



The Adapting to Rising Tides Program

Napa County Workshop
February 25, 2016



San Francisco Bay Conservation
and Development Commission

Meeting Objectives

- Learn about how regional work can help Napa County plan for current and future hazards
- Discuss the integration of Napa County projects and programs into regional resilience work
- Demonstrate how joint hazard mitigation and adaptation planning can lead to local and regional resilience

Agenda

- 8:30 Check-in and coffee
- 9:00 Group introductions and review agenda
- 9:15 Regional efforts and their connections to Napa
- 10:30 *Break*
- 10:45 Breakout sessions on aspects of Napa Resilience
- 11:45 Wrap Up and Next Steps



Overview of the ART Program

- ART Program Approach and Findings
- ART Regional Efforts
- ART Portfolio and Technical Assistance



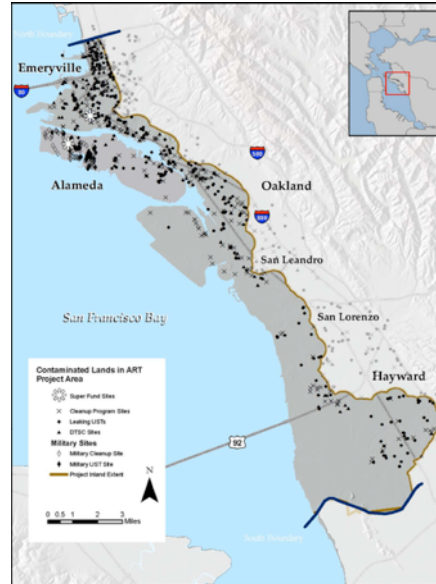
ART Alameda County

Initiated in 2011, the ART Alameda County Project was the first in the region to evaluate current and future flooding across multiple jurisdictions and sectors

Key factors of the ART approach – collaborative by design, a transparent process, and sustainable from start to finish – were foundational to the project



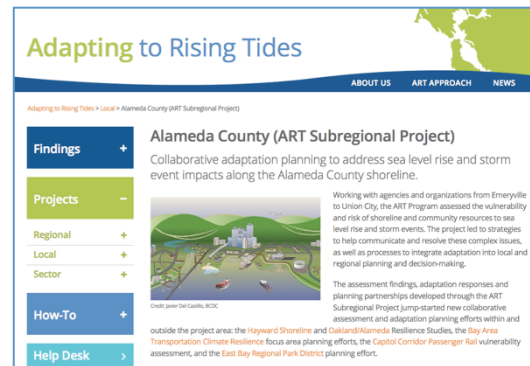
Multi-jurisdiction



Diverse Working Group
ART emphasizes close collaboration among stakeholders to ensure a shared understanding of the issues, build trust, and achieve buy-in for shared solutions and joint action

Multi-sector

- Airport
- Community characteristics
- Community services
- Contaminated lands
- Energy, pipelines, telecom
- Flood control
- Hazardous material sites
- Ground transportation
- Parks and recreation
- Natural shorelines
- Residential land uses
- Seaport
- Storm water
- Structural shorelines
- Wastewater



ART Alameda Project Outcomes

- ✓ A clearly defined approach to adaptation planning
- ✓ A road-tested planning process



Map of the Pacific Northwest showing the location of the study area in the Puget Sound region.

Transitioned from leading a single county effort in Alameda County to a regional program that uses findings, processes, tools and relationships developed in ART Alameda County Project to lead and support:

- Efforts at multiple geographic scales
- Efforts that are multiple or single sector
- Identify critical issues and challenges where more research and analysis is needed



ART Program Objectives

- Provide guidance and support for adaptation at all scales (local, regional, state and federal)
- Develop, leverage and identify the best available data, information and research
- Build ongoing partnerships with agencies and organizations
- Identify challenging issues or regional priorities that need further assessment and information
- Continue to develop and refine approaches and identify regional issues and priorities that lead to action



Share what we learn and make it easier for everyone else!

The ART Approach

- Integrates equity, economy, environment and governance from start to finish
- Can be applied to different geographies, sectors and hazards
- Convenes and engages a working group to build local capacity and ensure outcomes resonate locally
- Results in a robust and transparent vulnerability assessment that makes the case for adaptation
- Establishes a clear roadmap for actors at all scales to take action



ART Factors for Success

Sustainable from Start to Finish

Considers the relevance and implications of all aspects of sustainability – society & equity, economy, environment and governance – in each step of the planning process

Collaborative by Design

Develops trust among stakeholders, shared understanding of the issues, buy-in for collaborative problem solving, and improved capacity to address issues

A Transparent Process

Maintains transparency throughout and provides tools to ensure clear communication about decisions and outcomes



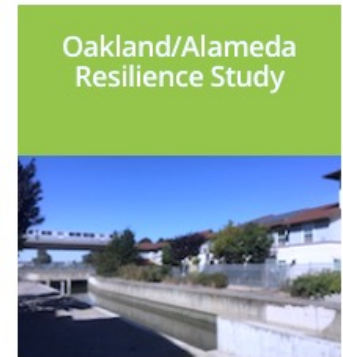
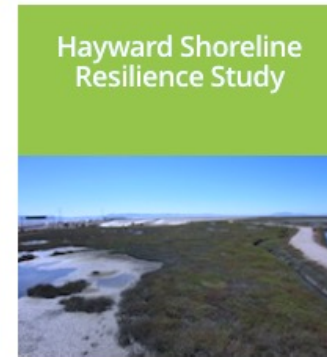
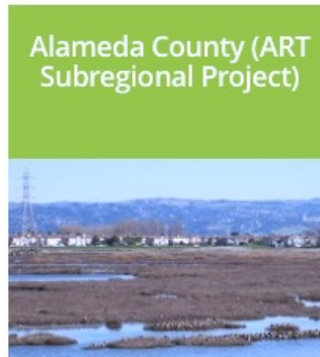
ART Program Projects



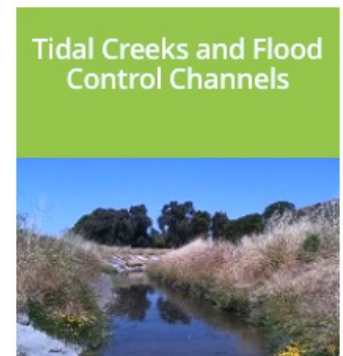
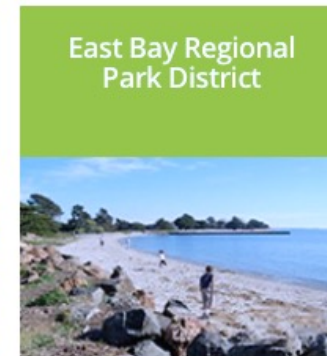
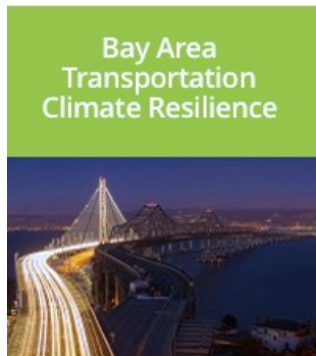
Regional



Local

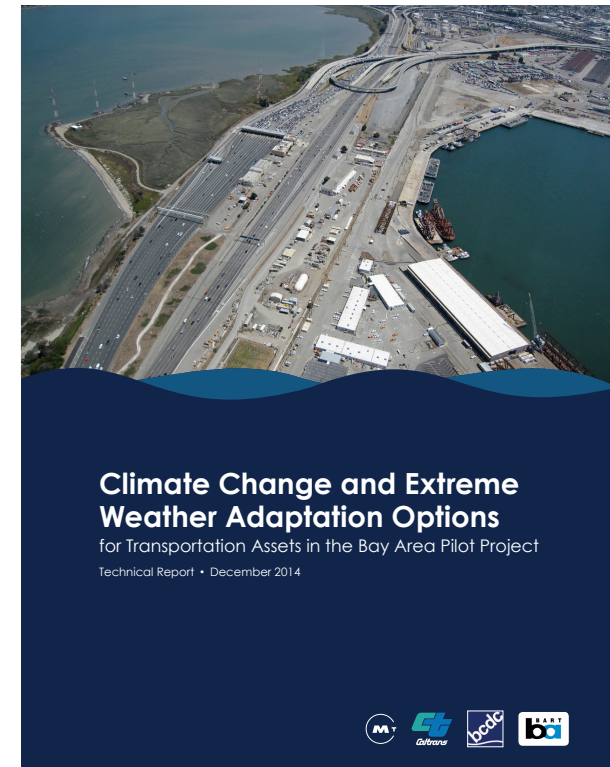


Sector



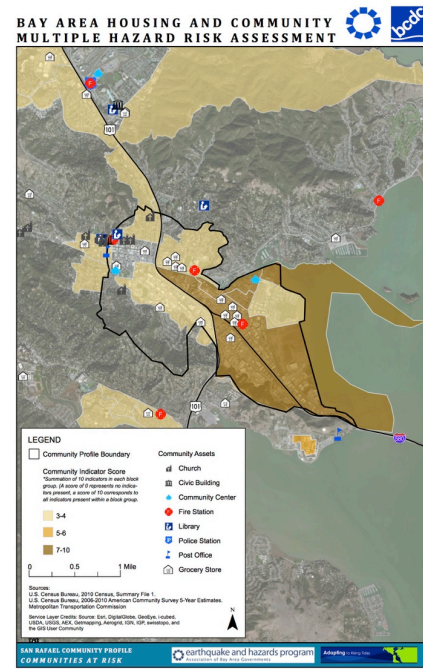
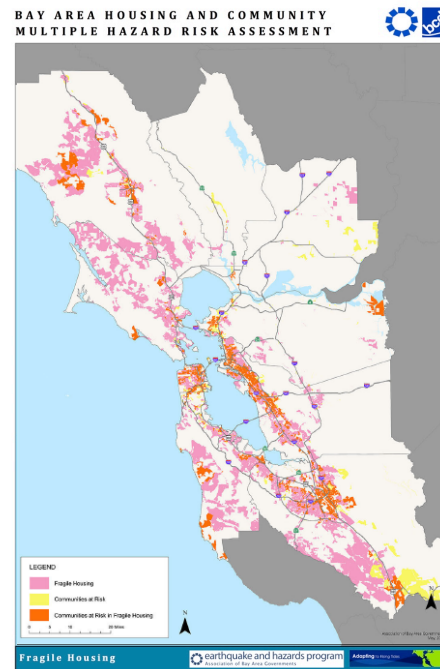
Bay Area Transportation Climate Resilience

- MTC, Caltrans, BART and BCDC's ART Program are working together to build a regional understanding of sea level rise and storm event flooding on critical transportation infrastructure
- Together, the agencies have assessed transportation infrastructure in Alameda County and three focus areas, and have developed adaptation actions and implementation options
- Findings from these efforts is helping resolve both the specific vulnerabilities identified and is being applied broadly throughout the region by Caltrans, BART, CCJPA and others



Stronger Housing, Safer Communities

- Improved the understand of the housing and communities most at risk from earthquakes and flooding
- Completed regional and local assessments of the earthquake and flood risks faced by existing communities and areas projected to grow
- Developed risk reduction strategies to increase resilience, sustainability, prosperity, and equity and help ensure people can stay in their homes after a disaster
- Sharing findings with the region, state, and country, and using them to support regional long range planning



Tidal Creeks and Flood Control Channels

- Worked with local stakeholders and regional partners to improve the understanding of how rising tides will impact tidal creeks and channels
- Developed a creek and channel assessment guide and worked with SFEI to develop science-based field and desktop assessment protocols
- Developed recommendations for improved coordination between community planning and engineering disciplines to support implementation of multi-benefit solutions



Regional Program Findings

- Adaptation and hazard planning involves working beyond existing intra-agency processes and across jurisdictional boundaries. The region can help convene local stakeholders and provide a structure for collaboration to improve climate and hazard resilience.
- There are some significant information gaps, for example the elevation of the ground transportation and shoreline protection is often unknown. The region can help fill these gaps, jumpstarting local planning and action
- Current regulatory processes for natural area and shorelines can make maintenance and repairs difficult, and may not support adapting to sea level rise. The region can play a key role in helping to address this governance challenge across sectors and scales.



The ART Portfolio

An on-line resource with information to help understand and address the specific challenges of building resilience across different assets, jurisdictions and owners


Findings: ART Program outcomes summarized by sector and planning issue

Projects: Latest information about current and past projects of the ART Program

How-to: Background information and step-by-step guidance and supplies for leading a project

Help-desk: Connect with knowledgeable ART Program staff

Adapting to Rising Tides

[ABOUT US](#)[ART APPROACH](#)[NEWS](#)[Adapting to Rising Tides](#) > Findings by Sector**Findings** [Findings by Sector](#) [Findings by Issue](#) **Projects** **How-To** **Help Desk** 

Findings by Sector

Click on the sectors below for summarized outcomes about vulnerability to current and future flooding and adaptation responses from the ART Program. These findings provide helpful background information and broadly-relevant insights for planning efforts that address the same types of assets.

Airport**Community Land Use,
Facilities and Services****Contaminated Lands****Energy, Pipelines and
Telecommunications****Ground
Transportation****Hazardous Materials****Natural Shorelines****Parks and Recreation****Seaport****Stormwater****Structural Shorelines****Wastewater**

Adapting to Rising Tides is a program of the [San Francisco Bay Conservation and Development Commission \(BCDC\)](#).

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Adapting to Rising Tides

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[Projects](#)

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[How-To](#)

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[ART Approach](#)

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[Design Your Project](#)

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[ART Supplies](#)

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ART Supplies

The guides, engagement exercises and other information referenced in How-To: Design Your Own Project.

To learn how these supplies are used in the ART approach to adaptation planning, visit the [Design Your Project](#) pages and download the guide (24 pages) which detail each step in the planning process.



**Download the
Design Your
Project Guide**

Good Planning Guides:

Provide a foundation for designing a project that utilizes robust stakeholder engagement and transparent decision-making.

[Stakeholder Engagement](#) [Transparent Decision-Making](#)

How-To Guides:

Provide instructions and tools used by the project team.

[Communicating About Climate Impacts](#) [The ART Assessment Questions](#) [Selecting Climate Scenarios](#) [Exposure Analysis](#) [Vulnerability & Consequence Statements](#) [Profile Sheets](#) [Issue Statements](#)

Questions?



Bay Area Resilience Planning

Hazard Mitigation and Climate Adaptation Plans

Association of Bay Area Governments

Bay Conservation and Development Commission



Natural hazards impact our communities



ABAG Resilience Projects

Regional Resilience Initiative



Cascading Failures: Earthquake Threats to Transportation and Utilities



Stronger Housing, Safer Communities



Mitigation and Adaptation Planning Assistance



Holistic thinking about assessing and reducing risk

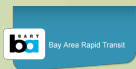
- Multi-hazard assessments
- Different types of physical vulnerability: people, infrastructure, buildings, natural resources
- Political and regulatory context: how does resilience thinking fit into the “universe” of local government decision-making?
- Actions that protect investments and ensure a safer, more resilient future

Integration with other resilience projects

Adapting to Rising Tides
Alameda County Project



Regional
Transportation
Assessment and
Adaptation Options



City, county, and
sector-specific projects,
e.g., Contra Costa ART



2011 Regional Hazard Mitigation
Plan



Cascading Failures



Stronger Housing, Safer
Communities Project



Sustainable
Communities
Strategy Update



Hazard Mitigation and
Adaptation Plans



Local Assessment and Strategies: Mitigation and Adaptation Plans

- Use your Local Hazard Mitigation Plan to incorporate holistic resilience thinking into city policy
- Combine assessment for earthquakes, flooding, climate change, and other hazards
- Coordinate process across departments
- Develop strategies that fulfill many needs and requirements

Benefits of planning for current and future hazards

- Protect public safety and prevent loss of life and injury
- Reduce damage to buildings and infrastructure
- Reduce the economic and financial impact of disasters
- Protect community's unique economic, cultural and environmental resources
- Speed community recovery
- Plan to reduce long-term risks from hazards associated with climate change.



Hazard Mitigation Planning + Climate Adaptation Planning

Consider current hazards and the effect climate change will have on them

Assess vulnerability of assets

Assess risk from current and future hazards to assets

Develop resilience strategies that mitigate hazards and adapt to future conditions

Our Process	FEMA Hazard Mitigation Plan	General Plan Safety Element	Climate Adaptation Plan
Planning Process	<ul style="list-style-type: none"> Determine planning area Build planning team Community outreach strategy Assess community capabilities 	<ul style="list-style-type: none"> Establish team 	<ul style="list-style-type: none"> Establish climate adaptation team
Hazard and Risk Assessment	<ul style="list-style-type: none"> Identify and profile hazards Inventory assets Identify and assess risk Analyze vulnerability of assets to hazards 	<ul style="list-style-type: none"> Identify hazards 	<ul style="list-style-type: none"> Community exposure Vulnerability Potential impacts Adaptive capacity Risk and onset
Performance goals	<ul style="list-style-type: none"> Set mitigation goals 	<ul style="list-style-type: none"> Establish acceptable risk 	
Mitigation and Adaptation Strategy	<ul style="list-style-type: none"> Develop mitigation goals Identify mitigation actions 	<ul style="list-style-type: none"> Develop hazard mitigation policies 	<ul style="list-style-type: none"> Prioritize adaptive needs Identify strategies Evaluate and prioritize
Implementation	<ul style="list-style-type: none"> Create an action plan for implementation 		<ul style="list-style-type: none"> Phase and implement

Benefits of a Hazard Mitigation Plan

- Mitigation grants (CalOES + FEMA)
 - Hazard Mitigation Grant Program currently has \$34m available for risk reduction projects
- Flood insurance premium reductions under CRS
- Waive 6.25% local match for Public Assistance money *if plan is aligned with general plan safety element.*

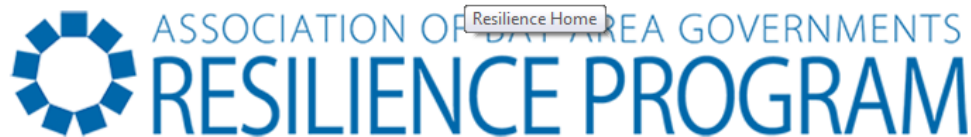


Desired outcomes of the planning process

- Robust local plans
- Streamlined plan development process
- Inclusive community engagement process
- Assess current and future conditions (climate change and land use)
- Focus on strategy and implementation
- Integration with other planning efforts

Local responsibility - LHMP

- Develop plan update that meets FEMA requirements
- Submit plan to CalOES for review and FEMA approval
- Get plan adopted by governing board
- Integrate the plan with other long-range and comprehensive plans
- Maintain and implement the plan

[Hazards](#)[Projects](#)[Topics](#)[Data](#)[Publications](#)[About](#)

Mitigation and Adaptation Plans

Local Hazard Mitigation and Climate Adaptation Plans

In an effort to support local governments in planning for existing hazards and preparing for future hazards due to climate change, the Association of Bay Area Governments (ABAG) Resilience Program and the [Bay Conservation Development Commission](#) (BCDC) [Adapting to Rising Tides Program](#) are partnering to create a process that will support the update and development of hazard mitigation and climate adaptation plans. Integrating hazard mitigation planning, which focuses on historic risks, with climate adaptation planning, which focuses on future risks, will provide clear guidance and a unified strategy to support community sustainability and resilience.

If you would like to stay informed about the resilience planning process and be notified about future workshops, please sign up for our [mailing list](#).



2016 Planning Process

ABAG and BCDC provided assistance to communities updating or developing hazard mitigation plans by presenting three workshops, developing guidance documents, hosting an open data page, assembling additional resources, and offering specialized one-on-one technical assistance for plan development. **The workshops are completed, but if you would like one-on-one assistance with resilience planning please [contact us](#) directly.**

All resources presented at past workshops can be found in the resources section below. The sequence of three workshops were focused on community engagement, risk assessments, and the selection and implementation of mitigation and adaptation strategies.

Submitting your Plan

Jose Lara is the new CalOES point of contact for LHMP reviews. His information for digital and physical copies is below:

ABAG and BCDC Assistance – Plan Development Process

Workshops

1. Community engagement
2. Hazard and risk
3. Mitigation and adaptation strategies

- Individualized technical assistance

Plan Development Process

1. Establish Team

2. Identify and Assess Hazards and Assets

3. Develop and Evaluate Strategies

4. Adopt the Plan

5. Implement the Plan

Community Engagement

Plan Development Resources

- Resilience Planning Process Roadmap
- LHMP sample outline
- Choosing your planning team handout

1 Community Engagement

Why is community engagement important?

- Relationship building – building community
- Connecting with the most vulnerable residents
- Ensuring that your planning serves the needs of your residents
- Identify ideas for improvement that have traction and energy from the community
- Learn about your hazards at a local scale

Community Engagement Resources

- Engaging community-based organizations
handout

2 Hazard & Risk Assessment

1. Set Community Goals

- Identify community goals to frame and guide the assessment

2. Describe Hazards

- Identify and describe current & future hazards
- Document past disasters
- Prioritize hazards and hazard scenarios to assess

3. Determine Assessment Methods

- Select the assets and asset scale
- Determine approach to exposure, vulnerability and consequences

4. Conduct the Assessment

- Conduct an exposure analysis
- Gather information on your assets
- Identify further data needs

5. Summarize Vulnerability

- Summarize assessment information into clear, outcome-oriented problem statements

2 Hazards & Risk Assessment

- Key points leading into the assessment
 - Select the asset classes to analyze, and if they will be assessed as a class or individually
 - Determine approach to evaluating exposure, vulnerability and consequences.
 - The assessment is much more than the location of the asset and the hazard. Consequence, governance, and function are equally necessary information.
- Key point leading out of the assessment
 - The results must be synthesized in concise statements.

Probabilistic Seismic Hazard Map (PSHA)

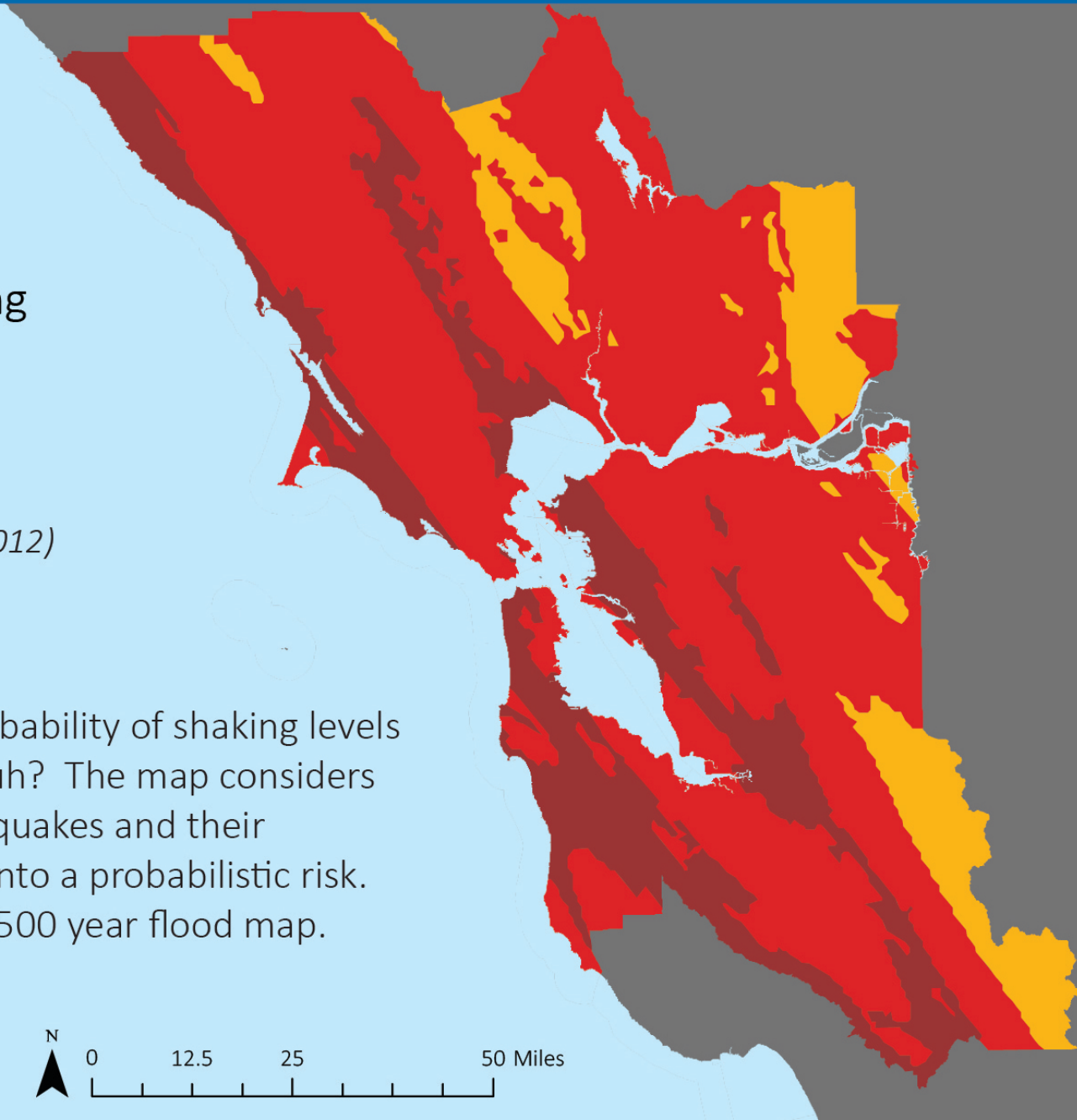
Shaking

- MMI 9 - Violent
- MMI 8 - Very Strong
- MMI 7 - Strong
- MMI 6 - Moderate
- MMI < 5 - Light

Map Source: USGS & ABAG (2012)

What is PSHA?

This map shows a 10% probability of shaking levels over the next 50 years. Huh? The map considers all types of scenario earthquakes and their likelihood and converts it into a probabilistic risk. It's somewhat similar to a 500 year flood map.



Hazards & Risk Assessment Resources

- Risk assessment process guidance document
- NFIP Repetitive Flood Loss Structures Sample Request Letter

Hazards & Risk Assessment Resources

OpenData Website	Risk Landscapes Document
Hazard maps – GIS layers	List of state and federal declared disasters
Regional level asset data – hospitals, schools, infrastructure	resource language for characterizing natural hazards
Future climate projections	Historic occurrences, future probability
Census tract data	Replicable methodology for risk assessment
	Mitigation and adaptation compendium

3 Mitigation Strategy Development, Evaluation, and Implementation

1. Set or Revisit Goals

2. Revisit Problem Statements

3. Identify Appropriate Strategies

4. Evaluate and Prioritize Strategies

5. Develop Implementation Plans

3 Mitigation Strategy Development, Evaluation, and Implementation

2014 URM	Complete the ongoing program to retrofit all remaining non-complying Unreinforced Masonry (URM) buildings.
Proposed Activities	<ul style="list-style-type: none"> - Begin by working with owners of remaining potentially hazardous URM buildings to obtain structural analyses of their buildings and to undertake corrective mitigation measures to improve seismic resistance or to remove the buildings and replace them with safer buildings. - Apply available legal remedies, including but not limited to citations, to owners who fail to comply with the URM ordinance. - Maintain program notification to building occupants and owners.
Related Natural Hazard(s)	Earthquake
Associated LHPM Objective(s)	A. Reduce the potential for loss of life, injury and economic damage to Berkeley residents and businesses from earthquake, wildland-urban interface fire, landslide, flood, tsunami, climate change, and the cascading impacts of these hazards.
Related Policies from the General Plan or Climate Action Plan	General Plan Policy S-20, Action A
Special Environmental Concerns	All building upgrade activities will include efforts to minimize impacts to existing residential and commercial tenants, and historic resources.
Lead Organization and Staff Lead	Planning Department - Building and Safety Division Staff Lead: Program and Administration Manager
Priority	High
Timeline	Engage all remaining URM building owners by January 2015 Complete all remaining URM retrofits/demolitions by

27. Reduce flood risk through integrated watershed management

Develop a program to work with public and private landowners to decrease the risk of flooding by advancing watershed management projects that reduce and/or store runoff during rainfall events, including the installation of green infrastructure and Low Impact Development (LID) practices, and improve the condition in the floodplain, for example through floodplain restoration or improvement.

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					None			

Description

This strategy recommends developing an integrated watershed management program to reduce the risk of coastal and riverine flooding. The program would encourage watershed-wide solutions, including engineered and nature-based watershed management approaches such as the installation of green infrastructure, use of Low Impact Development (LID) practices, and improving the condition of the floodplain through restoration or maintenance. This strategy will help protect both existing and future housing located in coastal and riverine floodplains as well as adjacent low-lying areas that will be susceptible to flooding during storm events as sea level rises.

This strategy recommends building on the existing California Regional Water Quality Control Board's Municipal Regional Stormwater Permit to requiring all new development and redevelopment projects over a certain size conform to a set of LID requirements. Low Impact Development (LID) is a land development and redevelopment approach that focuses on site layout and natural landscaping to increase infiltration and retention and minimize rainfall

Mitigation Strategy Development, Evaluation, and Implementation Resources

- Strategy development and implementation worksheet
- Strategy evaluation criteria
- Strategy sources

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ABAG_Resilience



Quarterly newsletter

Sign up on the website!



Adapting to Climate Impacts in the San Francisco Bay Area



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Conservancy Adaptation Work: A Brief History



- 40 years of protection and resilience
- 2009 Climate Change Policy & project selection criteria
- 2012 authority to prepare for and adapt to climate change
- Climate Ready Program



Nature-based solutions

Best available science

Focus on future conditions

Account for uncertainty

Minimize GHG emissions

**Address needs of underserved
populations**



Coastal Conservancy

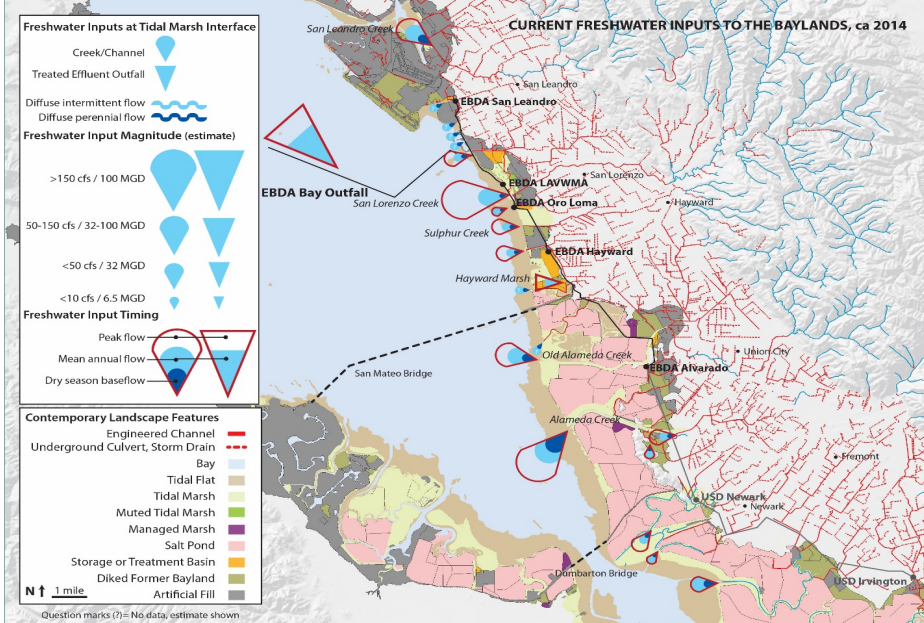
Climate Ready

Helping California communities meet the challenge of a changing climate

**Climate Ready Program:
Assists local communities to
prepare for and mitigate the
effects of climate change.**

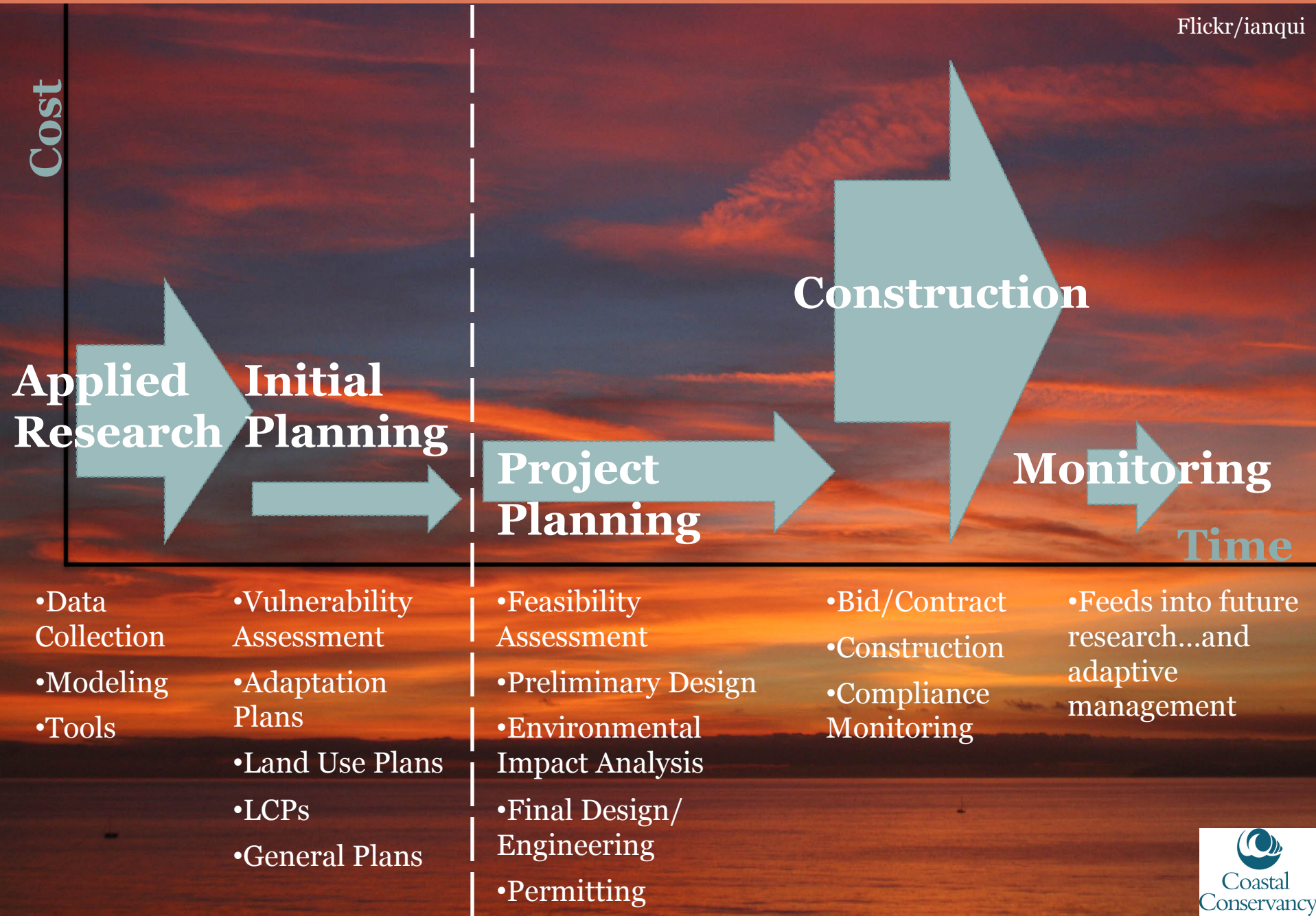
- Round 1 (Jan. 2014) = \$3 million for 20 projects
- Round 2 (Jan. 2015) = \$2 million for 11 projects
- Round 3 (June 2015) = \$2 million for 11 projects

Adaptation in SF Bay



Phases of Adaptation Project Implementation

Flickr/ianqui



Napa Sonoma Marsh Restoration

- Purchased by State from Cargill in 1994
- Planning (feasibility study, EIR/EIS, and final designs) and project leadership
- Leveraged over \$3 million in federal funds
- Restoration of 9,460 acres of former salt ponds to wetland habitats
- Pre-climate change awareness
 - Served as adaptation
 - Buffer against storms and waves

Napa River: Living River/Flood Management Overview



- Early 1990s: acquisition & restoration
- 1996: technical studies
- Management plan
- Living River
- Plan Implementation:
 - Acquisitions
 - Watershed Assessments
 - Study of fish passage barriers
 - Historical ecology assessment
 - And more!



Napa River: Rutherford Reach Restoration

- 20 miles upstream of river mouth
- Early contributor
- Planning for 4.5 mile reach (\$280k grant)
- Construction of Reach 8 (\$1m grant)



Napa River: Fish Passage Projects



Napa Valley Historical Ecology Atlas



- Funded SFEI (\$25,000) to prepare
- 100-page publication presenting findings of Napa Historical Ecology Study
- Inspires stewardship and more accurate conservation planning
- Addressed information needs for local projects
- Used in outreach programs

Napa County RCD



- Climate Ready Round 3 (June 2015)
- \$90,000 for **5,000 oak seeds** (from 5 species) with **1,500 students** in Napa River watershed over 3 years
- Classroom education
- Oak tree survival and growth tracking tool for student and **public monitoring**



How We Can Help: Funding

<http://scc.ca.gov/grants/proposition-1-grants/>



Select Language



About

Projects

Climate Change

Grants

Meetings & Notices



Photo: Margaret Napier

Proposition 1 Grants

The Conservancy has released the **Proposal Solicitation** for the next round Prop 1 grants. These grants fund multi-benefit ecosystem and watershed protection and restoration projects. Priority project types include: water sustainability improvements, anadromous fish habitat enhancement, wetland restoration and urban greening.



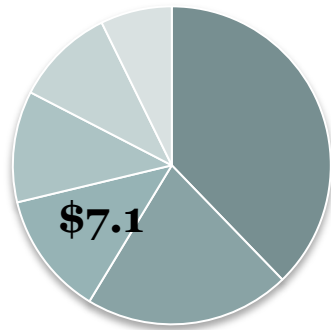
SCC Project Viewer



Grant News

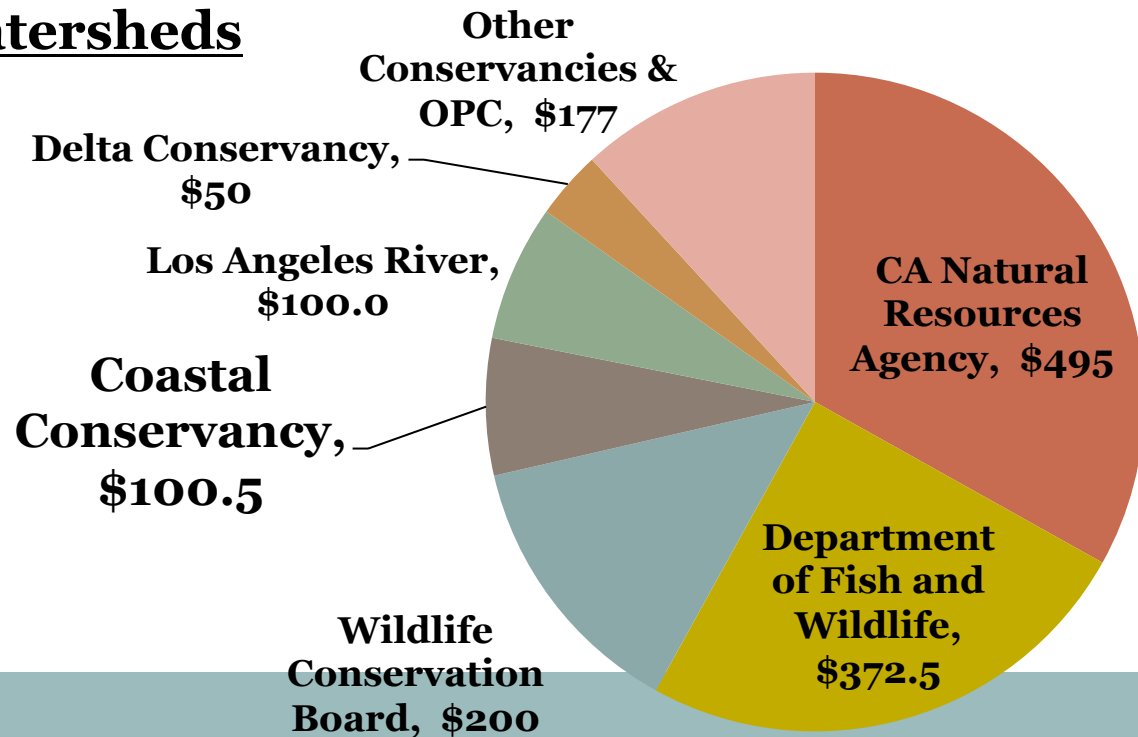
Proposition 1 Grants

Proposition 1



- Water System Operational Improvement & Drought Preparedness
- Protecting Rivers, Lakes, Streams, Coastal Waters & Watersheds
- Ground Water Sustainability
- Regional Water Security, Climate and Drought Preparedness
- Water Recycling
- Clean, Safe and Reliable Drinking Water

Chap. 6 – Protecting Rivers, Lakes, Streams, Coastal Waters & Watersheds



Eligible Projects

- Purposes of Chapter 6 of Proposition 1
- Coastal Conservancy Project Selection Criteria
- Promote and Implement State Plans and Policies
- Eligible Grantee
- Eligible for bond funding



Purposes of Chapter 6

13 specific purposes listed in Chapter 6 of Prop. 1



Prop 1 Next Steps



- Round 1 (General) = 10 projects selected for funding, on SCC website
- Round 2 (Anadromous fish) = Currently evaluating
- Round 3 (General) = Due March 31
- Round 4 (South Coast, Urban Greening) = May 1 – June 30

Potential SF Bay Urban Greening Focus for next year

How We Can Help: Future Projects



- **Next Phase of Napa River Restoration:**
 - Oakville to Oak Knoll
 - Potential for Prop 1 funding in future round
- **Potential acquisitions**
 - Would provide critical habitat connectivity and protect watershed properties.
- **Napa RCD's fish barrier removal project in Calistoga**

How We Can Help: Expertise, Resources



Credit: Photolibrium

Questions?



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Breakout Stations (rotate every 15 minutes)

- Adaptation and Natural Environments
- Community Resilience
- Hazard Mitigation and Climate Adaptation



Next Steps and Wrap Up

- How Napa can connect to regional resources
 - ✓ ART Help Desk and Technical Support
 - ✓ ABAG Resilience Program Resources
 - ✓ State Coastal Conservancy Grants and Funding
- We would love to hear from you what you need

Thank You!

