

**Alameda County Climate Adaptation/Resilience Snapshot
Compiled by the Bay Area Climate & Energy Resilience Project (BACERP)
March 2014**

This summary memo is based on input from Alameda County climate stakeholders. The information was gathered via phone, email, web search, and an in-person group meeting co-hosted by the Alameda County General Services Agency in November 2013. The information is presented in four sections:

- County-Level “Spotlight” Adaptation & Resilience Initiatives
- Climate Planning Activities
- Current Structure for Coordination Among Cities
- Resources and Assistance To Accelerate Action

I. County-Level “Spotlight” Adaptation & Resilience Initiatives

Across the Bay Area, government, non-profit and private sector stakeholders are developing and implementing programs that address climate impacts (e.g., sea level rise, extreme storms, fire, heat) and build community resilience. Some are called “climate adaptation” projects, while others focus on health, transportation, or land conservation, but provide substantial climate adaptation or resilience co-benefits.

Whatever they are called, these efforts are increasingly mainstreaming climate issues into community planning and making our cities more prepared for the physical, economic, and social impacts of climate change. Importantly, a number of these programs can provide a wonderful double-benefit, by building local resilience AND reducing greenhouse gas emissions.

For example, in Alameda County:

- Alameda County is conducting a comprehensive portfolio review of county owned properties to assess their vulnerabilities to sea level rise, extreme storms, heat, and other climate impacts.
- BART is conducting an adaptation strategies pilot study with the Federal Transportation Administration (FTA) and is developing a lifecycle assessment on the cost of inaction for specific climate impacts.
- Alameda County Stopwaste.org has developed innovative programs for energy efficiency, green building, and waste management that are helping businesses, government agencies, schools and residents to reduce their greenhouse gas emissions.
- The county’s water agencies—Zone 7, EBMUD, the Alameda County Water District, and the East Bay Dischargers Association—are active on flood control, sea level rise, and conservation efforts, and participated in the 2013 Integrated Regional Water Management Plan process.
- The City of Oakland has an official policy that requires all reports to the City

- Council to identify environmental, social equity and economic opportunities – a policy that challenges every department to address these issues.
- Health advocates are partnering with community organizations to highlight the nexus between climate change and health impacts, as well as documenting the density of toxic sites in specific areas.
 - The East Bay Regional Park District’s most recent Master Plan Update includes a commitment to “monitor the effects of climate change on District resources and utilize adaptive management techniques to adjust stewardship methods and priorities to preserve the natural, cultural and scenic values of the parks and trails.”

At the same time, there are a growing number of region-wide, climate-related initiatives such as Plan Bay Area, the Bay Area Ecosystems Climate Change Consortium, PG&E’s infrastructure protection work, the Integrated Regional Water Management Plan, TBC3’s new fine-scale hydrology mapping for land managers, the Bay Area Council’s extreme storm study, Bay Localize’s Community Resilience Toolkit 2.0, BayREN (energy efficiency), Cal-BRACE (health), and the Baylands Ecosystem Habitat Goals Project. (These regional efforts are outside the focus of this county-level report.)

Within this broad and growing climate context, we have selected 9 Alameda climate adaptation and resilience initiatives to "spotlight" as notable examples of *county-level innovation* and *leadership*. These are described below with the hope that they will inspire and inform stakeholders in counties across the region. (Note: For accuracy, we have used language from project web sites where possible.)

Web links are provided for each spotlight initiative. To learn more, including project contact info, email the BACERP staff — Bruce@bayareaajpc.net or Aleka@bayareaajpec.net.

Adapting to Rising Tides

Pioneering sub-regional planning and collaboration for Bay Area sea level rise

ART is a collaborative planning effort to understand how San Francisco Bay Area communities can adapt to sea level rise and storm event flooding. Led by the San Francisco Bay Conservation and Development Commission (BCDC) and the NOAA Coastal Services Center, the ART Project has engaged local, regional, state and federal agencies, as well as non-profit and private stakeholders, in an in-depth exploration of the issues. The project focuses on a portion of the Alameda County shoreline, from Emeryville to Union City. This sub-region was selected based on local community and stakeholder interest and capacity for participation, diverse shoreline features, and the presence of regionally significant transportation infrastructure.

The goal of the ART project is to increase the Bay Area’s preparedness and resilience to sea level rise and storm events while protecting critical ecosystem and

community services. The initial phases of the project addressed two critical initial questions:

- How will climate change impacts of sea level rise and storm events affect the future of Bay Area communities, infrastructure, ecosystems and economy?
- What strategies can we pursue, both locally and regionally, to reduce and manage these risks?

The ART project eventually developed a portfolio of possible adaptation responses to address the vulnerabilities identified for the sub-region. The adaptation responses and the identified vulnerabilities both serve as starting points for the comprehensive planning that will need to occur at multiple scales around the nine-county region.

The ART project also included a separately funded, \$300,000 sea level rise risk assessment of transportation facilities in the project area. MTC, in partnership with Caltrans and BCDC, led the project. Using a conceptual model developed by the Federal Highway Administration, MTC and its partners conducted a comprehensive inventory of potentially vulnerable transportation assets along the shoreline and measured their relative importance to the health of the transportation network as a whole.

The next steps for BCDC and ART involve working with partners elsewhere in the Bay Area to utilize the tools, resources and lessons learned from ART to assist resilience planning efforts that address specific sectors, neighborhoods and assets, as well as broader resilience planning.

Hayward Area Shorelines Planning Agency — Sea Level Rise Project

Local leadership and multi-sector collaboration

In 2010, the Hayward Area Shoreline Planning Agency (HASPA) completed an innovative study to develop strategies to protect the Hayward shoreline from sea level rise and storm surge. HASPA is a joint powers agency, formed in 1970, including the City of Hayward, East Bay Regional Parks District, and the Hayward Area Recreation and Parks District. The sea level rise study addresses 4+ miles of shoreline between State Highway 92 and San Lorenzo Creek.

The study area is composed of several successful wetland mitigation and enhancement projects that have been in existence for many years. These mitigation areas were developed based upon a consistent tidal regime to provide habitat and forage for a number of species. These areas also form a tidal 'buffer' that protects both public and private improvements and facilities built along the inboard levees. Sea level rise now threatens the continued existence of these wetland areas and levees that are critical to the protection of this shoreline.

Like the ART project, HASPA's success has been largely based on bringing together, for the first time, a wide range of stakeholders in the study area for group discussions and problem solving.

Berkeley Hazard Mitigation Plan

A statewide model for resiliency planning and local action

The City of Berkeley is one of the first Bay Area cities to formally incorporate a comprehensive set of climate impacts into its draft 2014 Hazard Mitigation Plan. The plan, for the first time, formally acknowledges climate change as a “man-made” hazard of concern and focuses on climate impacts including extreme heat, extreme rainfall, flooding and sea level rise. The city's sustainability staff is also working with Emergency Services on energy assurance planning. This hazard mitigation work builds on adaptation and resiliency issues that were addressed in the city's Climate Action Plan and provides an excellent example of heretofore “siloed” elements of a municipal government coming together for mutual benefit.

Berkeley has also developed an innovative environmental tracking system with specific performance metrics that allows the city to measure and report progress in real-time on their Climate Action Plan goals. This information is presented for five sectors, including Adaptation and Resilience.

Oakland Climate Action Coalition

A model for community engagement and bold, equitable climate solutions

Between 2009 and 2011, the Oakland Climate Action Coalition (OCAC) organized unprecedented community participation to help the City of Oakland develop one of the most comprehensive and bold climate action plans in the Bay Area. Oakland's Energy and Climate Action Plan (ECAP) outlines 150 actions the city should take to reduce emissions to the adopted goal of 36% below 2005 levels by the year 2020 and 85% below 2005 levels by 2050 and includes an adaptation section with four strategies to address sea level rise and other climate impacts. The ECAP includes a long-term plan for the next 10 years and a short-term plan for the upcoming three years. Originally led by the Ella Baker Center, the OCAC currently involves more than 30 community organizations.

In 2012, the OCAC's Resilience and Adaptation Subcommittee partnered with the Pacific Institute on the study Community-Based Adaptation Planning: Case Study of Oakland CA for the state's climate research program. The goal of the study was to inform the development of equitable adaptation planning efforts by engaging community-based organizations in analyzing both the impacts of, and social vulnerabilities to, climate change. The study report outlines adaptation strategies that can be implemented at the local level, discusses their advantages and disadvantages, and identifies social equity concerns.

West Oakland Environmental Indicators Project

Resident-led, community-based model for climate change and other issues

The WOEIP is a West Oakland-based environmental justice organization working to create healthy homes, healthy jobs and healthy neighborhoods for all who live, work, learn and play in the community. Through Community-Based Participatory Research projects and their Collaborative Problem-Solving Model, WOEIP builds community empowerment and helps local residents achieve their own vision for healthy neighborhoods. WOEIP played a key role in the development of the 2012 Oakland study referenced above.

EBMUD Water and Energy Conservation Projects

Preparing for a water-constrained future with ambition and innovation

The East Bay Municipal Utility District (EBMUD) is playing a leadership role in Bay Area climate/water efforts through a range of initiatives to conserve water and energy, including their own ambitious goal of reducing the agency's indirect GHG emissions to zero by 2040.

- EPA Climate Ready Water Utilities - EMBUD is involved in this EPA effort to create a risk assessment tool for water utilities. Currently testing version 2.0 and will be involved in developing version 3.0 in 2014.
- Climate Change Monitoring and Response Plan - EBMUD is in the process of updating this plan that summarizes the agency's climate work and includes section on impacts, vulnerabilities and adaptation strategies.
- Renewable Energy and Energy Conservation – EBMUD uses 89 percent less energy than the average California utility to deliver water. At the district's wastewater treatment plant in Oakland, food and other wastes are used to create much of the power needs of the plant. Solar installations and micro turbines at the District's main Oakland office, a satellite office, and the El Sobrante water treatment plant are part of the District's plan to get more energy from renewable sources.

Alameda County Santa Rita Jail Smart Grid

A model for the 21st century electricity system

Unveiled in March of 2012, the smart grid at Santa Rita jail is the first of its kind in the country. The project enables the jail to sustain power if the Bay Area power grid is disrupted through the use of stored, renewable power. The \$11.7 million project is a partnership between Alameda County and Chevron Energy Solutions and was funded by the U.S. DOE, the California Energy Commission and the California Public Utilities Commission. The project ensures that the Santa Rita jail has a supply of reliable electricity and will save the county approximately \$100,000 per year in energy costs. The smart grid project is the culmination of energy projects implemented at the jail, including solar panels, a 1 MW fuel cell cogeneration plant, and wind turbines, along with a 2 MW advanced energy storage system.

Regional Renewable Energy Procurement Project (R-REP)

Alameda County leadership for this four-county energy project

Alameda County, Joint Venture Silicon Valley and the Contra Costa Economic Partnership created the R-REP that utilizes collaborative procurement to purchase renewable energy systems for public agencies in Alameda, Contra Costa, and San Mateo counties. By collaborating, the project partners can reduce transaction costs and administrative time, enjoy competitive contract terms, use standardized financing mechanisms, and reap other benefits while reducing greenhouse gas emissions. The R-REP is now serving more than 20 agencies at more than 100 sites and deploying over 20MW of renewable power. The program is an expansion of a successful Silicon Valley program (SV-REP) that brought together nine agencies for solar procurement. That project produced *The Best Practices Guide for Collaborative Solar Procurement*.

Rockefeller 100 Resilient Cities Challenge

New, full-time staff for climate and resiliency for four Bay Area cities

In December 2013, the Rockefeller Foundation announced that four Bay Area cities were winners in the 100 Resilient Cities Challenge—Alameda, Berkeley, Oakland and San Francisco. The awardees will work individually and collaboratively to develop resiliency strategies for climate impacts, earthquakes and other issues, and will expand current efforts to engage community members in resiliency planning.

Although each of these four Bay Area cities will develop its own comprehensive resiliency strategy, they will do so in the context of regional collaboration and cooperation to capitalize on common opportunities, challenges and benefits. The new funding will enable each city to recruit and hire a Chief Resiliency Officer (CRO) – an executive level staff member who will lead their city’s efforts and will coordinate with other Bay Area CROs. Part of this work will involve the development of local definitions and goals for “resiliency” as well as other city specific challenges.

II. Climate Planning Activities

A. Climate Action Plans

Climate Action Plans (CAP's), completed by more than 40 Bay Area cities, set goals and strategies for greenhouse gas (GHG) emissions reduction. Recently, some cities have also begun to include climate adaptation strategies in their CAP's that address heat, sea level rise, extreme storms, higher fire risk, and other climate impacts. The chart below provides key information on Alameda County climate action plans.

Alameda is the only county in the Bay Area in which every city has developed its own unique Climate Action Plan. Alameda County’s StopWaste.org, along with city staff, coordinated the development of the CAPs with technical support from ICLEI.

Development of GHG inventories using ICLEI tools was funded by PG&E with staff support from StopWaste.

Climate Action Planning Activity

City	Adopted CAP	GHG Reduction Goal	Adaptation Section in CAP
Alameda	Yes	25% below 2005 levels by 2020	-
Albany	Yes	25% below 2004 levels by 2020	Recommends strategies for sea level rise and a peak oil adaptation plan ¹
Berkeley	Yes	33% below 2000 levels by 2020	Recommends coordination among local agencies to develop an adaptation plan ²
Dublin	Yes	20% below “business as usual” scenario by 2020	References state agencies efforts on adaptation
Emeryville	Yes	25% below 2004 levels by 2020	-
Fremont	Yes	25% below 2005 levels by 2020	Includes section identifying complementary and conflicting adaptation and mitigation actions ³
Hayward	Yes	12.5% below 2005 by 2020	Notes that future CAPs will include adaptation strategies ⁴
Livermore	Yes	15% below 2008 levels by 2020	References state agencies efforts and executive orders on adaptation ⁵
Newark	Yes	15% below 2005 levels by 2020	Includes brief chapter on adaptation and recommends a vulnerability assessment and a climate adaptation plan ⁶
Oakland	Yes	36% below 2005 levels by 2020	Outlines specific actions and priorities for local and regional climate adaptation efforts ⁷
Piedmont	Yes	15% below 2005 levels by 2020	References state agencies efforts on adaptation
Pleasanton	Yes	15% below 2005 levels by 2020	Identifies local climate impacts, strategies for adaptation planning and

¹ <http://www.albanyca.org/index.aspx?page=256>

² http://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/Berkeley%20Climate%20Action%20Plan.pdf

³ <http://www.fremont.gov/DocumentCenter/View/19837>

⁴ http://www.hayward-ca.gov/GREEN-HAYWARD/CLIMATE-ACTION-PLAN/pdfs/2009/CAP_Final/Hayward_CAP_FINAL_11-6-09%20-%20full%20document.pdf

⁵ <http://www.cityoflivermore.net/civicax/filebank/documents/8925/>

⁶ <http://www.ci.newark.ca.us/images/uploads/pubwks/pdfs/greenhouse/Climate%20Action%20Plan.pdf>

⁷ <http://www2.oaklandnet.com/oakca1/groups/pwa/documents/report/oak039056.pdf>

			actions for specific vulnerabilities ⁸
San Leandro	Yes	15% below 2005 by 2020	-
Union City	Yes	20% below 2005 levels by 2020	Provides overview of potential local impacts and outlines adaptation strategies by sector ⁹
County Unincorporated Areas	Yes (2011 ¹⁰)	15% below 2005 levels by 2020	-

B. Other Climate Planning

Berkeley has formally incorporated climate impacts into its Hazard Mitigation plan (see Section I).

III. Current Structure for Coordination Among Cities

The Alameda County Board of Supervisors formed the Alameda County Energy Council Joint Powers Authority in March 2013 to coordinate and expand sustainable energy programs in the county. The cities of Albany, Berkeley, Emeryville, Fremont, Hayward, Oakland, Piedmont, San Leandro and Union City as well as Alameda County have signed onto the new JPA.

IV. Resources and Assistance to Accelerate Action

Stakeholders were asked what services or products would be most helpful to advancing their climate work. This could include assistance and resources provided by a proposed regional climate adaptation “hub.” Alameda County stakeholder answers are summarized below (grouped but unranked).

Note: The bold headings describe common themes from the stakeholder discussions. The bulleted items are opinions expressed by individuals.

Prioritize Outreach and Resources for Vulnerable Communities

- Most cities are struggling to make the focus on vulnerable communities more explicit. Everyone agrees that this should be a focus but we need help to move past this awareness towards action.

⁸ <http://www.cityofpleasantonca.gov/pdf/HE-CAP-07-2011.pdf>

⁹ http://www.ci.union-city.ca.us/green_city/Green_city_PDFs/Union%20City%20CAP_Final.pdf

¹⁰ Pending CEQA review <http://www.acgov.org/cda/planning/landuseprojects/climateaction/>

- We need assistance in developing a clearer definition of vulnerable communities – there has been some effort on this but we have a ways to go.
- We need to develop a standard engagement process for vulnerable populations. Each agency should have three or more vulnerable community partners that they work with regularly and are engaged with during emergencies.
- While there is a lot of great organizing happening in the community, it's not connected to planning or city hall – what can be done to bridge this gap?
- The Hub could help provide support for and facilitate collaboration among cities, counties and community groups
- We need to expand the notion of vulnerable communities to include multiple and diverse populations – people of color, seniors, children, etc.
- Community groups need to be engaged but also need funding to support this engagement – community based organizations often do not have the resources to participate in these processes.
- We need to develop a “gold standard” for what good planning processes for adaptation look like and these must include community groups. Having these groups at the table from the beginning makes this process *smarter* – Oakland’s Climate Action Plan is a good example.
- There is a need to share best practices around community engagement and specifically block-by-block organizing that supports preparedness.
- We should be using technology to enhance and improve our ability to communicate with and enable community members to participate in climate planning processes.

Provide Us With Technical Assistance, Access to Quality Data and Help Us Communicate this Information

- City staff need to be able to answer the “when, how bad and how much will it cost” questions around climate impacts. Staff should be able to answer these questions as accurately as possible and articulate the uncertainty in a way that doesn't hold projects back.
- County Public Health staff would be much more prepared to answer questions about linkages between climate change, extreme events, and health if we had real time data and specific patient information from hospitals - currently hospitals are not mandated to give us this data in a timely fashion.

- A lot of agencies have a hard time making the business case to elected officials for climate work. The Hub should help with this by making cost analysis tools more accessible and available.
- Utilities need help with understanding and identifying quality climate science. It would be helpful to have the Hub identify assumptions for temperature, precipitation etc. that we could then be confident in using in our planning and reports. Utilities also need help translating the technical information on climate into something actionable – we are not climate scientists.
- It would be really helpful if the Hub could help Utilities develop language that we could easily incorporate into our reports to communicate the urgency of the problem through reputable data and analysis.
- We need a database of storm info to use during storms to be able to predict damage.
- Use the Library Concept for this information. Put all practical information and data into one place so cities and counties can easily identify the standards they should be building to, options for renewable energy purchasing, etc.
- We always hesitate to include information in our reports that we don't totally understand – if the Hub could provide assurance that this is the right language/data then we could have greater confidence and could be more consistent in this messaging regionally.
- There is a need for uniform metrics for climate impacts – both so we can measure damage and to assess progress.

Help Us Work Together to Tell the Climate Change Story and Build Support

- The Hub should help us leverage the power of *groups* of cities, counties and other agencies to secure new, more substantial funding. The Hub could also help these groups approach private sector companies and utilities for partnerships.
- The public is not at all clear on climate issues – there needs to be a coordinated campaign with framing that is clear and powerful.
- Building political support is a big challenge. Agencies do a good job of bringing in the technical people however, what's missing is engagement among communications professionals to actually make the case for this work.

We need to respect the fact that communicating this is difficult and we need to employ professionals with experience and expertise.

- We need to think beyond elected officials in terms of building political support – we should consider other influential leaders in our communities.
- The Hub could provide examples of best practices for internal communications and support for external communications and outreach – lots of people still don't believe in climate change.
- We need a much more coordinated approach in terms of getting a compelling set of messages to the media.
- These issues should be framed economically to increase buy-in and support.
- It's important that we focus on getting people to pay more attention to these issues. Consider holding simulations like a Bay Area wide emergency drill to raise awareness.

Lack of Staff Capacity is a Huge Barrier Both to Implementing Climate Projects and to Understanding and Identifying Adaptation Measures

- Public health efforts need executive direction, funding and additional capacity to identify adaptation measures for local communities.
- It would help us leverage existing staff if the Hub could be a resource for best practices in climate and health, by documenting what other cities and counties have done.
- Flood work needs more staff resources and support in general. We already have aging infrastructure that is overdue for attention – this would be a great topic for the Hub to take on first.
- Elected officials and staff are focused on too many other immediate needs in public health for climate to be prioritized on its own. Instead of waiting for specific “health/climate” funding, we need to make connections, highlight win-win solutions, and talk more about the co-benefits of this work.
- We need better internal buy-in. We need climate and adaptation to be part of everyone's job.
- It's imperative that the Hub works to compliment efforts and coalitions that already exist – the Hub's focus should be on filling gaps in order to avoid duplication.

Help to Leverage Existing Resources and Secure New Sources of Additional Funding.

- We should access *existing* infrastructure funds (at the local, state and federal level) for adaptation efforts – we need to make the link between infrastructure upgrades and climate readiness.
- Political support and funding go together – the power of several local governments coming together to approach funders and electeds should not be underestimated.
- It would be helpful for the Hub to engage hard-to-reach institutions like funders and other stakeholders that have specific technical expertise and bring them to the table with us.

V. Participants

We thank the following Alameda County stakeholders who provided their valuable time and smart thinking:

- Caroline Judy, Assistant Director, General Services Agency, County of Alameda
- Ryan Bell, Sustainability Project Manager, County of Alameda
- Gina Blus, Sustainable Communities Supervisor, PG&E
- Timothy Burroughs, Climate Action Program Manager, City of Berkeley
- Clifford Chan, Manager of Water Treatment and Distribution, EBMUD
- Mike Connor, General Manager, East Bay Dischargers Authority
- Rachel DiFranco, Sustainability Coordinator, City of Fremont
- Jill Duerig, General Manager, Zone 7 Water Agency
- Elizabeth (Liz) McElligott, Assistant Planning Director, Alameda County
- Garrett Fitzgerald, former City of Oakland Sustainability Coordinator
- Margaret Gordon, Co-Director, West Oakland Environmental Indicators Project
- Susan Kattchee, Manager, Environmental Services, City of Oakland
- Anna Lee, Policy Coordinator, Alameda County Public Health Department
- Carol Mahoney, Project Manager, Zone 7 Water Agency
- Erik Pearson, Environmental Services Manager, City of Hayward
- Kirsten Schwind, Program Director, Bay Localize
- Sonia Urzua, Planner, Alameda County
- Ursula Vogler, Climate Initiatives Outreach Program Manager, Metropolitan Transportation Commission
- Kara Vuicich, Senior Transportation Planner, Alameda County Transportation Commission
- Norman Wong, Environmental Engineer, BART