



# Planning for Residential Recovery

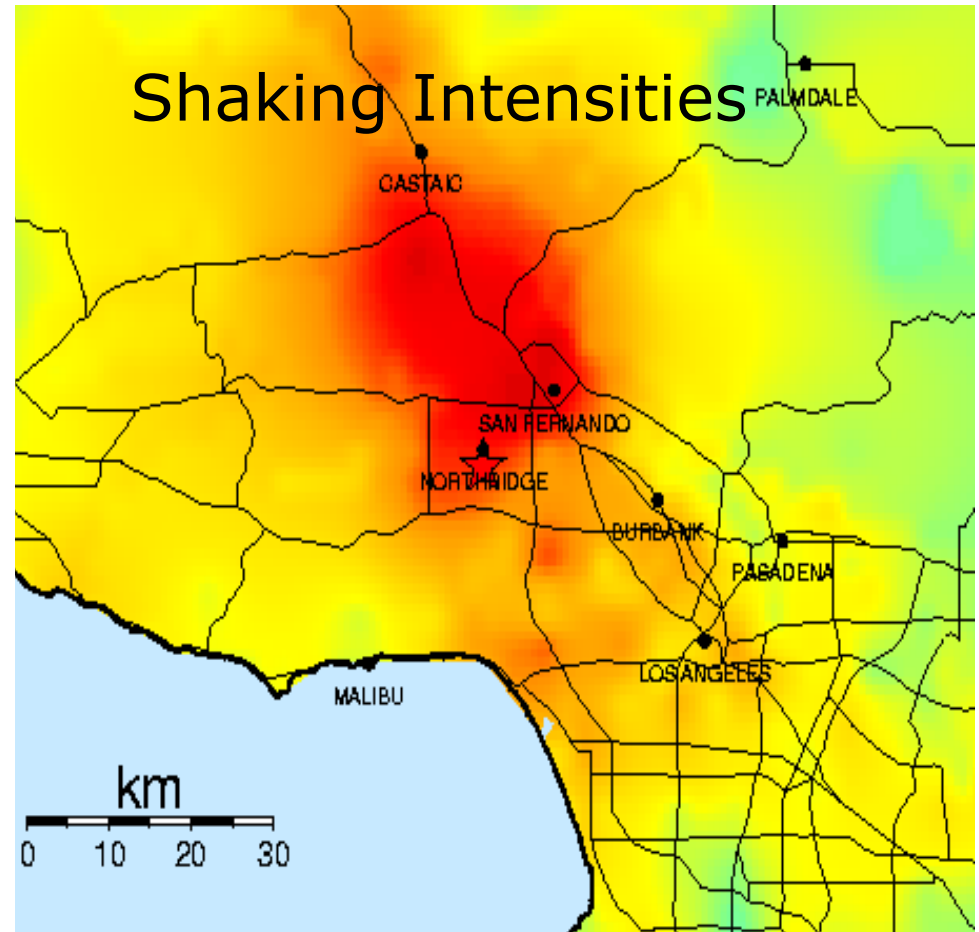
Ken Topping, FAICP  
City and Regional Planning Department  
Cal Poly San Luis Obispo

*January 16-17, 2014 - University of California, Los Angeles*

# Impacts: M6.8 Northridge Earthquake Disaster, January 17, 1994

- 57 deaths
- 20,000 homeless
- 30,000 damaged housing units
- ~\$42+ billion total losses
  - \$21 billion residential
  - \$15 billion business
  - \$6 billion public infrastructure
- ~\$14 billion insured losses (65%+ for residential structures)

Source: Olshansky et al



Source: USGS

# Impacts – Residential Areas

- Generally moderate, repairable apartment damages → → → →
- Widespread but relatively minor single family damages (e.g. chimneys, plaster, glass)



Source: EERI

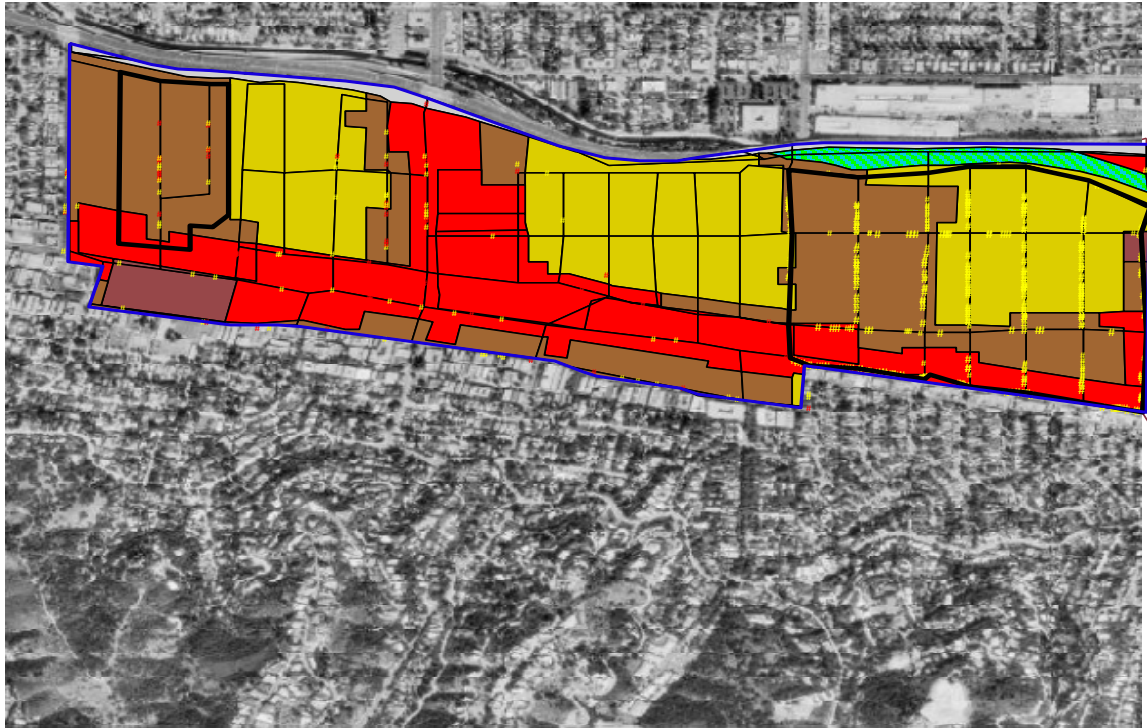


Source: EERI

- Pockets of severe damage requiring full reconstruction

← ← ←

# Case Study: Sherman Oaks District

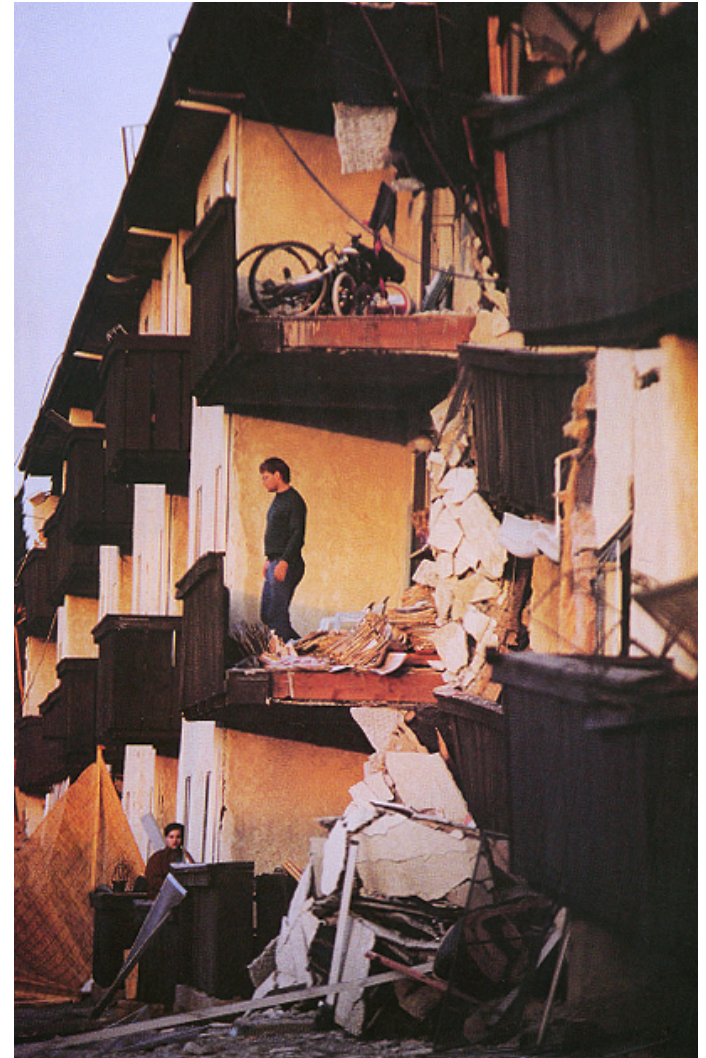


Highest concentration of damages; relatively high-income area; relied heavily on private resources; "Ghost Town Projects" relied on HUD CDBG loans via LA City

Source: Olshansky et al

# Key Rehousing Program: “Ghost Towns”

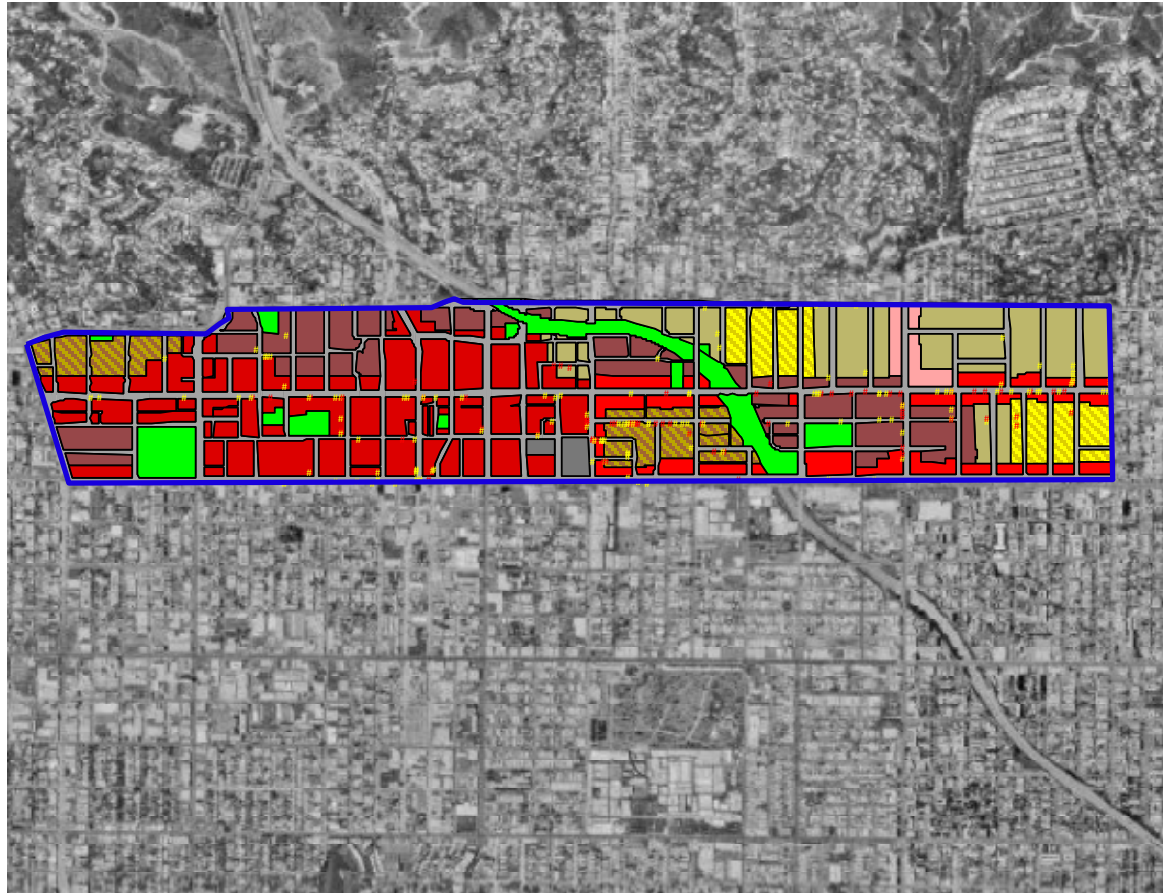
- 19,000 vacated housing units; additional 10,000 “at risk”
- Mostly wood-frame apt. (age 1950-1975); many repairable
- Apt. building owners lacked insurance or had high deductibles
- Deflated property values, declining rental income and high debts limited owners’ abilities to get repair loans
- L.A. City used CDBG funds to provide no-interest loans to rebuild rental housing (condo owners not included)
- 20% affordable housing component



Source: Olshansky et al

Source: L.A. Times

# Hollywood Study District



Heavy damage;  
low-income,  
large immigrant  
population

Significant  
government  
intervention in  
recovery

Several BIDs  
formed

Major projects  
built

Source: Olshansky et al

# Lessons from Northridge Recovery

- After a disaster opportunities for community betterment exist but their half-life is short
- There is extreme pressure to act quickly
- “Default” decisions are made which have long-term consequences
- Each community must find its own balance between quick action and betterment
- Pre-event planning is a smart investment

Source: Olshansky et al



# Source of Preceding Findings:

## Opportunity in Chaos: Rebuilding After the 1994 Northridge and 1995 Kobe Earthquakes

Robert B. Olshansky, Laurie A. Johnson, and  
Kenneth C. Topping

With Yoshiteru Murosaki, Kazuyoshi Ohnishi,  
Hisako Koura, and Ikuo Kobayashi

2005 (Web-published: March 2011)

[http://www.urban.uiuc.edu/faculty/olshansky/  
chaos/chaos.html](http://www.urban.uiuc.edu/faculty/olshansky/chaos/chaos.html)





# Impacts: Implications for Today

- Residential recovery challenges still with us:
  - Anomalous vacancy conditions benefitted renters – rehousing much harder in a catastrophic event
  - HUD housing assistance – CDBG grants useful but uneven track record since then
  - Condos – walk-aways on underwater mortgages; SBA loans not useful; no relief in sight
  - Remaining vulnerabilities – mobile homes, soft-stories, soft soils/fault zones

# Impacts: Rebuilt Apartments

## Question:

What was the key mitigation lesson learned from the Northridge Earthquake?



Source: EERI

## Answers:

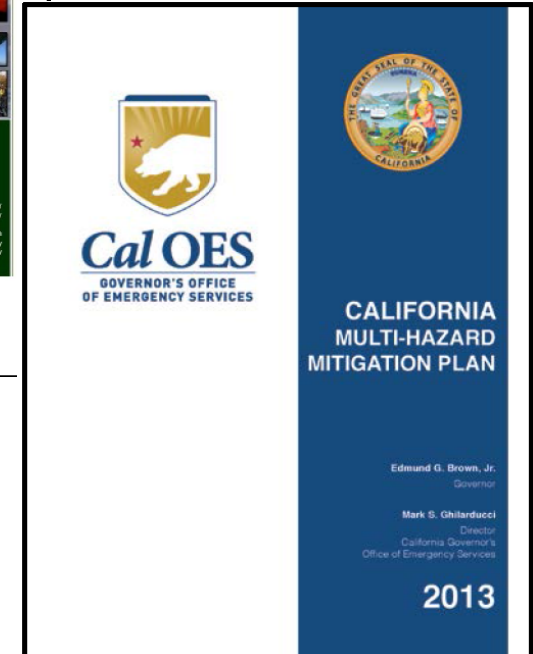
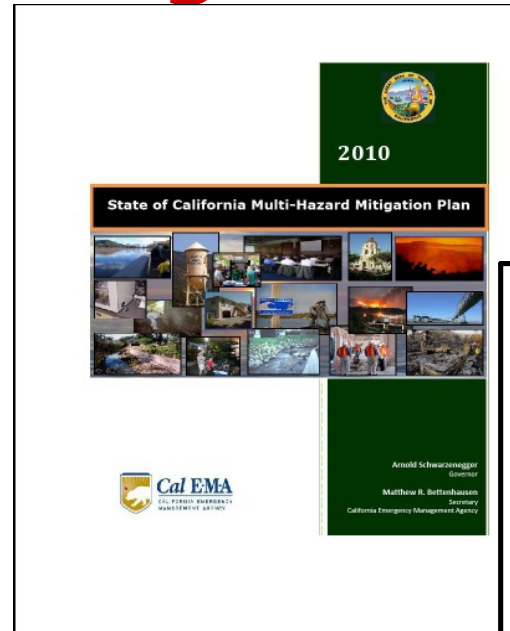
- Large inventory of vulnerable housing remains
- Limited private or public initiatives address magnitude of ongoing mitigation challenges



Source: EERI

# Addressing Risk: State Hazard Mitigation Plan

- Provides framework for state and local mitigation action
- Helps create more resilient and sustainable communities
- Protects California's economy and environment from preventable losses
- Creates benchmarks for future progress
- Supports federal-state mitigation grants

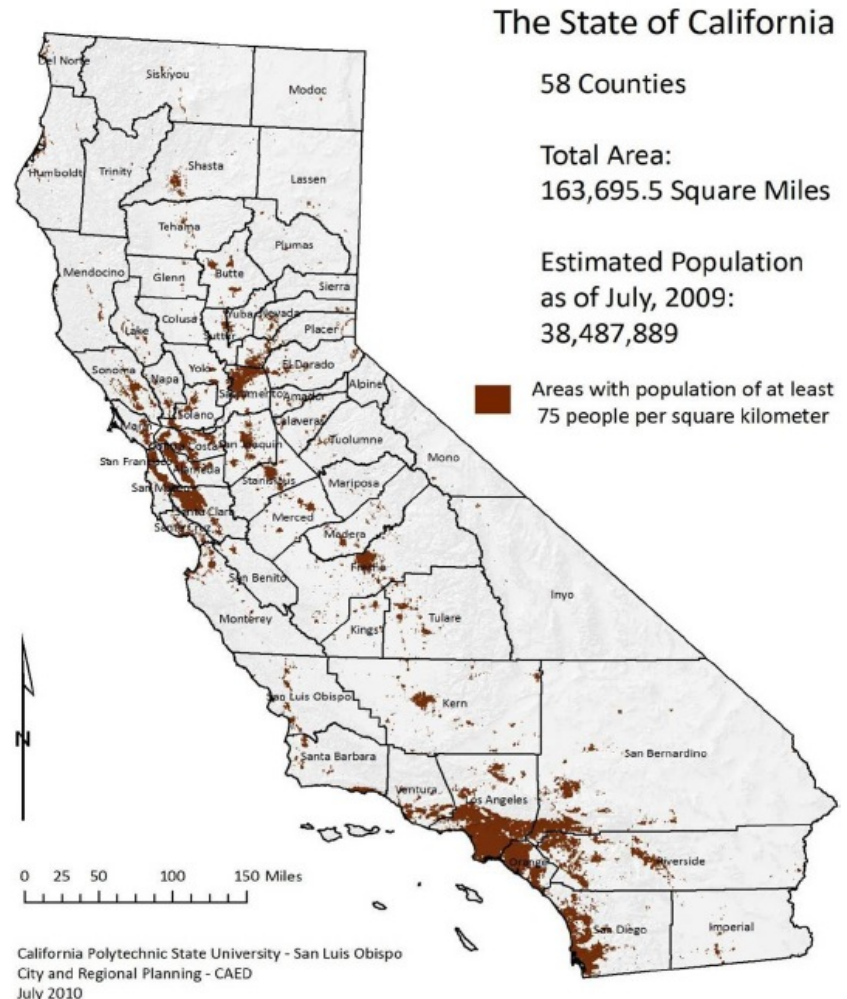


**2013 Plan now out**

# Assets at Risk

## Stakes are high:

- 38 million people – highest state population
- 3<sup>rd</sup> largest state land area
- 8<sup>th</sup> largest economy in world
- Highest agricultural production in U.S.



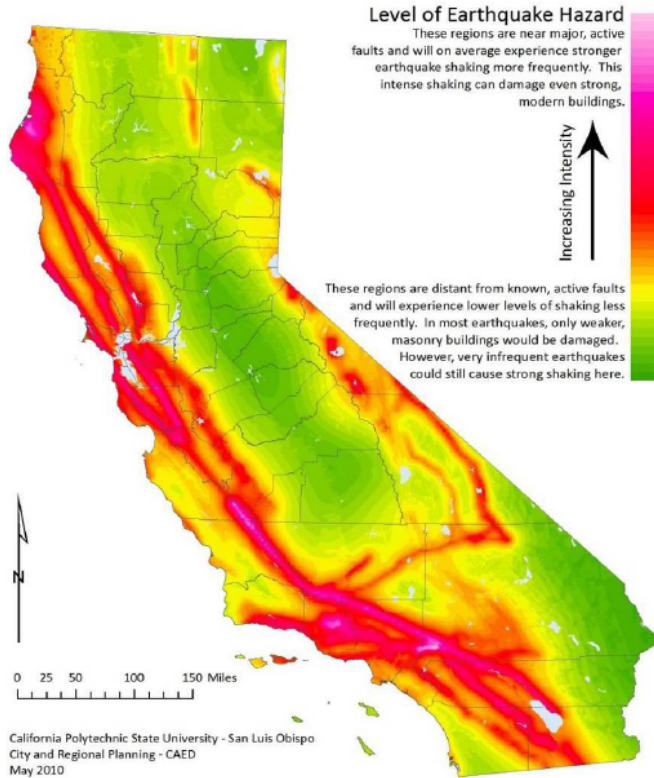
Source: CA Dept. of Finance, E-2 Report (Dec 2009); CA Statistical Abstract, 2009;  
ORNL LandScan 2007™ /UT-Battelle, LLC 2005-2007 American Community Survey (ACS) 3-year estimates;  
and 2000 U.S. Census County Division (CCD)

Created by  
C. Schuldt

3-A-State of California.mxd

# Most Californians Live in Areas of Highest Earthquake Risk

## Earthquake Shaking Hazard Primarily Affecting One- and Two-story Buildings

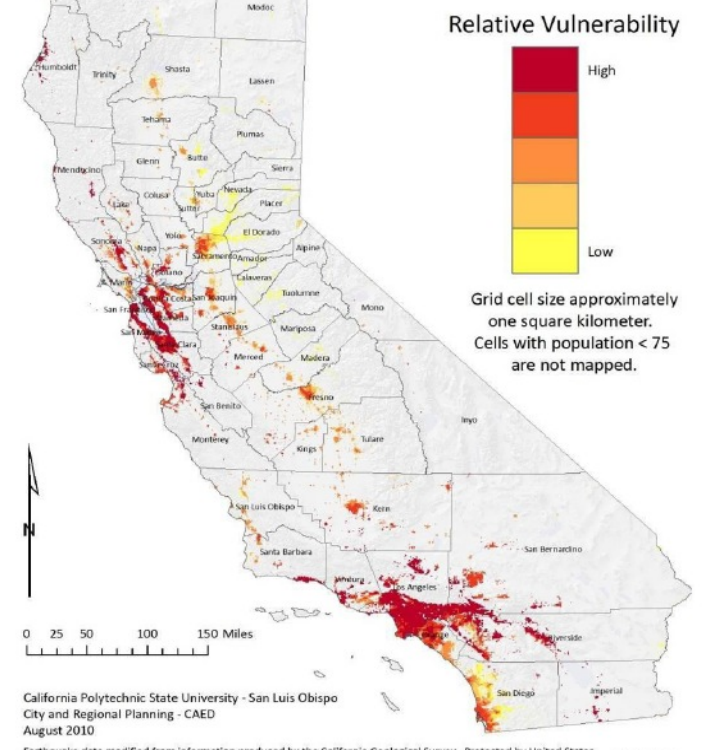


0.2 second spectral acceleration with 2% probability of exceedance in 50 years  
 This information was produced by the Department of Conservation,  
 California Geological Survey and is protected by the United States Copyright Law.  
 For information, contact the California Department of Conservation, California Geological Survey.

Created by:  
 S. Robidoux  
 C. Schuidt

S-P-Earthquake Shaking Hazard One- and Two-story.mxd

## Population/Social Vulnerability with Earthquake Hazard



Earthquake data modified from information produced by the California Geological Survey. Protected by United States Copyright Law. For information, contact the California Department of Conservation, California Geological Survey.

Population data source: ORNL LandScan 2007™/UT-Battelle, LLC;  
 2005-2007 American Community Survey (ACS)  
 3-year estimates; and 2000 U.S. Census County Division (CCD)

Created by:  
 M. Schmitzlein  
 C. Schuidt  
 B. Witherspoon

S-C-Population Social Vulnerability with Earthquake.mxd



# Outcomes – Where Are We Now?

- Inadequacies of public sector resources and processes for residential rebuilding
  - Federal assistance programs – matrix policy summary
  - Patchwork financial assistance – temporary FEMA trailers, HUD block grants
  - Agency stovepiping at federal-state levels
- Linkages of unmet hazard mitigation challenges (e.g., better fault zone mapping related to land use practices) to post-earthquake recovery
  - Moving beyond structural mitigation – need for expanded state mapping linked to land use applications through general plan statutory reform (similar to NFIP mapping)

# Next Steps:

- Need for more widespread, cross-sectoral, and continuing pre-event recovery planning similar to the LA Recovery and Reconstruction Plan used after Northridge
  - APA Planning for Disaster Recovery and Reconstruction; Next Generation
  - Model recovery ordinance for local governments (APA draft online)
- Need for more active public-private sector involvement
  - Go beyond Stafford Act relief and recovery programs
  - Stronger linkages of local hazard mitigation and land use planning
  - Focus responsibility for recovery planning at multiple level

# Recommendations: Mitigation, Finance

- Assess residential risks, hazards, and vulnerability using existing tools:
  - Conduct vulnerable structure inventories
  - Update general plans and local hazard mitigation plans
  - Expand earthquake risk mapping (e.g., Alquist Priolo Study Zones)
- Develop additional revenue sources and incentives for structural strengthening:
  - Bond issues
  - Low-interest rate loans
  - Streamline permitting and reduced processing fees
  - Establish local assessment districts
  - Real estate transfer tax



# Recommendation:

## California Recovery Plan

- State of California should prepare and adopt a multi-sectoral Pre-event Recovery Plan
- The California Recovery Plan would identify a strategic vision and implementing actions to:
  - Restore peoples' lives and housing
  - Regain economic vitality
  - Rebuild safely, wisely, and creatively
- The California Recovery Plan would:
  - Provide a framework for coordinating action
  - Direct public sector funds toward most urgent needs
  - Link mitigation with recovery to avoid future losses
  - Promote local pre-event recovery ordinances/plans
  - Create opportunities for sustainable rebuilding