

# **Preparing the Bay Area For A Changing Climate**

A Summary of the Latest Research, Planning, and Action  
Based On Input From 60+ Bay Area Experts

## **Chapter 2 Current Initiatives and Stakeholders**

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# CHAPTER 2

## **Bay Area Climate & Energy Resilience Project** ***Bay Area Initiatives and Key Stakeholders***

Chapter 2 provides a current snapshot (to be updated quarterly) of the key projects, programs and stakeholders for each sector.

We provide this information to facilitate collaborations, reduce “reinventing the wheel” (particularly with limited resources), make it easier for groups to learn from each other, and maybe most importantly, inspire hope that we CAN make a difference. As the following pages demonstrate, we are an innovative and action-oriented region, with MANY positive stories to tell.

### **Projects, Programs and Key Stakeholders (July 2012)**

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## SECTION 1

### Major Flood Events (Sea Level Rise and Extreme Storms)

The considerable work to-date on sea level rise has been led by the Bay Conservation and Development Commission, the California Coastal Conservancy, PRBO Conservation Science, NOAA, San Francisco Estuary Partnership, Gulf of Farallones NMS, plus local governments including Hayward, San Francisco and Marin County. Adapting to Rising Tides (#2 below) is key pilot project that is gathering important information on *how* to effectively bring together local governments and many diverse stakeholders on this crucial regional issue.

The overall work on Bay Area disaster preparedness is led by the Association of Bay Area Governments, in conjunction with cities, counties and other stakeholders (26). This work, which is focused primarily on earthquakes, can provide important lessons learned on organizational structures, funding sources, and other elements needed to build resilience to climate-related disasters. Coordination and eventual integration of climate adaptation and disaster preparedness work streams is an approach that is gaining traction around the country and should be seriously considered for the Bay Area.

#### Current Projects, Plans and Initiatives (July 2012)

1. **BCDC Bay Plan Climate Change Amendments (2011)**  
The Bay Area's very first regulations on climate change adaptation, a key product of BCDC's extensive climate change program.
2. **Adapting to Rising Tides (East Bay – Bay Bridge to San Mateo Bridge)**  
BCDC is leading this multi-stakeholder 2-year project, a trial run at planning across city lines.
3. **California Coastal Conservancy Climate Change Policy & Project Selection Criteria**  
Two important documents from one of the key players on sea level rise. Describes impacts and identifies the Conservancy's legislative directives, strategies, and project criteria.
4. **PRBO San Francisco Bay Sea-Level Rise Website**  
New online decision support tool for managers, planners, conservation practitioners and scientists to study impacts on Bay Area tidal marshes and bird habitat.
5. **South Bay \$1 Billion Funding Drive to Rebuild Levees (April 2012)**  
Senator Feinstein, Moore Foundation, and business leaders call for a massive fundraising program to protect the South Bay.
6. **Hayward Shoreline Area Planning Agency (HASPA) Sea Level Rise Project**  
Project to develop strategies to protect Hayward shoreline from sea level rise. Run by joint powers agency including Hayward, East Bay Regional Parks District, and Hayward Area Recreation and Parks District.

7. **Innovative Wetland Adaptation Strategies Study (Corte Madera Creek)**  
One of the first Bay Area projects to examine how to reduce the vulnerability of tidal wetlands to sea level rise. \$600K US EPA grant. Run by USGS, USF, consultants and Marin County Flood Control District.
8. **MTC-BCDC-Caltrans-FHWA Sea Level Infrastructure Assessment**  
\$600K assessment of risks from sea level rise for transportation infrastructure along a section of the Alameda County shoreline. Will be used as a national model when completed in 2012.
9. **SF Bay NOAA Sentinel Site**  
One of just four recently-selected (April 2012) U.S. sites where NOAA and its partners will attempt to develop truly collaborative solutions (“do more with less”) to address sea level rise and coastal flooding.
10. **San Francisquito Creek Project JPA Highway 101 to Bay Capital Project**  
SFCJPA-BCDC-SFEP project will reduce flood risks in East Palo Alto and Palo Alto along a flood-prone reach of the creek from Highway 101 to San Francisco Bay. Planned for bay tides and 50 years of future Sea Level Rise within the creek in concert with the SFCJPA’s planned coastal levee system.
11. **San Francisco Estuary Partnership Climate Ready Estuaries Pilot Project**  
Project goal is to provide place-based information on the potential implications of climate change for estuarine ecosystems and processes, in a form that will enable managers to undertake adaptation planning. Focus is on San Pablo Bay salt marshes and mudflats for sediment retention and community interactions.
12. **California King Tides Initiative**  
Encourages the public to document the highest seasonal tides (King Tides) to help us visualize the impact of rising waters on the California coast. Documents impacts to private property, infrastructure and wildlife habitat, and offers a glimpse of what our daily tides may look like in the future as a result of sea level rise.
13. **Gulf of the Farallones National Marine Sanctuary Ocean Climate Initiative**  
**Action Plan**  
Sanctuary staff is currently drafting the Ocean Climate Initiative (OCI) Action Plan in four chapters: Conservation Science; Education and Outreach; Adaptive Management and Policy; and Green Operations (completed). Includes 2010 report *Climate Change Impacts: Gulf of the Farallones and Cordell Bank National Marine Sanctuaries*.
14. **Our Coast-Our Future: Planning for Sea Level Rise and Storm Hazards Along the Bay Area's Outer Coast** (GUF/PRBO/USGS/NPS)  
Project provides Bay Area natural resource managers, local governments and others with science-based decision-support tools to help Bay Area communities understand, visualize, and anticipate local coastal climate change impacts.

- 15. San Francisco Subtidal Habitat Goals Project** (BCDC/OPC/SCC/NOAA/SFEP)  
Conservation planning for the submerged areas of the bay through a collaborative, regional effort to advance understanding and conduct future science-based protection and restoration.
- 16. South San Francisco Bay Shoreline Project**  
Congressionally-authorized study being performed by the US Army Corps of Engineers together with the Santa Clara Valley Water District, City of San Jose, Coastal Conservancy and other local partners in Santa Clara County and parts of Alameda County. Purpose is to identify and recommend for federal funding one or more projects for flood damage reduction, ecosystem restoration and related issues such as public access. Includes impacts of sea level rise.
- 17. South Bay Salt Pond Restoration Project**  
The largest tidal wetland restoration project on the West Coast, led by the Coastal Conservancy with a series of Bay Area partners. Unprecedented restoration effort, in the middle of a major urban center, will transform a landscape the size of Manhattan into a thriving wetland ecosystem— providing a critical natural buffer against the effects of global climate change and sea level rise.
- 18. Port of San Francisco Sea Level Rise Project**  
Study by the Port’s Engineering Division to examine potential future flood risk from sea level rise on Port property. The URS/AGS study provided an estimate of sea level rise for the San Francisco bay shoreline managed by the Port from Mission Bay to Fisherman’s Wharf. The team also provided mitigating/adaptation alternatives along with associated costs.
- 19. San Francisco International Airport Climate Change Impacts Program**  
GHG reduction and adaptation review by SFO .
- 20. Hamilton/Bel Marin Keys Wetlands Restoration Project**  
Project run by Corps of Engineers and sponsored by Coastal Conservancy.
- 21. Ocean Beach Master Plan Project**  
SPUR-led collaborative project to develop long-range master plan for San Francisco’s Ocean Beach area to address the impact of rising seas, the physical and ecological processes shaping the beach, and improved integration with its natural, recreational, and urban contexts.
- 22. Sea Level Rise for the Treasure Island Development Project.**  
Analysis of sea level rise impacts and strategies to mitigate those impacts for major proposed development on man-made island in San Francisco Bay.
- 23. Adapting to Sea Level Rise: A Guide for California’s Coastal Communities**  
Brand new (2012) State of California guide (produced at UC Santa Cruz) to assist coastal communities in planning for sea level rise.

**24. Bay Area IRWMP—Flood Control and Stormwater Management**

This section of the regional water management plan identifies the major flood protection and storm water management objectives and issues for the Bay Area. It also identifies opportunities for regional efficiencies by working collaboratively towards multi-benefit, multi-beneficiary management of resources.

**25. Napa River/Napa Creek Flood Control Project**

Improvements to six miles of the Napa River including bank terracing, bridge replacements, bypass channels, culverts, floodwalls, and levees. A number of components have been completed—600+ acres of restored wetlands, replacement of three bridges, construction of the new Soscol Avenue Bridge, cleanup of contaminated properties, east bank terracing, and the Hatt to First Floodwall and Promenade.

**26. State of California Department of Water Resources (DWR) Flood Initiatives**

DWR projects to improve flood safety through integrated management, including Bay Area specific information. **FloodSAFE Initiative & FloodSAFE Strategic Plan** **The California Water Plan Update 2013—Flood Risk Management Section** **The California Water Plan Update 2009—Flood Management Section**

**27. ABAG Bay Area Regional Disaster Resilience Initiative**

Major disaster recovery project that is focused on earthquakes but will eventually include SLR/storm events, wildfires, etc. ABAG and its partners completed the Regional Hazards Mitigation Plan in 2010.

**28. Bay Area Preparedness Initiative (BAPI)**

First-in-the-nation, Bay Area-wide disaster preparedness program funded by Hewlett Foundation, San Francisco Foundation and others. Approach is a partnership of government, nonprofit organizations, the business community and philanthropy to establish processes and standards that will save Bay Area lives, minimize suffering, and enable local agencies to provide aid quickly and effectively to the most vulnerable.

**29. Resilient SF**

Coalition of city agencies, non-profit and faith-based organizations who have convened around the issue of disaster preparedness in order to help create a stronger and more resilient San Francisco.

**30. Adapting to Sea Level Rise Along the North Bay Shoreline**

Project funded by the North Bay Watershed Association to support the shoreline of eastern Marin north to the Petaluma River. The project is being operated for the NBWA by PRBO Conservation Science.

## **Additional Key Stakeholders**

In addition to the above specific projects and plans, there are a number of important Bay Area stakeholders who are currently engaged on a range of issues related to flooding, sea level rise, and extreme storms, including:

- ◆ **Save the Bay**
- ◆ **Bay Area Ecosystems Climate Change Consortium**
- ◆ **Bay Planning Coalition**
- ◆ **Bay Area Council**
- ◆ **Silicon Valley Leadership Group**
- ◆ **Joint Venture Silicon Valley**
- ◆ **Association of Bay Area Governments**
- ◆ **California Coastkeeper Alliance and San Francisco Baykeeper**
- ◆ **Bay Institute**
- ◆ **U.S. Army Corps of Engineers—San Francisco**
- ◆ **San Francisco Estuary Institute Historical Ecology Program**
- ◆ **California Climate Action Team — Coastal and Ocean Resources Working Group (CO-CAT)**
- ◆ **GGNRA Climate Friendly Parks**
- ◆ **Sierra Club San Francisco Bay Chapter**
- ◆ **Sierra Club Loma Prieta Chapter**
- ◆ **Golden Gate Audubon Society**
- ◆ **Bay Area Stormwater Management Agencies Association**
- ◆ **Bay Area Flood Control Districts**
- ◆ **Bay Area Flood Protection Agencies Association**
- ◆ **California Emergency Management Agency (Cal-EMA)**
- ◆ **Red Cross — Bay Area Chapter**
- ◆ **Bay Area CAN (Coordinated Assistance Network)**

## **SECTION 2**

### **Economy**

Bay Area projects to build resiliency can help the economy in two basic ways. First, they can protect key economic assets like the transportation system from floods, fires and other disasters. Second, a number of these projects can create Bay Area jobs and boost economic development.

#### **Current Projects, Plans and Initiatives (July 2012)**

For examples of projects that will protect the economy, see other sections, such as Major Flood Events (Section 1), Water Supply (Section 5), and Sacramento Delta (Section 6).

For examples of projects that will create jobs and boost the economy, see other sections, such as Major Flood Events (Section 1), Ecosystems (Section 4), Water Supply (Section 5), and Energy Supply and Demand (Section 7).

## SECTION 3

### Public Health

Most of the work to-date on climate and public health is taking place at the state level, led by the Department of Public Health and the Climate Action Team's Public Health Working Group [1-2]. Some Bay Area county health departments have taken part in these efforts, but funding limits their participation. San Francisco is conducting one of the few Bay Area-specific climate/health projects [3] that could be a good model for similar work around the region. In addition, the Bay Area Regional Health Inequities Initiative [4] (BARHII) has been quite active on the Bay Area's Sustainable Communities Strategy (Plan Bay Area).

#### **Current Projects, Plans and Initiatives (July 2012)**

1. **California Dept of Public Health - Climate Action Team Public Health Work Group**  
Developed the Public Health Climate Change Adaptation Strategy for California in 2009 and will update it by Fall 2012. Have produced a number of public health/climate documents (available on their website):
  - Overview of the Public Health Impacts of Climate Change
  - Public Attitudes and Perception on Public Health as a Climate Change Issue
  - Health Impact Assessment of a Cap and Trade Framework
  - Proposed Screening Method for Low-Income Communities Highly Impacted by Air Pollution for AB 32 Assessments
  - Public Health Working Group 2010 Work Plan
  - Public Health Working Group Heat Adaptation Guidance (June)
2. **California Dept of Public Health--Climate Action Plan Guidance**  
Developed *Climate Action for Health: Integrating Public Health into Climate Action Planning* to help cities and counties enhance their climate action planning.
3. **Environmental Health Assessment of Vulnerability to Heatwaves and Air Quality.**  
CDC-funded pilot project by the San Francisco Department of Public Health to develop public health capacity and adaptation strategies to reduce human health impacts from climate change. The focus is on preventing heat stress morbidity and mortality from extreme heat events and associated air quality impacts, which are expected to increase in frequency and duration.
4. **Bay Area Regional Health Inequities Initiative (BARHII)**  
Regional undertaking by local health departments in the Bay Area to confront health inequities. Includes public health directors, health officers, senior managers and staff from all nine counties. Produced the *Healthy Planning Guide*.
5. **Air District Clean Air Plan**  
Comprehensive plan for the nine-county region to protect and enhance public health through clean air strategies for industry, transportation and other sectors. In addition, the Air District's CEQA Guidelines provide assistance to local jurisdictions and lead

agencies in complying with the requirements of CEQA regarding potentially adverse impacts to air quality, including toxics and GHGS.

### **Additional Key Stakeholders**

In addition to the above specific projects and plans, there are a number of Bay Area stakeholders who are engaged in public health issues with eventual relevance to climate change, including:

- ◆ **Association of Bay Area Health Officers (ABAHO)**
- ◆ **Bay Area County Departments of Public Health**
  - *Alameda County*
  - *Contra Costa County*
  - *Marin County*
  - *Sonoma County*
  - *Napa County*
  - *Solano County*
  - *City/County of San Francisco*
  - *San Mateo County*
  - *Santa Clara County*
- ◆ **Health Care Sector**
  - Hospitals
  - Medical groups
  - Health clinics
  - Wellness stakeholders
  - Other
- ◆ **City of Berkeley Public Health Department**
- ◆ **Center for Public Health and Climate Change (Public Health Institute)**
- ◆ **Public Health, Law and Policy — Climate Change Program**
- ◆ **Bay Area Regional Water Quality Control Board**
- ◆ **The California Endowment**

## SECTION 4

### Ecosystems and Biodiversity

This active sector has a large number of active stakeholders and projects in the Bay Area. The Bay Area Climate Change Consortium [1] funded by the Moore Foundation, is attempting to bring together many of these efforts. There are a number of substantial projects underway led by universities, conservation organizations and others.

#### **Current Projects, Plans and Initiatives (July 2012)**

**1. Bay Area Ecosystems Climate Change Consortium**

THE model consortium for the entire region (and the best name!). BAECCC assesses the impacts of climate change on Bay Area ecosystems, and identifies management actions to address those impacts. BAECCC fosters collaboration among natural resource managers, scientists, and others interested in climate change and the future of the San Francisco Bay Area through three elements— communication & coordination, strategic science, and management applications.

**2. PRBO Climate Change Program**

PRBO’s collaborative research program on climate change is aimed at revealing what climate change might mean for Bay Area ecosystem conservation. Current topic areas include “Birds—Indicators of a Changing Climate,” “Using the Past to Plan the Future,” and “Guiding Conservation in a Changing Climate.” PRBO works in close partnership with government agencies, nonprofits, academics, and the public to guide effective conservation investments.

**3. Berkeley Institute in Global Change Biology (BiGCB)**

A \$2.5 million grant from the Moore Foundation supports seven integrated research projects focused on global change forecasting for California ecosystems. Grant involves eight campus departments and four natural history museums. In addition, a \$1.5 million grant from the Keck Foundation is supporting a BiGCB project to build an informatics infrastructure that will enable the integration of the data on campus and at UC field stations necessary for developing the next generation of predictive models for global change biology.

**4. Terrestrial Biodiversity Climate Change Consortium (TBC3)**

Interdisciplinary team of ecologists and earth scientists focused on the development of applied science products to define potential impacts of climate change on the Bay Area and the implications for management of the region’s conservation lands, both from the perspective of maximizing the biological value of those lands and the ecosystem services they provide human communities.

**5. Conservation Lands Network/Upland Habitat Goals Project**

Five-year science-based study of 4.3 million acres and over 1,000 plant and animal targets by over 125 organizations and individuals. The study aimed to identify the most essential Bay Area lands needed to sustain biological diversity. It was designed to recommend the types, amounts and distribution of conservation lands as well as actions needed to sustain diverse and healthy communities of plant, fish and wildlife resources in the nine counties. The study is intended to serve as a guide for selecting areas to be conserved for public and private conservation practitioners.

**6. North Bay Climate Adaptation Initiative**

NBCAI seeks to foster an open conversation between technical experts, land managers and policymakers in support of effective local scale climate adaptation strategies that preserve natural resources, biodiversity, and ecosystem services. NBCAI's purpose is to implement effective climate adaptation strategies that sustain ecological and human communities in North San Francisco Bay watersheds.

**7. Demonstrating the Economic Value of Conservation in Santa Cruz and Sonoma Counties.**

Moore Foundation-funded project will evaluate the economic benefits of conservation and educate decision-makers and community leaders about these economic benefits in order to enhance and expand investment in conservation.

**8. Save the Redwoods Climate Change Initiative**

The League and scientists from UC Berkeley and Humboldt State University have launched the multiyear Redwoods and Climate Change Initiative to create a comprehensive climate adaptation strategy for the redwoods. Their findings will help focus League efforts on where to protect and restore redwood forestland according to climate change forecasts.

**9. Climate Change, Conservation and Land Use Initiative**

This Nature Conservancy/Sonoma County joint project (with Moore Foundation funding) will produce a model and a guide for integrating conservation into climate change policies and actions at the county scale. The project is focused on Sonoma County.

**10. GGNRA Climate Friendly Parks**

Golden Gate National Recreation Area has set a goal of operating the park in a carbon neutral manner by 2016. It has also begun planning for impacts of climate change through a science advisory group, a climate change risk index, and by establishing principles of response for when resources are threatened.

**10. San Francisco Bay Area Conservation Commons**

The San Francisco Bay Area Conservation Commons is an effort dedicated to making environmental information more accessible and useful for conservation of our region's natural resources. By bringing information together and developing commonly-needed services we can leverage our collective knowledge and respond more effectively to environmental challenges of the present and future.

## **11. California Climate Commons**

The California Climate Commons offers a point of access to:

- Climate change and related environmental data,
- Helpful information about the data and the science that produced it,
- Web resources, services, and tools, and
- The opportunity to communicate with others about applying climate adaptation to conservation practice in California.

## **12. Gulf of the Farallones National Marine Sanctuary Ocean Climate Initiative**

### **Action Plan**

- a. Sanctuary staff is currently drafting the Ocean Climate Initiative (OCI) Action Plan in four chapters: Conservation Science; Education and Outreach; Adaptive Management and Policy; and Green Operations (completed). Includes 2010 report *Climate Change Impacts: Gulf of the Farallones and Cordell Bank National Marine Sanctuaries*.

*For more ecosystems-related projects see Section 1: Major Flood Events*

## **Additional Key Stakeholders**

In addition to the above specific projects and plans, there are a number of Bay Area stakeholders who are engaged on climate-related ecosystems issues, including:

- ◆ **Moore Foundation**
- ◆ **The Nature Conservancy**
- ◆ **Woods Institute for the Environment (Stanford University)**
- ◆ **California Landscape Conservation Cooperative**
- ◆ **California Coastal Conservancy**
- ◆ **Gulf of the Farallones National Marine Sanctuary**
- ◆ **San Francisco Estuary Institute**
- ◆ **Environmental Change Network**
- ◆ **California Academy of Sciences**
- ◆ **USGS Western Ecological Research Center**
- ◆ **Bay Area Regional Water Quality Control Board**

## SECTION 5

### Water Supply & Wastewater

Individual Bay Area water agencies like SFPUC (2), EBMUD (4), and Sonoma County Water District (3) are conducting projects related to climate change. In addition, the latest Bay Area Integrated Water Management Plan (IRWMP), to be completed in 2013, will contain a major section on climate change issues (1). The State DWR is a key player (8).

#### Current Projects, Plans and Initiatives (July 2012)

1. **Bay Area Integrated Regional Water Management Plan (2013)**  
Integrated plan for Bay Area water agencies includes major section on climate change impacts. Will be completed in 2013.
2. **SF PUC Study: Sensitivity of Upper Tuolumne River Flow to Climate Change Scenarios (2012) (Item 9)**  
Major climate change study on primary source of San Francisco water supply by SFPUC.
3. **Sonoma County Water Agency Carbon Free Water by 2015**  
Project for the water agency, the largest energy user in the county, to be carbon neutral by 2015 by diversifying its energy portfolio and reducing its energy and fuel needs through efficiency and renewable energy production. Part of the project is to pioneer new technologies that have been carefully evaluated for economic viability.
4. **EBMUD Wastewater Treatment Project**  
EBMUD's wastewater treatment plant is now producing energy. Biodegradable wastes in sewage, food scraps and grease from local restaurants, and waste streams from wineries and poultry farms are mixed together in large tanks and "digested" by microorganisms. The methane emitted by the microorganisms is captured and used in engines that power the plant. As a result, EBMUD is now producing more energy than it needs AND saving nearly \$3 million a year.
5. **Bay Area Regional Water Desalination Project (Study)**  
5 water supply agencies—SF, EBMUD, CCWD, Zone 7, and SCVWD—that serve 5+ million people and businesses are investigating a regional desalination project. The agencies are studying several options that could provide about 20 to 50 million gallons per day.
6. **Engineering Research Center (ERC) for Re-inventing the Nation's Urban Water Infrastructure (ReNUWIIt)**  
Major NSF-funded, interdisciplinary Stanford/Berkeley collaboration to “change the ways in which we manage urban water.” Project includes pilot projects at Stanford and in Discovery Bay wetlands.

7. **2010 Urban Water Management Plans**  
Each Bay Area water agency must produce an urban water management plan and submit it to the State Department of Water Resources. Each plan shows how the agency will meet the state's goal to reduce urban water use by 20% by 2020.
8. **Department of Water Resources Climate Change Page**  
Extensive information on California water and climate change, including Climate Action Plan Phase I: Greenhouse Gas Emissions Reduction Plan (2012)
9. **Delta Vision Strategic Plan**  
Comprehensive plan, two years in the making, provides a suite of strategic recommendations for long-term, sustainable management of the Sacramento-San Joaquin Delta. The Delta provides two-thirds of Californians – an estimated 25 million people – with some of their water and is home to more than 750 plants and animals that, in some cases, are unique to the Delta.
10. **Piloting Utility Modeling Applications (PUMA): A Climate Change Assessment Pilot Project.**  
Collaborative venture bringing together Water Utility Climate Alliance (WUCA) members, Regional Integrated Sciences and Assessments (RISA) leaders, and selected representatives of the climate science and applications community.
11. **Bay Localize Solutions Series Guides: Greywater Systems, Rainwater Harvesting**  
Part of Bay Localize's series on greening cities and building resilience.
12. **City of Berkeley Rainwater Harvesting and Greywater Reuse Program**  
12-page guide by City of Berkeley explains the basics of rainwater harvesting and greywater reuse.
13. **Water and Climate Bibliography.** Pacific Institute  
Searchable database compiling scientific literature pertaining to climate change and freshwater resources worldwide. Currently contains over 4,300 entries and is updated regularly. Allows the suggestion of additional resources.
14. **Santa Clara Valley Water District Climate Change Portal**  
Searchable database compiling reports and other technical literature on climate change and how it could affect the Santa Clara Valley Water District, including the topics of Sea Level Rise, Water Intelligence, Climate Risk and Insurance Industry Response, Groundwater and Climate Change, and Ecosystems and Climate Change.

## **Additional Key Stakeholders**

In addition to the above specific projects and plans, there are a number of Bay Area stakeholders who are engaged on climate-related water issues, including:

- ◆ **Bay Area Water Agencies Coalition (water supply)**
- ◆ **Bay Area Clean Water Agencies (wastewater)**
- ◆ **Bay Area Stormwater Management Agencies Association**
- ◆ **Bay Area Regional Water Quality Control Board**
- ◆ **Bay Area Water Forum**
- ◆ **Bay Area Water Agencies**
  - Santa Clara Valley Water District
  - Bay Area Water Supply and Conservation Agency (BAWSCA)
  - San Francisco Public Utilities Commission
  - East Bay Municipal Utilities District (EBMUD)
  - Contra Costa Water District
  - Alameda County Water District
  - Zone 7 Water District (Alameda County)
  - Marin Municipal Water District
  - Sonoma County Water Agency
- ◆ **East Bay Dischargers Authority**
- ◆ **North Bay Watershed Association**
- ◆ **Pacific Institute**
- ◆ **CDPH- Division on Drinking Water and Environmental Management – Bay Area Northern California (Region II)**
- ◆ **Greywater Action**

## SECTION 6

### Sacramento-San Joaquin Delta

The Delta, critically important to Bay Area and California water supplies, has had more high-level committees, commissions, and studies than any other climate-related topic. While DWR implements a series of interim actions (4) the Delta Stewardship Council (1) is currently the focus of a long-term agreement that balances human needs and the Delta's natural systems.

#### **Current Projects, Plans and Initiatives (July 2012)**

- 1. Delta Stewardship Council—Delta Management Plan**  
7-member board created by State legislation in 2010 to achieve 2 co-equal goals—ensuring a reliable water supply and protecting, restoring and enhancing the Delta ecosystem. Just completed staff draft of Delta Management Plan (May 2012).
- 2. Bay Delta Conservation Plan (Natural Resources Agency)**  
Appendices 2.C and 5.A.2 are new documents (April) particularly focused on climate change. The BDCP is being prepared by a group of local water agencies, environmental and conservation organizations, state and federal agencies, and other interest groups in compliance with the Federal Endangered Species Act (ESA) and the California Natural Communities Conservation Planning Act (NCCPA). When complete, the BDCP will provide the basis for the issuance of endangered species permits for the operation of the state and federal water projects. The plan would be implemented over the next 50 years. The heart of the BDCP is a long-term conservation strategy that sets forth actions needed for a healthy Delta.
- 3. Delta Vision Strategic Plan**  
2008 Plan that provided a suite of strategic recommendations for long-term, sustainable management of the Sacramento-San Joaquin Delta.
- 4. California Department of Water Resources Delta Initiatives**  
DWR is heading up a series of actions for the Delta, including a set of interim actions designed to make incremental improvements until the long-term solutions are in place.
- 5. Economic Sustainability Plan for the Sacramento-San Joaquin Delta**  
Prepared for the Delta Protection Commission by the University of the Pacific Eberhardt School of Business (2012)
- 6. Envisioning Futures for the Sacramento-San Joaquin Delta**  
PPIC report prepared by academic and public policy experts provides a comprehensive, scientifically up-to-date analysis and outlines several alternative management strategies for the Delta.

7. **Bay Area Integrated Regional Water Management Plan (in progress)**

This next integrated water plan for the Bay Area will contain a major section on climate change impacts, including the Delta.

### **Additional Key Stakeholders**

In addition to the above specific projects and plans, there are a number of Bay Area stakeholders who are engaged on Delta issues, including:

- ◆ **Bay Area Water Agencies Coalition (water supply)**
- ◆ **Bay Area Regional Water Quality Control Board**
- ◆ **Bay Conservation and Development Commission**
- ◆ **Bay Area Regional Water Quality Control Board**
- ◆ **Bay Institute**

## SECTION 7

### Energy, Supply, Demand & Pricing (Transportation and Buildings)

There is substantial work underway to reduce GHGs from transportation and building energy that is also helping to improve Bay Area resilience to climate-related impacts on energy supply, demand and pricing. Projects by Bay Area stakeholders on transit-oriented development, local renewable power, and energy efficiency will help prepare Bay Area residents for climate-related changes to our energy systems. In addition, PG&E and its partners are working to protect our power infrastructure.

#### **Current Projects, Plans and Initiatives (July 2012)**

##### *Transportation Energy*

1. **Plan Bay Area**  
ABAG and MTC are developing the state-mandated Sustainable Communities Strategy that focuses growth in Priority Development Areas (PDAs) where less driving is needed for work and other travel. The plan aims to cut GHGs per capita by 15% in 2035. EIR process starts in June leading to a decision by both agencies in Spring 2013.
2. **MTC Transportation 2030 Plan**  
Current Bay Area regional transportation plan includes GHG reduction grant program.

##### *Building Energy*

3. **PG&E**  
PG&E commissioned its first technical study on climate change's potential physical impacts on operations in 1989. Since 2008, PG&E has maintained a cross-functional team to explore and communicate climate-related risks within the company, conducting bi-annual reviews at the local level of the most relevant scientific literature on sea level rise, temperature changes, rainfall and runoff patterns, and storm frequency and intensity.
4. **Pacific Environment Bay Area Smart Energy 2020**  
Brand new (2012) plan for how to significantly reduce Bay Area building energy use by 2020 through efficiency, conservation, renewable power and other means.
5. **Bay Area Renewable Power Network**  
BARPN, a 30+ stakeholder group coordinated by the Joint Policy Committee, has developed a draft 2012-13 Action Plan for developing at least 2,400 MW of local renewable power by 2020. The plan will help to implement the BASE 2020 vision and approach.

**6. Bay Area Bridge to the Clean Economy**

Major new project run the Bay Area Climate Collaborative to advance initiatives on energy efficiency, renewable power, and energy efficiency.

**7. Marin Clean Energy**

The Bay Area’s first “community choice aggregation” electricity provider is already offering 50% renewables at a reasonable market rate and 100% renewables for a small premium. Moves from pilot program to countywide in Summer 2012. Two other counties are in the development stage for similar utilities—CleanPower SF and Sonoma Clean Power, while Richmond and other cities are exploring their options.

**8. Sonoma County Renewable Energy Secure Communities (RESCO)**

Developing and demonstrating a model for a locally owned, cost-effective renewable energy portfolio that meets the county’s greenhouse gas reduction goals. Focused on the integration of mature renewable energy resources and efficiency measures together with demand response to prepare Sonoma County to advance to the implementation stage.

**9. San Francisco Dept. of Environment Renewable Power Program**

Range of projects to increase renewable power in San Francisco.

**10. Oakland Solar Mosaic**

Ella Baker Center, Rebuild the Dream, Sungevity, Green for All and others created this project to boost local jobs and prosperity through a new crowd-sourcing model for financing clean energy development. Individuals purchase \$100 shares (called “tiles”) that are combined to pay the upfront costs of solar installations on community buildings in Oakland. The building owners pay a set price for the electricity through a long-term contract, which saves money, and eventually allows them to return share values to the “investors.”

**11. Energy Upgrade California**

The State of California’s latest energy efficiency program for homeowners. Customized by each participating county and coordinated by ABAG in the Bay Area. Planning is underway now for CPUC-approve Regional Energy Networks to coordinate EE work in each metro area. ABAG will coordinate the Bay Area REN with its partners.

**12. East Bay Green Corridor Solar Permitting Project**

Federal grant-driven program to develop a regional standardized solar energy permitting process to help increase efficiencies, drive the local solar PV market & boost the regional economy.

**13. HELiOS Project (Helios Energy Lights Our Schools)**

KyotoUSA project aiming to eventually get solar power installed on every California school. HELiOS and the National Renewable Energy Laboratory recently completed solar master plan site assessments for all schools in the Berkeley, Oakland and West Contra Costa school districts.

**14. Palo Alto CLEAN (Clean Local Energy Accessible Now)**

Palo Alto CLEAN is a brand new innovative finance initiative that authorizes the local utility to buy power from small local renewable energy systems. The first year goal is to contract for up to 4 megawatts (MW) of solar energy delivered by systems located on local large commercial rooftops in Palo Alto.

**15. Regional Renewable Energy Procurement Project (R-REP)**

Alameda County and Diablo Innovation Alliance project to coordinate public agencies in four counties who join forces to collaboratively purchase clean-energy systems. Benefits include 10-15% cost savings over bidding out projects individually, 75% reduction in transaction and administrative time, and highly competitive contract terms compared to individual projects.

**16. Grid Alternatives — Bay Area**

Both a nonprofit organization and a licensed solar installer, GRID Alternatives' flagship Solar Affordable Housing Program trains and leads teams of job trainees and other community members to install solar electric systems exclusively for low-income families throughout California. GRID Alternatives has installed solar for over 630 low-income homeowners in the Bay Area region to date (with the highest concentrations in Oakland, Richmond, and the Bayview district of San Francisco).

**17. SF Solar@Work**

A new project by San Francisco Department of Environment and the World Resources Institute, Solar@Work is a commercial solar group-purchasing program that secures discounted solar pricing for commercial building owners, providing an affordable solar financing option, and stimulating local economic development.

**18. SEI Southwest Solar Transformation Initiative**

New project in which, Novato-based SEI and Optony will offer centralized technical support and other services to various stakeholders in develop programs that will drive municipal, residential and commercial participation in the solar market.

**19. Solar Sonoma County**

Supports innovative solar power and energy efficiency policy programs, educates and trains community members in these fields about solar power and solar energy, advocates for a rapidly growing industry, and acts as a clearinghouse for clean energy activity in Sonoma County.

**20. SunShares (San Jose)**

Solar group-buy program that organizations can make available for employees to put solar power on their homes. SunShares accelerates clean energy, creates jobs, and helps to engage employees in pursuit of company sustainability goals.

**21. E2/Renewable Funding Solar Community Gardens (SB 843)**

Bay Area-based E2, Oakland-based Renewable Funding, Clean Path, and others are pushing SB 843 (Wolk) which sets up a financial system in which individuals purchase shares in a solar facility away from their home. Participants pay a set amount for their

share of the solar electricity generated and receive an equal credit off their normal PG&E bill. The program would greatly expand participation in renewable energy by including renters, people living in multi-family units, small businesses, public entities, and individuals who lack sufficient credit or do not have an appropriate roof.

### **Additional Key Stakeholders**

In addition to the above specific projects and plans, there are a number of Bay Area stakeholders who are engaged on energy issues, including:

- ◆ **Silicon Valley Power**
- ◆ **Alameda Power and Light**
- ◆ **Local Clean Energy Alliance**
- ◆ **Local Government Sustainable Energy Coalition**
- ◆ **Bay Area Climate Collaborative (BACC)**
- ◆ **Berkeley Law: Center for Law, Energy & Environment**
- ◆ **Bay Area Bike Coalition**
- ◆ **Greenbelt Alliance**
- ◆ **TransForm**

## SECTION 8

### Vulnerable Populations

A number of groups are working to build climate resilience in the Bay Area among low-income communities, communities of color, seniors, and individuals with disabilities. While the entire Bay Area will be affected by climate change, these groups have fewer resources with which to respond, and they contain existing conditions—unemployment, poverty, lack of health care, etc.—that will make them more vulnerable to climate change impacts.

*See also Section 4: Public Health*

#### Current Projects, Plans and Initiatives (July 2012)

1. **Bay Localize Climate & Energy Adaptation Worksheets**  
Regional non-profit building equitable resilience throughout the Bay Area. Released first edition of Community Resilience Toolkit in 2009, second edition forthcoming. Curriculum includes a set of worksheet to help identify adaptation needs and the green career and business opportunities they create in the Bay Area, following the belief that a truly resilient community invests its adaptation dollars in local green businesses.
2. **Collaborating Agencies Responding to Disasters (CARD)**  
Oakland-based non-profit that works on local resiliency through its “Fear-free preparedness for non-profits, faith agencies and vulnerable communities” and the “Prepare to Prosper” curriculum.
3. **Bay Area Regional Prosperity Plan**  
\$5 million HUD-funded project, led by MTC and ABAG with 20 cities/counties and more than dozen nonprofit partners. Two major, interconnected areas of work: A community-rooted process to develop and implement a regional *Economic Opportunity Strategy* to expand economic opportunities for low- and moderate-income residents; and the implementation of a *Housing the Workforce* strategy that would create and preserve housing affordable to low-income workers.
4. **West Oakland Environmental Indicators Project—Climate Adaptation**  
WOEIP was a key part of recent Oakland adaptation project by Pacific Institute for the State’s PIER program.
5. **Asian Pacific Environmental Network Asian Pacific American Climate Coalition**  
Launched by APEN, the APA Climate Coalition is an effort to ensure that Asian Pacific American communities are at the forefront of advancing solutions to climate change in California. The coalition is also working to protect these communities from the impacts that will disproportionately harm low-income communities and communities of color—heat strokes, dirtier air, paying more in food and energy costs, and losing jobs.

- 6. Movement Generation Justice and Ecology Project**  
Provides in-depth information and analysis about the global ecological crisis and facilitates strategic planning for action among organizers from urban Bay Area organizations working for economic and racial justice in communities of color. Focuses on developing the strategic movement capacity of young organizational leaders 35-years old and under in the Bay Area social justice community, especially young women, LGBTQ individuals and people of color.
- 7. Bay Area Social Equity Caucus**  
Unites more than 75 organizations across the nonprofit, public, and private sectors around a shared regional agenda for environmental, economic, and social justice. Currently working on the Bay Area's Sustainable Communities Strategy to reduce transportation GHGs and generally to ensure that Bay Area climate change strategies benefit all communities.
- 8. Oakland Green Jobs Corps**  
Nationally recognized program launched in 2009 by Ella Baker Center and the Oakland Apollo Alliance that connects people who face barriers to employment with opportunities in green construction, solar installation, home weatherization, and other green fields.
- 9. RichmondBUILD**  
The Pre-apprenticeship Construction Skills and Green Jobs Training Academy was developed in 2007 to create employment and career opportunities for Richmond residents in the high wage construction and renewable energy fields.  
Through the 14-week intensive program, RichmondBUILD graduates have a 90 percent placement rate with an average wage of \$18.33 an hour.
- 10. County Social Service agencies and health departments**  
Important services to build food and health resiliency for low-income residents, including food stamps, WIC, nutrition education, healthy food programs, community and school gardens, and farmers markets.
- 11. Communities for a Better Environment**  
Community organizing group active in Oakland and Richmond doing community education and neighborhood projects to increase resiliency.
- 12. California Environmental Justice Alliance (CEJA)**  
State alliance of environmental justice organizations, organizing a research project with UC geographers mapping disproportionate impact of climate change on low-income populations.
- 13. People Organizing to Demand Economic and Environmental Rights (PODER)**  
Key CEJA partner involved with researching impacts of climate change on low-income populations in San Francisco.

## **Additional Key Stakeholders**

In addition to the above specific projects and plans, there are a number of Bay Area stakeholders who are engaged on social equity issues and building resilience, including:

- ◆ **California Food Security Coalition**
- ◆ **Literacy for Environmental Justice**
- ◆ **Golden Gate University School of Law: Environmental Law and Justice Clinic**
- ◆ **California Environmental Justice Alliance**
- ◆ **Pacific Institute**
- ◆ **Transition Towns: California Communities Network**
- ◆ **Communities for a Better Environment**
- ◆ **Urban Habitat**
- ◆ **Unitarian Universalist Legislative Ministry**
- ◆ **Faith-based organizations**

## SECTION 9

### Cross-Sector Initiatives

While Sections 1-8 focus on specific topic areas, this section spotlights projects, initiatives and stakeholders that are working across sectors.

#### **Current Projects, Plans and Initiatives (July 2012)**

- 1. Santa Clara County Climate Impacts Initiative**  
New, \$1 million cross-sector assessment, led by Santa Clara County's Office of Sustainability and funded through the state's Strategic Growth Council grant program.
  
- 2. City/County Climate Action Plans on Adaptation**  
More than 30 Bay Area cities and counties have developed climate action plans. While these are targeted to GHG reductions, a small but growing number of plans also include adaptation strategies. In addition, some general plans now include climate adaptation measures.
  - **City of Oakland Energy and Climate Action Plan — Adaptation Section**
  - **City of Berkeley Climate Action Plan — Adaptation Section**
  - **City of Pinole General Plan — climate adaptation**
  
- 3. San Mateo County Climate Vulnerability Assessment**  
Recent (2012) vulnerability assessment of the county's infrastructure, ecosystems, public health, etc. produced by ICLEI.
  
- 4. Cal-Adapt**  
Local impacts research and information, including extensive content on the Bay Area, through an interactive web tool designed by the California Natural Resources Agency
  
- 5. Local Climate Adaptation Policy Guide DRAFT**  
Public review phase is over for this extensive guidance document for local governments and planners produced by the Natural Resources Agency.
  
- 6. State of California — Office the Governor Executive Order S-13-08**  
The official directive from the State of California on climate adaptation, Governor's Schwarzenegger's Executive Order in 2008 that directs the Resources Agency, OPR and others to take specific actions on sea level rise, adaptation and other topics.
  
- 7. Woods Institute Public Opinion Research on Climate and Energy**  
Stanford-based nationally-focused work on climate change and public opinion.

8. **Public Policy Institute of California Climate Change Polling**  
San Francisco-based organization with the longest-running public opinion polling on Californians and climate change.
9. **ABAG Wildfire Maps and Information**  
Detailed city maps for the “Wildland-Urban Interface Fire Threat” from ABAG’s Regional Hazards Mitigation Plan.
10. **Bay Area Wildfire Forum**  
Grassroots organization organized in the Bay Area in 1992 by fire agencies to create a firesafe environment through coordinated wildland fire training and other means.

### **Additional Key Stakeholders**

In addition to the above specific projects and plans, there are a number of Bay Area stakeholders who are engaged on cross-sector climate and energy resilience issues, including:

- ◆ **SPUR**
- ◆ **EPA Region 9 Climate Adaptation Program**
- ◆ **The Climate Corporation**
- ◆ **NRDC—San Francisco**
- ◆ **San Francisco Foundation**
- ◆ **NASA Ames Research Center**
- ◆ **Chabot Space and Science Center—Bill Nye’s Climate Lab Exhibit**
- ◆ **ICLEI**
- ◆ **Bay Area Fire Departments**

## **SECTION 10**

### **Bay Area GHG Reduction**

The Bay Area's work to prepare for climate impacts must be linked to the region's efforts to reduce GHGs. Finding these double-wins will help to accelerate both sets of projects and initiatives. Listed below, are some of the key GHG reduction programs in the region.

**FOR THE LATEST ON BAY AREA GHG REDUCTION SEE BAAQMD'S CLIMATE CHANGE PORTAL AT: [www.ca-ilg.org/sf-bay-area-climate-portal](http://www.ca-ilg.org/sf-bay-area-climate-portal)**

#### **City & County Climate Action Plans**

- Alameda
- Albany
- Benicia
- Berkeley
- Burlingame
- Emeryville
- Hayward
- Marin County
- Martinez
- Menlo Park
- Newark
- Novato
- Oakland
- Palo Alto
- Piedmont
- Redwood City
- San Carlos
- San Francisco
- San Jose
- San Leandro
- San Mateo
- San Rafael
- San Ramon
- Sonoma County + 9 cities
- Union City

#### **Local or Sub-Regional Networks (multiple counties)**

- Business Council on Climate Change (BC3)
- Climate Protection Campaign (Sonoma)
- Contra Costa County Climate Leaders
- East Bay Green Corridor
- Marin Clean Energy Partnership
- Joint Venture Silicon Valley Public Sector Task Force

Sustainable Napa County  
Sustainable San Mateo County  
Sustainable Silicon Valley

### **Regional Agencies**

BAAQMD Bay Area Clean Air Plan (GHGs, criteria pollutants, toxics)  
BAAQMD CEQA GHG/Toxics Guidelines (linked to local climate plans)  
JPC Near-Term Green Jobs + (EVs, DG, EE)  
MTC Climate Initiatives Grant Program  
MTC Regional Transportation Plan  
PG&E/Marin Energy Authority/Alameda Power/Palo Alto Utilities/SV Power  
Plan Bay Area (2013) — SB 375 - Sustainable Communities Strategy - RTP - RHNA

### **Regional Networks (9 counties)**

Bay Area Climate Collaborative  
Bay Area Council Economic Institute  
Climate Bay Area  
SF Bay Climate Action Portal (ILG-BAAQMD)

### **Topic-Specific Networks**

Bay Area Local Renewable Power Experts Group  
Electric Vehicle Strategy Council  
EV Communities Alliance  
Energy Upgrade California – Bay Area  
Great Communities Collaborative

### **Other**

Marin Carbon Project (rangeland sequestration)