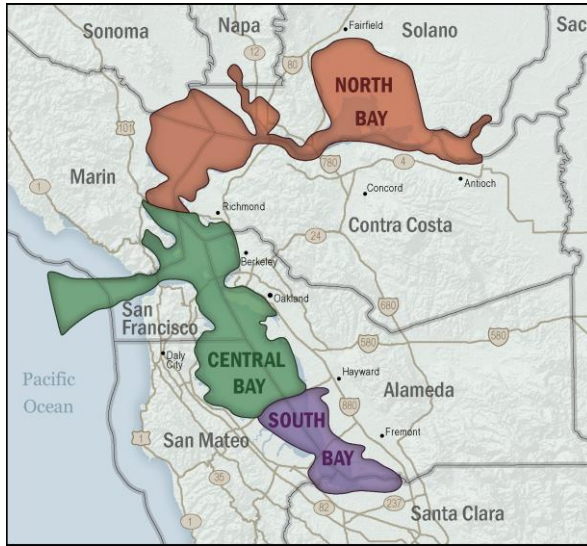




FEMA



## CCAMP: San Francisco Bay Coastal Study



### San Francisco Bay Counties

Alameda *Central, South Bay*

Contra Costa *Central, North Bay*

Marin *North, Central Bay*

Napa *North Bay*

San Francisco *Central Bay*

San Mateo *Central, South Bay*

Santa Clara *South Bay*

Solano *North Bay*

Sonoma *North Bay*

Visit [www.r9coastal.org](http://www.r9coastal.org) for more info

### Contact

Kathy Schaefer  
FEMA Engineer  
[kathleen.schaefer@dhs.gov](mailto:kathleen.schaefer@dhs.gov)

### San Francisco Bay Study and Mapping Overview

The Federal Emergency Management Agency (FEMA) is performing new detailed coastal engineering analyses of San Francisco Bay. The new coastal study will revise and update the flood and wave data for the coastal Flood Insurance Study reports and Digital Flood Insurance Rate Maps. In total this effort will encompass all or portions of the San Francisco Bay shoreline within the nine counties of: Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, San Mateo, San Francisco, and Santa Clara. To learn more about the FEMA San Francisco Bay Shoreline Study, please visit [www.r9coastal.org](http://www.r9coastal.org).

In addition, FEMA is coordinating with the U.S. Army Corps of Engineers (USACE), San Francisco District on the South San Francisco Bay Shoreline Study (Shoreline Study). The Shoreline Study is a Congressionally-authorized study being performed by the USACE together with local sponsors to identify and recommend Federal funding for one or more projects for flood damage reduction, ecosystem restoration and related purposes such as public access. To learn more about the USACE study, please visit ([www.southbayshoreline.org](http://www.southbayshoreline.org)).

California Coastal Analysis and Mapping Project



RiskMAP

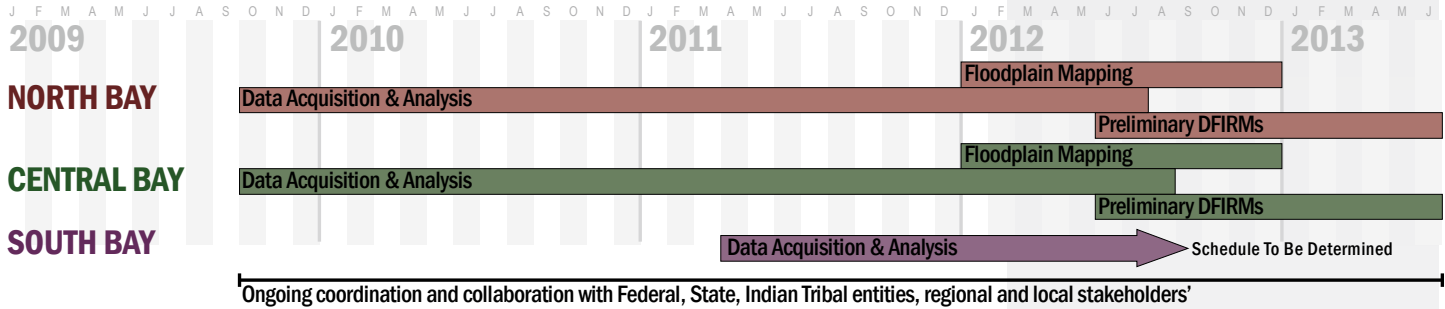
Increasing Resilience Together



FEMA



## CCAMP: San Francisco Bay Study and Mapping Timeline



### General Information on Coastal Mapping

FEMA’s coastal study and mapping efforts benefit from new technologies and coastal data, including the collection of detailed topographic data using Light Detection and Ranging (LIDAR). Studies by other entities, such as the USACE, will be evaluated for compatibility with FEMA’s study and mapping goals.

Regional-scale storm surge and wave models of San Francisco Bay were developed to provide still water levels, open ocean swells and locally-generated seas for the North and Central Bay areas. The model simulations were performed for a 31-year continuous period, from 1973 to 2004. Time series input parameters included the ocean tide level, lower Sacramento River discharge, wind and pressure fields, and various river, creek and tributary discharges. The results from this study will be used to provide boundary conditions for detailed onshore coastal flood hazard analyses.

FEMA will evaluate the onshore coastal flood hazard due to high water levels and waves to determine new proposed Base Flood Elevations (BFEs). The BFEs will include the effects of waves, including wave setup, wave runup and overtopping, and overland wave propagation. Coastal High Hazard Areas (Zone VE) will be mapped when supported by flood hazard modeling results.

Following FEMA’s due process and statutory requirements, the BFEs will be finalized in revised Flood Insurance Study reports and on the DFIRMs. FEMA is coordinating with Federal, State, Indian Tribal entities, regional and local stakeholders and will continue to coordinate with these stakeholders as the study and mapping efforts progress.

### Next Steps, Stay Informed and Engaged

After FEMA’s review and approval of the storm surge and wave modeling, it will commence with the onshore coastal flood hazard analysis. FEMA welcomes your comments. Visit [www.r9coastal.org](http://www.r9coastal.org) to stay informed. Questions and comments can be submitted from the ‘Contact Us’ tab.

California Coastal Analysis and Mapping Project



RiskMAP

Increasing Resilience Together