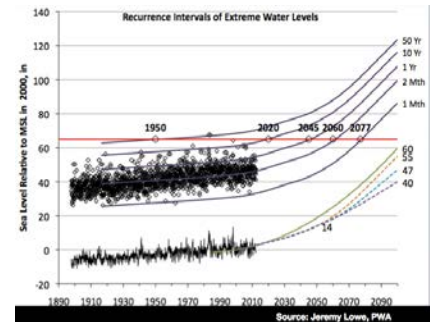
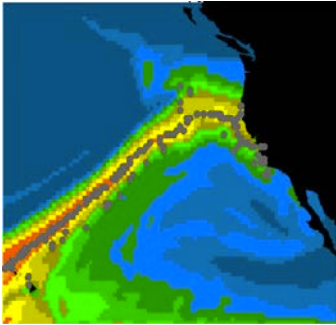


Bay Area Climate Adaptation & Resilience



Nine County-Level Snapshots

Projects, Plans, Structures & Needs

Bay Area Climate & Energy Resilience Project
March 2014

Bay Area Climate Adaptation & Resilience Stakeholders:

This report, produced for the Joint Policy Committee with funding support from the Kresge Foundation, provides a snapshot of Bay Area county-level climate adaptation and resilience work. The purpose of the report is to accelerate Bay Area climate action in three ways:

- Inspire and inform cities, counties and other stakeholders about great projects being done by their peers.
- Help design the next generation of resources and assistance that will support and boost the actions of climate stakeholders in the region.
- Identify the high-value topics—such as funding, governance, political support and roles—that can only be effectively addressed through joint action.

The information contained here was compiled through individual and group interviews with more than 140 climate stakeholders in the nine Bay Area counties. Key to this information gathering was a set of county-level meetings that were co-hosted by local government agencies. A list of informants is included at the back of each county summary.

Four basic questions were posed to the county stakeholders.

1. What are the key climate adaptation/resilience projects or initiatives in your county that have the potential for significant impact if replicated across the Bay Area?
2. What official climate planning has been conducted?
3. What structure, if any, exists in your county for local governments and stakeholders to work together on climate action?
4. How could a Bay Area information and assistance “hub” best help to advance your climate adaptation/resilience efforts?

This report focuses on county-level adaptation projects, structures, and needs. While there are a number of important *regional-level* adaptation initiatives in the Bay Area, our purpose is to dive deeply into work at the local level so we can understand how local, regional, and state adaptation efforts can eventually be integrated into a powerful and effective California adaptation movement.

These snapshots will be updated at regular intervals on the [BACERP web page](#). If you have additions or corrections please contact us — Bruce@bayareaajpc.net or Aleka@bayareaajpec.net.

Thank you for your input! Keep up the great work!

Bruce Riordan Aleka Seville
Bay Area Climate & Energy Resilience Project

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SUMMARY OF FINDINGS

This report provides “snapshots” of county-level climate adaptation and resilience initiatives in each of the nine Bay Area counties. The Bay Area Climate & Energy Resilience Project (BACERP) gathered the information from November 2013 to February 2014 through individual and group interviews, email correspondence, and web searches. BACERP is a project of the Bay Area Joint Policy Committee with funding support from the Kresge Foundation.

The goal of this BACERP effort is to better understand local and sub-regional projects and structures, and the barriers that Bay Area stakeholders are facing as they undertake adaptation planning. This intelligence will be extremely valuable in the eventual design of a long-term Bay Area adaptation and resilience *program* that integrates these innovative county-level initiatives with adaptation efforts by regional, state and federal actors.

While this report focuses on county-level initiatives, it is worth noting the increasing number of regional climate-related efforts 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. BACERP inventoried many of these region-wide programs in a 2013 report for the Kresge Foundation and the Joint Policy Committee.

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

Section I focuses on a selection of county-level efforts that we call “spotlight” projects that are notable for innovation, leadership, replicability, and potential impact. Bay Area local governments, special districts, regional agencies, and non-profit organizations are implementing these projects.

Flooding (sea level rise, extreme storms)

The sub-regional initiatives spotlighted below are developing locally-specific solutions and providing valuable lessons learned:

1. Adapting to Rising Tides (Page 14)
2. Contra Costa County Flood Control Leadership (p. 28)
3. Flood Control 2.0 (p. 28)
4. Hayward Area Shoreline Planning Agency — Sea Level Rise Project (p. 15)
5. Marin County Coastal and Bay Flooding Projects [multiple web sites] (p. 41)
6. Napa River/Napa Creek Flood Protection Project (p. 54)
7. Port of San Francisco Sea Level Rise and Climate Adaptation Study (p. 67)
8. San Francisquito Creek Joint Powers Authority (p. 79, 94)
9. San Mateo County Sea Level Rise/Adaptation Workshops (p. 78)

10. [SF Baylands Restoration and Flood Protection Project](#) (p. 94)
11. [SF Mission Bay Vulnerability Assessment](#) (p. 68)
12. [SF Ocean Beach Master Plan for Sea Level Rise](#) (p. 68)
13. [Solano County Sea Level Rise Strategic Program](#) (p. 106)
14. [South Bay Salt Bay Pond Restoration Project](#) (p. 95)
15. [South San Francisco Bay Shoreline Study](#) (p. 95)
16. [State Route 37 Stewardship Study](#) (p. 55)
17. [Suisun Marsh Restoration Project](#) (p. 108)

Water

All of the Bay Area’s water supply agencies are assessing climate risks to their infrastructure and water supplies, and are implementing strategies to address both supply and demand. Five specific initiatives are spotlighted:

1. [Bay Area Regional Desalination Project](#) (p. 30)
2. [EBMUD Water and Energy Conservation Projects](#) (p. 17)
3. [Santa Clara Valley Water District Projects](#) (p. 93)
4. [SFPUC Upper Tuolumne River Flow & Climate Change Scenarios](#) (p. 68)
5. [Sonoma County Water Agency: Leadership & Projects](#) (p. 117)

Energy

Energy initiatives include both the protection of infrastructure and power generation from storms, heat, and sea level rise, as well as energy efficiency and local renewable power efforts that boost our resilience to energy shortages and price spikes. In the Bay Area, PG&E is leading considerable efforts to address the former while a number of county-level projects aim to reduce fossil fuel dependence. Seven county-level projects for the latter are spotlighted:

1. [Alameda County Santa Rita Jail Smart Grid](#) (p. 17)
2. [Marin Clean Energy](#) (p. 29, 40)
3. [Regional Renewable Energy Procurement Project \(R-REP\)](#) (p. 18)
4. [San Francisco Renewable Power Program](#) (p. 69)
5. [Solano County Wind and Solar Energy: Leadership and Planning](#) (p. 107)
6. [Sonoma Clean Power](#) (p. 118)
7. [Sustainable Napa County Energy Projects](#) (p. 56)

Land: Natural Systems and Agriculture

A number of collaborative projects are underway to better understand the climate risks to the Bay Area’s fabulous natural systems as well as to identify how these assets can sequester carbon and fight climate change. Spotlight projects include:

1. [Climate Change, Conservation & Land Use: Sonoma County Pilot Project](#) (p. 120)
2. [Marin Carbon Project](#) (p. 42)
3. [Napa Green: Sustainability Leadership in the Wine Industry](#) (p. 55)
4. [North Bay Climate Adaptation Initiative](#) (p. 118)
5. [Preparing for Climate Change with Scenarios: Marin Case Study](#) (p. 43)

6. Sonoma County Veg Map (p. 119)

Health

County health departments and health advocates are beginning to marshal their resources to address climate change impacts on human health, often with a focus on highly vulnerable populations. Two climate projects are spotlighted below. In addition, health experts are working on active transportation, local food production, and other activities that have climate co-benefits.

1. Contra Costa County Health Services: Climate Leadership (p. 67))
2. San Francisco Climate Ready Initiative (p. 29)

Multiple Impacts and Sectors

Some cities, counties and other entities have organized adaptation and resilience initiatives that cut across impacts and sectors. We spotlight the following:

1. Benicia Climate Action Plan/Community Sustainability Commission (p. 106)
2. Berkeley Hazard Mitigation Plan (p. 16)
1. Contra Costa County Climate Leaders (p. 30)
2. Joint Venture Silicon Valley Public Sector Climate Task Force (p. 95)
3. Marin Climate & Energy Partnership (p. 40)
4. Napa Countywide Climate Action Framework (p. 56)
5. Oakland Climate Action Coalition (p. 16)
6. Rockefeller 100 Resilient Cities Challenge (p. 18, 69)
7. San Francisco Carbon Fund (p. 68)
8. San Jose Green Vision (p. 93)
9. San Mateo County Energy Efficiency Climate Action Plan (p. 80)
10. San Mateo County Climate Action Plan: Vulnerability Assessment (p. 80)
11. San Mateo County Regionally Integrated Climate Action Planning Suite (p. 78)
12. SF Adapt (p. 66)
13. Silicon Valley 2.0 (p. 92)
14. Small Cities EPA Climate Showcase Grant (p. 29)
15. Solano Transportation Authority Leadership: Climate Action Plans (p. 107)
16. Sonoma Climate Action 2020 Plan (p. 119)
17. Sonoma Climate Protection Campaign (p. 117)
18. Sonoma Regional Climate Protection Authority (p. 116)
19. West Oakland Environmental Indicators Project (p. 17)

II. Climate Planning Activities

40+ cities and counties in the Bay Area have completed Climate Action Plans (CAPs). (See county charts in each summary.) Climate action plans now cover 100% of the cities in two counties—Alameda County and Sonoma County.

While city/county climate action plans focus primarily on greenhouse gas emissions reduction, a number of these plans now include adaptation activities. Examples include

plans done by Fremont, El Cerrito, Burlingame, and Oakland. Plans completed in the last few years are more likely to include adaptation strategies. (See county charts in each summary.)

A small but growing list of cities now include climate in general plans, hazard mitigation plans, and other existing official planning processes. Examples include general plans for San Jose, San Mateo County, Marin County, Richmond and Pinole, as well as hazard mitigation plans in Berkeley and San Francisco.

III. County-level Structures for Coordination Among Cities

We have identified ten on-going structures that bring together cities for climate/energy planning. These structures vary widely, but all are providing valuable opportunities for collaboration within a given county or sub-region.

1. [Alameda County Energy Council Joint Powers Authority](#) (p. 20)
2. [Contra Costa County Climate Leaders](#) (p. 30)
3. [Joint Venture Silicon Valley Public Sector Climate Task Force](#) (p. 95)
4. [Marin Climate & Energy Partnership](#) (p. 40)
5. [San Mateo County Regionally Integrated Climate Action Planning Suite](#) (p. 78)
6. [SF Adapt](#) (among city/county departments) (p. 66)
7. [Silicon Valley 2.0 Working Group](#) (p. 92)
8. [Solano Transportation Authority](#) (p. 107)
9. [Sonoma Climate Protection Campaign](#) (p. 117)
10. [Sonoma Regional Climate Protection Authority](#) (p. 116)

IV. Resources and Assistance to Accelerate Bay Area Action

Stakeholders report a range of barriers and a set of actions needed to accelerate Bay Area progress on adaptation and resilience. The proposed actions could be implemented by various Bay Area institutions and collaboratives.

Major themes from the stakeholder discussions include:

Move from Individual Projects to Coordinated Bay Area-Wide Action

- Identify the “accelerants”—e.g., insurance issues, state mandates, business community demands—to address why cities and counties would act at the speed and scale required.
- Move climate adaptation planning into mainstream planning by integrating it into general plans, hazard mitigation plans, and capital improvement plans that already command attention. Show that climate planning is not something totally new and different (and all extra work).
- Work with stakeholders to create a Bay Area road map so everyone can see where we are (eventually) going, to identify the key work areas, and understand where they fit in.

- Create a set of goals and indicators that will guide actions and measure our progress.
- Focus more research and resources on highly vulnerable communities and support community leadership and organizations in their resilience planning.

Identify and Develop New, Substantial Funding Streams/Approaches

- Create a funding strategy with insurance, real estate, finance, and other private sector entities that have assets at risk by focusing on the cost of doing nothing.
- Identify how to shift more of the Bay Area’s tremendous resources, spending, and wealth to work for adaptation and resilience building.
- Think creatively about funding strategies that will produce at-scale, e.g. Napa River Flood Project, SF Bay Restoration Authority, Marin Clean Energy, and the California cap-and-trade program.
- Pull local governments together for more powerful *joint action* to advocate for state and federal funding.
- Position the Bay Area now to connect to federal adaptation funding when it becomes available on a larger scale.

Build Political Support and Engage The Public

- Engage communications experts (private sector, academia, community, etc.) to frame a powerful communications campaign on the need to take action now.
- Clearly connect the dots on health, jobs, the Bay Area’s natural beauty *and* climate change by focusing not some abstract, future, far-away world, but on things that people care about in their day-to-day lives.
- Develop a set of narratives that will speak directly to each sub-regional “tribe” about their own part of the Bay Area. It is NOT “one message fits all.”
- Help leaders and the general public understand how GHG reduction and adaptation are linked and need to be considered as two parts of a whole.
- Help people see what we are talking about. Create a positive vision for what a resilient future Bay Area looks like. Use scenarios to see multiple futures.

Provide Centralized Information/Assistance to Deal with a Dynamic Environment

- Leverage existing local staff and resources by providing guidelines, templates, technical experts, shared-staff, and other time- and labor-saving tools.
- Provide one clear, trusted, clearinghouse/referral center that can screen and synthesize science information, and provide guidance on how to use that information.
- Make it much easier to get information on Bay Area projects, state and federal adaptation programs, best practices from outside the region, and potential partners so stakeholders can focus on doing their own work.
- Provide locally specific impacts information that will allow us to develop local adaptation strategies linked to overall regional goals.

Build and Take Collaborative Action Where It Will Add Real Value

- Identify the best roles and responsibilities for each stakeholder group—cities, counties, regional agencies, state/federal government, non-profit organizations, and the private sector—then divide the work and develop a coordinated team approach.
- Support new and existing topic-specific networks of practitioners—sea level rise, water, energy, public health, vulnerable communities, etc.— for information-sharing, problem-solving, and joint advocacy.
- Provide a direct link between Bay Area stakeholders and state agencies, including developing a common advocacy agenda.
- Provide assistance to and link together county-level networks such as Marin Climate & Energy Partnership, Silicon Valley 2.0, Contra Costa County Climate Leaders, and the San Mateo RICAPS program.
- Encourage innovation in the most innovative region on the planet—don't just create top-down plans.

NEXT STEPS

1. BACERP staff will develop draft recommendations for action based on these findings as well the findings from the Kresge Foundation-funded regional needs assessment conducted by BACERP in 2012-13.
2. BACERP staff will discuss the draft recommendations with key stakeholders and funders, and finalize them in Spring, 2014.
3. BACERP staff and other stakeholders will use the recommendations to design and secure funding for new resources, assistance and structures that will accelerate Bay Area climate action.

Alameda County

**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 “siloe” 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/civica/x/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>

San Leandro	Yes	15% below 2005 by 2020	actions for specific vulnerabilities ⁸ -
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

Contra Costa County

**Contra Costa 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 Contra Costa County climate stakeholders. The information was gathered via phone, email, web search, and an in-person group meeting co-hosted by the Contra Costa County's Health Services 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 Contra Costa County:

- The City of Antioch recently completed a \$4.6 million streetlight retrofit that will result in half a million dollars in savings per year.
- The East Bay Leadership Council is participating in the East Bay Broadband Consortium – a project that could help to reduce business travel and transportation emissions through expansion of broadband access.
- Save Mount Diablo is pursuing land preservation for multiple benefits, including parks and open space as a buffer to fire and carbon sequestration.
- East Bay Regional Parks District has completed a carbon foot-printing analysis to calculate how much carbon they have currently sequestered as well as an annual sequestration estimate.
- The major transit-oriented development (housing, offices and services) efforts around the Pleasant Hill BART station are cutting transportation emissions for both residents and workers.
- The Contra Costa Water District is working to develop more reliable water supplies and is participating in the Integrated Regional Water Management Plan process to help prepare for drought and other climate-related impacts.

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 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 7 Contra Costa 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.

Contra Costa County Flood Control Leadership

Leadership in adaptation and flood control planning

Contra Costa flood control staff has taken regional leadership in preparing for the impacts of climate change. Working in conjunction with the Bay Area Flood Protection Agency Association, staff has been instrumental in significantly raising awareness on the need to accelerate regional flood control planning. They have forcefully advocated for funding, governance, science information, and uncertainty issues to be put "on the table" for multi-stakeholder discussions.

Flood Control 2.0/Walnut Creek

Promoting economic and environmental benefits through smart flood management

Flood Control 2.0 is a regional three-creek project that is developing a set of innovative approaches for bringing environmental benefits and cost-savings to flood protection infrastructure along the bay shoreline. Walnut Creek, Novato Creek, and San Francisquito Creek are the focus areas. The strategy has two complementary approaches that transform costly, trapped sediment in local flood control channels into a resource:

- Channel redesign where sufficient adjacent land use flexibility exists
- Sediment redistribution for highly constrained channels

Flood Control 2.0 will advance channel redesign to restore wetland habitat, water quality, and shoreline resilience through demonstration projects. At a regional scale, the project will collect and integrate data on coarse sediment and historical stream characteristics with the results of the local projects. The resulting strategy will increase environmental benefits and cost-savings to all flood protection efforts in the region.

Contra Costa County Health Services: Climate Leadership

Making the Link Between Public Health and Climate Change

County Health Services is taking a leading role in climate change/health strategy development. Currently, staff members are developing a comprehensive white paper on the connection between climate change and public health impacts in the county. The paper is intended to serve as a starting point for further discussion and collaboration on climate and health issues and will be released in early 2014.

At the same time, Health Services is now in the process of completing a hazard and vulnerability assessment for the county's public and private medical system facilities. This new assessment will consider the impact of increased fires, floods and other climate impacts based on facility location to better prepare the county to deal with climate related disasters and emergencies.

Health staff also identified key health impacts of climate change in the county's draft Climate Action plan and highlighted "win-win" strategies that both slow down further climate change and immediately improve human health as "co-benefits."

Finally, the Planning Integration Team for Community Health (PITCH), established by the Board of Supervisors in 2007, integrates public health considerations into land use and transportation planning and engineering activities. The inter-departmental team includes the Department of Conservation and Development, Public Works and Health Services. Projects have focused on Complete Streets implementation, the One Bay Area grant and the County Climate Action Plan development.

Richmond & Marin Clean Energy

East Bay city brings renewable power & energy efficiency to residents and businesses

The City of Richmond is the first Bay Area city to join an adjacent local Community Choice Aggregation (CCA) program to provide residents and businesses with more local control over energy sources. Richmond residents and businesses now have the option of purchasing 50% renewable power (Light Green) or 100 percent renewable energy (Dark Green) through Marin Clean Energy, or staying with PG&E's regional program. Richmond customers began enrollment in MCE in mid-2013. Currently, MCE is providing service to approximately 35,000 Richmond customers while other Bay Area cities consider following Richmond's lead.

Small Cities EPA Climate Showcase Grant

Collaboration across and within small cities to reduce GHG emissions

The city of El Cerrito has made significant progress in increasing both local renewable energy capacity and energy efficiency by leveraging limited resources through innovative partnerships. For example, El Cerrito has utilized nearly all of the city's solar installation capacity resulting in a 28 percent reduction in their municipal energy load.

Much of this work was funded through an EPA Climate Showcase grant, led by El Cerrito staff. The EPA grant helped four small Bay Area cities (El Cerrito, Albany, Piedmont and San Pablo) partner on a series of activities including joint solar purchases. In this way, these staff-constrained programs could pool their resources for the benefit of all.

Contra Costa County Climate Leaders (4CL)

A model nonprofit advocacy and organizing resource for Contra Costa cities

4CL is a network assisting the county and its 19 cities to inform, support and encourage climate change strategies for both GHG reduction and adaptation. The network facilitates countywide action by monitoring and documenting climate activities, providing free resources and tools, and operating a multimedia communications strategy that ensures best practices are shared and implemented.

4CL's website includes an interactive "local actions map" that details climate actions and specific accomplishments for each of Contra Costa's 19 cities providing a user-friendly way to share best practices. 4CL also provides regular workshops on specific climate and resiliency issues that are a priority in Contra Costa County. All workshops feature peer-to-peer discussions and opportunities for local governments to share lessons learned. Recent workshop topics include: Resilient Cities, Climate Change and Health, Water Conservation, Residential Energy Financing, GHG Inventories, and Reducing VMT.

Bay Area Regional Desalination Project

Contra Costa desalination facility to benefit entire Bay Area

The Bay Area Regional Desalination Project (BARDP) is evaluating the building of a desalination treatment facility at CCWD's Mallard Slough Pump Station in eastern Contra Costa County. The plant would turn brackish water into a suitable water supply. Once treated, water could be delivered through either EBMUD or CCWD's systems or "traded" through water transfer agreements. Five of the Bay Area's largest water agencies are working together to investigate how this regional project could serve the needs of over 5.6 million residents and businesses in the region.

The Contra Costa Water District (CCWD), the East Bay Municipal Utility District (EBMUD), the San Francisco Public Utilities Commission (SFPUC), and the Santa Clara Valley Water District (SCVWD) have collaborated in this effort since 2003. In 2010, Zone 7 Water Agency joined the group.

In 2013, the project partners completed the Site-Specific Analysis for the project, which included hydraulic modeling, wheeling cost analysis, greenhouse gas analysis, and Delta modeling. The partners are now looking at a broader effort to develop regional solutions to improve water supply reliability for the Bay Area; desalination will continue to be considered as a potential component.

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 existing Contra Costa County climate action plans.

Climate Action Planning Activity

City	Adopted CAP	GHG Reduction Goal	Adaptation Section in CAP
Antioch	Yes	25% below 1990 levels by 2020	-
Brentwood	No	-	-
Clayton	No	-	-
Concord	Pending	Reduce emissions by 1.7 MTCO ₂ e per capita by 2020	Integrated with GHG reduction program. Includes strategies and directives ¹¹
Danville	Yes	15% below 2005 levels by 2020	-
El Cerrito	Yes	15% below 2005 levels by 2020	Includes list of potential adaptation strategies by impact to be integrated into future updates and other city plans ¹²
Hercules	No	-	-
Lafayette	No	-	-
Martinez	Yes	Reduce to 1990 levels by 2020	Integrated with GHG reduction program. Includes strategies ¹³
Moraga	No	-	-
Oakley	No	-	-
Orinda	No	-	-
Pinole	No	-	-
Pittsburg	No	-	-

¹¹ http://www.cityofconcord.org/pdf/dept/planning/EIR/climate_study_review.pdf

¹² <http://www.el-cerrito.org/DocumentCenter/View/2689>

¹³ <http://www.cityofmartinez.org/civicax/filebank/blobdload.aspx?blobid=6332>

Pleasant Hill	No	-	-
Richmond	No	Reduce to 1990 levels by 2020 ¹⁴	-
San Pablo	Yes	15% below 2005 levels by 2020	-
San Ramon	Yes	15% below 2008 levels by 2020	Outlines General Plan policies by impact that will aid in adaptation efforts ¹⁵
Walnut Creek	Yes	15% below 2005 levels by 2020	-
County unincorporated areas	Pending ¹⁶ (Draft released 12/12)	15% below 2005 levels by 2020	-

B. Other Climate Planning

Pinole has included climate change as a significant component of its General Plan update.¹⁷ The general plan addresses climate change adaptation and mitigation through more than 90 policies and actions, all developed under the umbrella of long-term sustainability.

Richmond’s General Plan¹⁸ includes a climate and energy element that examines how the city’s land use and transportation network will affect energy consumption and outlines specific GHG reduction measures as well as broad resiliency goals.

San Pablo has outlined specific implementation policies in its 2011 General Plan update that include encouraging clean transportation, mandating green building and conducting GHG inventories.¹⁹

III. Current Structure for Coordination Among Cities

Contra Costa Climate Leaders (4CL) provides an on-going learning network for cities and other climate stakeholders (see Section I).

¹⁴ 2020 and 2050 targets adopted by Resolution 108-08

¹⁵ <http://www.sanramon.ca.gov/plan/climateact.htm>

¹⁶ Draft released in December 2012, public review through February 2013.

¹⁷ http://www.bcdc.ca.gov/planning/climate_change/AdaptPinolePlan.shtml

¹⁸ <http://www.ci.richmond.ca.us/DocumentCenter/Home/View/8813>

¹⁹ <http://www.sanpabloca.gov/DocumentCenter/Home/View/669>

IV. Resources and Assistance to Accelerate Action

BACERP staff asked Contra Costa stakeholders to identify and discuss 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.” Contra Costa stakeholder input is summarized below (grouped but unranked).

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

Help Us Coordinate Within the County and Regionally to Address Potentially Conflicting Regulations

- Proposed projects that will help us adapt to sea level rise face conflicting regulations. For example, the Regional Board considers sediment a pollutant and has developed a Total Maximum Daily Load sediment budget for various watersheds. On the other hand, depositing sediment along shorelines to increase wetland habitat is an effective way to attenuate storm surge.
- Climate change adaptation strategies must be integrated into the Floodplain Management Programs for land use agencies along the bay.
- We need to develop a forum for working out project specific conflicts that are experienced or will be experienced as we propose, plan and implement climate change adaptation projects.
- We need to understand how to streamline permitting so that new regulations under Title 24²⁰ don't work counter to current local energy efficiency programs and efforts.

Climate Change is a Dynamic System – We Need Integrated Thinking to Address Multiple Aspects of Sea Level Rise and Climate Change Impacts

- We need to have more clarity of purpose between our goals of adapting to sea level rise and not filling in the Bay. Horizontal Levees will work well with minimal environmental risk in some areas and will require us to fill in the Bay to construct them in others.
- There are different impacts associated with sea level rise and climate change from a watershed/flood protection perspective. There has been a lot of helpful information and discussion about the increases projected for water surfaces due to sea level rise. However, not as much information is available for the impacts to area creeks, rivers and streams due to climate change.

²⁰ <http://www.energy.ca.gov/title24/2013standards/index.html>

- Lack of measurement of various impacts is a big issue – we need to develop and track indicators.
- We need to better coordinate agencies and stakeholders so we can explain potential future scenarios to the public. For example, FEMA is finishing their coastal and bay tidal mapping effort that will include increased water surface elevations due to storm surge and wind fetch across the Bay and low-pressure zones. At the same time, BCDC has mapped potential sea level rise water surface elevations around the Bay shoreline. Meanwhile, we will also be faced with increased storm surge from the Central Valley drainage and localized increase in peak flows due to climate change. We need to consider all of these *together* to articulate what possible future scenarios could look like.
- We must develop best practices on disaster response and integrate this into climate and adaptation planning.
- We need to include economic evaluation and benefit-cost impact assessments in climate change and adaptation studies and planning – specifically, we should be aware of the cumulative impact future policies could have on job creation and retention.

Help Us Build Political Support and Communicate With Specific Communities About the Impacts of Climate Change in Their Area

- Communities along the shore do not understand the changes that will occur in their communities as a result of climate change. Increased public awareness in general and increased public awareness for shoreline communities, in particular, needs to be a key part of any adaptation strategy.
- We need help communicating that adaptation and mitigation are deeply connected.
- We need to communicate how many jobs can be created and/or restructured as a result of climate projects. This will help us reinvigorate the industrial base and build public support and funding for climate projects.
- Building political support for climate work is the most important thing the Hub can do.
- We should be engaging non-traditional climate stakeholders that could be allies, such as labor leaders and solid waste managers to build deeper political support.

- We need help with developing messaging for both internal and external communications. Specifically, we need to address attitudes around climate change by highlighting the co-benefits associated with climate adaptation projects.

Provide Us with Assistance and Support to Use The Tools and Technical Information That Is Already Available

- While there is a need for technical information, we also need assistance and support to actually use this information effectively.
- There are an increasing number of technical tools and information pieces available to cities – however, we don’t actually use these tools or information because we don’t have the capacity to effectively incorporate them into our current processes.
- There is an immediate need to coordinate science information among agencies.
- Flood maps from BCDC don't extend all the way out through Contra Costa, which creates a lack of integration. The county is forced to rely on multiple resources for this information and this makes it difficult to decide which data to use.
- Many cities in the Bay Area have used ICLEI’s tools to create initial emissions inventories. ICLEI’s processes have now changed but we continue to use the old system so we can gauge our progress. This is not ideal and is very inefficient.
- We need a common set of climate change assumptions that bay area agencies can use for planning like selecting a range of temperature increases, range of sea level rise, etc. It would be great if there could be a ‘go-to’ spot that contains the most up to date information containing specific planning targets.

Help Our Small Cities Identify and Secure Resources For Additional, Dedicated Staff Capacity.

- Most cities need additional resources and staff capacity as much of this work is unfunded. For example, Antioch has a small amount of staff time dedicated to climate project implementation and El Cerrito’s climate work is nearly entirely grant funded.
- The Hub should develop and support regional projects that will help cities leverage the limited capacity we have.
- We need more funding but we also need assistance with grant writing to actually secure the funding.

- There is a need for more staff in each of the cities in Contra Costa. The Climate Corps Bay Area program is a good model. However, those staff members are temporary.
- Messaging on the importance of providing resources for climate work should be directed to city managers.
- The Hub should create a fund to support the implementation of new adaptation efforts in cities.

V. Participants

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

- Seth Adams, Land Programs Director, Save Mount Diablo
- Mitch Avalon, Deputy Director, Contra Costa Public Works
- Kim Cox, Emergency Services Manager, Contra Costa Health Services
- Amy Dao, Sustainable Community Energy Manager, PG&E
- Deidra Dingman, Conservation Programs Manager, Contra Costa Department of Conservation and Development
- Lynda Deschambault, Executive Director, Contra Costa County Climate Leaders
- Will Dominie, Built Environment Program Specialist, Contra Costa Health Services
- Julie Haas-Wajdowicz, Environmental Resource Coordinator, City of Antioch
- Marcelle Indelicato, Senior Emergency Planner, Contra Costa County
- Carol Johnson, Planning Manager, City of Concord
- Michael Kent, Hazardous Materials Ombudsman, Contra Costa Health Services
- John Kopchik, Conservation Planner, Contra Costa Department of Conservation and Development
- Maureen Martin, Associate Water Resources Specialist, Contra Costa Water District
- Pat Roche, Principal Planner, Contra Costa Department of Community Development
- Margaret Romiti, Emergency and Volunteer Services Manager, City of Concord
- Maria Sanders, Environmental Analyst, City of El Cerrito
- Kevin Takei, Unit Manager, East Bay Regional Parks
- Tom Terrill, Contra Costa Council/East Bay Leadership Council

Marin County

Marin 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 Marin County climate stakeholders. The information was gathered via phone, email, web search, and an in-person group meeting co-hosted by the Marin Climate & Energy Partnership in December 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 Marin County:

- The Marin Municipal Water District is working with customers on water conservation and efficiency programs to address drought and has commissioned detailed studies of future rainfall patterns.
- The Marin Energy Watch Partnership is providing assistance and incentive funding to help residents and businesses reduce their energy needs.
- The Transportation Authority of Marin, Marin County Bicycle Coalition, WalkBikeMarin, and other groups are building out transit, bike, and walk programs that will help residents withstand energy price shocks and shortages.
- Health advocates are working with the statewide Cal-BRACE program to quantify the climate benefits of various health strategies.
- Marin businesses are reviewing supply chains and markets beyond the Bay Area to identify potential vulnerabilities from extreme storms.
- Strategic Energy Innovations (SEI) has partnered with the Marin Energy Management Team (MarinEMT) of the County of Marin to help Marin school

districts maximize the financial, environmental, and learning outcomes of their Proposition 39 investments.

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 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 5 Marin 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.

Marin Climate & Energy Partnership

Staff-level coordination and strategy development for climate change

Founded in 2007, the Marin Energy & Climate Partnership (MCEP) brings together the eleven Marin cities and towns, the County of Marin, the Transportation Authority of Marin, and the Marin Municipal Water District. The partners are working together to reduce greenhouse gas emissions and build resilience.

In six years, MCEP has helped develop greenhouse gas inventories and climate action plans for member cities, and helped local governments to implement green building regulations, electric vehicle charging stations, LED streetlights, zero waste initiatives, and green purchasing policies. MCEP is now developing a "resilient neighborhoods project" modeled on the Low-Carbon Diet program. The basic MCEP approach is to develop a key topic at MCEP and then each city takes it back to its officials and constituents. MCEP is funded by BAAQMD, the Marin Community Foundation, Marin Energy Watch Partnership, and annual dues (\$2,000 from each city), and other sources.

Marin Clean Energy

Blazing the trail for renewable energy and other climate/energy action

Marin stakeholders began organizing MCE six years ago because their analysis showed it was the single most significant step that local governments could take to reduce GHGs. Now, MCE procures electricity for 125,000 customers in Marin and Richmond. MCE's Light Green product is 50% renewable, more than twice PG&E's mix, and costs less than a dollar more each month. MCE's Deep Green is 100% renewable and roughly

costs an additional \$4 per month for the average residential electric customer. Now, MCE is taking aggressive action to further green Marin's electricity supply, including:

- Development of Marin-based renewable power sources, including feed-in-tariff projects.
- An aggressive energy efficiency program for multi-family and small-commercial properties.
- Solar rebates for low-income households.
- An environmental justice collaborative with community-based organizations.
- On Bill Repayment financing for deeper building retrofits.
- A pilot battery energy storage project with Tesla.

MCE is a not-for-profit public agency created in December 2008 and is governed by a thirteen-member Board of Directors representing each of the participating jurisdictions—the County, eleven Marin cities, and the City of Richmond.

Marin County Coastal/Bayside Flooding Projects

Leadership on protection from sea level rise and extreme storms

Marin County and various regional/local partners are conducting an impressive number of projects to address sea level rise and extreme storms. These include:

- *Collaborating on Sea Level Rise: Marin Adaptation Response Team (C-SMART)*. \$200,000 grant recently awarded to the county by Ocean Protection Council to help fund a project to look at vulnerabilities and ways to protect Marin, including natural systems improvements (wetlands, dunes, oyster reefs) as well as engineered solutions (seawalls and raising structures). Work will begin in 2014 and finish in 2016.
- County leaders are developing a sea level rise project in southern Marin that uses a grassroots, multi-stakeholder approach modeled on BCDC's Adapting to Rising Tides project in Alameda County.
- *Innovative Wetland Adaptation Techniques in Lower Corte Madera Creek Watershed* is a collaborative, pioneering effort by BCDC, Marin County, USGS, UNESCO-IHE, and University of San Francisco that examines the resilience of San Francisco Bay tidal marshes and intertidal mudflats to accelerating sea level rise, and considers how the wave attenuation and other ecosystem benefits they provide can be preserved. It was conceived in recognition of the significant gap in understanding of the role bay lands play as the first line of defense against coastal flooding, and how that role may change in the future. Funded by San Francisco Estuary Partnership and the US EPA.
- *Shore-Up Marin*. This project by Marin Grassroots works with vulnerable communities in Marin to learn their primary concerns about sea level rise. The project hosted 3 community meetings to identify a list of concerns, which will be compiled and released in report form on Earth Day in April 2014.

- *Flood Control 2.0* is a regional demonstration project on three creeks including Novato Creek in Marin that is developing a set of innovative approaches to bring environmental benefits and cost-savings to flood protection infrastructure along the bay shoreline. The strategy has two complementary approaches that transform costly, trapped sediment in local flood control channels into a resource: channel redesign where sufficient adjacent land use flexibility exists, and sediment redistribution for highly constrained channels. The project uses an interdisciplinary team linking regional science expertise with on-the-ground flood control agencies. Funded by the San Francisco Estuary Partnership and US EPA.
- *Aramburu Island Coarse Beach Restoration* is a \$2.6 million project to restore a gravel and cobble beach on an island near Mill Valley to help protect habitat from sea level rise. In appropriate sites, engineered beaches of this type can provide erosion protection that is as effective as the traditional alternative—rock armoring—but less expensive to build, while also offering habitat and aesthetic benefits. Construction was completed in 2012 with re-vegetation and monitoring on going.
- *SF Bay Living Shorelines Project* is using engineered oyster reefs and eelgrass beds to restore habitat and attenuate wave energy to reduce erosion. This project, led by the California Coastal Conservancy, is currently testing various reef approaches in San Rafael on property owned by the Nature Conservancy. This type of habitat supports many species of invertebrates, fish, and water birds.

Marin Carbon Project

Pilot project using California's largest land type—rangelands—to fight climate change

The Marin Carbon Project is a consortium of the leading agricultural institutions and producers in Marin County, university researchers, county and federal agencies, and nonprofit organizations seeking to demonstrate the potential of enhanced carbon sequestration in Marin's agricultural and rangelands soils. Carbon farming involves implementing practices that are known to improve the rate at which CO₂ is removed from the atmosphere and converted to plant material and/or soil organic matter. Carbon farming is successful when carbon gains resulting from enhanced land management and/or conservation practices exceed carbon losses.

MCP's goal is to develop a countywide agricultural carbon sequestration program with producer outreach, technical infrastructure, and economic supports to serve as a model for other regions in California, the western US, and the nation.

The MCP pilot carbon-farming project involves three farms in West Marin: Stemple Creek Ranch, Straus Dairy, and Corda Ranch. After performing extensive baseline soil sampling and rangeland assessment on these farms, close to 4,000 cubic yards of

compost supplied by West Marin Compost was applied on nearly 100 acres of rangelands. This has been followed by careful and detailed monitoring and analysis of enhanced carbon soil properties. As part of the project, MCP has now developed carbon sequestration protocols for review by state and regional authorities.

Preparing for Climate Change with Scenarios: A Marin County Case Study

Scenario planning to deal with climate uncertainty

“The Futures of Wild Marin,” was a unique and compelling one-day workshop using climate scenario planning, conducted by Climate Adaptation Consultant Sara Moore, working with Marin conservation managers. The purpose was to help stakeholders deal with the uncertainty surrounding future climate change in Marin.

Scenario planning is a decision-support tool which incorporates the best available information on climatic and socio-economic trends to create multiple, plausible future scenarios. The workshop found that the planning approach most helpful to resource managers may be a hybrid, using scenario planning in conjunction with iterative, adaptive management and inter-agency collaboration.

The workshop and related research are reported in “*Decision-Making Under Uncertainty: An Assessment of Adaptation Strategies and Scenario Development for Resource Managers,*” produced for the state PIER program in 2012.

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 Marin climate action plans.

Climate Action Planning Activity			
City/Town	Adopted CAP	GHG Reduction Goal	Adaptation Section in CAP
Belvedere	Yes	15% below 2005 by 2020	Highlights local impacts and recommends partnering with regional agencies to develop regional adaptation programs ²¹
Corte Madera	No	-	-
Fairfax	No	-	-

²¹ <http://www.cityofbelvedere.org/DocumentCenter/Home/View/508>

Larkspur	Yes	15% below 2005 by 2020	-
Mill Valley	Pending	15% below 2005 levels for community emissions and 20% below 1990 levels for municipal emissions	Includes chapter on adaptation that outlines 6 specific goals by impact ²²
Novato	Yes	15% below 2005 by 2020	-
Ross	Yes	15% below 2005 by 2020	-
San Anselmo	Yes	15% below 2005 by 2020	Includes brief section on adaptation and recommended actions ²³
San Rafael	Yes	25% below 2005 levels by 2020	Includes measures related to monitoring sea level rise and carbon sequestration ²⁴ .
Sausalito	No	-	-
Tiburon	Yes	15% below 2005 by 2020	Includes brief section on adaptation and recommended actions ²⁵
County unincorporated areas	No	15% below 1990 levels	-

B. Other Climate Planning

Marin County was one of the first counties in California to include GHG reduction goals (15% below 1990 levels by 2020) in its general plan, the Marin Countywide Plan, adopted in 2007.

III. Current Structure for Coordination Among Cities

Marin Climate & Energy Partnership convenes cities with the County and other climate partners. (See description in Section I)

²² <http://www.cityofmillvalley.org/Index.aspx?page=1028>

²³ [http://www.townofsananselmo.org/documents/3/33/CAP-San%20Anselmo-Final\[1\].PDF](http://www.townofsananselmo.org/documents/3/33/CAP-San%20Anselmo-Final[1].PDF)

²⁴ <http://docs.cityofsanrafael.org/CityMgr/Climate%20Change%20Action%20Plan%20-%20Final.pdf>

²⁵ http://www.marinclimate.org/sites/default/files/documents/tiburon_climate_action_plan.pdf

IV. Resources and Assistance to Accelerate Action

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

BACERP staff asked Marin stakeholders to identify and discuss 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.” Marin stakeholder input is summarized below (grouped but unranked).

Help Us Identify and Secure Resources So We Can Implement Strategies in Climate Plans.

- Although we have many CAP's and other plans, cities have little or no money to actually implement climate projects and programs – need more funding for implementation.
- If local agencies are going to lead or play a major role on climate action, they are going to need dedicated (additional) staff to design and implement programs.
- It's critical to raise consciousness with vulnerability assessments but then, what comes next? We need funding and staff resources to start taking action. We are going to have to make hard choices but we don't see a clear path or movement beyond studies to implementation at this point.
- While MCEP has done a great job over the years in terms of coordinating planning, the organization still does not have adequate funding to focus efforts on implementation.
- We would love to be able to pick up the phone and call the proposed Hub for information or assistance. However, if we still lack sufficient funding to implement projects, the Hub's services will be less helpful.

Bring Us Together with Other Counties, Regional Agencies and Stakeholders for Joint Action. Help Us Create A Common Agenda, Networks and Working Groups on Specific Topics.

- We need joint action in Sacramento for Bay Area stakeholders around a few top agenda items. We will be much more effective if every county is not trying to do this on its own.
- We need to coordinate our messages and actions statewide as our Bay Area infrastructure is connected to the rest of the state – we really are all in this together. For example, the Port of Oakland is directly tied to Central Valley

agriculture. This understanding should lead to statewide legislation or other action.

- Regional agencies need to work with us on topics of mutual interest. We could have helped with Plan Bay Area—we could have been good allies—but we weren't included.
- There's too much siloed or parallel work. We need much more coordination among groups to figure out the common agenda that we should work on together.

Facilitate New, Innovative “Creative Thinking” on Funding Strategies. This Work Requires Additional Funding. The “Usual” Funding Sources Are Not Going to Magically Expand.

- MCE has its own revenue streams via people paying their energy bills. This is a huge factor in their success. It allows them to develop and implement new programs. What other climate programs could we design that would have their own revenue streams?
- Need to identify and quantify the cost of doing nothing. We can't just look at the costs of implementing climate programs. We need to look at what counties and cities are going to eventually spend *just to fix things*. What money can we save by acting now?
- The insurance industry will be a very important and key player in coming years on the economics of climate change- we need to do more work to effectively engage them now.
- How do we shift some of the great resources and wealth in the Bay Area economy to help fund and support this critical climate work?
- How do we engage the private sector on taking more responsibility to fund projects that will protect their own assets? We need effective partnerships with them.
- Think more clearly about where money is going to be spent. For example, focus on purchases that many people will inevitably make in the next ten years like buying a new car. How do you get people to use their dollars to buy a more climate-friendly vehicle?
- Those who helped create the mess (i.e. fossil fuel industry) need to take greater responsibility for cleaning it up. We are already spending a ton of money locally to fix climate-related damages; these companies/industries should be paying their fair share.

- The Hub could work with us to see what funding is already out there and how it could be used for climate action here. For example, the Hub could explain to local officials how the state’s cap and trade revenue is being allocated and spent.
- We need to work in a coordinated approach with other counties at the state level to see how existing resources can be modified/redirected to help provide adequate funding for climate work.
- We need new partnership ideas for funding. For example, we need to bring the Marin Carbon Fund to the table.
- What are “creative” funding solutions that are used in other fields? For example, a \$500,000 loan loss reserve could allow MCE to significantly expand onsite solar.
- We must bring Marin Community Foundation back into the climate funding and leadership picture for Marin.

Provide Us with Easier Access to (Vetted) Quality Climate Information.

- We need a common place for residents and businesses to go for reliable climate data and information. There are way too many different sources of information for each of us to wade through.
- We need help to figure out what we should be doing and how to move forward without reinventing the wheel. If the Hub were able to screen/filter existing climate information/portals, this would be helpful. We need help filtering, rating and evaluating climate information. Help us find and use the quality information needed to choose strategies and take action.

Help Us To Engage The Public In A Much More Compelling And Effective Fashion. The Key To Action Is Greater Public Engagement.

- Climate work right now is siloed. Connect it with other popular activities. For example, show how energy efficiency efforts can help with emergency preparation. Connect those types of programs—they can be much more powerful together.
- We need help connecting the dots for people—health, economy, and climate change. Show how they are linked. Show more clearly how climate change is directly linked to the “things people care about.”

- There is a need for more focused public education on climate change impacts—most people don't understand how "climate change" will affect them personally.
- We have a significant problem in terms of public perception. Example – we promote wetlands restoration only as an environmental project/priority as opposed to a public safety or climate adaptation measure.
- We must develop a useable language to get away from climate jargon and acronyms. We need to promote and communicate concepts and thought bubbles that people can easily understand.
- The concept of climate adaptation is too broad and vague. Need to focus on a few compelling issues that will get the public engaged. Sea Level Rise could be a very successful and compelling issue that the whole region could rally around. We should use this to promote spending "dollar for dollar" on adaptation and mitigation efforts.
- Communication needs to be coordinated and improved. We need a policy framework that people can understand. Need to explain how laws and regulations are made and why.
- We should hold public forums called "choosing the future you want." We need to understand that Marin County will never go back to the way it was 20 years ago. We need to work towards the common goals to make Marin a better place to live.
- We need more inclusive and thoughtful community outreach to be successful—need to get broader community involved. In recent debates on housing efforts, people came out and talked about equity issues in a very powerful way and the Supervisors made the low-income housing project happen. Support was critical to countering the housing opponents who are vocal and organized. We need more of this.
- We need to remember that for most residents the work of the County is irrelevant to their everyday lives. Therefore, we need to make the connection between everyday actions and climate change much clearer and more personally relevant. Start organizing from the ground up. Then, move up to the next level. Build local trust and credibility first. Food waste is a great example of this – the challenge is making the connection between composting/creating less waste and climate impacts. We can use garbage as a way to reach out and engage people about their personal footprint.
- Communication is our biggest challenge, but we should not try to do this alone. We need countywide coordination on this. For example, we should connect MCEP with the City Managers group to work on coordinating communication

efforts. Marin County Council of Mayors could also help on this. We need to work more *together*, not just in silos.

- We need to use business networks to do outreach. There are 3 core components of this work: 1) Need coaches to hold the hands of each business through the process. 2) Need a promotional or business network to work directly with. 3) Need a valuable accreditation process.
- We need to speak specifically to the relatively affluent Marin community by making the business case for climate work. That's what most people will respond to.
- Political support can be built not by finding elected leaders to educate but by educating the public who then pressure leaders into action.

Marin Clean Energy Is A Big Success Story. Help Us To Expand MCE's Programs in Marin and Help Get New CCA's Launched Statewide.

- Need legislation to reduce the launch costs for CCA's statewide. That would turn Marin, Sonoma (SF maybe) into a large movement.
- Two big issues for MCE: 1. Regulatory hurdles at the CPUC are hindering MCE's progress. Additional costs are being shifted to MCE from PG&E. 2. Energy efficiency restructuring – we need to promote long term, deeper savings by changing the way that Total Resource Cost (TRC) is calculated by pro-rating this over many years (TRC = money spent per kilowatt-hour saved).
- All of the CAP's list getting residents and businesses to switch to MCE's Deep Green option as the most cost effective GHG reduction measure – we need to promote this and also need to work to adjust regulations so that we can build more local solar capacity.
- We should focus our efforts on getting all businesses in Marin County to choose MCE's Deep Green option and recover the additional costs through energy efficiency savings.

V. Participants

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

- Leslie Alden, Aide to Supervisor Kathrin Sears, Southern Marin – 3rd District, County of Marin
- Bob Brown, Community Development Director, City of Novato

- Cory Bytof, Sustainability Coordinator, City of San Rafael, Chair, MCEP
- Bill Carney, President, Sustainable San Rafael
- Elizabeth Dunn, Planning Manager, City of Novato, Vice Chair, MCEP
- Jon Elam, President, Marin Conservation League
- Rochelle Ereman, Epidemiology Program Manager, Marin County Department of Health and Human Services
- Ericka Erickson, Associate Director, Marin Grassroots
- Kiki La Porta, President, Sustainable Marin
- Roger Leventhal, Senior Civil Engineer, Department of Public Works, County of Marin,
- Jack Liebster, Planning Manager, Community Development Agency, County of Marin
- Stephen Miller, Deputy Director, Strategic Energy Innovations
- Christine O'Rourke, Sustainability Coordinator and Planning Consultant, Marin Climate and Energy Partnership
- Rafael Silberblatt, Program Specialist, Marin Clean Energy
- Dawn Weisz, Executive Officer, Marin Clean Energy
- Chris Yalonis, Director, Marin Conservation League

Napa County

Napa 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 Napa County climate stakeholders. The information was gathered via phone, email, web search, and an in-person group meeting co-hosted by the Napa County Transportation Planning Agency in December 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, and 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 Napa County:

- The Napa County Transportation and Planning Agency is developing innovative strategies to reduce VMT among wine country visitors.
- Health advocates are promoting active transportation to reduce both transportation GHG emissions and obesity rates, and are reviewing the health implications of heat waves, flood events, and invasive pests.
- County and city-operated water providers are working with the private sector and other partners to implement water conservation and efficiency strategies for the wine industry and residential users. This includes the Groundwater Resource Advisory Committee (GRAC), which works on data collection, monitoring, well pump test protocols, management objectives, and building community support.
- The Napa County Local Food Advisory Council advises the Agricultural Commissioner to promote the development of a sustainable local food system, and provides a forum for public input on local food production and consumption.

- Napa County has joined two innovative energy financing programs—CaliforniaFIRST and Home Energy Renovation Opportunity (HERO) for residential and commercial customers.

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 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 5 Napa 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.

Measure A: Napa River/Napa Creek Flood Protection Project

Innovation in flood protection, cross-sector partnerships, and major project financing

Napa County has a long history of flooding issues with 21 serious floods recorded since 1862. While it was clear to residents and businesses that new flood protection initiatives were necessary, early plans were rejected due to concerns about both environmental and economic impacts. In 1996, a precedent-setting coalition representing diverse Napa interest groups came together in a series of meetings to develop what is now one of the most successful flood protection projects in the state.

Passed by two-thirds of Napa County voters in 1998, Measure A provides environmental restoration and economic development to achieve 100-year flood protection—new dikes, levees and floodwalls and bank stabilization—while maintaining “living river principles.” Project partners include Napa County and its cities, the Friends of the Napa River, the Napa Valley Economic Development Corporation, the Sierra Club and the Chamber of Commerce.

Measure A created the Napa Flood Protection and Watershed Improvement Expenditure Plan, the Financial Oversight Committee and the Technical Advisory Panel, and established the half-cent sales tax to fund the local share of projects (additional funding comes from federal and state sources). Each incorporated city or town receives a share of Measure A revenue, and a share goes to Napa County for the unincorporated area. Measure A includes specific approved projects and allows for the funding of other projects to improve flood protection, water supply and the health of

the watershed. All of the Napa governments involved in Measure A signed a Joint Powers Agreement to spell out structure and responsibilities.

State Route 37 Stewardship Study

Forward thinking solutions for critical Bay Area infrastructure

Highway 37 passes through the last great marshes in the San Francisco Bay, providing commuters, tourists, and trucks a path between I-80 and highway 101. Route 37 is now in jeopardy of becoming flooded more often because of sea-level rise. The Highway 37 Stewardship Study includes stakeholder processes and technical analyses to determine possible future planning solutions for the highway and its human and natural environment.

The Route 37 project is a good local example of effective cross-sector partnerships, involving a long-term commitment by Bay Area transportation, environmental, and resource protection agencies. It will be a significant challenge to reach a mutually agreeable solution in this extremely sensitive environment threatened by climate change.

Phase I of the project was funded by the Transportation Research Board, Strategic Highway Research Program 2, and supported a collaboration among Caltrans District 4, the UC Davis Road Ecology Center, the Sonoma Ecology Center, Southern Sonoma County Resources Conservation District, Sonoma Land Trust, and the Napa County Resources Conservation District. With additional funding from Caltrans, Phase II of the project will begin in 2014 by re-engaging partners and stakeholders to develop alternative designs and scenarios.

Napa Green: Sustainability Leadership in the Wine Industry

Best practices and certification for water, energy and other resource topics

Napa Green is the wine industry's most comprehensive "best practices" program for sustainable land-use and wine production. This voluntary program developed by the Napa Valley Vintners and Napa Valley Grape Growers, along with local industry and environmental groups, is open to all Napa County vintners and grape growers.

The program is focused on independently certified, environmentally sound farming and production methods that meet and exceed more than 20 local, state and federal best practices. The Napa Green certification programs for both land use and wineries include multiple sustainability benchmarks for water and energy conservation, healthy riparian environments, and restoration of wildlife habitat. Over 80 wineries have achieved the Napa Certified Green Land and/or Napa Certified Green Winery certifications resulting in significant reductions in both water and energy use and increased conservation of natural capital.

Sustainable Napa County Energy Projects

Nonprofit leadership in community outreach and engagement

Sustainable Napa County (SNC) recently received a grant from PG&E to develop a public engagement campaign with specific focus on identifying common climate concerns across the political spectrum. This is a new part of SNC's work to bring together Napa County business, agriculture, nonprofit, and government entities for long term environmental, economic, and social sustainability. Other project focus areas include:

- Supporting green public policy development countywide, beginning with green building ordinances.
- Promoting renewable energy action by bringing new approaches to the community and working to reduce traditional barriers to action such as financing for solar installations for homeowners.
- Helping social service nonprofit organizations become energy efficient and more sustainable.
- Becoming a comprehensive sustainability resource center for Napa county that informs and inspires the residents of Napa County where they live, work and play

Napa Countywide Climate Action Framework

County guidance and partnership building in critical climate planning

The Countywide Climate Action Framework was specifically developed to assist cities and other stakeholders in moving from climate planning to action. This will require the combined effort of residents, businesses, local government staff and elected officials in Napa County.

The Framework provides a consensus-based context for detailed climate planning efforts. It outlines a package of 53 actions that, when translated into locally specific programs and projects, will help meet climate protection targets. Actions proposed in the Framework will pay for themselves in energy cost and other savings and are designed to promote an economy powered by more local, reliable energy, a healthier environment, healthier people, and a preserved natural environment.

The Framework will be followed by locally appropriate implementation plans, designed for each jurisdiction, focusing on specific programs and projects. Funded in part by BAAQMD, the Framework was developed by the Napa County Transportation and Planning Agency, the Napa Valley Community Foundation, American Canyon, Calistoga, Napa, St. Helena, Yountville, and the County of Napa.

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 Napa County climate action plans.

Napa's draft Countywide Climate Action Plan recommends potential strategies for post-2020 planning including integration of the Safety Element and Hazard Mitigation and Disaster Recovery plans into a comprehensive countywide strategy.

Climate Action Planning Activity

City	Adopted CAP	GHG Reduction Goal	Adaptation Section in CAP
American Canyon	No	Community-wide target for energy-related GHG emissions - 15% below 2005 baseline by 2020 ²⁶	-
Calistoga	No	15% below 2005 levels by 2020 ²⁷	-
Napa	No ²⁸	-	-
St. Helena	No	20% below 2005 levels by 2020	-
Yountville	No	20% below 2010 emission levels by 2020 ²⁹	-
County unincorporated areas	Pending ³⁰	15% below 2005 emission levels by 2020	Draft lists adaptation projects underway & outlines potential adaptation efforts ³¹

²⁶ GHG reduction goals outlined in city of American Canyon's draft Energy Efficiency Climate Action Plan (EECAP): <http://www.cityofamericancanyon.org/Modules/ShowDocument.aspx?documentid=3557>

²⁷ Adopted by resolution.

²⁸ In the City of Napa's Sustainability plan, goals include reducing municipal energy use 15% below 2005 levels by 2020. http://www.cityofnapa.org/index.php?option=com_content&view=article&id=1221&Itemid=815

²⁹ Adopted by resolution in November 2013.

³⁰ A proposed CAP was recommended for adoption in early 2012 - Board of Supervisors requested the CAP better address transportation emissions and to credit past accomplishments and voluntary efforts. Napa County Department of Planning, Building and Environmental services will begin revising the CAP in July 2013.

³¹ <http://www.countyofnapa.org/CAP/>

B. Other Climate Planning

The Napa County Transportation and Planning Agency is launching a countywide transportation planning effort in 2014 that will involve a climate change element. Napa County's Hazard Mitigation Plan is also being updated to address adaptation.

III. Current Structure for Coordination Among Cities

No formal structure for climate coordination at this time.

IV. Resources and Assistance to Accelerate Action

BACERP staff asked Napa stakeholders to identify and discuss 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." Napa stakeholder input is summarized below (grouped but unranked).

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

Framing, Friends and Funding (Overall comments)

- We need help with top three needs: 1) **Framing** – we need better ways to reach people who are hard to reach and who don't see climate change as an issue or a priority. 2) **Finding Friends** – we need to identify where we can effectively partner with others for action. The Hub could connect people to jointly tackle common challenges. 3) **Funding** – we need better access to both public and private funding sources. The Hub could help by putting stakeholders together for joint funding proposals or by coordinating groups of stakeholders to advocate for funding at regional, state or federal levels.
- The Hub could help facilitate work on a goal for adaptation. This could come from the state or be more Bay Area focused. Specifically, this goal should coincide with more streamlined and productive applications of CEQA and NEPA – these need to be more balanced.
- The recent Transportation Futures Plan took all of the County's current GHG reduction policies into account and modeled the fact that the County will not reach climate goals with only these policies in place. We need to figure out next steps based on this conclusion.

- There is a need to develop place-based health initiatives in vulnerable communities and to have more focus on vulnerable communities in general.

Help Us Address Specific Climate Impacts that will Greatly Affect our County

- Decreased water supply is already a significant issue for both urban users and the wine industry.
- Invasive species (both in terms of pests and plants) as a result of climate change will become more of a challenging issue in the future. Statewide, invasive species management is completely underfunded.
- There is a significant need for infrastructure funding in Napa County. Some impacts to the county’s infrastructure associated with climate change are linked to the future of Highway 37. If improvements to Highway 37 necessary to minimize the impacts of climate change are disregarded, there is a direct threat to Napa’s highways and road infrastructure.

Help Us Engage the Wine Industry and the Public to Build Local Economic and Climate Resiliency

- Wine industry stakeholders are concerned about climate impacts but have not reached consensus on a long-term vision for action.
- The wine industry must be fully engaged if we are to protect and enhance our local economy.
- We need support developing wine industry focused messaging around climate change. Protecting the wine industry from major climate impacts is key to maintaining economic resiliency.
- While the wine industry is clearly the dominant economic force in Napa County, the issues that we will experience associated with climate change will be similar to those across the Bay Area—water, heat, flooding, drought, food and energy prices, etc. Approaching these from a more regional perspective would be helpful.

We Need Better Communication About Climate Issues But These Messages Must be Tailored to Rural Counties

- There is a need to recognize and appreciate the key role that the rural parts of the Bay Area play in the region – especially with respect to agriculture.

- We need to develop a narrative that is wine industry specific to make it relevant to Napa County residents and decision makers—this can't just be a regional or California story about climate change if you want to get the public's attention.
- Perhaps the Hub could bring together the four rural counties to work collaboratively on these issues—we speak some of the same language.
- Our communications efforts should focus on early education (elementary, middle and high school) and broad public outreach to help get the message out to multiple audiences, including those who may not agree with the need for climate action.

Implementation Resources are Extremely Limited – Help Us Secure Funding and Make Better Use of Existing Resources

- Overall, there are very limited resources for climate plan implementation. Technical assistance would be very helpful to aid smaller cities to plan and implement.
- An online data center would be helpful. The task of looking for data takes too much time with current staff resources. An online source that helped with this and also created standards for quality data would be very helpful.
- The Open Space District needs guidance and agreed-upon protocols on carbon sequestration. We don't have the staff capacity to deal with this. We would like to get carbon credit for critical open space work.

V. Participants

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

- Brent Cooper, Planning Director, City of American Canyon
- Greg Desmond, Planning Director, City of St. Helena
- Jeri Gill, CEO, Sustainable Napa County
- Lynn Goldberg, Planning Director, City of Calistoga
- Eliot Hurwitz, Planning Manager, Napa County Transportation and Planning Agency
- Steve Lederer, Public Works Director, Napa County
- Julie Lucido, Flood Project Manager, City of Napa
- John McDowell, Deputy Planning Director, Napa County
- Phillip Miller, Deputy Director, Flood Control, Napa County
- Kate Miller, Executive Director, Napa County Transportation and Planning Agency

- Pete Parkinson, Interim Planning Director, County of Napa
- Kelli Schimmoeller, Public Works Department, City of Napa
- Danielle Schmitz, Senior Planner, Napa County Transportation and Planning Agency
- Sandra Smith, Associate Planner, Town of Yountville
- Karen Smith, Public Health Officer/Deputy Director, County of Napa Health and Human Services Agency
- Bob Tiernan, Planning Director, Town of Yountville
- Rick Tooker, Community Development Director, City of Napa
- Ursula Vogler, Climate Initiatives Program Project Manager, Metropolitan Transportation Commission
- John Woodbury, Executive Director, Napa County Parks and Open Space

City & County of San Francisco

San Francisco County Climate Snapshot
Compiled by the Bay Area Climate & Energy Resilience Project (BACERP)
March 2014

This summary memo is based on input from San Francisco climate stakeholders. The information was gathered via phone, email, web search, meeting summary review, and in-person meetings in December 2013/January 2014. 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. “Spotlight” Adaptation & Resilience Projects/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 San Francisco:

- PG&E is increasing protection for its energy infrastructure (grid, substations, etc.) in preparation for extreme storms, high heat events, sea level rise and other climate impacts.
- SFMTA, BART, Caltrain, AC Transit and other transit providers are assessing their vulnerabilities to climate impacts.
- The Business Council on Climate Change (BC3) is promoting cross sector collaboration to address priority climate issues with specific emphasis on identifying common sustainability goals in the public and private sectors.
- San Francisco International Airport is working on shoreline protection strategies.
- The Planning Department is looking at climate impacts in relation to the expectation that the city will absorb a large portion of the Bay Area’s job and residential growth over next two decades.
- Greenaction for Health and Environmental Justice implemented a successful Diesel Education and Emissions Reduction Project that worked effectively with

residents, truckers, businesses, schools and bus drivers to reduce diesel vehicle idling in Bayview Hunters Point.

- Community resilience planning work is being developed through the City Administrator's Office in conjunction with neighborhood organizations.

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 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 San Francisco 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.

SF Adapt

Inter-departmental collaboration and cooperation to build resiliency

SF Adapt is the city's coordinated effort, led by the Department of the Environment and the City Administrator, to bring together agencies on climate adaptation. SF Adapt includes the Public Utilities Commission, Planning, the Port, the San Francisco International Airport, Public Works, the Municipal Transportation Agency, Public Health, Recreation and Parks, and other city agencies.

SF Adapt was formed to attain three important goals:

- Build interdepartmental coordination and collaboration to address adaptation risks.
- Increase private sector and community awareness and capacity to respond to emergencies.
- Integrate climate impact considerations into all of the city's capital investments, plans, codes and standards.

SF Adapt is currently focused on four adaptation topics; 1) Public health, 2) Sea level rise, 3) Energy assurance planning and 4) Incorporating adaptation into the city's hazard mitigation planning.

San Francisco Climate Ready Initiative

Making the link between climate change and health

This pilot project by the Department of Public Health (funded by the federal Center for Disease Control) is developing San Francisco's public health capacity for climate change, with a focus on heat stress morbidity and mortality from extreme heat events and poor air quality. These impacts on at-risk populations are expected to increase in frequency and duration with climate change.

Phase I project outcomes include:

- An environmental health assessment to map social and community determinants of heat vulnerability.
- A gap analysis of public health capacity to reduce human health effects of climate change utilizing the environmental health assessment and national performance standards.
- Interactive vulnerability maps that indicate adverse health outcomes and risks for extreme heat by census block.
- A citywide heat wave disaster response plan, including appropriate surveillance and health education/outreach activities. The plan was developed by Disaster Planning, in conjunction with Emergency Management Services and an inter-agency task force.

SFDPH, in conjunction with the Office of the City Administrator, has recently been awarded funding by the CDC for the next three years of the project. With this funding, SFDPH will continue to assess climate trends, define disease burden, develop specific intervention methods, and evaluate effects of change for at-risk populations. In partnership with the Office of the City Administrator and community stakeholders, SFDPH will promote community resilience to climate change through education, empowerment and engagement activities.

Port of San Francisco Sea Level Rise and Climate Adaptation Study

An assessment of port vulnerabilities and adaptation opportunities

The Port's Engineering Division worked with URS to examine potential future flood risk from sea level rise on Port property and to outline adaptation alternatives with associated costs. The study provided an estimate of sea level rise for port-managed shoreline from Mission Bay to Fisherman's Wharf for two time periods - from the present day through 2050 and through 2100.

The project also included a visual assessment of the Port's shoreline from Aquatic Park and the Municipal Pier to Pier 54. The Port is now undertaking an engineering study of the structural integrity of the sea wall (to be completed in the next two years) and is working with URS to develop an adaptation plan by mid-2014.

Ocean Beach Master Plan for Sea Level Rise

Nonprofit leadership in cooperation with city stakeholders

SPUR staff led this collaborative project to develop a 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. The plan recommends six key strategies and an ambitious, proactive vision for managing a changing coastline, protecting critical sewer infrastructure, and significantly upgrading public access.

In September 2013, the Ocean Beach Master Plan received the Waterfront Center's Top Honor Award. The annual awards are granted to projects that "represent the best national and international efforts at furthering excellence on the waterfront." It was the project's second major award recognizing its collaborative approach to climate adaptation.

SF Mission Bay Vulnerability Assessment

Applying lessons from the ART project (and the Dutch experience!) to San Francisco's Mission Creek

This SPUR-led partnership between BCDC and ARCADIS, with participation by the Dutch government, will develop a real time vulnerability assessment of the Mission Bay area of San Francisco. The pilot project aims to incorporate its findings into future city planning and development priorities. The project will follow a similar collaborative model to the ART project and will employ Dutch experts with considerable experience in sea level rise and flooding issues.

SFPUC Study: Upper Tuolumne River Flow & Climate Change Scenarios

Preparing for changes in Sierra water resources and supply

This major study by the SFPUC analyzed climate change impacts on the Hetch Hetchy watershed, the primary source of San Francisco's water supply. The study assessed the sensitivity of reservoir inflows to a range of changes in two variables, temperature and precipitation. Climate change scenarios were selected to represent a range of possible future climate conditions.

The simulated changes in 2040, 2070 and 2100 result in a progressively altered snow and runoff regime in the watershed. Snow accumulation is reduced and snow melts earlier in the spring. Fall and early winter runoff increases while late spring and summer runoff decreases, and these changes become more significant later in this century. Total runoff is projected to decrease under the climate change scenarios evaluated, in some cases marginally and in others very significantly.

San Francisco Carbon Fund

Innovative financing for local climate action

Since July 2009, the City and County of San Francisco has levied a carbon fee on city government airline travel. The revenue generated is sent to the San Francisco Carbon

Fund to pay for city projects that mitigate carbon emissions. The Department of the Environment administers the program.

The SF Carbon Fund awards grants and contracts to businesses, community-based organizations and neighborhood schools for projects that mitigate carbon, improve San Francisco's natural infrastructure, and enhance the quality of the city's living environment. In prior funding cycles, the SF Carbon Fund has made awards for biodiesel and urban forest pilot projects. The most recent grant cycle aims to mitigate carbon by increasing the number of healthy trees, thereby expanding habitats and decreasing the energy needed to treat wastewater through reduced storm water runoff.

San Francisco Renewable Power Program

Aggressive action to reach a 100% renewable power goal for San Francisco

Spurred by the city's ambitious 100% renewable energy goal, the Department of the Environment manages a number of ongoing clean energy programs. SFE provides outreach and education to residents and business owners, operates the [SF Solar Map and Wind Map](#), and has developed innovative financing models for renewable energy projects, including the Solar@Work and Solar@School aggregated financing projects and [GoSolar SF](#).

SFE also supports the development of emerging technologies like ocean power and urban wind, and worked over the last decade with the SFPUC to develop a Community Choice Aggregation program, CleanPower SF. (The latter has not been approved by the SFPUC.)

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 San Francisco's climate action plans.

Climate Action Planning Activity

City	Adopted CAP	GHG Reduction Goal	Adaptation Section in CAP
San Francisco County (community wide ³² and municipal ³³)	Yes	25% below 1990 levels by 2017 40% below 1990 levels by 2025	SF Adapt accomplishments and next steps are outlined in the CAP

B. Other Climate Planning

San Francisco's Capital Planning Committee requested that sea level rise considerations now be included in the Long Term Capital plan.

The Department of Emergency Management is leading the effort to work with Cal EMA to update the city's Hazard Mitigation Plan. The plan now names climate change as a major hazard, positioning the county for access to future mitigation-related funding.

III. Current Structure for Coordination Among City Departments

The Department of the Environment provides coordination on climate work among the various city departments and organizations.

³²http://www.sfenvironment.org/sites/default/files/engagement_files/sfe_cc_ClimateActionStrategyUpdate2013.pdf

³³ In 2008 the Board of Supervisors approved an ordinance requiring each city department to track their carbon footprints and develop an annual Departmental Climate Action Plan: <http://www.sfenvironment.org/article/city-government-climate-action/city-department-climate-action-planning-0>

IV. Resources and Assistance to Accelerate Action

BACERP staff asked San Francisco stakeholders to identify and discuss 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.” San Francisco stakeholder input is summarized below (grouped but unranked).

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

Help Us Strategically to Secure Funding from New State, Federal and Private Sector Sources

- Lack of sufficient funding will continue to be a major issue for adaptation work.
- There is a real and immediate need to work more with the private sector. Specifically, the real estate, finance and insurance industries have assets at risk and should be engaged for financial support for this work. We need to focus first on the big companies that are local.
- Some people are focusing on the questions of *when* and *how* to engage the private sector but the biggest question is *who* to engage? We need to approach private sector engagement just as we would putting a task force together – look for dynamic individuals who can translate this information to other private sector leaders.
- All agencies have passed up grant opportunities because we don’t have the staff to secure the funding or to manage it.
- We must make sure that we are positioning ourselves now to connect to federal adaptation funding.

Facilitate the Development of an Effective and Compelling Outreach Strategy to Build Political Support for Adaptation Work.

- We need increased political support for adaptation planning both at the micro (local) and macro levels (state, national).
- More consistent and effective communication on this issue is needed. The private sector and the public need to better understand the importance of climate impacts before we will get their support.

- For the public to have confidence in the importance of this issue maybe we need to have a minimum mandate by the state to support adaptation efforts? It's important though that this not be an unfunded mandate.
- We need to focus on educating local, state and federal officials. We should also bring in the private sector to help make climate change less of a partisan issue.
- Most agencies don't have the staff capacity or expertise to do effective community outreach but outreach is essential to building political support.
- We need to focus on effective storytelling and develop this into a comprehensive media strategy. Right now, we rely on a small number of reporters to get stories out.

Create a Central Point of Organization for Climate Issues in the Bay Area

- The Port needs help identifying data that will be needed in order to plan for climate impacts.
- We need to identify climate change and adaptation planning and implementation as a priority issue – a climate “Hub” would help us do this.
- It would be very helpful if the Hub could support issue-focused stakeholder networks. SFO has been thinking through what other agencies and stakeholders we should be engaging with – it would be great to have assistance on this.
- There is a big need for guidance, discussion and coordination on streamlining permitting. We spend a lot of time and resources on this now and know that conflicts between regulations will only increase as we move forward.
- Important to note that streamlining permitting is very different than circumventing it – we need to focus on making these regulations—how they interact and overlap—more clear. The Hub could gather input from different permitting agencies and organize this information in one place.
- We need for a central point of organization for the Bay Area on climate. We have a lot of meetings to attend and a lot of people to stay in touch with and its impossible to do this well with our current staff resources.
- Easy access to specific technical support is very important and will be critical for some agencies. For example, the Port needs access to mapping expertise.

V. Participants

We thank the following San Francisco stakeholders who provided their valuable time and smart thinking through interviews in late 2013 and January 2014:

- David Behar, Public Utilities Commission
- Joe Birrer, SFO
- Cal Broomhead, San Francisco Department of the Environment
- Cyndy Comerford, Department of Public Health
- Lauren Eisele, Port of San Francisco
- Roger Kim, Mayor's Office
- Calla Ostrander, Climate Action Coordinator, San Francisco Department of the Environment
- Roselyn Yu, SFO

Additional information on projects and initiatives was obtained through inter-departmental meetings convened by DOE in late 2012 and in 2013. Participants in these meetings included:

- Melanie Nutter, Director, San Francisco Department of the Environment
- Adam Stern, Climate Program Manager, San Francisco Department of the Environment
- David Behar, Climate Program Manager, SFPUC
- Tommy Moala, Assistant General Manager, SFPUC
- Cyndy Comerford, Manager of Planning and Fiscal Policy, San Francisco Department of Public Health
- Mina Mohammadi, Coordinator, Cryptosporidiosis Surveillance Project, SFDPH
- Richard Berman, Stormwater Management Program, Port of San Francisco
- Uday Prasad, Senior Civil Engineer, Port of San Francisco
- Timothy Papandreou, Deputy Director, SF MTA
- Peter Brown, Project Manager, SF MTA
- Craig Raphael, SF MTA
- Nixon Lam, Senior Environmental Planner, San Francisco International Airport
- Jose Campos, Planning Department
- Scott Edmondson, Strategic Sustainability Planner – Economist, San Francisco Planning Department
- Kate McGee, Lead Planner, San Francisco Planning Department
- Michael Tymoff, Project Manager, Treasure Island
- Ana Alvarez, Superintendent of San Francisco Parks and Open Space
- Daniel Homsey, Director of Strategic Initiatives, City Administrator's Office

San Mateo County

San Mateo 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 San Mateo County climate stakeholders. The information was gathered via phone, email, web search, and an in-person group meeting co-hosted by San Mateo County 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 San Mateo County:

- East Palo Alto is working with Cal-Fire to expand its tree canopy as both a flood protection and a GHG reduction measure.
- The Grand Boulevard Initiative is building community resilience by reducing energy use, promoting healthy activities, and bolstering local economies.
- The County’s Office of Emergency Services has developed plans for dealing with heat, flooding, fire and other natural disasters that are projected to increase as climate change worsens over the next few decades.
- To reduce auto dependency and increase mobility, Caltrain, C/CAG, and other partners fund and operate an extensive system of last mile shuttles linking train stations with work centers.
- City of Burlingame passed an aggressive green building ordinance that will create resiliency by reducing energy dependence and insulating businesses against future price shocks.
- A collaborative effort developed the comprehensive San Mateo Energy Strategy 2012 which addressed 1) the increasing financial costs of energy and water, 2)

the impact that energy infrastructure on local communities, and 3) the increasing concern about climate change and its effects.

- The nonprofit *Get Healthy San Mateo* works collaboratively with individuals and organizations in the County to develop strategies that will reduce health risks related to unhealthy eating and a lack of physical activity.

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 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 5 San Mateo 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.

San Mateo County Regionally Integrated Climate Action Planning Suite (RICAPS) *C/CAG leadership and expert assistance makes climate planning more effective*

In San Mateo County, each city develops its own Climate Action Plan using a special set of tools developed by the City and County Association of Governments (C/CAG) in conjunction with KEMA Inc. and Hara. This unique and effective approach has been funded by grants from the Bay Area Air Quality Management District (BAAQMD) and Pacific Gas and Electric Company (PG&E) and C/CAG. Climate action plans developed with these tools help cities meet BAAQMD's CEQA guidelines for a Qualified Greenhouse Gas Reduction Strategy. Sea level rise, heat, and other climate impacts are included in the climate adaptation chapter of the plan template. C/CAG and its consultants also provide technical assistance to the cities to complement the CAP tools.

San Mateo County Sea Level Rise/Adaptation Workshops

Leadership to convene partners and raise awareness about San Mateo County's high risk from sea level rise

San Mateo County has held two adaptation workshops to bring together all 20 cities to understand climate risks for their areas and begin strategy discussions. The first workshop was held in June 2013 and featured speakers from UC Berkeley, the Joint Policy Committee, and the State of California. City representatives and other stakeholders identified and discussed their top needs for information, guidance, and best practices.

The second workshop in December focused on sea level rise and drew a large crowd of interested stakeholders. “Meeting the Challenges of Sea Level Rise in San Mateo County” featured Congresswoman Jackie Speier, Assemblyman Rich Gordon, Supervisor Dave Pine, author John Englander, as well as panelists from FEMA, the Army Corps of Engineers, SFO, BCDC, and the Coastal Conservancy. The experts presented information that contributed to the overall consensus that the sea level is indeed rising and that it's not as important to determine when, but rather how the region can protect itself. With 240 square miles of filled land and 1,100 miles of California coastline, San Mateo County is among the most at risk to flooding. A follow up workshop on similar issues will be held in the spring of 2014.

San Franciscquito Creek Joint Powers Authority/Flood Control 2.0

Five public entities turning a liability into a shared asset with multiple benefits

Following years of effort to address environmental issues, and a 45-year flood in 1998 that damaged approximately 1,700 properties, five local agencies from two counties—the cities of Palo Alto, Menlo Park, and East Palo Alto, the County of San Mateo, and the Santa Clara Valley Water District—joined together to create a new government agency, the San Franciscquito Creek Joint Powers Authority (SFCJPA). Elected officials represent these jurisdictions on the SFCJPA Board. The JPA employs an executive director and two professional staff, with much of its project work being done by consultants.

The SFCJPA project aims to reduce flood risks in East Palo Alto and Palo Alto along a flood-prone section of the creek from Highway 101 to San Francisco Bay. Project strategies include:

- Widening the creek to convey a 100-year storm flow, coupled with a 100-year tide and 26 inches of sea level rise.
- Excavating sediment built up over several decades and replace it with a marsh plain with higher value vegetation that is naturally more self-sustaining.
- Selectively reducing the height of an abandoned levee to allow high creek flows into the Palo Alto Bay lands north of the Creek, thus reinstating a natural connection to the Bay for the first time in over 75 years.
- In the area confined by homes and businesses, constructing floodwalls aligned to Caltrans’ Highway 101 bridge over the creek.

The project will also provide the capacity needed for upstream flood protection projects, enhance the habitat of three endangered species in the area, and improve Bay trails and outdoor education opportunities. San Franciscquito Creek is also part of the three-creek project, Flood Control 2.0, with additional partners Bay Conservation and Development Commission (BCDC) and the San Francisco Estuary Partnership (SFEP).

San Mateo County Climate Action Plan: Vulnerability Assessment

An initial review of the county’s vulnerabilities to get the ball rolling

The San Mateo County vulnerability assessment was conducted in 2011 as a collaborative effort between ICLEI - Local Governments for Sustainability, PMC, San Mateo County's Planning and Building Department, as well as the San Mateo County Vulnerability Assessment Working Group.

The assessment addresses the impacts of climate change on public health, water supply, and agriculture (including farms and managed timber) due to temperature and precipitation changes; wildfires; and the impacts of sea level rise on built infrastructure and ecosystems. The Working Group consisted of staff representatives from County departments including Parks and Recreation, Planning, Public Health, and Public Works, as well as external experts and stakeholders including BCDC, the California Coastal Commission, Cal-FIRE, and PG&E.

2013 San Mateo County Energy Efficiency Climate Action Plan

300+ page guide to reducing GHGs, building resilience and addressing adaptation

San Mateo County developed the Energy Efficiency Climate Action Plan (EECAP) for the county's unincorporated areas with four goals:

- Reduce fossil fuel emissions;
- Reduce the total energy use of the eligible entities;
- Improve energy efficiency in the transportation, building, and other appropriate sectors; and
- Create and retain jobs.

Chapter 6 of the EECAP features a set of strategies to address climate adaptation. This work builds on the vulnerability assessment conducted in 2011. The EECAP recognizes that climate change has the potential to seriously impact county residents and businesses. The EECAP includes assessment information and adaptation actions tailored to six sectors:

- Agriculture and forestry
- The built environment
- Natural resources
- Fire
- Public health
- Water

The EECAP builds on the County's groundbreaking *Energy Strategy 2012*, which was developed by the San Mateo Utilities Sustainability Task Force, an ad-hoc energy-working group of the Congestion Management and Environmental Quality Committee.

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 San Mateo County climate action plans.

Climate Action Planning Activity

City/Town	Adopted CAP	GHG Reduction Goal	Adaptation Section in Cap
Atherton	No	-	-
Belmont	No	-	-
Brisbane	No	-	-
Burlingame	Yes	15% below 2005 levels by 2020	Includes adaptation chapter with specific strategies for local and regional action ³⁴
Colma	Yes	15% below 2005 levels by 2020	Includes adaptation chapter with specific strategies for local and regional action ³⁵
Daly City	No	-	-
East Palo Alto	Yes	15% below 2005 levels by 2020	Includes list of local climate impacts and stresses need for monitoring and preparation ³⁶
Foster City	In Progress	-	-
Half Moon Bay	No	-	-
Hillsborough	Yes	-	Includes chapter on adaptation and recommends evaluation of climate impacts and vulnerabilities ³⁷

³⁴ <http://www.burlingame.org/Modules/ShowDocument.aspx?documentid=5458>

³⁵ http://www.colma.ca.gov/index.php?option=com_content&view=article&id=265&Itemid=206

³⁶ http://dreamsofacity.pbworks.com/f/1st_Draft_Climate_Action_Plan.pdf

³⁷ <http://www.hillsborough.net/civica/filebank/blobdload.asp?BlobID=4121>

Menlo Park	Yes	27% below 2005 levels by 2020	-
Millbrae	No	15% below 2005 levels by 2020 ³⁸	-
Pacifica	No	-	-
Portola Valley	No	-	-
Redwood City	Yes	15% below 2005 levels by 2020	Includes chapter section and appendix on adaptation, lists steps for effective adaptation planning and adaptation strategies and measures ³⁹ .
San Bruno	No	-	-
San Carlos	Yes	15% below 2005 levels by 2020	Includes adaption section with detailed potential strategies and specific focus on sea level rise
San Mateo	Yes	15% below 2006 levels by 2020	-
South San Francisco	No	-	-
Woodside	No	-	-
County⁴⁰ (municipal)⁴¹	Yes	7% below 2005 levels by 2020 and 15% below 2005 levels by 2035	Includes appendix on adaptation, lists steps for effective adaptation planning and recommends specific strategies and measures ⁴²

B. Other Climate Planning

The San Mateo County General Plan (2013) includes a 30-page Energy and Climate Element that outlines a GHG emissions inventory of the County unincorporated area as well as mitigation and adaptation goals, policies and programs.

³⁸ Adopted by Resolution 09-68

³⁹ <http://www.redwoodcity.org/ClimateActionPlan.pdf>

⁴⁰ Community County CAP sets a goal of 17% below 2005 levels by 2020

⁴¹ The county of San Mateo also has a recently released an Energy Efficiency CAP (EECAP): http://www.co.sanmateo.ca.us/planning/rechargesmc/pdf/docs/SanMateoCounty_EECAP_FINAL_06-04-2013.pdf

⁴² http://www.co.sanmateo.ca.us/Attachments/greenportal/PDFs/SMC_LGO_Climate%20Action%20Plan.pdf

III. Current Structure for Coordination Among Cities

San Mateo County provides an on-going structure for cities to work together through the RICAPS program (see Section I).

IV. Resources and Assistance to Accelerate Action

BACERP staff asked San Mateo stakeholders to identify and discuss 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.” San Mateo stakeholder input is summarized below (grouped but unranked).

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

RICAPS program structure has been VERY helpful—help us to sustain it.

- RICAPS has been incredibly helpful — good model for other counties.
- City of Colma would not have developed a CAP without the RICAPS tools and support. The most helpful aspect of the program is the “menu of measures” provided in the template.
- The menu of measures has been very helpful for the city of Menlo Park – although the city had already created a CAP prior to joining RICAPS, tools like the measures have enabled Menlo Park to learn from other cities and improve our plan.
- Big cities were early adopters of RICAPS. However, San Mateo County has many smaller cities – this is why the tools and program are so important.
- The RICAPS monthly meetings have been really helpful and have given KEMA the opportunity to provide “office hours” for city staff while also providing structure and consistent deadlines for cities.
- Although transportation actions and emissions are included in city CAPs, this sector would be more effectively addressed on a regional level. Smaller cities do not have the resources for transportation and there is too much overlap between cities.

Climate planning guidelines or mandates from the state would advance our work at the local level.

- Would be helpful for the state to provide guidelines for what a regional/countywide adaptation plan should include. However, an adaptation plan doesn’t have to be a whole new plan – could be incorporated into existing plans or be a “plan of plans”.

- Cities work on mandates – without a mandate, implementation of CAPs and adaptation plans is not rising to the level of importance that it needs to.
- Would be helpful to have more guidance on best practices/policy options for adaptation planning. Cities don't know where to start or which policy options to consider.
- Communities want to have their voices heard – adaptation planning mandates should take this into account and allow for local flexibility.
- There is a need to map existing mandates to better understand what additional measures might be needed for adaptation planning.
- Need more clarity from the state on Title 24⁴³ and how cities should be planning/responding to new regulations.

Help build political support for adaptation and resilience work.

- Political support will only be gained if you also engage citizens at the grassroots level.
- The people who are not at RICAPS meetings have the most need for additional political support for this work. Cities need help convincing department directors and elected officials that climate action planning is not completely separate from all other work.
- To gain political support, it is important to make sure that we don't "redo" the story – need to know what is already out there and make messaging/outreach consistent.
- The message needs to be delivered by trusted members from the community. In order to minimize language barriers, the message should be tailored and translated for non-native English speaking communities.
- KEMA put together a position paper for staff to use with RICAPS to help build support for the program. Very helpful. Need more of this kind of assistance.
- Need to tie adaptation and GHG reduction work into *existing* mandates – it's most often the same person at a city level that is doing this work and tying these together will build political support.

⁴³ <http://www.energy.ca.gov/title24/>

- More groundwork needs to be done with vulnerable communities prior to implementing climate programs and setting goals – essential to understand specific needs and resources within each community.
- Who the message is coming from as well as the timing of when it is promoted are keys to building political support – strategic timing is crucial.
- Cities and counties need to better understand how we can use Community Based Social Marketing⁴⁴ to promote the policies and programs that will help us reach climate goals. We are currently not being as sophisticated about public outreach as we should be – cities need access to external expertise on this issue.

Identifying and creating funding streams for local agencies that are accessible and sustainable

- Our citizens are well aware of climate change – the challenge for us is implementation. We are currently talking with city council about developing funding options for this work.
- Identifying and securing funding is great, but it's important to be very conscious of the “strings” attached to specific funding sources. For many cities, reporting and other requirements are so extensive that it's not worth it unless the grant is fairly large (at least \$100,000).
- Agree that funding requirements should be well understood before accepting – specifically, cities and counties also need to be aware of matching fund requirements as this often makes grant opportunities unrealistic for cities to pursue.
- Given funding constraints, providing technical assistance from a (funded) third-party would be really helpful.
- PG&E now has nine specific task forces on different topics that have been helpful for cities to engage with – the Hub could expand on this issue specific assistance.
- Our cities are mostly small and in need of additional staff capacity.

Get Insurance industry more involved in adaptation

- We have been in multiple meetings/discussions where the role of the insurance industry in adaptation planning has come up – surprised that this industry

⁴⁴ <http://www.cbsm.com/pages/guide/preface/>

hasn't been more involved as this will be a big issue and there is a need to engage them in discussions now.

- Some cities have been very careful to ensure that their projects don't activate a negative response from the insurance industry - this is likely holding some cities back.

Assistance with energy projects—that's something we can do well in cities

- It would be helpful to review outcomes of programs like Energy Upgrade California to assess progress and make improvements.
- Any assistance implementing energy related projects/programs/policies would be helpful – specifically, would like to be able to apply more localized approaches.
- Community Emissions Data – the state has this information and could be providing it to all municipalities but are not currently doing so. Getting the state to compile and share this information annually would be very helpful on a number of levels, but especially in terms of reducing city staff time which could be refocused on actual implementation.
- The state developed the Cal-Adapt tool but few people in cities know about it or use it. You are on your own as opposed to RICAPS which was especially helpful because the program provides tools AND technical assistance and guidance to use the tools.

Focus and Tailor Outreach and Educational Efforts to the Most Vulnerable Communities

- We need a greater emphasis on climate adaptation/resilience outreach and education for non-English speakers. This should be achieved through community-based, culturally relevant messaging delivered by trusted community champions.
- More groundwork needs to be done with vulnerable communities prior to implementing climate programs and setting goals – essential to understand specific needs and resources within each community.
- We need to develop specific responses to help the most vulnerable communities impacted by high levels of environmental pollution. We should focus on air and ground water quality and mitigating risks to seniors, children and people of color.

- We should follow best practice models of community outreach and education (i.e. *Promoters de Salud*⁴⁵). The reason why *Promotores de Salud* have been so successful in engaging community members is they have a close understanding of the communities they serve and often share the same language, culture or socio-economic class.
- We should engage community-based organizations as an instrument to conduct outreach and to develop and support spokespeople and community advocates to actively participate in climate change policy discussions.
- Access to information on climate change impacts and climate adaptation strategies should be made available through educational institutions and community based organizations (such as community colleges and community health centers). We should invest in training and education for young adults interested in climate adaptation/resilience and encourage them to take leadership roles in these efforts.

V. Participants

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

- Lori Burns, Human Resources Manager, Town of Colma
- Leslie Carmichael, Planning Manager, Foster City
- Michael Closson, Consultant, Sierra Club
- Ed Cooney, Innovative Program Manager, CSG Consultants, Inc.
- Michelle Daher, Environmental Coordinator, City of East Palo Alto
- Sapna Dixit, Community Energy Manager, PG&E
- Rebecca Fotu, Environmental Programs Manager, City of Menlo Park
- Kevin Gardiner, Planning Manager, City of Burlingame
- Nathan Kinsey, DNV GL - Energy
- Kathy Kleinbaum, Senior Management Analyst, City of San Mateo
- Erica Kudyba, Resource Conservation Associate, County of San Mateo
- Ortensia Lopez, Executive Director, El Concilio of San Mateo County
- Stephen Mahaley, District Coordinator, Office of Emergency Services, County of San Mateo
- Joe McCluskey, Recycling Specialist, City of Burlingame
- Susan McCue, Consultant, City of South San Francisco
- Jeff Norris, District Coordinator, Office of Emergency Services, County of San Mateo

⁴⁵ The promoter model is founded in community engagement and education through local *Promoters de Salud* or community health workers. Through this model, local *Promoters de Salud* receive training in health prevention and health management. <http://minorityhealth.hhs.gov/templates/content.aspx?lvl=2&lvlid=207&ID=8930>

- Tara Peterson, Assistant to City Manager, City of San Carlos
- Steve Schmidt, Environmental Initiatives Committee Member, Town of Los Altos Hills
- Betty Seto, Sustainability Manager, DNV GL - Energy
- Matt Seubert, Senior Planner, County of San Mateo
- Kim Springer, Resource Conservation Program Manger, County of San Mateo
- Sandy Wong, Executive Director, City/County Association of Governments (C/CAG)
- Susan Wright, Resource Conservation Specialist, County of San Mateo

Santa Clara County

Santa Clara County Climate Snapshot
Compiled by the Bay Area Climate & Energy Resilience Project (BACERP)
March 2014

This summary memo is based on input from Santa Clara County climate stakeholders. The information was gathered via phone, email, web search, and an in-person group meeting co-hosted by the Santa Clara County Office of Sustainability in December 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 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 Santa Clara County:

- Santa Clara County’s Public Health Department is working with other departments on a stand-alone strategic plan for climate change.
- Palo Alto was the first city in California to be certified as a Green Power Community by the US EPA and their green power program has the highest customer participation rate in the country.
- Santa Clara Valley Transportation Authority is planning to implement new Bus Rapid Transit service for 8.5 miles of Stevens Creek Boulevard, a major traffic artery in the county.
- Cupertino developed and manages *GreenBiz Cupertino*, a program that builds on the Bay Area Green Business Program to offer free sustainability support to small and medium sized businesses, schools and nonprofits.
- Health Officials and the Office of Emergency Services have the ability to activate a “reverse” 911 system (which they did in 2013) to contact half a million homes with advice on how to stay cool in extreme heat. The County also operates cooling centers and posts the locations on their website.

- The nonprofit Sustainable Silicon Valley, in conjunction with private and public sector partners, has developed *EcoCloud*, a virtual collaborative platform for business leaders, industry experts, policy makers and other climate stakeholders to engage on specific sustainability issues.

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 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 8 Santa Clara 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.

Silicon Valley 2.0

County leadership in cross agency planning and adaptation strategy development

Through Silicon Valley 2.0 (SV 2.0), the County of Santa Clara is working with local and regional agencies, private sector partners and nonprofit organizations to develop a countywide climate adaptation plan and a decision making tool that will facilitate in-county coordination. The project engages stakeholders to create a framework of adaptation strategies and measures for sustaining the region's "livability/desirability index".

Funded through a grant from the Strategic Growth Council, SV 2.0 takes a risk management approach to climate change impacts on four principal infrastructures (transportation, energy, water, and "human capital") and uses this framework to:

- Evaluate the exposure of community assets (i.e., infrastructure, populations, and landscapes) to likely climate impacts,
- Examine the potential consequences to the economy, society, and environment of this exposure, and
- Develop preemptive adaptation strategies that improve community resiliency.

SV 2.0 also includes an Economic Resiliency Element to provide strategies for local economies (principally innovation technology and agriculture). The second phase of SV 2.0 Project (which the County is currently seeking funding for) will establish a roadmap towards an ambitious emissions reduction goal for 2050. The roadmap effort

will identify potential pathways, technologies, strategies, and policy mechanisms needed to both reduce emissions and increase resiliency in Santa Clara County.

Santa Clara Valley Water District Projects

Leadership in water conservation and adaptation planning efforts

The Santa Clara Valley Water District (SCVWD) is very active in adaptation activities including flood control, South Bay salt pond restoration, maintaining stream/creek habitat, expanding water re-use and conservation programs, adjusting to changes in local precipitation, and long-term water supply planning. SCVWD also maintains the Climate Change Portal, a searchable database compiling reports and other technical literature on climate change. Current projects/programs include:

- Vulnerability assessment of water and wastewater sectors assets
- Saltwater intrusion prevention program
- Multiple rebate and efficiency and conservation programs for residential, commercial and agricultural areas
- Planning efforts to increase the consumption and production capacity of recycled water
- Management of a network of conduits, reservoirs and percolation ponds fed by imported water to recharge groundwater aquifers

San Jose Green Vision

A model for comprehensive citywide sustainability planning and action

In 2007, the City of San Jose adopted the “Green Vision”, a 15-year plan for economic growth and environmental sustainability. The plan outlines 10 ambitious goals to achieve by 2022:

- Create 25,000 clean tech jobs
- Reduce per capita energy use by 50%
- Receive 100% of the city’s energy load from renewable power
- Build or retrofit 50 million square feet of green buildings
- Divert 100% of waste from landfill and convert waste to energy
- Recycle or beneficially reuse 100% of the city’s wastewater
- Adopt a general plan with measurable standards for sustainable development
- Ensure that 100% of public fleet vehicles run on alternative fuels
- Plant 100,000 new trees and replace 100% of city streetlights with smart, zero emission lighting
- Create 100 miles of trails connecting with 400 miles of on-street bikeways

Progress on each of these goals is tracked through detailed metrics that are posted on the Green Vision website.

SF Baylands Restoration and Flood Protection Project

Public private partnership to address storms and sea level rise

This project is an innovative public private partnership to protect the South Bay from sea level rise and extreme storms. Partners include the Moore Foundation, Silicon Valley Leadership Group (SVLG), Santa Clara Valley Water District, City of San Jose, Save the Bay, California Coastal Conservancy and other stakeholders. The partnership has a goal of raising substantial funding over the next 10 years from sources including state bonds, federal funding, local tax measures, and contributions from affected business property owners.

San Franciscquito Creek Joint Powers Authority/Flood Control 2.0

Five public entities turning a liability into a shared asset with multiple benefits

Following years of effort to address environmental issues, and a 45-year flood in 1998 that damaged approximately 1,700 properties, five local agencies from two counties—the cities of Palo Alto, Menlo Park, and East Palo Alto, the County of San Mateo, and the Santa Clara Valley Water District—joined together to create a new government agency, the San Franciscquito Creek Joint Powers Authority (SFCJPA). Elected officials represent these jurisdictions on the SFCJPA Board. The JPA employs an executive director and two professional staff, with much of its project work being done by consultants.

The SFCJPA project aims to reduce flood risks in East Palo Alto and Palo Alto along a flood-prone section of the creek from Highway 101 to San Francisco Bay. Project strategies include:

- Widening the creek to convey a 100-year storm flow, coupled with a 100-year tide and 26 inches of sea level rise.
- Excavating sediment built up over several decades and replace it with a marsh plain with higher value vegetation that is naturally more self-sustaining.
- Selectively reducing the height of an abandoned levee to allow high creek flows into the Palo Alto Bay lands north of the Creek, thus reinstating a natural connection to the Bay for the first time in over 75 years.
- In the area confined by homes and businesses, constructing floodwalls aligned to Caltrans' Highway 101 bridge over the creek.

The project will also provide the capacity needed for upstream flood protection projects, enhance the habitat of three endangered species in the area, and improve Bay trails and outdoor education opportunities. San Franciscquito Creek is also part of the three-creek project, Flood Control 2.0, with additional partners Bay Conservation and Development Commission (BCDC) and the San Francisco Estuary Partnership (SFEP).

South Bay Climate Adaptation Projects

National models for natural capital restoration

The **South Bay Salt Pond Restoration Project** began in 2009 and is the largest tidal wetland restoration project on the West Coast. When complete, the project will restore 15,100 acres of industrial salt ponds to a rich mosaic of tidal wetlands and other habitats. Goals of the project include:

- Restore and enhance a mix of wetland habitats
- Provide wildlife-oriented public access and recreation
- Provide for flood management in the South Bay

Phase II of the project is currently being planned with extensive public input and multi-agency participation. The Project Management Team is comprised of the California State Coastal Conservancy (SCC), the California Department of Fish and Wildlife (DFW), the U.S. Fish and Wildlife Service (FWS), Santa Clara Valley Water District (SCVWD), Alameda County Flood Control and Water Conservation District (ACFCWCD), and the U.S. Army Corps of Engineers (USACE).

The **South San Francisco Bay Shoreline Study** is coordinated with the Salt Pond Restoration project and will identify and recommend flood risk management and ecosystem restoration projects for Federal funding. The Shoreline Study is looking at the feasibility of options for managing flood risk as well as undertaking ecosystem restoration and expanding public access.

The goal of the Shoreline Study is to protect sections of Santa Clara County's shoreline with the highest potential damages and threats to human health and safety from flooding, using a combination of levees and wetlands. Using natural infrastructure will provide increased flood protection and restored Bay habitats, as well as a flood protection system that can evolve in the future.

Joint Venture Silicon Valley Public Sector Climate Task Force

Cross sector collaboration for cost effective climate solutions

Formed in May 2007, the Joint Venture Public Sector Climate Task Force develops collaborative solutions for the reduction of greenhouse gas emissions from public agency operations. It also provides a neutral forum for cities, counties, and special districts to learn from each other.

The Task Force recently completed Phase 1 of a multi-agency procurement of solar power for local agencies using Power Purchase Agreement financing. The project will generate more than 14 megawatts of power at peak capacity – in total, these sites will more than double the entire solar installed capacity for nonresidential systems in Santa Clara county. The Task Force includes representatives from each city, town and county in Silicon Valley, plus several special districts and other public agencies. The group also includes advisory members from local organizations working on sustainability and energy conservation and several affiliate members from for-profit companies in relevant sectors.

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 Santa Clara County climate action plans.

Climate Action Planning Activity

City	Adopted CAP	GHG Reduction Goal	Adaptation Section in CAP
Campbell	No	-	-
Cupertino	No	-	-
Gilroy	No	-	-
Los Altos	Pending	15% below 2005 levels by 2020	-
Los Altos Hills	No	-	-
Los Gatos	Pending	15% below 2008 levels by 2020	-
Milpitas	Yes	15-20% below 2005 levels by 2020	-
Monte Sereno	No	-	-
Morgan Hill	No	-	-
Mountain View	In progress	15-20% efficiency improvement over 2005 levels by 2020 ⁴⁶	-
Palo Alto	Yes	15% below 2005 levels by 2020	-
San José	No ⁴⁷	-	-
Santa Clara	No	-	-
Saratoga	No	-	-
Sunnyvale	Pending	23% below 2008 levels by 2020	Outlines local impacts, existing efforts and recommends specific adaptation strategies ⁴⁸
County (municipal)	Yes	Decrease emissions 10% every 5 years 2010-2050	-

⁴⁶ GHG efficiency improvement goal is outlined in Mountain View's Greenhouse Gas Reduction Program: <https://www.mountainview.gov/civica/filebank/blobdload.asp?BlobID=10700>

⁴⁷ The City of San José has adopted a Greenhouse Gas (GHG) Reduction Strategy in conjunction with the recently adopted the Envision San José 2040 General Plan Update: <https://www.sanjoseca.gov/index.aspx?NID=2740>

⁴⁸ http://www.pmcworld.com/client/sunnyvale/documents/cap/Sunnyvale-CAP_draft-11-2011.pdf

B. Other Climate Planning

Envision 2040 is the City of San Jose’s general plan. Adopted in November 2011, the plan includes sustainable development goals and recommendations for both mitigation and adaptation. *Envision 2040* was preceded by the City Council’s action in 2007, when they adopted the “Green Vision,” ten sustainability goals that included the development of a general plan with measurable standards for sustainable development (see Section I).

The Santa Clara Office of Emergency Services led a collaborative effort to draft the Local Hazard Mitigation Plan in 2011. The Plan identifies climate change as an “amplifier” of existing hazards including coastal flooding, heat waves and other extreme weather events.

The Department of Public Health’s Strategic Plan includes a goal to “establish a departmental focus on environmental health issues related to climate change and sustainability”⁴⁹ and lists four objectives to help achieve this goal.

III. Current Structure for Coordination Among Cities

Silicon Valley 2.0 provides a multi-agency structure for countywide adaptation planning (see Section I).

The Joint Venture Public Sector Climate Task Force provides a forum for cities, nonprofit partners and other regional stakeholders to share best practices and coordinate projects and partnerships (see Section I).

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.” Santa Clara 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.

⁴⁹ http://www.sccgov.org/sites/sccphd/en-us/AboutUs/Documents/SCCPHD_StrategicPlan.pdf

Provide Us With a Central Information Point for Climate Science and Policy to Support and Leverage Existing Staff Capacity

- Legislative and regulatory processes are demanding and overlapping. Throughout the Bay Area, there is an enormous amount of time spent by many different individuals and organizations just keeping up with this information—the Hub could help us on these issues by participating at the state and federal level for the Bay Area and then reporting back.
- The Hub should also be coordinating with state agencies to ensure we are aware of climate studies being conducted by the CEC under the EPIC program (formerly PIER).
- It would be helpful for the Hub to develop jurisdictional maps to illustrate geographic boundaries (and overlap) of specific projects.
- It's very encouraging and helpful just to know that the Hub will be available to help with this work. Just knowing that there will be someone to call on is helpful.
- What has helped VTA's efforts so far are all of the organization and local partnerships that already exist – the Hub will need to ensure that efforts are not duplicating what is already out there.
- It would be useful for the Hub to highlight positive examples of climate projects that other jurisdictions can emulate.
- The Hub could help us stay up to date on climate and adaptation efforts and partnerships without the city of Mountain View having to directly participate in all these efforts. The City doesn't have the staff capacity or resources to keep up on all of this – currently, our elected officials will ask us for specific information and we have to take time out to do research which is very time consuming.
- It would be helpful to be able to use the Hub as a resource for information and best practice sharing. If the Hub provided this information, we could choose more easily what to take on.
- The Hub could develop and regularly release a climate/adaptation policy summary to help local officials both filter information and stay updated on key legislative initiatives.
- Specifically, one of our biggest challenges is getting quality data and then translating that information for use at the local level – the Hub could help with this.

Help Us Strategically Tap into Existing, Local Technical and Financial Resources

- In Santa Clara County, we have a wealth of resources and expertise that we are currently not tapping into as much as we should. Part of the strength of this region is the wealth of knowledge and great thinkers that work and live here. These people/businesses need to be identified as champions and stewards of this knowledge.
- We need to rely on expertise and resources at the local level because this is where the best information and data exists. For example, we should leverage Google and USGS as local resources.
- We need to identify and understand what climate “core competencies” should be at the local level.
- We should capitalize on the knowledge and technological resources that exist in this county to identify (and develop where necessary) the best climate science and data.
- While there are various political bodies currently lobbying for funding for adaptation work, it won’t be enough – we are going to need money from everywhere to actually make an impact.
- We also need to create a focused effort to go after a significant amount of private sector resources – these companies have a lot at stake.
- Funding and staffing are huge issues. However, the sustainability of both is a bigger issue. Any solutions must be ongoing.

Provide Us With Support and Technical Expertise to Tackle Specific Issues

- There is a big need for access to technical experts. The Hub doesn’t have to hold all the expertise, but it should provide a portal or link to them.
- Cal-Adapt is a good start but we need someone to help translate and interpret the information.
- Need data on extreme wind; need to get data on likelihood and extent of extreme wind events due to changes in hydrological cycle.
- The Hub could help to create/maintain/manage a project library that includes local, national and international project examples. Quick clean summaries, not just web links. This library could include some type of filtered local version and some type of scorecard that ranks/evaluates the projects.

- It would be helpful to have a scenario analysis of potential extremes and likelihood of temperatures, sea level, etc. so that planners can consider different potential impacts in an uncertain but changing future.
- Mountain View is wrestling with issues like riverine flooding – this is a good example of an issue that the Hub could help us better understand how to address through information sharing, data and best practice sharing.

Develop a Common and Powerful Advocacy Message and Vision for the Bay Area Region.

- The Bay Area needs a more coordinated approach and more guidance on both short and long term climate planning – we need to be able to accurately answer the question of where to build certain things.
- There is a need to build more support for adaptation planning at the agency leader level.
- We should ask the question “what does *good* climate planning look like?” and “what are the key components of climate resiliency?”
- A Bay Area message should show how our sectors are linked when it comes to climate and adaptation planning – we need to address these as linked sectors, not each area in isolation.
- We need to develop and communicate a positive vision of what resiliency looks like for the Bay Area.
- We need to “normalize” and mainstream climate planning.
- We need a cohesive message in both Washington D.C. and in Sacramento to communicate our needs.

V. Participants

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

- Gina Blus, Sustainable Communities Supervisor, PG&E
- Claire Bonham-Carter, Project Co-Director, AECOM
- Sapna Dixit, Community Energy Manager, PG&E
- Jeff Goldman, Project Director, AECOM

- Kara Gross, Co-Director, Public Sector Climate Initiatives, Joint Venture Silicon Valley
- Marianna Grossman, Executive Director, Sustainable Silicon Valley
- Joe LaClair, Chief Planner, BCDC
- Lani Lee Ho, Environmental Planner, Valley Transit Authority
- Demetra McBride, Director, Office of Sustainability, County of Santa Clara
- Aimee Reedy, Division Director-Programs, Public Health Department, County of Santa Clara
- Susan Stuart, Health Program Specialist, Public Health Dept., County of Santa Clara
- Culley Thomas, Project Manager, AECOM
- Randy Tsuda, Community Development Director, City of Mountain View
- Sarah Young, Senior Project Manager, Santa Clara Valley Water District

Solano County

Solano 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 Solano County climate stakeholders. The information was gathered via phone, email, web search, and an in-person group meeting co-hosted by the Solano County Transportation Authority in December 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 Solano County:

- Solano Napa Commuter Information (SCNI) runs one of the largest ridesharing programs in the region and provides other services to reduce residents’ transportation emissions.
- Solano County cities work with the regional BayREN program to increase energy efficiency that will help insulate residents and businesses from energy price shocks and shortages.
- The Solano County Water Agency conducts conservation programs for its urban and agricultural customers to address drought and other water supply issues.
- Dixon amended its parking code to require at least 40% parking shading to deal with heat impacts and wrote the code so solar panels could be used to meet the requirement.
- Suisun City has developed a networked system of bike paths and provided other active transportation infrastructure to reduce car-related GHGs.

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 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 5 Solano 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.

Solano County Sea Level Rise Strategic Program

An initial sea level rise analysis tied to the Solano General Plan

The 2008 Solano County General Plan recognized the threat of climate change and called on the County to develop a Climate Action Plan (CAP) to address GHG emissions and a Sea Level Rise Strategic Program (SLRSP). General Plan Program HS.I-1 required the development and adoption of the SLRSP for Solano County and defines three primary objectives: (1) investigate the potential effects of SLR on Solano County, (2) identify properties and resources susceptible to SLR in order to prioritize management strategies, and (3) develop protection and adaptation strategies to meet the County's and region's goals.

The 71-page sea level rise study was completed in 2010 and contains extensive material on climate science, the effects of sea level rise in Solano, vulnerable assets, and potential strategies to protect Solano's bayside areas.

Benicia Climate Action Plan/Community Sustainability Commission

Full-time Coordinator, Climate Action Plan and Sea Level Rise Assessment

Benicia's Climate Action Plan (CAP) was completed in 2009 and contains an extensive set of strategies to reduce GHG's, with a particular focus on the commercial and industrial sectors. The plan guides the implementation of actions to meet the goal of reducing GHG emissions to 10 percent below 2000 levels by 2020. Benicia's program is managed by a full-time climate and sustainability coordinator funded through a city settlement with the Valero Refinery.

The 11-member Community Sustainability Commission (CSC) was established in 2009 to evaluate and prioritize Benicia's strategies to reduce greenhouse gas emissions and

make key recommendations for the City's Climate Action Plan. The CSC is also charged with implementing the CAP's measures and monitoring its effectiveness. This broad mandate includes recommendations for allocations of Good Neighbor Steering Committee Settlement Agreement funds for projects that meet certain criteria set out in the Agreement.

Benicia was recently awarded a Climate Ready grant from the California Coastal Conservancy to develop a scientific risk assessment for the area along the Carquinez Strait. Sea level rise is the main focus of the study but it will also include other climate impacts. The city will turn this assessment into an adaptation plan. As preparation for this effort, Benicia recently worked with students at UC Berkeley to develop an initial risk assessment list (focused on sea level rise) for the industrial park and proposed adaptive measures. Staff vetted the list and presented it to the Economic Development Board for review and feedback. Finally, UC Berkeley students worked with a local hotel manager to assess site-specific risks and develop adaptive strategies to mitigate those risks. The findings will help inform the Conservancy grant work in 2014-15.

Solano Transportation Authority Leadership: Climate Action Plans

County leadership, support and funding for countywide climate planning

As follow-up to the general plan, Solano County secured grant funding in 2011 from the California Strategic Growth Council for the development of a multi-agency climate action plan and an implementation strategy managed by the Solano Transportation Authority (STA). STA also secured PG&E funds to assist in the development of a CAP focused on energy production and use (Energy Efficiency CAP). Subsequently, the STA Board and the Solano City County Coordinating Council directed the STA to work with the cities of Dixon, Fairfield, Rio Vista, Suisun City and Vacaville to develop GHG inventories.

STA is now working with AECOM and PG&E on the EECAP, the multi-agency CAP and the individual CAPs. Benicia and Vallejo and the County of Solano have all independently developed Climate Action Plans but have participated in group meetings on regional coordination and CAP implementation. Integration of CAPS will be done when they are all completed. While this collaborative set-up has to-date focused on GHG reduction, many of the strategies also build community resilience. Finally, this framework could also be used in the future to address direct climate impacts at the city or county level.

Solano County Wind and Solar Energy: Leadership and Planning

Large-scale wind and solar for Bay Area power generation

Solano is home to three large wind energy projects in the Montezuma Hills, operated by private companies and the Sacramento Municipal Utility District (SMUD), and feeding power to PG&E, Palo Alto, the SMUD grid, and other customers. Private companies want to build more wind and solar projects in Solano so the county is working pro-actively to address issues sometimes associated with utility scale projects. For example, the county has designated permissible areas for wind projects to

reduce conflicts with existing residential, agricultural and military uses. (Travis Air Force Base is the largest employer in the county.)

While wind energy projects have generally been able to co-exist with rangeland users, large-scale solar projects in Solano that offer an even larger potential for energy generation present a different set of problems. Solar projects can take away valuable agricultural land that is a mainstay of Solano's economy. At the same time, expansion of large wind facilities may have impacts on Travis Air Force Base. For these reasons, the county has placed a moratorium on both utility scale solar and wind development to allow public and private stakeholders to conduct a more in-depth assessment of problems and opportunities.

Suisun Marsh Restoration Project

Balancing fresh and saline waters for the benefit of humans, plants, fish and wildlife

The Suisun Marsh is the largest contiguous brackish water wetland in the western United States and an important wetland on the Pacific Flyway, providing food and habitat for migratory birds. The lands and waters of this unique ecosystem also are home to a wide variety of plants, fish and wildlife that depend upon a careful balancing of fresh and saline waters for their survival. Sea level rise and reduced water flows through the Delta could impact this critical area and affect water quality for all.

Agency managers with primary responsibility for actions in Suisun Marsh formed a Charter Group to develop an implementation plan that would protect and enhance Pacific Flyway and existing wildlife values, endangered species, and water-project supply quality. The group includes U.S. Fish and Wildlife Service, National Marine Fisheries Service, U.S. Bureau of Reclamation, California Department of Fish and Wildlife, California Department of Water Resources, and California Bay-Delta Authority. Because the Marsh includes private lands, the Suisun Resource Conservation District (SRCD) also serves on the Charter Group to represent private landowners. The Charter Group has also consulted with other participating agencies, including the San Francisco Bay Conservation and Development Commission (BCDC) and U.S. Army Corps of Engineers (COE), in developing the Plan.

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 Solano County climate action plans.

Climate Action Planning Activity

City	Adopted CAP	GHG Reduction Goal	Adaptation Section in CAP
Benicia	Yes	Reduce GHG emissions to 10 percent below 2000 levels by 2020	Adaptation is referenced in the Climate Action Science and Policy section and at the beginning of each chapter ⁵⁰
Dixon	In Progress	-	-
Fairfield	In Progress	-	-
Rio Vista	In Progress	-	-
Suisun City	In Progress	-	-
Vacaville	In Progress	-	-
Vallejo	Yes	15% below 2008 emission levels by 2020	-
County (unincorporated areas)	Yes ⁵¹	Reduce communitywide GHG emission by 20% below 2005 baseline levels by 2020	-

B. Other Climate Planning

Climate change is substantially discussed (including an extensive bibliography) in the final EIR for the county’s 2008 General Plan. The General Plan includes Health Safety Goal #7 “Prepare for and adapt to the effects of climate change.” The Public Health and Safety element of the general plan includes discussion of flooding, fires and other climate-related impacts. The General Plan calls for the creation of a comprehensive climate action plan including reduction in GHGs and adaptation strategies.

Additionally, the City of Vacaville added an Energy and Conservation Action Strategy Plan to its current General Plan update that lists goals for energy and water conservation and improved air quality.⁵²

⁵⁰ <http://sustainablebenicia.org/cap/indicators>

⁵¹ Goal to reduce GHGs by 20% below 2005 levels by 2020. No adaptation chapters in CAP but does mention plan to develop accompanying Sea Level Rise Strategic Program.

⁵² <http://www.vacavillegen>

III. Current Structure for Coordination Among Cities

The Solano Transportation Authority plays a critical role in the county, providing coordination, technical assistance, and funding for cities to produce climate action plans (see Section I). In addition, the County has established processes for intergovernmental cooperation and communication that address climate-related issues. These processes include the City-County-Coordinating Committee and joint powers authorities such as the Fairfield-Suisun Sewer District.

IV. Resources and Assistance to Accelerate Action

BACERP staff asked Solano stakeholders to identify and discuss 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.” Solano stakeholder input is summarized below (grouped but unranked).

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

Provide technical Assistance to help us be more efficient

- Provide templates and assistance to help us do the right things in a much more efficient way.
- Provide factual information in a format usable by residents and local governments that help us understand “what the problem is”. This might include on-line summaries, handouts, and white papers suitable for a general audience.
- Provide a summary of potential programs, solutions, and policies that local governments can adopt which encourage building owners to improve climate resilience.

Create outreach and engagement activities to build support

- Our challenge is to highlight the parts of our CAP that benefit people – the Hub could help us with this messaging/communication. There is a relatively small but vocal faction in the County that doesn’t believe that climate change is happening or is a problem. However, there is also a belief among those trying to do this work that if you show how climate change will impact citizens directly then we can get broader support.

- Outreach efforts should focus on other benefits resulting from climate change planning and public and private investment, such as lower energy costs, water efficiency, and improved livability associated with walk-able communities.
- Communication efforts need to highlight the potential costs to homeowners and commercial property owners from climate impacts as well as how this work will benefit cities, residents, and businesses above and beyond GHG mitigation.
- Communication efforts should also focus on direct and indirect benefits from investments made to address climate change.
- The most important need is for additional political support. Solutions must be “Solano grown” with a big emphasis on local needs and benefits. Most people in Solano County do not consider themselves a real part of the Bay Area so the messaging here needs to reflect this.
- Solano County is different from the core Bay Area so we should be treated differently to reflect this. Lots of people are against the regional planning process – we need a local approach.

Provide Information

- We need to make land use decisions that reflect our climate-related vulnerabilities. To do that effectively, we need more quality research and data on impacts.
- It would be helpful for the Hub to create a pre-qualified consultant list for cities that could reduce the amount time spent in outreach and hiring processes for climate related work.

Help Solano identify and secure planning Resources

- We have four cities all working on developing Climate Action Plans – perhaps we could hire a regional coordinator to implement CAP actions? This is the type of resource the Hub could help us secure or provide.
- Benicia is currently working on a CAP policy analysis similar to the City of Berkeley, where we looked at the gap between current GHG emission rates and our reduction goals and then outline strategies that could meet the goals. Additional funding will be needed to implement strategies between now and 2020.
- Benicia is in a unique position; the City is a party to a settlement agreement that designates funds for a CAP Coordinator through June 2015. However,

developing ways to integrate CAP work into city departments can be difficult with limited staffing and funding for sustainability-related projects.

- Solano County is located under two air districts' jurisdiction. Solano County should advocate that these agencies, including BAAQMD, SAQMD, and the San Joaquin Valley Air District, develop joint programs and funding to better address areas like Solano County.

More Coordination

- Programs such as BAYREN, PACE and HERO (form of PACE) all have similar objectives – the Hub could help citizens and local officials understand these programs better. Having so many similar programs creates confusion as no one really understands the difference between them – we need to simplify this, perhaps with a matrix people can understand.

Examine the potential for Mandates as opposed to voluntary actions

- One of the big issues that will come up is whether climate-planning decisions should be voluntary or mandatory. For example, we are using voluntary approaches (i.e. green building ordinances that recommend specific actions) but most people aren't making these upgrades/investments voluntarily.

V. Participants

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

- John Degele, Planning Manager, City of Rio Vista
- Dave Dowswell, Interim Community Development Director, City of Dixon
- John Kerns, Associate Planner, Suisun City
- Robert Macaulay, Director of Planning, Solano Transportation Authority
- Michelle McIntyre, Analyst, Solano LAFCo
- Brian Miller, Associate Planner, City of Fairfield
- Amy Million, Principal Planner, City of Benicia
- Elliot Mulberg, Executive Officer, LAFCo
- Alex Porteshawver, Consulting Climate Action Plan Coordinator, City of Benicia
- Sophia Recalde, Associate Planner, Solano Transportation Authority
- Matthew Walsh, Principal Planner, Solano County

Sonoma County

Sonoma 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 Sonoma County climate stakeholders. The information was gathered via phone, email, web search, and an in-person group meeting co-hosted by the Regional Climate Protection Authority in December 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 Sonoma County:

- The Climate Protection Campaign and SCTA are conducting transportation projects under the MTC Climate Initiatives Program that promote real-time ride matching.
- A coalition of Sonoma stakeholders has been very active in promoting electric vehicle use through fleet purchases and building out EV infrastructure.
- Sonoma is one of three Bay Area sites for *Healthy Lands & Healthy Economies*, a regional collaboration of open space agencies to demonstrate the economic value of natural areas and working landscapes, funded by the Moore Foundation and the Coastal Conservancy.
- The award-winning Windsor Efficiency PAYS program offers water and energy upgrades to Windsor homeowners and renters without upfront costs. The program allows participants to ‘Pay As You Save,’ with no loan and no debt associated with repayment for upgrades, including include high efficiency clothes washers, refrigerators, toilets, hot-water recirculation pumps, showerheads, and drought-resistant landscaping.

- Sonoma County’s Energy Watch program, a partnership between PG&E and the County, provides energy efficiency services to small businesses, local governments, and residents.
- Sonoma County is the testing ground for a set of new climate projections developed by the 9-county Terrestrial Biodiversity Climate Change Collaborative (TBC3), based at Pepperwood Preserve.
- The Sonoma County Agricultural Preservation and Open Space District is working with the RCPA and other county agencies on developing a modeling framework to quantify economic, health, and ecosystem benefits of various development scenarios.

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 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 8 Sonoma 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.

Regional Climate Protection Authority

California’s only legally constituted local climate authority

The Regional Climate Protection Authority (RCPA) was created through state legislation in 2009 to improve *cross-agency* coordination and collaboration in Sonoma County on climate change issues. The RCPA shares its board with the Sonoma County Transportation Authority, including representatives from each of the nine cities and the Board of Supervisors.

RCPA staff are leading the development of the new “Climate Action 2020” and are engaged in a variety of GHG reducing efforts including energy efficiency, building retrofit and alternative transportation programs. Data collection, public information and education are significant elements of the RCPA effort.

Climate Protection Campaign

The pioneering non-profit model for climate protection in the Bay Area

For more than a decade, the award-winning CPC has provided strong climate leadership, resources, and advocacy for Sonoma County by working in partnership with governments, businesses, youth and the broader community. Under leadership from the CPC, Sonoma's nine cities, the County, and a coalition of diverse stakeholders produced a comprehensive and detailed Climate Action Plan in 2008 with one of the toughest GHG reduction goals in the country—25% below 1990 levels by 2015. Strategies in the plan were designed to reach measurable targets for each sub-area, a key ingredient often missing in local climate action plans.

Over the past few years, the CPC has provided major support for the development of a wide range of Sonoma climate programs, including Sonoma Clean Power, energy efficiency programs, and schools-based projects. It has also developed a countywide GHG reduction scorecard and helped secure funding. Currently, a CPC-led project is documenting best practices around the country for climate protection.

Sonoma County Water Agency: Leadership & Projects

Unique and highly important climate leadership role in Sonoma County

In addition to innovative water-related projects like *Carbon Free Water by 2015*, SCWA has stepped “out of the water box” to provide executive-level leadership and advocacy for aggressive climate action in Sonoma County, including funding and technical support for projects ranging from electric vehicles to clean power. (A small portion of property tax revenue allows SCWA to fund projects outside ratepayer fees.)

Current projects include:

- Taking a series of steps to become carbon neutral by 2015 (SCWA is the largest energy user in the county) by diversifying their energy portfolio and increasing water efficiency.
- Participation in a national EPA-led task force of water managers and financial experts looking at how Wall Street characterizes water risks.
- Developing a possible energy efficiency program (modeled after a Delaware program) that packages or bundles energy efficiency derived savings for the bond market.
- Working with the SFPUC and EBMUD to develop Pay As You Save (PAYS) in the region.
- Working with USGS and NOAA, and SCRIPPS on opening a new Western Center for Extreme Weather Events that will lead to better forecasting for extreme weather events (heat, frost/freezes, storms).
- USGS Climate Change Study featuring downscaling models for the Russian River watershed.
- Research focusing on the current and future role of atmospheric rivers that produce nearly half of the Bay Area's average water supply.

- Risk assessments for SCWA’s water infrastructure, including conducting vulnerability studies and outlining potential strategies.
- Partnering with Pepperwood and the Santa Rosa Junior College on multi-station countywide monitoring of weather and plant response —the Climate Smart Sonoma Weather-Phenology Network.
- Provided start up funding and staffing for the implementation of Sonoma Clean Power and the Sonoma County Energy Independence Program.

North Bay Climate Adaptation Initiative (NBCAI)

Leadership and Coalition Building

NBCAI is currently leading the adaptation section of the new Climate Action 2020 Plan. NBCAI is a coalition of natural resource managers, policy makers and scientists committed to working together to create positive solutions to the problem of climate adaptation for the ecosystems and watersheds of Sonoma County. Members are experts and conservation leaders drawn from natural resource organizations throughout the region.

NBCAI grew out of a three-day 2009 conference on watershed climate change adaptation in Sonoma County. The initiative now includes three active working groups aimed at the implementation of climate change adaptation strategies identified by conference participants.

- Habitat Conservation and Stewardship Working Group
- Science, Technology and Land Management Nexus Working Group
- Public Policy Working Group

The working groups address needed actions towards implementation of specific climate change adaptation strategies. The individual working group goals are aligned into a larger combined vision by the NBCAI Coordination Committee.

Since climate adaptation is ultimately a regional issue, NBCAI’s goal is to pilot an approach in Sonoma County that can be extended throughout the North Bay. NBCAI’s vision is that the San Francisco North Bay will retain resilient, biologically diverse natural systems that provide lasting ecosystem functions and services into the future. NBCAI and RCPA have recently been selected for California State Coastal Conservancy Climate Ready funding to assess climate vulnerabilities, particularly in terms of water security, for Sonoma County as well as Napa, Mendocino and Marin.

Sonoma Clean Power

The Bay Area’s 2nd program for community control and local renewable energy

Sonoma Clean Power, the Bay Area’s 2nd Community Choice Aggregation agency (following Marin Clean Energy) will begin Phase I service in May 2014 with 20,000 customers. By January 1st, 2015 that number will increase to 60,000. Sonoma Clean Power’s program is similar to MCE, but will have a greater focus from the start on the development of local renewable power projects. Sonoma Clean Power’s basic power mix will have a 30% reduction in GHGs from PG&E and will cost about 2-3% less.

Other benefits of the program include greater local control of electricity rates, new markets for local renewable energy producers (through SCP's feed-in tariff), and keeping ratepayer dollars in Sonoma County to invest in new energy products and services. Sonoma Clean Power will also develop energy efficiency and other supporting programs to reduce GHGs.

As with Marin's decision to develop community choice, Sonoma stakeholders, including SCWA and CPC, determined that a countywide clean power program would be the most significant action local governments could take to reduce GHGs. That analysis led to an extensive public process, under the direction of the SCWA, and the eventual formation of a joint powers authority to govern the program.

Sonoma Clean Power builds on nearly a decade of innovative energy/climate programs in Sonoma that reduce GHGs and build community resilience. For example, the Sonoma County Energy Independence Program (SCEIP), which provides retrofit financing for homeowners, has continued to operate with local funding when most other residential programs in the country shut down due to federal financing restrictions.

Climate Action 2020 Plan

A new plan, including adaptation, tailored for each community, to reduce GHGs and increase resilience.

Climate Action 2020, currently underway, is a collaborative effort among all 9 cities and the County of Sonoma to reduce GHG emissions community-wide and prepare Sonoma for the impacts of climate change. RCPA will work with communities to develop a comprehensive and detailed plan for each jurisdiction that will identify measures to reduce GHGs from building energy, transportation, water use and transport, waste, wastewater and agriculture. This detailed plan will be completed in 2015. Development of the adaptation section of the plan will be led by North Bay Climate Adaptation Initiative.

The plan will build on efforts to meet the prior commitments to reduce GHG emissions made by Sonoma County communities over the past decade. Since each Sonoma County community is unique, each city will have a locally specific plan that addresses different concerns and priorities within their community.

Sonoma County Veg Map

A groundbreaking project for Sonoma County climate planning

A coalition of partners has embarked on a 5-year program to map Sonoma County's topography, physical and biotic features, and diverse plant communities and habitats. The project partners include the Sonoma County Agricultural Preservation and Open Space District, SCWA, the California Department of Fish and Wildlife, USGS, the Sonoma County Information Systems Department, the Sonoma County Transportation and Public Works Department, the Nature Conservancy, the City of Petaluma, NASA, and the University of Maryland.

The publicly available datasets eventually produced by this program – including countywide LiDAR data and a fine scale vegetation and habitat map – will provide an accurate, up-to-date inventory of the county’s landscape features, ecological communities and habitats. These foundational data sets are key to facilitating good planning and management for watershed protection, flood control, fire and fuels management, and wildlife habitat conservation. These data are also critical to assessing climate mitigation and adaptation strategies and benefits provided by the landscape, such as the amount of carbon sequestration in forests or the degree to which riparian areas, floodplains, and coastal habitats may buffer extreme weather events.

Climate Change, Conservation & Land Use: A Sonoma County Pilot Project

Quantifying the climate benefits of land conservation

The Sonoma County Agricultural Preservation and Open Space District and The Nature Conservancy are collaborating to help Sonoma County, and ultimately other counties across California, address climate change through natural resource conservation and land use. The project, funded by the Moore Foundation, is creating a replicable portfolio of tools, policies and economic incentives for Sonoma County that facilitate the conservation of natural and working landscapes and urban forests to optimize climate benefits.

Project deliverables include:

- An enhanced Sonoma County “greenprint” that includes considerations of biological GHG emissions and reductions.
- A countywide inventory of forests, urban forests and grasslands.
- An accounting method and tool for estimating and monitoring GHG emissions and reductions.
- Links to state and local incentives (e.g., SB 375 and cap and trade auction revenue, etc.).

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 Sonoma climate action plans.

Sonoma took an innovative and groundbreaking approach to its initial climate action planning. In 2008, a broad coalition of stakeholders from across the county, under the leadership of the Climate Protection Campaign, produced a comprehensive and

detailed plan. The plan’s strategies were aimed at the toughest GHG reduction goal in the region—25% below 1990 levels by 2015—a goal that was approved by resolution by all nine of the cities and the Sonoma County Board of Supervisors.

Subsequently, the county’s largest city, Santa Rosa, developed its own climate action plan. Now, Sonoma’s cities and the county, under the Regional Climate Protection Authority banner, are developing a new CEQA-compliant countywide climate plan entitled Climate Action 2020.

Climate Action Planning Activity

City	Adopted CAP ⁵³	GHG Reduction Goal	Adaptation Section in CAP
Cloverdale	No	25% below 1990 by 2015	
Cotati	No	25% below 1990 by 2015	-
Healdsburg	No	25% below 1990 by 2015	-
Petaluma	No	25% below 1990 by 2015	-
Rohnert Park	No	25% below 1990 by 2015	-
Sebastopol	No	25% below 1990 by 2015	-
Santa Rosa	Yes	25% below 1990 by 2020	-
Sonoma	No	25% below 1990 by 2015	-
Windsor⁵⁴	No	25% below 1990 by 2015	
Countywide⁵⁵	Yes	25% below 1990 by 2015	

⁵³ The nine cities and Sonoma County adopted the 2015 GHG reduction goal as part of their work to develop the 2008 Sonoma County Community Climate Action Plan, but did not formally adopt the plan itself.

⁵⁴ The City of Windsor has a Climate Change Adaptation plan published in 2012

⁵⁵ Under leadership from the Climate Protection Campaign, Sonoma’s nine cities and the County produced a comprehensive and detailed Climate Action Plan in 2008 with one of the most ambitious communitywide GHG reduction goals in the nation.

B. Other Government Climate Planning

The City of San Rosa’s general plan’s climate change section includes discussion of preparing for the impacts of climate change.

III. Current Structure for Coordination Among Cities

The Regional Climate Protection Authority provides the official climate authority for the county including a board of elected officials (see Section I).

The Climate Protection Campaign provides a complementary countywide structure by bringing together a range of climate stakeholders for specific project development and action (see Section I).

IV. Resources and Assistance to Accelerate Action

BACERP staff asked Sonoma stakeholders to identify and discuss 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.” Sonoma stakeholder input is summarized below (grouped but unranked).

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

Planning is needed, but we must go beyond plans. Help us get more ACTION.

- We need to identify and develop “igniters/accelerants” for climate action – need to figure out what the effective levers are that will make GHG reductions and adaptation strategies happen at a much greater scale. Mandates? Insurance? Carbon tax?
- Frustration with how to keep great plans from sitting on the shelf. How do we turn these plans into action? Climate Action 2020 can be a great step forward but it’s not enough to just do the planning process.
- We need to think strategically in creating an action plan. You can’t just *do things*.
 - What are the barriers to implementation?
 - Does an action require political support to get this done? If so, is it feasible to get that support? Why or why not?
 - Will we need more staff or more resources to implement?

- Top priority is identifying more funding and financing sources. Without financing, our plans are just plans.
- City of Santa Rosa doesn't have enough staff resources to implement the actions outlined in our CAP.

Help us build greater political support.

- Building political support is critical. We have spent considerable time on this in Sonoma and it has been a key to our success so far.
- Building political support is #1. Maybe education/engagement with the Board? Hub could provide more tools to educate elected officials with a focus on simplifying data and info to make it more usable/relevant.
- Political support needs to be more regional. We always have to push to get “rural” thinking into the mix – would be great if the Hub can help with this.
- We have been relatively successful in Sonoma. However, there is still fear among some elected officials that participating in this will undo them politically – you have to ask them for leadership.

Facilitate New, Innovative Thinking on Funding and Financing Strategies.

- Staff resources are key. We have someone in our office that has made it his mission to get Prop 39 and cap and trade revenue funding for the agency. That’s what it takes.
- OBAG model of funding rural counties might be helpful to look at.
- We need funding that is specifically for pro-active natural capital protection.

Help Us To Engage The Public In A More Compelling And Effective Fashion.

- Interacting with the public is at the fulcrum of a lot of these issues but this interaction on some issues has become more difficult. Local officials and staff need to improve skills on dealing with the public – public meetings to provide input are not enough anymore.
- What is not on the list for the Hub services are formal efforts around marketing and branding. People need to be able to see themselves in this – we need a formal branding campaign around climate and adaptation that clearly outlines what people can do.

- SCWA has had some success with public outreach using scenario planning to guide the discussions. Learn from that model.
- SCWA’s communications on groundwater are a good example of an effective public information effort.

Bring Us Together with Other Counties, Regional Agencies, and the State. Help Us Create A Common Agenda, Networks and Working Groups on Specific Topics.

- We need to see ourselves as part of a larger effort. Each individual transportation project moves the needle so slightly that it’s difficult to stay motivated to start new programs as just one agency.
- Let’s do a shared roadmap of projects/goals in the county. Map the climate activities and see potential partnerships, conflicts, and topics that are not being addressed. This could help to ensure that we are not competing with each other for the same resources.
- How about creating a shared Sonoma scenario for climate impacts that is part of a larger Bay Area scenario? We’d like to work with the Hub to make sure our work is relevant to the region and the state’s efforts. Much of this can’t be done in just one county.
- Be strategic about collaboration. There is always a question around the efficiency of collaboration – we are a small shop so we think long and hard about what efforts we are going to participate in so its helpful if goals and benefits of coordination/partnerships are clearly outlined from the beginning (Hub could help with this).

Provide Us with Easier Access to (Vetted) Quality Climate Information.

- Everyone in the Bay Area should be using the same overall science/data with more specific data for agency specific jobs.

V. Participants

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

- Jennifer Barrett, Sonoma County, Permit and Resource Management Department
- BC Capps, Energy and Sustainability Department Program Manager, Sonoma County

- Lauren Casey, Climate Protection Program Manager, Sonoma County Transportation Authority/Regional Climate Protection Authority
- Caitlin Cornwall, Conservation Planner, Sonoma Ecology Center/NBCAI
- Karen Gaffney, Conservation Planning Manager, Sonoma County Agricultural Preservation and Open Space
- Ann Hancock, Executive Director, Climate Protection Campaign
- Woody Hastings, Renewable Energy Implementation Manager, Climate Protection Campaign
- Jay Jasperse, Chief Engineer, Sonoma County Water Agency
- Lisa Kranz, Supervising Planner, City of Santa Rosa
- Misty Mersich, Program Analyst, Regional Climate Protection Authority
- Lisa Micheli, Executive Director, Pepperwood Foundation/TBC3/NBCAI
- Sara Moore, Policy Committee Co-Chair, North Bay Climate Adaptation Initiative (NBCAI)
- Sandi Potter, Sonoma County Permit and Resource Management Department
- Tom Robinson, Conservation Planner, Sonoma County Agricultural Preservation and Open Space
- Janet Spilman, Deputy Director, Sonoma County Transportation Authority