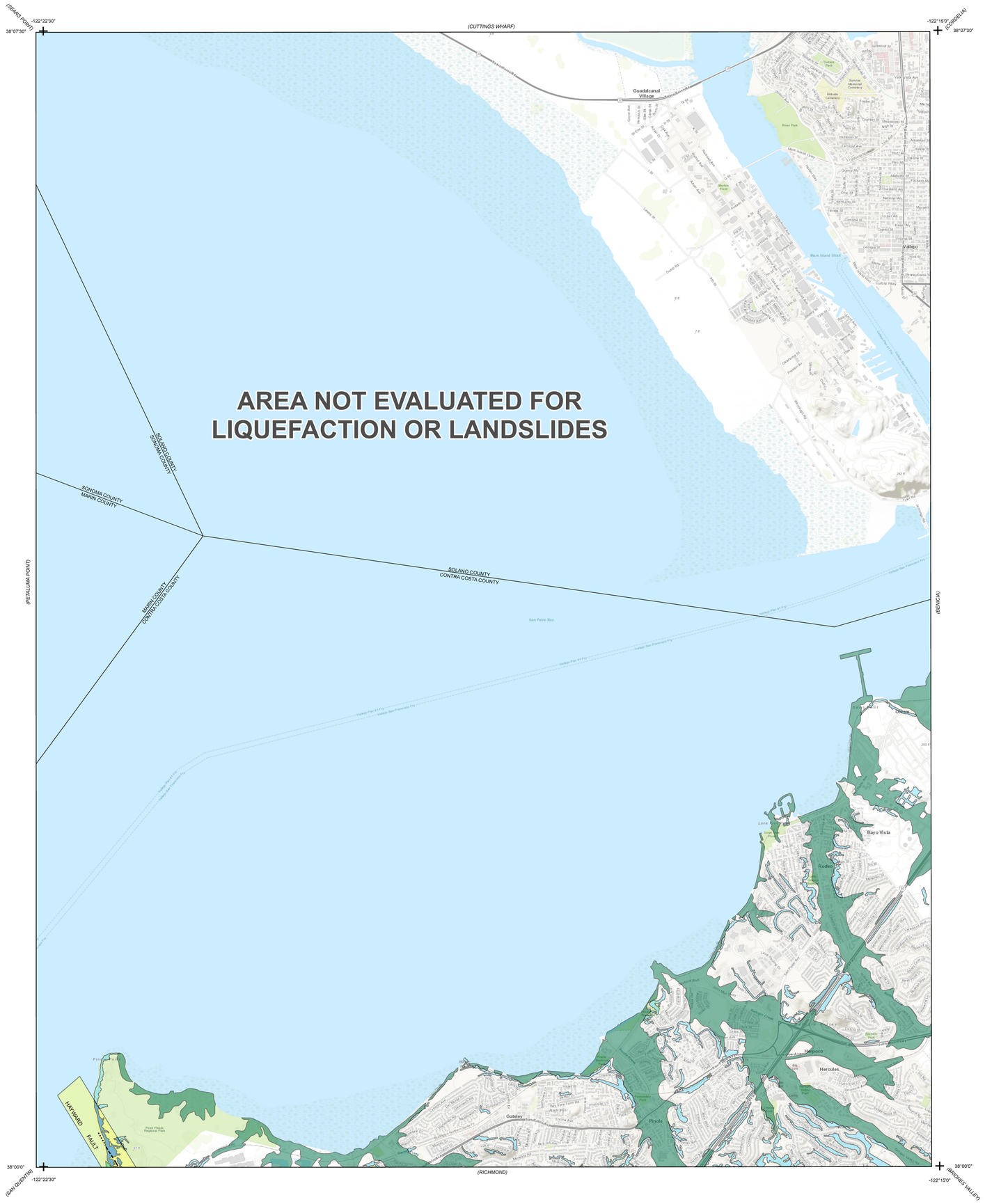


Study area defined by USGS quadrangle boundaries using NAD 27, represented by the visible map extent. Data are maintained and distributed in California Albers (meters), NAD 83, [EPSG:3310] as shown by ticks and coordinates.

Base Map: ESRI World Topographic, 2021. Earthquake Zones of Required Investigation originally registered with boundaries on USGS topographic base map 1959.

Scale 1:24,000

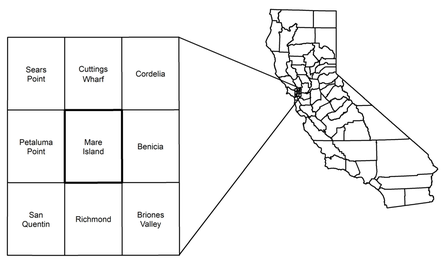
1 0.5 0 1 2 Miles

1,000 500 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 8,000 9,000 10,000 Feet

1 0.5 0 1 2 Kilometers
1,000 500 0 1,000 2,000 Meters

13°
TRUE NORTH
MAGNETIC NORTH
Approximate Declination, 2020

N



California Department of Conservation
California Geological Survey
Geologic Information and Publications
www.conservation.ca.gov/cgs

Citation for this Map: California Geological Survey, Earthquake Fault Zones (1982) and Seismic Hazard Zones (2024), Mare Island 7.5-minute Quadrangle: Map of Earthquake Zones of Required Investigation, scale 1:24,000; https://maps.conservation.ca.gov/cgs/informationwarehouse/. Accessed [day] [month] [year]

California Geological Survey

Earthquake Zones of Required Investigation Mare Island Quadrangle

This Map Shows Both Alquist-Priolo Earthquake Fault Zones And Seismic Hazard Zones Issued For The Mare Island Quadrangle
Map Preparation By Michael Falsetto

This map shows the location of Alquist-Priolo (AP) Earthquake Fault Zones and Seismic Hazard Zones, collectively referred to here as Earthquake Zones of Required Investigation. The Geographic Information System (GIS) digital files of these regulatory zones released by the California Geological Survey (CGS) are the Official Maps. GIS files are available at the CGS website https://maps.conservation.ca.gov/cgs/informationwarehouse/. These zones will assist cities and counties in fulfilling their responsibilities for protecting the public from the effects of surface fault rupture and earthquake-triggered ground failure as required by the AP Earthquake Fault Zoning Act (Public Resources Code Sections 2621-2630) and the Seismic Hazards Mapping Act (Public Resources Code Sections 2690-2699.6). For information regarding the general approach and recommended methods for preparing these zones,see CGS Special Publication 42, *Earthquake Fault Zones, a Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California*, Appendix C, and CGS Special Publication 118, *Recommended Criteria for Delineating Seismic Hazard Zones in California*.

For information regarding the scope and recommended methods to be used in conducting required site investigations refer to CGS Special Publication 42, and CGS Special Publication 117A, *Guidelines for Evaluating and Mitigating Seismic Hazards in California*. For a general description of the AP and Seismic Hazards Mapping Acts, the zonation programs, and related information, please refer to the website at: www.conservation.ca.gov/cgs/shp.

MAP EXPLANATION

EARTHQUAKE FAULT ZONES

Earthquake Fault Zones

Zone boundaries define the zone encompassing active faults that constitute a potential hazard to structures from surface faulting or fault creep such that avoidance as described in Public Resources Code Section 2621.5(a) would be required.

1906 C

Active Fault Traces

Faults considered to have been active during Holocene time and to have potential for surface rupture: Solid Line in Black or Red where Accurately Located; Long Dash in Black where Approximately Located; Short Dash in Black where Inferred; Dotted Line in Black where Concealed; Query (?) indicates additional uncertainty. Evidence of historic offset indicated by year of earthquake-associated event or C for displacement caused by fault creep.

SEISMIC HAZARD ZONES

Liquefaction Zones

Areas where historical occurrence of liquefaction, or local geological, geotechnical and ground water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslide Zones

Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

OVERLAPPING EARTHQUAKE FAULT AND SEISMIC HAZARD ZONES

Overlap of Earthquake Fault Zone and Liquefaction Zone

Areas that are covered by both Earthquake Fault Zone and Liquefaction Zone.

Overlap of Earthquake Fault Zone and Earthquake-Induced Landslide Zone

Areas that are covered by both Earthquake Fault Zone and Earthquake-Induced Landslide Zone.

Note: Mitigation methods differ for each zone --
AP Act only allows avoidance; Seismic Hazard Mapping Act allows mitigation by engineering/geotechnical design as well as avoidance.

ADDITIONAL INFORMATION

For additional information on the zones of required investigation presented on this map, the data and methodology used to prepare them, and additional references consulted, please refer to the following:

Seismic Hazard Zone Report for the Richmond, Mare Island, and San Quentin 7.5-minute Quadrangles, Contra Costa County, California. California Geological Survey, Seismic Hazard Zone Report SHZR-134.
https://www.conservation.ca.gov/cgs/Documents/Publications/SHZR/SHZR_134_Richmond_San_Quentin_Mare_Island_a11y.pdf

For more information on the Seismic Hazards Mapping Act please refer to:
https://www.conservation.ca.gov/cgs/shma/

The Hayward Fault in the Richmond and Mare Island 7.5-Minute Quadrangles, Alameda and Contra Costa counties, California. California Geological Survey, Fault Evaluation Report FER-101.
https://gmw.conservation.ca.gov/SHP/EZRIM/Reports/FER/101

For more information on the Alquist-Priolo Earthquake Fault Zoning Act please refer to:
https://www.conservation.ca.gov/cgs/alquist-priolo/

MARE ISLAND QUADRANGLE

EARTHQUAKE FAULT ZONES

Delineated in compliance with Chapter 7.5, Division 2 of the California Public Resources Code
(Alquist-Priolo Earthquake Fault Zoning Act)

OFFICIAL MAP

Released: January 1, 1982

STATE GEOLOGIST

SEISMIC HAZARD ZONES

Delineated in compliance with Chapter 7.8, Division 2 of the California Public Resources Code
(Seismic Hazards Mapping Act)

OFFICIAL MAP

Released: February 22, 2024

STATE GEOLOGIST

PROFESSIONAL GEOLOGIST
Jeremy Lancaster
No. 7692
STATE OF CALIFORNIA

IMPORTANT

PLEASE NOTE THE FOLLOWING FOR ZONES SHOWN ON THIS MAP

1) This map may not show all faults that have the potential for surface fault rupture, either within the Earthquake Fault Zones or outside their boundaries. Additionally, this map may not show all areas that have the potential for liquefaction, landsliding, strong earthquake ground shaking or other earthquake and geologic hazards. Also, a single earthquake capable of causing liquefaction or triggering landside failure will not uniformly affect the entire area zoned.

2) Boundaries of Earthquake Fault Zones, if included on this map, are based on interpreted Holocene-active fault traces.

3) The identification and location of these faults are based on the best available data. However, the quality of data used is varied. Traces have been depicted as accurately as possible at a map scale of 1:24,000.

4) Liquefaction zones may also contain areas susceptible to the effects of earthquake-induced landslides. This situation typically exists at or near the toes of existing landslides, downslope from rockfall or debris flow source areas, or adjacent to steep stream banks.

5) Landslide zones on this map were determined, in part, by adapting methods first developed by the U.S. Geological Survey (USGS). Landslide hazard maps prepared by the USGS typically use experimental approaches to assess earthquake-induced and other types of landslide hazards. Although aspects of these new methodologies may be incorporated in future CGS seismic hazard zone maps, USGS maps should not be used as substitutes for these Official SEISMIC HAZARD ZONES maps.

6) CGS base map standards provide that 90 percent of cultural features be located within 40 feet (horizontal accuracy) at the scale of this map. The identification and location of liquefaction and earthquake-induced landslide zones are based on available data. However, the quality of data used is varied. The zone boundaries depicted have been drawn as accurately as possible at this scale.

7) Information on this map is not sufficient to serve as a substitute for the geologic and geotechnical site investigations required under Chapters 7.5 and 7.8 of Division 2 of the California Public Resources Code.

8) Seismic Hazard Zones identified on this map may include developed land where delineated hazards have already been mitigated to city or county standards. Check with your local building/planning department for information regarding the location of such mitigated areas.

9) DISCLAIMER: The State of California and the Department of Conservation make no representations or warranties regarding the accuracy of the data from which these maps were derived. Neither the State nor the Department shall be liable under any circumstances for any direct, indirect, special, incidental or consequential damages with respect to any claim by any user or any third party on account of or arising from the use of this map.

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AUTHORSHIP CREDITS

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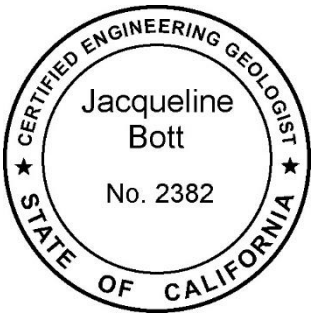
Lead Author – Jacqueline Bott, Engineering Geologist



Date: February 22, 2024

Work in Responsible Charge: Data acquisition and modeling, high-resolution (lidar) elevation analysis, field verification, and final seismic hazard zone map production.

Project Manager – Erik Frost, Senior Engineering Geologist

Date: February 22, 2024

Work in Responsible Charge: Validation of mapping process and pre-release seismic hazard zone map review.

Program Manager – Timothy Dawson, Supervising Engineering Geologist

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Date: February 22, 2024

Work in Responsible Charge: Technical review and approval.