



BAY AREA DISASTER RESILIENCE

Moving Beyond Response to Long - Term Recovery and Restoration

Danielle Hutchings, ABAG Earthquake and Hazards Program Coordinator

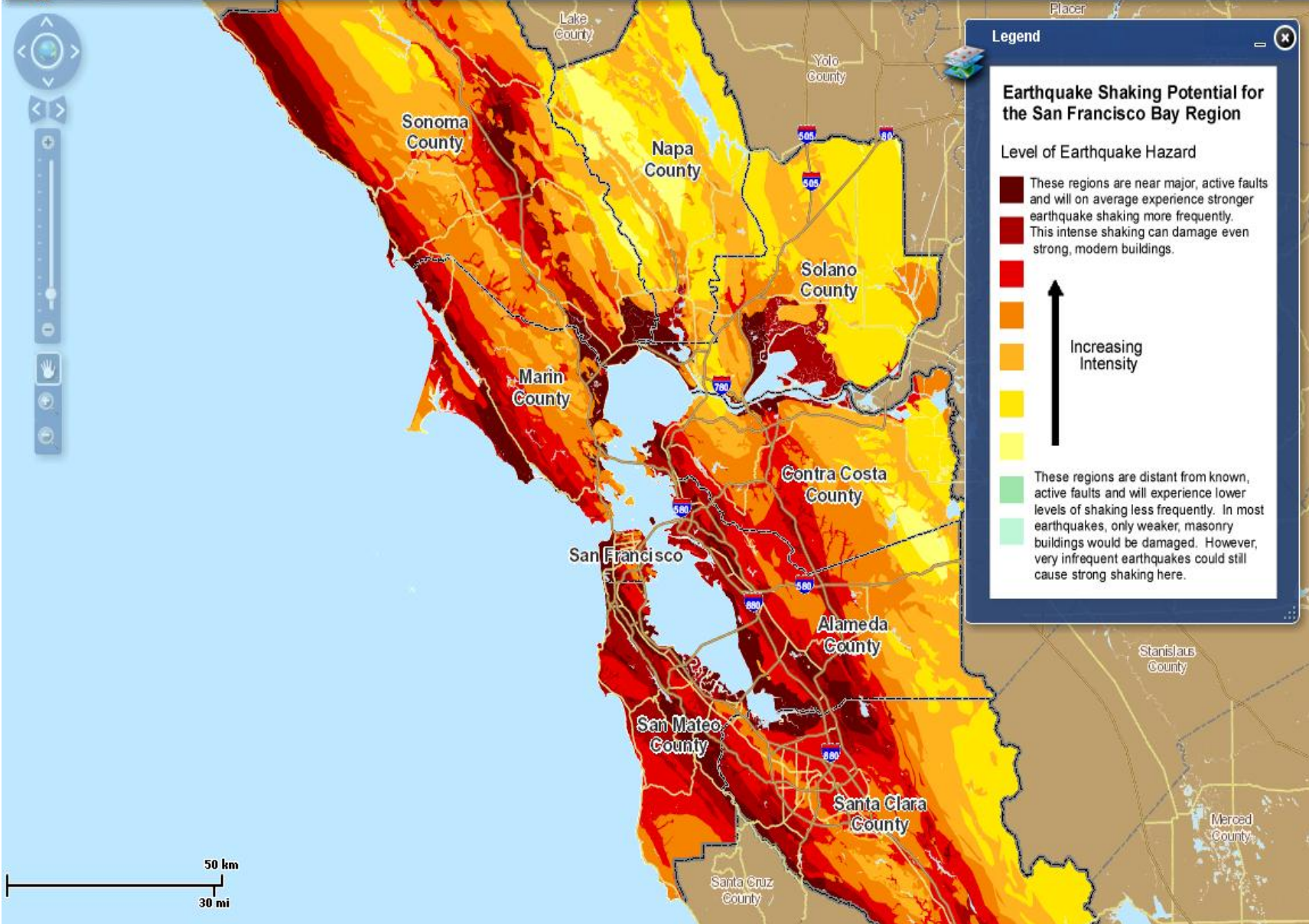
Sewer Smart Summit, October 25, 2011

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Earthquake and Hazards Information

Earthquake Shaking Potential

Map Info

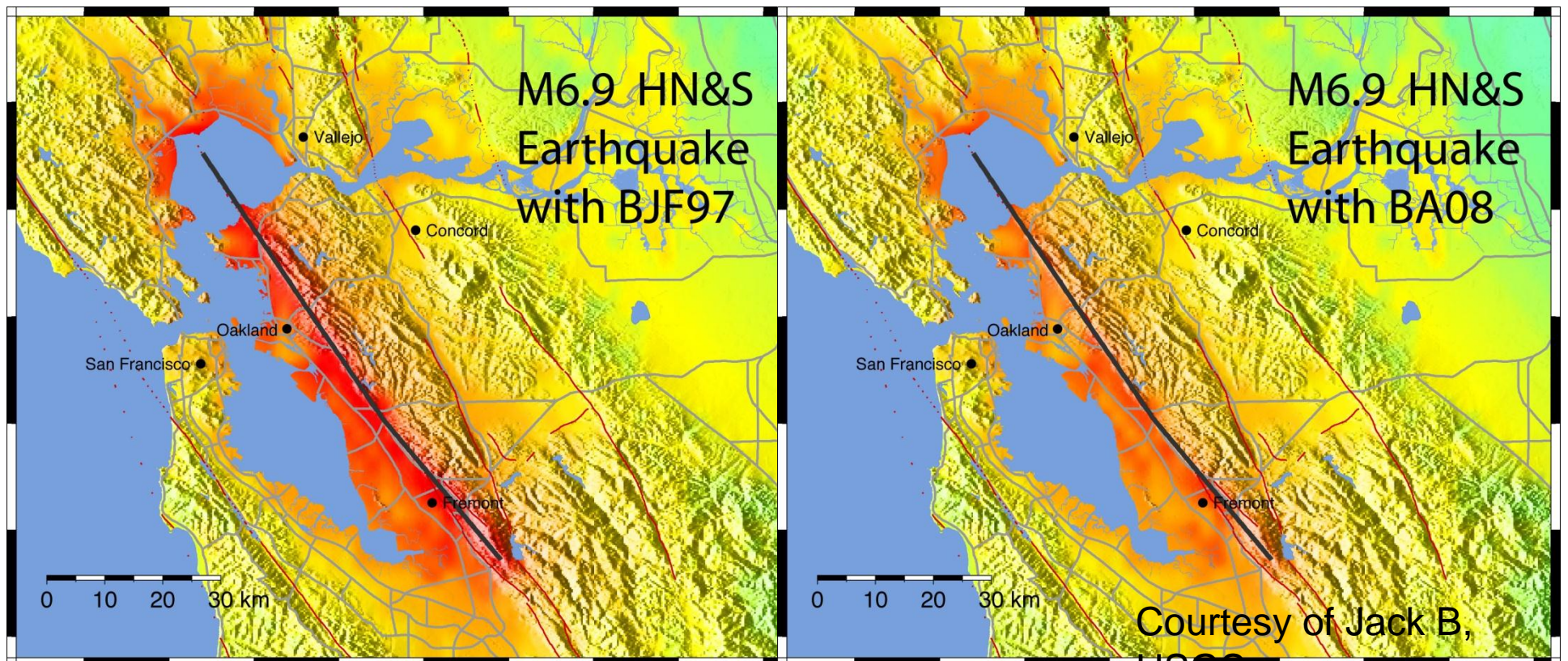


Lessons learned from Japan and NZ:

- “ Ground shaking may be weaker than we expect near the fault
- “ Earthquakes routinely ignore the models we develop for them . unexpected size, location
- “ When one earthquake occurs it is much more likely that another large one will follow
- “ Imagine all the consequences

Good news: shaking near the fault may be weaker than previously thought

- “ As magnitude increases, ground motion near the fault increases more and more slowly (saturation)
- “ Scenario models are being revised.



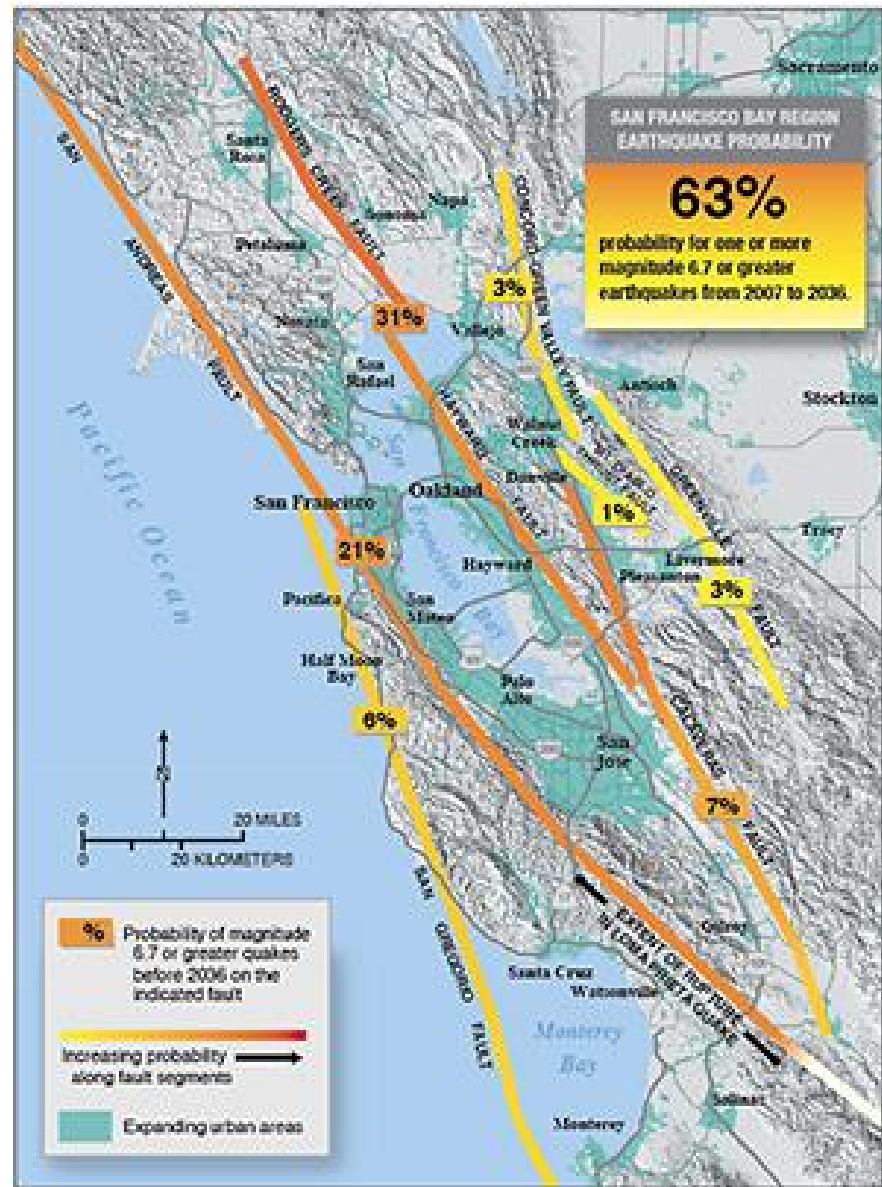
Bad news: Earthquakes ignore the models we construct for them

- “ The fault responsible for the 2010 and 2011 NZ earthquakes was unknown to seismologists before the event
- “ 1994 Northridge earthquake occurred on an unknown fault
- “ 2011 Japan earthquake occurred across two segments of fault thought to be separate . creating a larger than expected quake

We live in earthquake country

Web of faults are capable of a M6.7 or larger earthquake.

When the earthquake strikes, it is up to us to decide whether we emerge stronger or fall into disarray.

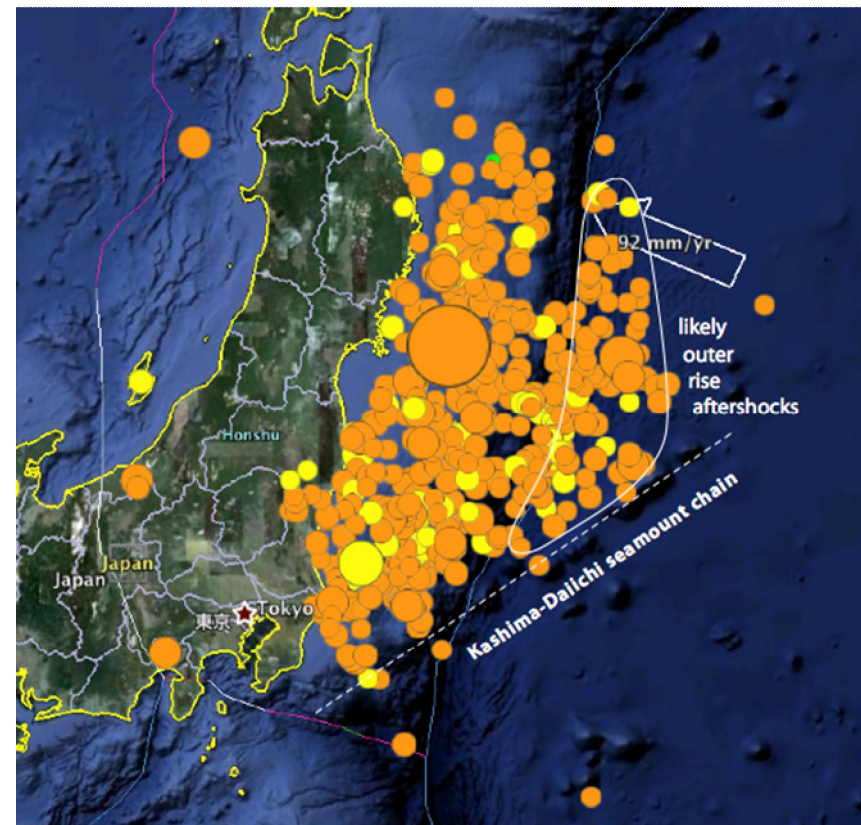


Source: USGS

Earthquake Clustering

- “ Number of aftershocks quickly diminishes after main event
- “ Size of aftershocks does not diminish over time
- “ Aftershocks can last for month to years
- “ 2011 NZ earthquake more devastating than main 2010 earthquake
- “ Implications for recovery

Kashima-Daiichi seamount chain may control southern end of Tohoku-Oki aftershock zone



Cascading failures

- “ Hurricane Katrina and the Japan earthquake demonstrate the concern of cascading failures in infrastructure systems
- “ Fires more destructive for SF than earthquake in 1906
- “ Major water, gas, and electric lines, roads, railways vulnerable to earthquake damage
- “ Delta levee failures



Underscores the need for a strategy to improve Bay Area disaster resilience

Need for Disaster Resilient Region

- “ Ensure the economic vitality of the region
- “ Maintain quality of life
- “ Quickly return to normal after disaster
- “ Leverage opportunities to build back better and more sustainably
- “ Work together to plan and execute of a post-disaster recovery plan



Goal: Improve the Region's Resilience

“ Capacity to withstand, adapt and rapidly return to a new sense of normal



Regional Disaster Resilience Action Plan

- “ Capabilities and gaps for long-term economic recovery
- “ Partner with public, private sector and non-profit organizations, regional agencies and associations
- “ Develop an action plan to address our gaps, with regional priorities
- “ Outcome: stakeholder-developed strategy building on existing capabilities to enhance Bay Area disaster resilience
- “ <http://quake.abag.ca.gov/resilience>

Emphasis on rebuilding and restoration

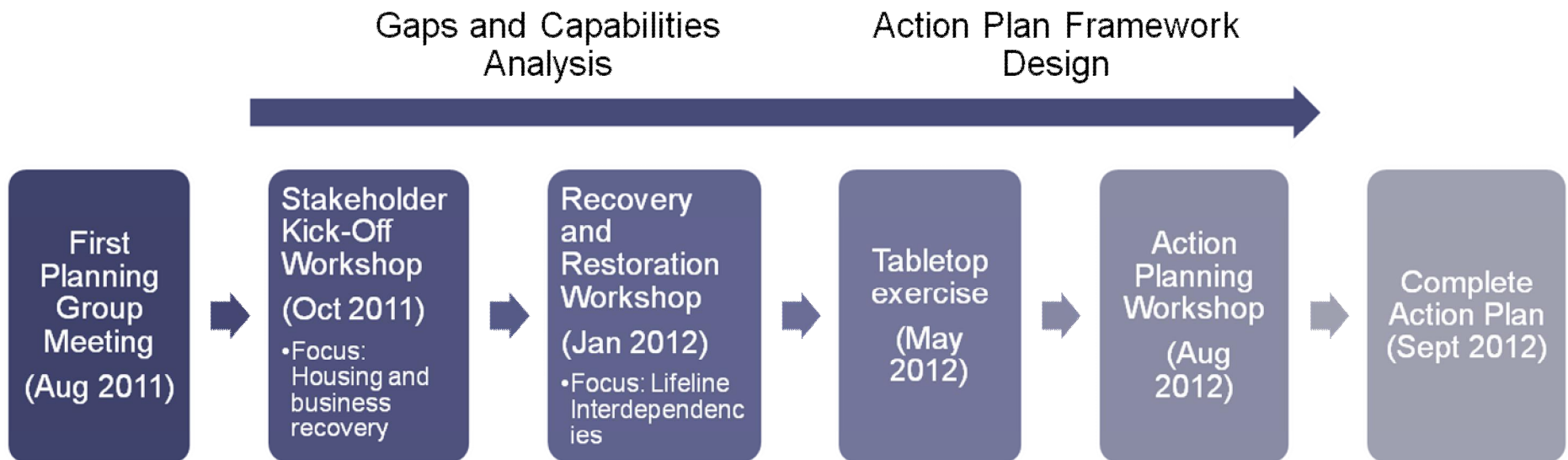
- “ Lifeline and critical infrastructure
- “ Businesses
- “ Government services
- “ Community institutions
- “ Housing
- “ Essential services
- “ Key facilities



Key Assumptions

- “ This is not an operational plan
- “ We do not intend the re-create the wheel
- “ This is a fundamentally a stakeholder driven process
- “ The most significant benefit from this process will be the collaboration, trust, and relationships that develop among the various stakeholder organizations and individuals during the process.

Resilience Action Plan Process



Resilience Action Plan - Stakeholder Driven Process



Leveraging Stakeholder Expertise, Experience and Preparedness Activities

1. Initiative events and activities
2. Incorporating outcomes and lessons learned from the many other events and activities in the Bay Area focusing on disaster resilience
3. Adding new events and activities to the Initiative that Bay Area organizations wish to sponsor to meet their organizational interests and objectives

What activities are underway to improve resilience of the Bay Area Sewer System?




You are invited to

Join in Building a Disaster Resilient Bay Area

Kick-Off Workshop for the Bay Area
Regional Disaster Resilience Initiative—
Focus on Recovery and Restoration

Tuesday, November 1, 2011, 8:30 a.m. - 4:30 p.m.

To Register for the Workshop and for Directions, plus more information about the Initiative— <http://quake.abag.ca.gov/resilience>



BAY AREA REGIONAL DISASTER RESILIENCE ACTION PLAN INITIATIVE SUPPORT TEAM CONTACT INFO

<http://quake.abag.ca.gov/resilience>

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