

Bay Area Housing and Community Risk August 26th Meeting Agenda

9:00 Welcome

9:15 Project Overview

9:30 Breakout Groups

10:30 Facilitated Open House

11:15 Discussion

11:45 Wrap up, next steps, adjourn

Bay Area Housing and Community Risk Assessment Project

Stakeholder Workshop 2
August 26, 2014

*Association of Bay Area Governments
Bay Conservation and Development Commission*



Goals of the Project

- Understand the housing and communities characteristics that affect resilience to earthquakes and flooding
- Identify potential consequences of housing and community risk in areas of future growth
- Develop strategies to reduce risks and increase regional resilience, sustainability, prosperity, and equity
- Share findings with jurisdictions throughout the region, the state and the country

Why housing and communities?

- Recovery from a major hazard event depends on whether people are able to stay in their homes
- To improve recovery we need to better understand which housing and communities are most at risk
- Understanding the risks is a critical step towards developing and implementing resilience and recovery strategies



Project Partners & Participants

- Lead agencies: ABAG and BCDC
- Funding agencies: USGS, US EPA, FEMA and the California Strategic Growth Council
- Strategy consultant: AECOM
- Advisory Committee: experts in hazard mitigation, housing risk, and community vulnerability
- Bay Area Stakeholders: public officials, community-based organizations, consultants, academics, interested community members

Project Components and Schedule

Project Initiation – Fall 2013

Assess Vulnerability – Winter/Spring 2014

Develop assessment approach

Convene advisory committee and working groups

Gather advisor input and feedback

Refine approach and complete assessment

Develop Strategies – Spring/Summer 2014

Share assessment outcomes with stakeholders

Gather input on strategy development approach

Present draft housing and community strategies

Refine and complete strategy recommendations

Document and Disseminate Findings – Fall 2014

Understanding Bay Area housing and communities risk

1. Select hazards to evaluate
2. Identify housing and community characteristics that impede recovery after a major hazard event
3. Evaluate hazards, housing and communities at a regional scale based on available data
4. Use the regional screening to select and further evaluate nine community profile areas

Hazards

Ground Shaking

Liquefaction

Current and future flooding



Housing

Types most likely to have poor structural performance if subjected to a hazards



Eight housing types identified

- Single family cripple wall
- Single family house over garage
- Unreinforced masonry
- Multi-family cripple wall
- Multi-family weak story or open front
- Multi-family non-ductile concrete
- Insufficient foundation for liquefaction
- Any house in a flood zone

Communities

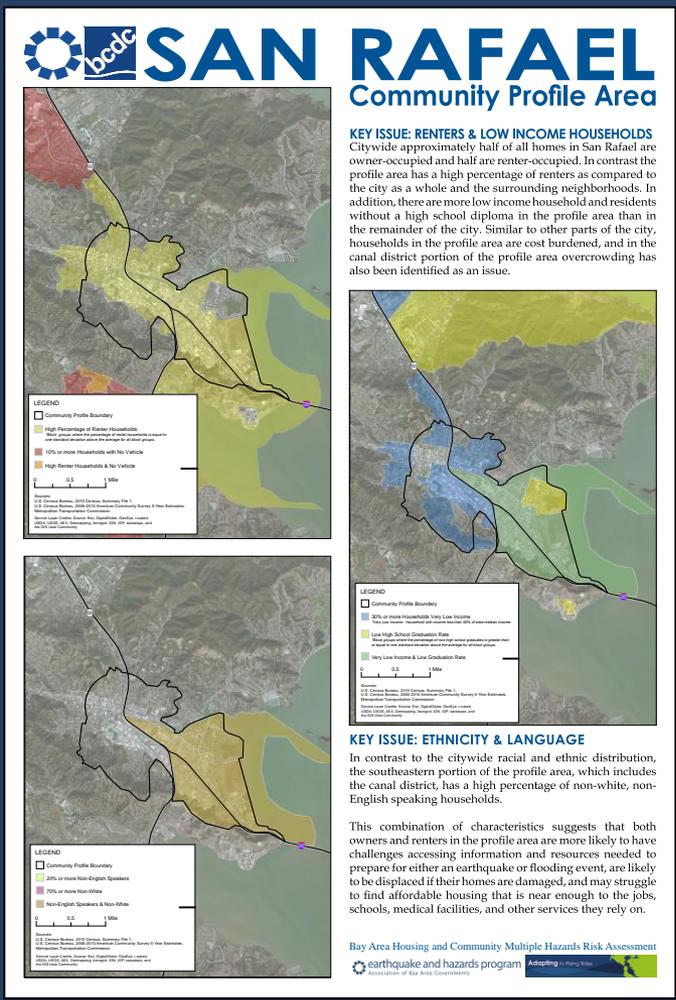
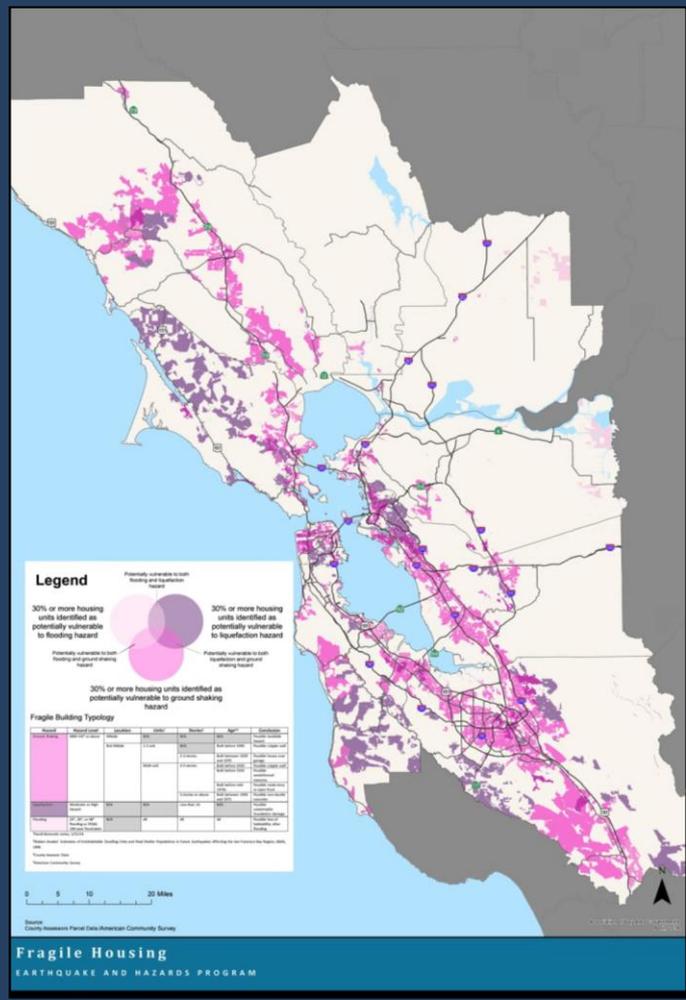
Characteristics that reduce the ability to prepare for, respond to, and recover from a major hazard event



Ten community characteristics

- Age
- Education
- Household income
- Race/culture
- Non-English speakers
- Home ownership
- Housing cost burden
- Transit dependence
- Transportation cost burden

Putting it together: regional and community assessment



Key issues identified

- Ground shaking can damage single-family homes, including cripple wall and house over garage
- Ground shaking can damage multi-family housing including weak story, concrete and cripple wall
- Housing is generally built to life safety rather than shelter-in-place standards
- Most foundations cannot withstand liquefaction
- Most houses cannot withstand any amount of flooding
- Houses with habitable living space or critical equipment below-grade are at particular risk from flooding

Key issues identified (con)

- Many community members are resource constrained and less able to prepare for or recover after a disaster
- Housing affordability is an existing challenge that will make recovery more difficult
- Renters have a limited ability to improve the resilience of the housing they live in
- Many community members have limited or inadequate information about hazards
- Information about the needs and location of elderly and very young community members is limited

To address key issues identified

- ✓ Strategies to improve existing housing and community resilience and recovery
- ✓ Strategies to help the region meet future growth, resilience, sustainability, prosperity, and equity goals
- ✓ Strategies that can be led locally, regionally, or statewide
- ✓ Strategies that will “unlock” or serve as prerequisites to other strategies



Different kinds of strategies developed, e.g.,

- Requires state initiated research, regulations, or support (can be a prerequisite to action at the local level)
- Addresses issues that cross jurisdictions and therefore require cooperation and coordination
- Can be initiated by local jurisdiction but may be advantageous if there is regionally coordinated action
- Can be initiated locally before a disaster to ensure residents can stay in their homes afterwards
- Best implemented in coordination with community based organizations and neighborhood nonprofits

Strategies organized to be quickly understood

Develop and implement a cripple wall retrofit program

Develop a retrofit program to address cripple wall housing in areas where it makes up a large percentage of a jurisdiction's housing stock (as a whole or for a specific vulnerable community). Pair programs with financing tools and incentives. Consider different incentives and financing tools for low-income homeowners or renters. The program should consider how to handle compliance and enforcement standards, mechanisms for enacting the program, and which retrofit standards to use.

Lead			Key Partner(s)				
State	Region	Local jurisdiction	State	Region	Local		
Target Development Type		Community Vulnerability Addressed					
Existing	New	Community-wide	Age	Language & Ethnicity	Cost Burdened	Housing Tenure	Access to Resources
Hazard Addressed			Vulnerable Housing Type Addressed				
Ground shaking	Liquefaction	Flooding	Cripple Wall	Soft story or House over garage	Unreinforced Masonry	Non-ductile concrete	

Description

Cripple walls are the short wood stud walls that enclose a crawl space under the first floor of a building. Most Bay Area detached homes built before 1940 have cripple walls, often indicated by a series of steps leading up to the front door. Cripple walls are at risk of severe damage or collapse during an earthquake, and may require that a home be demolished and rebuilt, even if the rest of the home is intact. ABAG estimates only 20-40% of older homes in the Bay Area have been strengthened, leaving an estimated 200,000 unbraced cripple walls. Retrofit solutions are often relatively affordable and can be completed by the homeowner in many cases. By retrofitting these vulnerable structures fewer people will be displaced from their homes after an earthquake, and necessary repair costs will be reduced.



Information provided on how to implement

Governance/ Implementation issues:	This strategy will require the adoption of cripple wall retrofit standards. Once adopted, building officials will need to be educated about the changes. Building owners who retrofit will need to obtain a permit from a building inspector who confirmed the retrofit was done in accordance with the adopted standard. If there is an education or incentive program to implement, standard resources will be needed to operate such programs.											
Potential Financing Mechanisms	Retrofits can be paid through many mechanisms. In many cases homeowners will pay for retrofits out of their own savings or take out loans. This is particularly true with cripple wall retrofits, as they tend to be fairly low-cost. Some jurisdictions may choose to provide financial incentives, such as grants or rebates as discussed in the examples below.											
Timing	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th colspan="3">Implementation</th> </tr> <tr> <th>Short-term</th> <th>Medium-term</th> <th>Long-term</th> </tr> </thead> <tbody> <tr> <td></td> <td>√</td> <td></td> </tr> </tbody> </table>			Implementation			Short-term	Medium-term	Long-term		√	
Implementation												
Short-term	Medium-term	Long-term										
	√											
Key Partner(s)	<table border="1" style="width: 100%;"> <thead> <tr> <th>State</th> <th>Region</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td> California Earthquake Authority (CEA) <i>The CEA has been working on programs to incentivize cripple wall retrofit programs through rebates from the state. Jurisdictions could benefit from lessons learned by CEA and utilize pre-developed standards and guidelines.</i> </td> <td> Association of Bay Area Governments (ABAG) <i>ABAG could, through partnership with the CEA and local jurisdictions, help develop and establish model ordinance language and common retrofit standards and procedures for use throughout the language as well as provide case studies from other jurisdictions</i> </td> <td> <i>There are no local partners needed for this strategy.</i> </td> </tr> </tbody> </table>			State	Region	Local	California Earthquake Authority (CEA) <i>The CEA has been working on programs to incentivize cripple wall retrofit programs through rebates from the state. Jurisdictions could benefit from lessons learned by CEA and utilize pre-developed standards and guidelines.</i>	Association of Bay Area Governments (ABAG) <i>ABAG could, through partnership with the CEA and local jurisdictions, help develop and establish model ordinance language and common retrofit standards and procedures for use throughout the language as well as provide case studies from other jurisdictions</i>	<i>There are no local partners needed for this strategy.</i>			
State	Region	Local										
California Earthquake Authority (CEA) <i>The CEA has been working on programs to incentivize cripple wall retrofit programs through rebates from the state. Jurisdictions could benefit from lessons learned by CEA and utilize pre-developed standards and guidelines.</i>	Association of Bay Area Governments (ABAG) <i>ABAG could, through partnership with the CEA and local jurisdictions, help develop and establish model ordinance language and common retrofit standards and procedures for use throughout the language as well as provide case studies from other jurisdictions</i>	<i>There are no local partners needed for this strategy.</i>										

Examples and how to find out more

Example(s)

The following examples offer retrofit standards to consider for use as part of a cripple wall retrofit program as well as examples of successful incentives and tools that jurisdictions have used for cripple wall retrofits.

Standards

- 2010 California Existing Building Code, Title 24, Part 2, Appendix A - Prescriptive Provisions for Seismic Strengthening of Cripple Walls and Sill Plate Anchorage of Light, Wood-Frame Residential Buildings

CEBC Chapter A3 provides detailed descriptions of building elements that need to exist and the prescriptive plans on completing a retrofit. See:

http://publicecodes.cyberregs.com/st/ca/st/b200v10/st_ca_st_b200v10_appaa3_sec001.htm

- City of Los Angeles Prescriptive Standard. See: <http://www.abag.ca.gov/bayarea/eqmaps/fixit/manual/PT14-App-A.PDF>
- Standard Plan Set A and model resolution for jurisdictions to adopt Plan Set A. See: <http://quake.abag.ca.gov/residents/planset/>

Incentives

- Financial – The City of Berkeley uses tax rebates and fee waivers to incentivize retrofits. See:

http://www.cityofberkeley.info/Planning_and_Development/Building_and_Safety/Transfer_Tax_Reductions_For_Qualifying_Seismic_Work.aspx

BREAKOUT GROUP DISCUSSION

Can you quickly understand how the strategy applies to your community?

Does the strategy align with your existing governance or decision-making?

Can you see your role in the strategy and could you advocate for it?

OPEN HOUSE AND GROUP DISCUSSION

Are there strategies that will unlock further action or be useful in improving your community's resilience?

What, if any, strategies are missing?

What unintended consequences of the strategies may need to be addressed and how should they be addressed?

Wrap up and Next Steps

- ❖ How we plan on getting your further feedback and input
- ❖ Timeline for the rest of the project
- ❖ Next steps beyond this project