

Bay Area Housing and Community Risk Assessment Project

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Bay Conservation and Development Commission



Bay Area Housing and Community Risk Assessment Project



Housing as Keystone to Resilience



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

Analysis Indicators

Hazards

Ground Shaking
Liquefaction
Current and future flooding

Housing

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

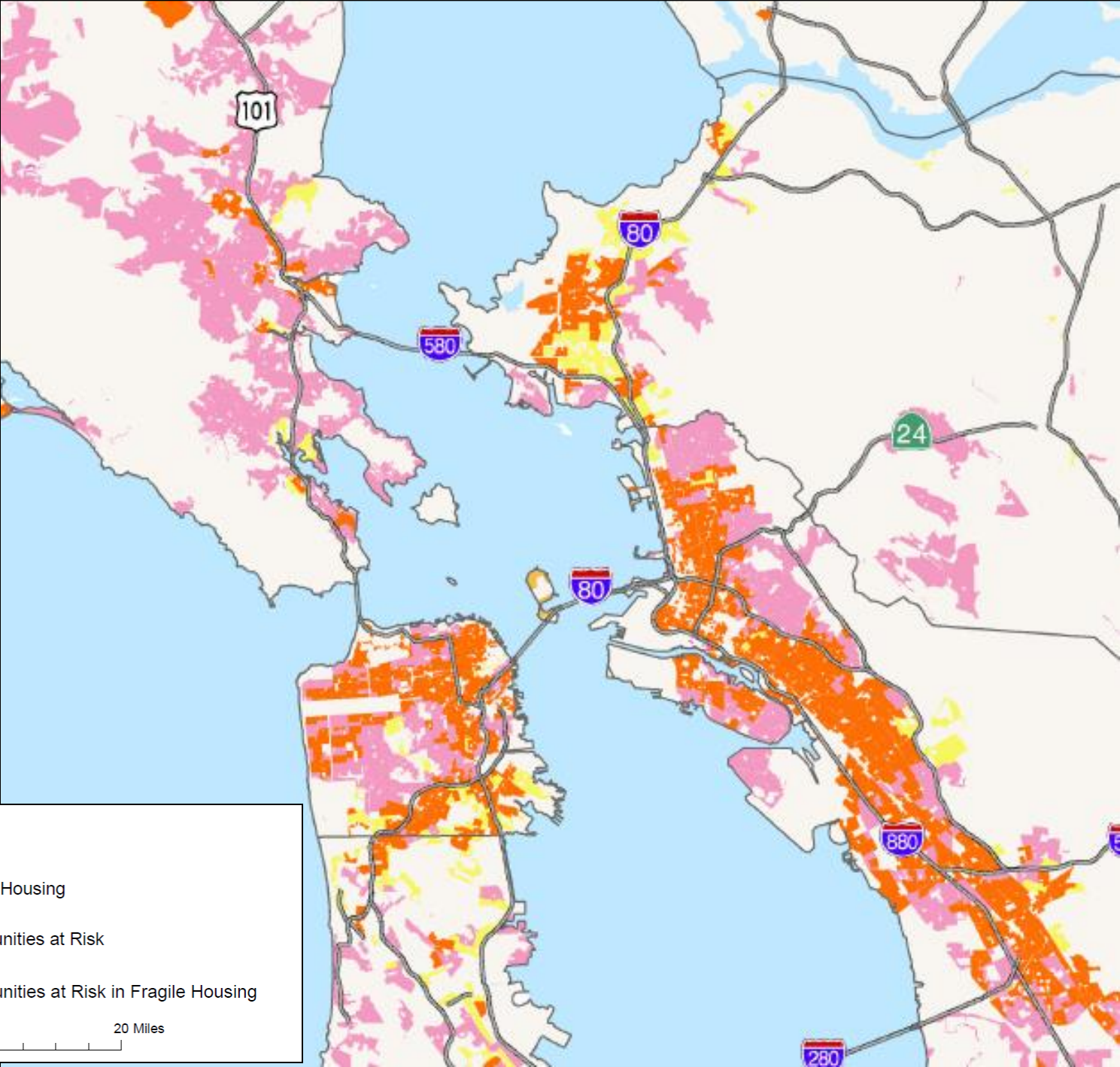
Communities

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






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LEGEND

-  Fragile Housing
-  Communities at Risk
-  Communities at Risk in Fragile Housing

0 5 10 20 Miles

Key Issues lead to targeted strategies

Housing Issues

Community Issues

Challenges

Strategies

Building codes life safety only



Residents resource constrained



Low-income residents can't shelter in place



Improve building codes

Liquefaction damages foundations



Housing affordability issues



People can't afford new housing



Encourage hazard insurance

Ground shaking damages homes



Limited hazard information



People don't retrofit



Develop retrofit programs

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What vulnerability do you want to address?	What key issue do you want to address?	What indicator do you want to address?	Strategies to consider
Natural Hazards		Ground shaking (MMI XIII or above)	Strategy 1: Complete seismic hazard mapping of urban and urbanizing areas Strategy 2: Evaluate current guidelines and the "state of practice" for mapping, evaluating and mitigating seismic hazards, particularly multi-hazard areas Strategy 11: Develop locally-specific seismic hazard maps <i>Also see strategies for "Any hazard" below</i>
		Moderate to high liquefaction	Any strategy above, plus: Strategy 1: Complete seismic hazard mapping of urban and urbanizing areas Strategy 2: Evaluate current guidelines and the "state of practice" for mapping, evaluating and mitigating seismic hazards, particularly multi-hazard areas Strategy 11: Develop locally-specific seismic hazard maps <i>Also see strategies for "Any hazard" below</i>
	Hazards will have significant impacts on communities that live in high hazard areas	Current and future flooding	Any strategy above, plus: Strategy 5: Establish a cooperative shoreline management program Strategy 31: Incorporate sea level rise guidance within the capital planning process <i>Also see strategies for "Any hazard" below</i>
		Any hazard	Strategy 6: Develop guidelines for the siting and design of transit-oriented development to reduce seismic and flood risks Strategy 10: Host a regional "Smart and Safe" growth design competition Strategy 12: Increase protection of critical facilities and lifelines in high hazard areas Strategy 13: Reduce or prohibit development in the most hazardous areas while ensuring equity and beneficial use of these areas Strategy 14: Establish overlay zoning districts to help facilitate safe and smart new development Strategy 15: Establish a Transfer of Development Rights program to redirect development from high hazard areas to preferred, low hazard areas Strategy 34: Create a pre-disaster rebuild and recovery plan Strategy 35: Revise local plans and development codes to allow temporary land uses to facilitate and expedite post-disaster recovery



Strategies organized to be quickly understood

1. Complete seismic hazard mapping of urban and urbanizing areas

Encourage the California Geological Survey (CGS) to complete mapping of seismic hazard zones for the portions of the Bay Area that are not currently mapped or in the process of being mapped with priority given to urban and urbanizing areas.

Lead					Scale of Benefit			
State	Region		Local jurisdiction		Region	Community	Resident	
Target Development Type				Hazard Addressed				
Existing		New		Ground Shaking		Liquefaction	Flooding	
Community Vulnerability Addressed					Vulnerable Housing Type Addressed			
Age	Language & Ethnicity	Cost Burdened	Housing Tenure	Access to Resources	Single or Two Family	Multi-family	Cripple Wall	Soft story or House over garage
Action Categories								
Evaluation	Program/ Operation		Plans and Policies		Codes, Regulations, and Ordinances	Coordination		Education/ Outreach
Prerequisite Strategies					Other Related Strategies			
None					Strategy 2: Evaluate current guidelines and the "state of practice" for mapping, evaluating and mitigating seismic hazards, particularly multi-hazard areas			

Description

The 1990 Seismic Hazard Mapping Act requires the State Geologist and CGS to prepare maps of seismic hazard zones, identifying the areas that are susceptible to strong ground shaking, earthquake-induced landslides, liquefaction, or other ground failures. The Act also requires that the areas susceptible to tsunami and seiches be included in these maps when appropriate hazard information and funding are available to complete this work. In addition, the 1972 Alquist-Priolo Earthquake Fault Zoning Act requires CGS to establish earthquake fault zones around the surface traces of active faults and issue appropriate maps of these fault zones.



Information provided on how to implement

Governance/Implementation Issues

Insurance can be important for recovery in many situations, but it's not always the best option. From a jurisdiction's perspective, retrofit is the preferred way to build in resilience, since it keeps housing intact and keeps residents in their homes. Any program promoting insurance would have to balance the needs and desires of the region and the jurisdiction with the safety and security of residents.

Potential Financing Mechanisms

City/County/ State Bond Program	Parcel or Sales Tax	Tax-based Special Districts	Fee-based Special Districts	Infrastructure Financing Districts	Joint Powers Authorities
Municipal Enterprise Funds	Development and Construction Loans	Individual Home Improvement or Commercial Renovation Loans	Revolving Loan Fund Programs	Grant Programs	Other

Jurisdictions will need to provide resources for staff time, printed materials, and possibly outreach events.

Implementation Partner(s)

State	Region	Local
CEA should serve as the primary lead on this effort and form partnerships with regional and local governments.	ABAG or other regional agencies or nonprofits can help promote insurance messaging at a regional level, and assist with coordinating jurisdictions' efforts.	Local jurisdictions may partner with local nonprofits or community groups to reach particular targeted audiences, such as renters or low income residents.



Examples and how to find out more

Examples

The following is an example of an existing program where the state coordinates and assists local shoreline management that can be leveraged to implement this strategy:

State of Washington Cooperative Shoreline Master Program (SMP)

The Shoreline Management Act (SMA, RCW 90.58.020) establishes a cooperative program between local and state governments for management of Washington's fresh and saltwater shorelines. Local governments develop and administer a Shoreline Master Program for their local area, and the Washington Department of Ecology provides support and oversight. See:

<http://www.ecy.wa.gov/programs/sea/SMA/guidelines/index.html>

As a part of this program, two-year Shoreline Master Program grants are available to local governments (cities, towns, and counties) as assistance for implementing and updating approved SMPs. Grant limits are dependent on shoreline length, complexity, population, and development pressure. See:

<http://www.ecy.wa.gov/programs/sea/grants/smp/moreinfo.html>

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Table 5-2: Potential Financing Mechanisms

Name	Administrator	Source of Repayment	Area of Application	Voter Approval Considerations	Applicable Strategies
City/County/ State Bond Program	City, County, Regional Agency, or State	General fund, sales tax, or hotel tax Service fees, property tax, tax increments	Citywide, Countywide, or Statewide	General obligation bonds require two-thirds voter approval. Revenue bonds require majority voter approval.	13, 21
Parcel or Sales Tax	City, County, Regional, or State	Parcel tax or sales tax	Citywide, Countywide, Region-wide, or Statewide	Parcel or sales taxes require two-thirds voter approval	None
Tax-based Special Districts	Special District	Ad-valorem property tax	Districtwide	Tax-based special districts need two-thirds voter approval to be able to levy special taxes.	13, 15, 33, 34
Fee-based Special Districts	Special District	Service fees	Districtwide	Fee-based special districts do not need voter approval to issue bonds for capital generation. Similarly, fees charged by special districts do not require voter approval as long as the fees are for a specific benefit, service, or product provided directly to the fee payer.	7, 13
Infrastructure Financing Districts	City or County	Property tax increments within the district	Districtwide	Property tax increments proposed by infrastructure financing districts require both local and countywide approval, where both jurisdictions forego general fund revenue to pay back infrastructure investments.	7, 15
Joint Powers Authorities (also known as Public Financing Authorities)	Joint Powers Authority appointed by City or County	Income from public project projects (e.g. income generated by a Port Authority by leasing space to businesses)	Multi-city, Countywide, Region-wide, District	This mechanism requires multi-jurisdictional buy-in before it can be implemented.	None
Municipal Enterprise Funds	City, County, or utility	Users of Infrastructure Services (e.g., water, energy, etc.)	Citywide, Countywide, District	Fees charged by municipal enterprises do not require voter approval as long as the fees are for a specific benefit, service, or product provided directly to the fee payer.	13
Development and Construction Loans	Local or regional banks	Income from investment	Neighborhood wide	None	7, 15, 16, 21, 22, 23, 24, 25, 26, 29, 30, 31
Individual Home Improvement Loans or Commercial Renovation Loans	Local or regional banks, local, regional, state, and federal agencies	Individual or business income	Individual property owner or individual business	None	13, 21, 23, 24, 25, 26, 29, 30



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