

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 ¹ and municipal ²)	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.

¹http://www.sfenvironment.org/sites/default/files/engagement_files/sfe_cc_ClimateActionStrategyUpdate2013.pdf

² 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