



Stronger Together

Integrating Climate Adaptation into the City of Berkeley's 2014 Local Hazard Mitigation Plan

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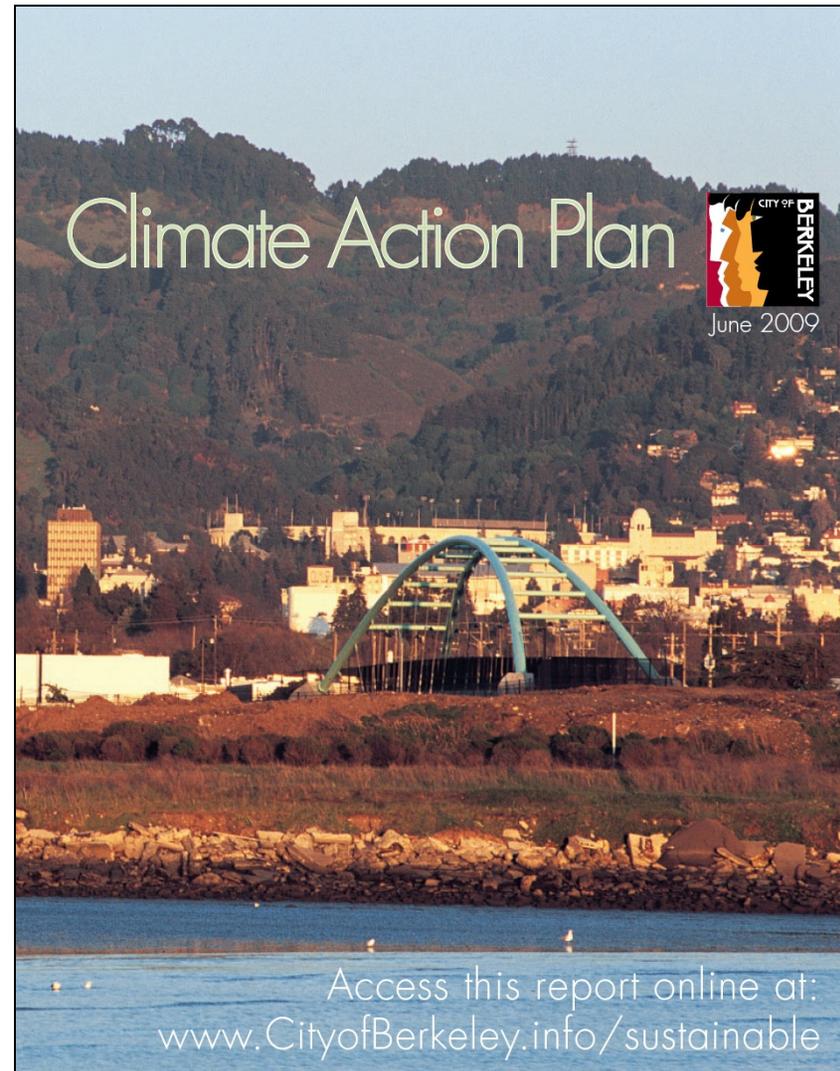
Objectives

- Overview structure, function and integration of:
 - Climate Action Plan (CAP)
 - Local Hazard Mitigation Plan (LHMP)
- Present benefits to using Local Hazard Mitigation Plans to forward adaptation planning efforts
- Describe how City's upcoming "Resilience Strategy" work will advance priorities identified in the LHMP

Climate Action Plan

33% Reduction
below 2000 levels
by 2020

80% Reduction
below 2000 levels
by 2050



Integrating Sustainability Priorities throughout City Operations

Integrating sustainability into...

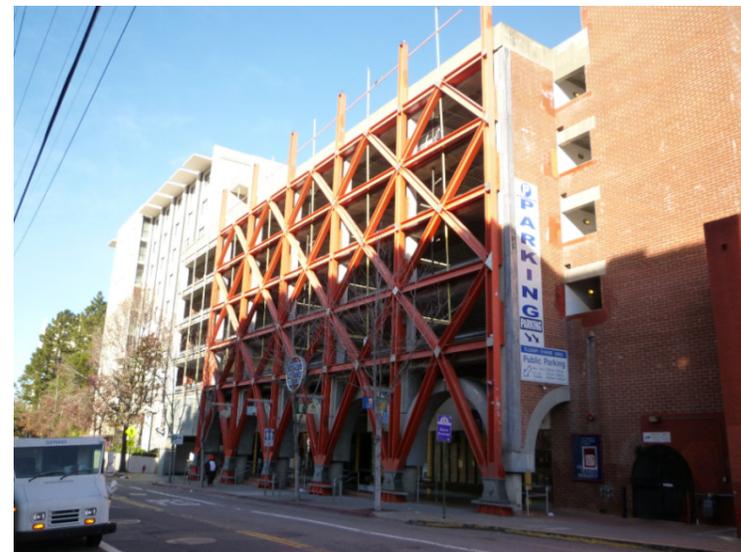
- City Council reports
- Land use decision-making
- Citywide Work Plan
- Local Hazard Mitigation Plan



Public Works team receiving 2014 Environmental Achievement Award

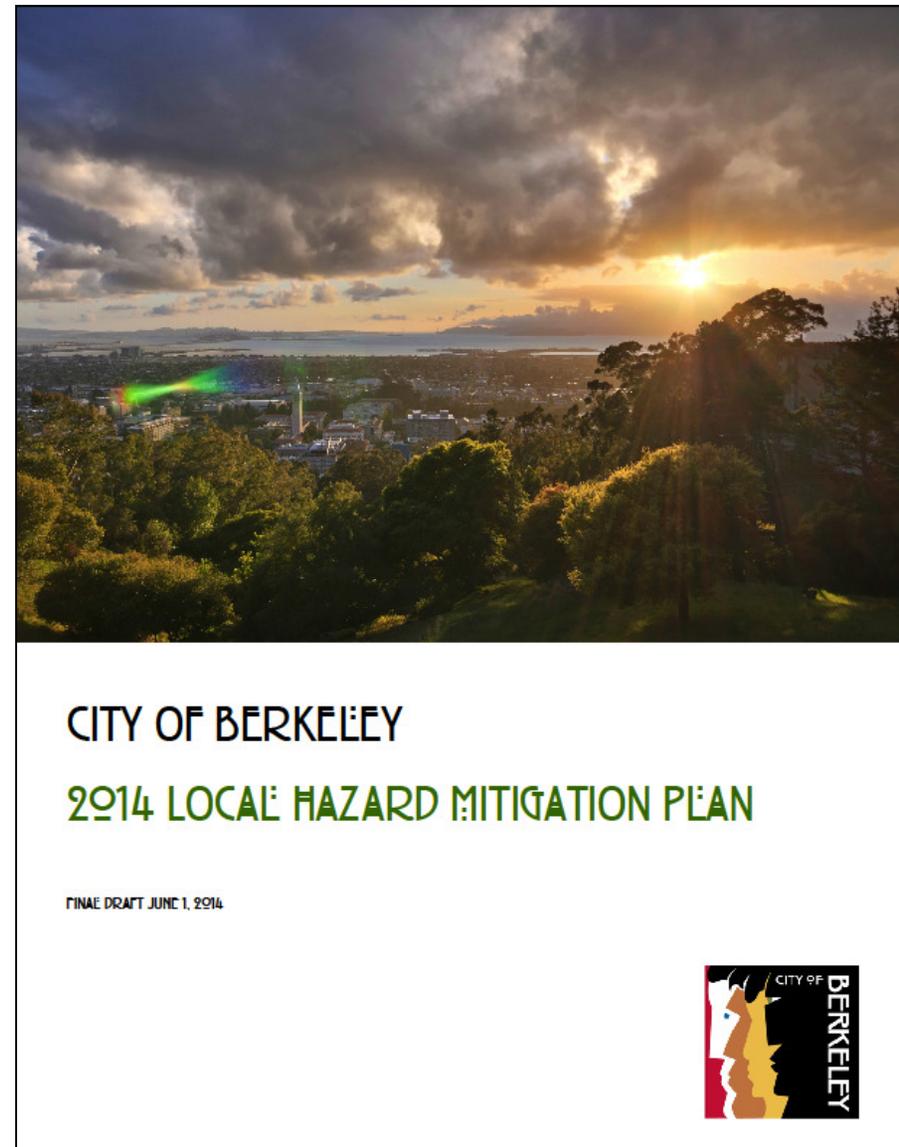
“Mitigation” to Emergency Managers

- Reduces the size of the disaster ahead of time
 - Reduce or eliminate long-term risks
 - Provide passive protection at the time of disaster impact
- Benefit-cost of mitigation projects is about 4:1!



Hazard Mitigation Plans

- Financial incentives (pre-and post-disaster)
- Your jurisdiction probably has one!
- Contains:
 - Hazard analysis
 - Mitigation strategy



Berkeley's 2014 Hazard Analysis

Earthquake

Wildland-urban
interface fire

Landslide

Flood

Tsunami

...Climate Change?



Berkeley's 2014 Hazard Analysis

Local Hazard

Mitigation Plan

Earthquake

Wildland-urban
interface fire

Landslide

Flood

Tsunami

Climate Action Plan

Climate Change

Heat events

Precipitation

Drought

Sea-level rise

Berkeley's 2014 Hazard Analysis

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Wildland-urban
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Precipitation

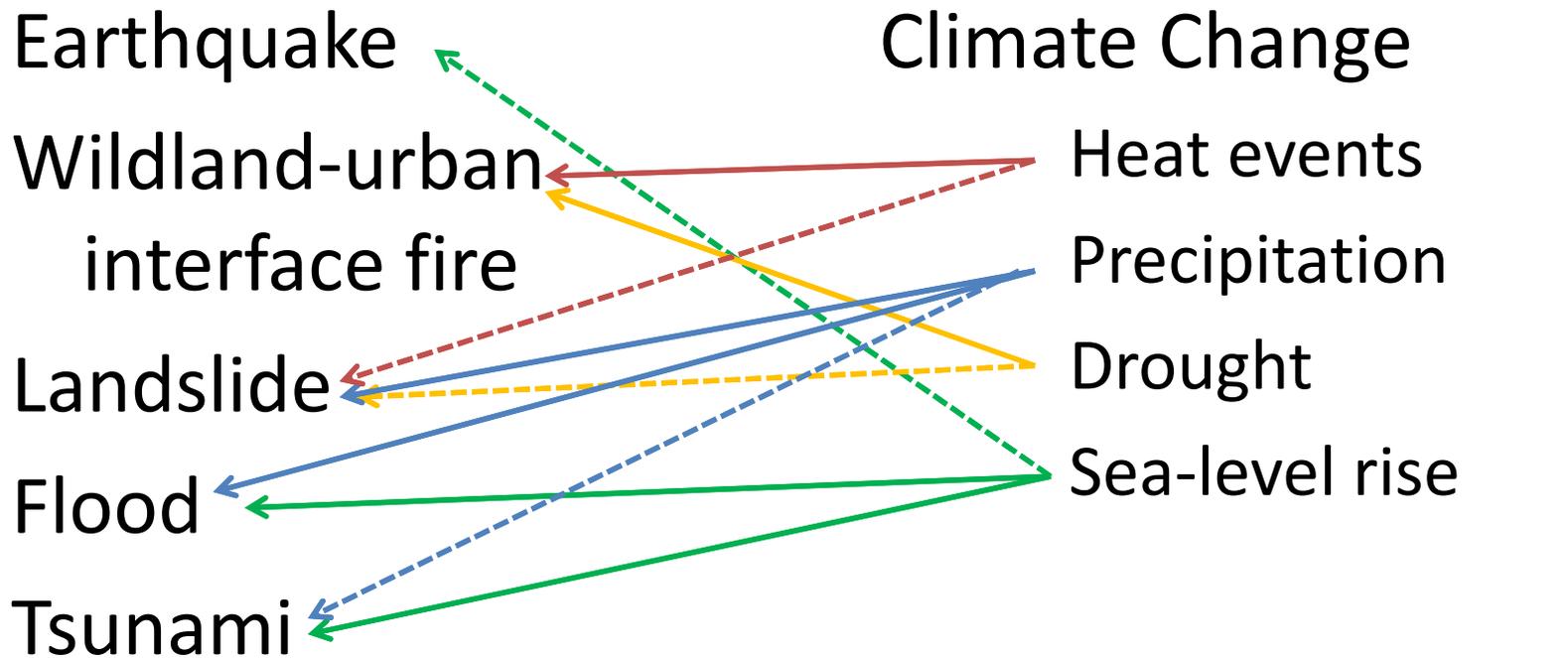
Flood

Drought

Tsunami

Sea-level rise

Climate change exacerbates Berkeley's natural hazards



2014 LHMP: Integrating Climate Change

Climate Change in Part I: Hazard Analysis

- Climate change impacts:
 - Primary
 - Secondary
 - On other hazards of concern
- Utilized partners' research
- Subject matter expert review

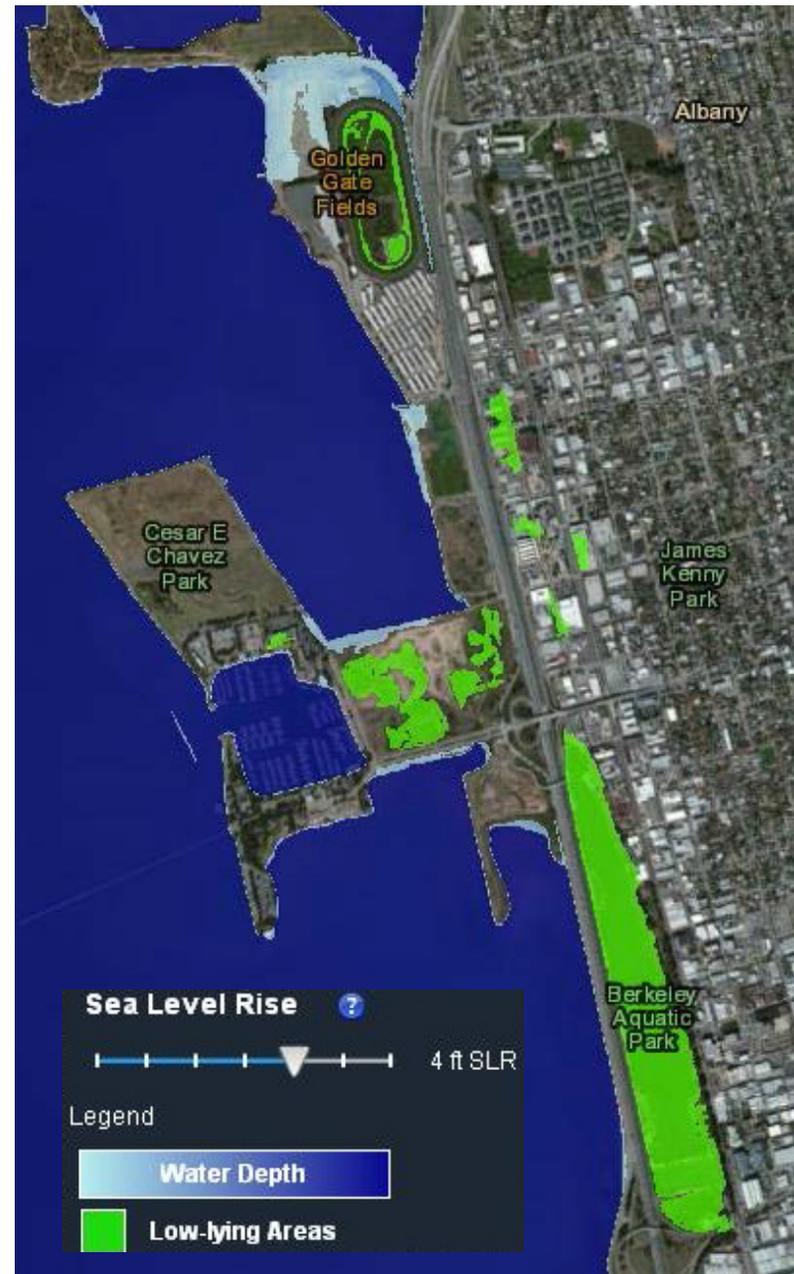
Adaptation Actions in Part II: Mitigation Strategy

1. Hazard Information
2. Extreme Heat
3. Water Security
4. Severe Storms
5. Sea-Level Rise
6. Stormwater System
7. Climate Change Integration

Sea-Level Rise

Hazard Analysis:

- Mapped exposed areas using [NOAA Sea-Level Rise Viewer](#)
- Vulnerabilities: buildings, infrastructure, Berkeley Marina
- Review by SMEs
- Noted increases area exposed to flood, tsunami, possibly earthquake liquefaction



Sea-Level Rise

Mitigation Strategy

Action: Mitigate the impacts of sea-level rise in Berkeley.

- Monitor and participate in regional and State-level research on projected sea-level rise in Berkeley and the region.
- Develop guidelines, regulations, and development review procedures to protect new and existing public and private developments and infrastructure from floods due to expected sea-level rise.

Expands on Climate Action Plan, Adaptation Policies A and C

Resilience



The capacity of residents and businesses to survive and thrive no matter what chronic stresses or acute shocks they experience

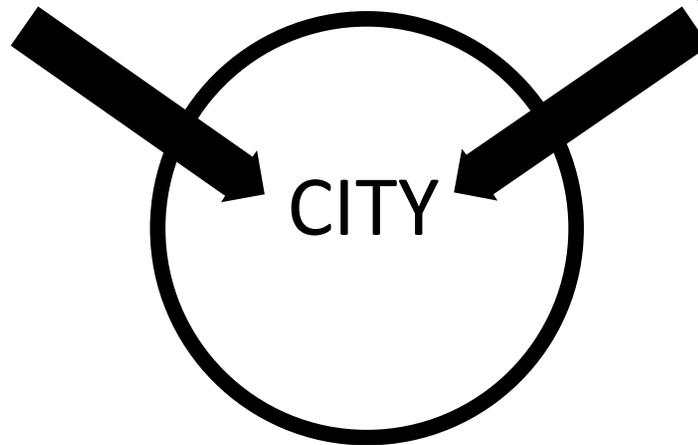
Cities must be resilient to acute shocks and chronic stresses

Acute Shocks

- Earthquakes
- Extreme heat
- Extreme storms/Floods
- Hazardous materials accident
- Terrorism
- Disease outbreak

Chronic Stresses

- Sea level rise
- Water and air pollution
- Lack of affordable housing
- Drought
- Crime and violence
- Poverty/inequity
- Aging infrastructure



www.CityofBerkeley.info/Mitigation

www.CityofBerkeley.info/ClimateProgress

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ADDITIONAL RESOURCES

Helpful Research Tools

- [Our Changing Climate](#) 2012 (CA Climate Change Center)
 - Overview of climate change impacts in the state
- [Cal-Adapt.org](#)
 - Interactive maps for temperature, precipitation, SLR and fire in different emissions scenarios
- [California Climate Adaptation Planning Guide: Understanding Regional Characteristics](#)
 - Narrative of Bay Area-specific projections on climate change impacts
- [NOAA Sea-Level Rise Viewer](#)
 - Sea-Level rise projections that delineate between high-confidence and low-confidence inundation areas

More on Financial Incentives for Mitigation Plan Development

- FEMA grant funding is available to local governments with approved mitigation plans
 - Both pre- and post-disaster grant funding is available
- Disaster recovery funding incentive: Approved mitigation plan may eliminate the 6.25% local match requirement for jurisdiction to receive post-disaster public assistance from FEMA (*see next slide*)



Disaster Recovery Funding Incentive

- Post-disaster Public Assistance
 - Normally: FEMA pays 75%, State pays 18.75%, local jurisdiction pays 6.25%
- AB 2140 (Hancock, 2007) allows for increased State share of post-disaster public assistance **for jurisdictions with adopted LHMPs**
 - Increases State share from 18.75% to 25%
 - Reduces local share from 6.25% to zero
 - **Not guaranteed** – has to be voted on post-event
- Requires adoption of LHMP into safety element of general plan (by reference or incorporation)