



## Bay Area Ecosystems Climate Change Consortium

Thursday, June 26, 2014, 10 AM – 2 PM

California State Coastal Conservancy

11<sup>th</sup> Floor Conference room, 1330 Broadway, Oakland, CA 94610

### Meeting Summary

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#### Attendees:

Julie Beagle, *San Francisco Estuary Institute*

\*Brian Benn, *Environmental Risk & Financial Solutions*

\*Marc Beyeler, *MBA Consultants*

Louis Blumberg, *The Nature Conservancy*

John Bourgeois, *SCC/South Bay Salt Ponds*

\*Erin Chappell, *CA Dept. of Water Resources*

Carolyn Doehring, *San Francisco Estuary Institute*

Scott Dusterhoff, *San Francisco Estuary Institute*

Naomi Feger, *SFBay RWQCB*

\*Jenn Fox, *Bay Area Open Space Council*

Matt Gerhart, *CA State Coastal Conservancy*

Brenda Goeden, *BCDC*

Steve Goldbeck, *BCDC*

Robin Grossinger, *San Francisco Estuary Institute*

Andy Gunther, *BAECCC*

\*Daphne Hatch, *Golden Gate NRA*

Alex Leumer, *The Nature Conservancy*

\*Roger Leventhal, *Marin County*

David Loeb, *Bay Nature*

\*Sara Moore, *Consultant/NBCAI*

Anne Morkill, *US Fish and Wildlife Service*

\*Carl Morrison, *Bay Area Flood Protection*

*Agencies Association*

Eric Mruz, *US Fish and Wildlife Service*

Alexandra Peers, *San Francisco Estuary Institute*

Sarah Richmond, *BCDC*

Linda Tandle, *CEMAR*

Caitlin Sweeny, *SF Estuary Partnership*

\* = via teleconference

#### 1. Introduction of participants and their BAECCC-related projects

BAECCC Steering Committee member Anne Morkill, Project Leader of the U.S. Fish and Wildlife Service's San Francisco Bay National Wildlife Refuge Complex, chaired the meeting. Participants introduced themselves and the interests of their organizations in BAECCC.

2. **Review Agenda.** No changes were made to the agenda.

#### 3. Updates

##### a. South Bay Salt Pond Restoration Project

John Bourgeois gave an update on this massive restoration effort, now 11 years into a 50 year timeframe. When Phase I is completed by the end of the year, 3,750 acres of wetlands will have been restored (the total goal for the project is 15,100 acres).

Tidal marsh restoration is the main focus of Phase II. Environmental impact analysis reports are being prepared for Phase II restoration and public access actions at the Alviso and Ravenswood ponds; public drafts likely out in late 2014. Phase II alternatives for Eden Landing have been developed and are available on the website; preparation of environmental documents will begin in Fall 2014.

Within the 7,900-acre Alviso Pond Complex three clusters of ponds are being considered as part of Phase II: (1) A1, A2W, and the City of Mountain View's Charleston Slough at the western end, (2) A19, A20, and A21 at the eastern end, collectively referred to as the Island Ponds, and (3) the Pond A8/A8S complex near the Alviso Marina.

Ponds A1 and A2W of the Mountain View Ponds complex are slated for tidal marsh restoration. Charleston Slough (owned by the City of Mountain View) is being considered for parallel restoration because of opportunities to collaborate on what would otherwise be two separate actions. The primary goal is to restore the ponds to full tidal marsh by breaching the levees between Charleston Slough and A1, A1 and Mountain View Slough, Mountain View Slough and A2W, and/or A2W and Stevens Creek. The main issues to be determined are the incorporation of Charleston Slough, permitting and regulatory items, coordination of local flood control issues, providing public access, and ensuring access to the PG&E towers that run through the site. Project integration also would provide the City of Mountain View with a way to meet a mitigation requirement of restoring 53 acres of tidal marsh that came with its purchase of Charleston Slough from Cargill.

The Ravenswood Pond Complex Phase II proposed actions include restoration of tidal action at Pond R4, and enhancement of habitat value at Pond R5 and Pond S5. These ponds are in a difficult location as they are surrounded by city trails, development, and highways. Redwood City has proposed that the ponds be used for temporary storage of overflow during high tide events. Design elements may include levee alterations that restore tidal action, enhancement of habitat, creating connections that provide floodwater storage and protection, and providing broad upland transition zones.

At Eden Landing, over 2,000 acres are targeted for tidal marsh restoration. An analysis report was completed in June that outlines preliminary alternatives: flood protection from a backside levee and a breach of the whole complex, flood protection using a land mass (a wide and high earthen feature) at the Bay side of Eden Landing along with a mix of tidal marsh and managed ponds, and flood protection from a land mass and staged tidal restoration. Also being considered is building an interim levee as a model to test reduction in wave height.

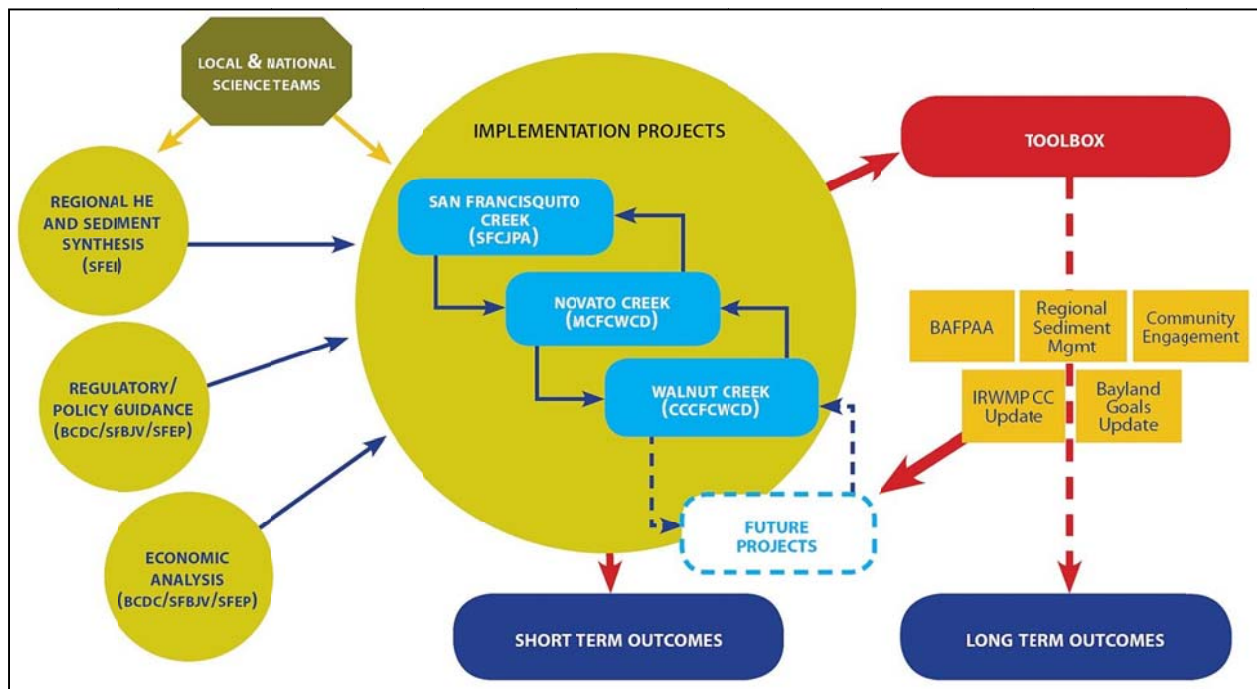
Matt Gerhart commented on the flood retention benefits in or next to the project. In the context of a rising bay, are conversations occurring about the impact on the future of those basins? Thinking long term and regionally means building levees that will provide protection many years in to the future.

#### **4. Group discussion : Flood Control 2.0**

The Flood Control 2.0 (FC 2.0) project goal is to “develop a set of tools and a process for helping to create a vision for redesigned flood control channels at the Bay interface that addresses multiple needs.”

Scott Dusterhoff opened the presentation with a brief summary of the historical impacts of flood control on ecological functions. Since the 1850s many Bay Area creeks and streams have been leveed for flood control and land reclamation purposes, resulting in a widespread loss of stream channel networks. Flood control is growing ever more costly due to an aging infrastructure, complex landscape settings, and rising costs for maintenance activities such as dredging. The future provides a unique opportunity for a new multi-benefit approach. 21<sup>st</sup> century drivers for change include: increasing challenges due to sea level rise, aging infrastructure dating from 50 to 100 years ago, and the growing value of sediment for Bayland restoration.

We can meet future flood control needs and restore/improve future ecosystem functioning at the Bay interface by advancing our understanding of these systems, developing a regional approach, and incorporating regulatory and economic components. The graphic below provides a conceptual overview of the project:



The primary studies, indicated by the circles to the left, inform the three implementation projects (blue boxes). Results from these studies help to build the tools for an online tool box.

FC 2.0 is developing a regional channel typology for the bay interface (fluvial-tidal or “F-T”). The goal is to develop appropriate restoration concepts—what to do where. Technical studies characterizing the historical and current F-T interface features are combined into developing regional channel/Baylands conceptual models. These models then feed into the toolbox to create appropriate restoration concepts.

The conceptual framework for the typology uses larger scale drivers (watershed/tidal/littoral) and the key processes they support to separate the Baylands into “Operational Landscape Units” (OLUs). OLU have four primary components: (1) F-T interface, (2) marsh plain/channel network, (3) marsh-upland transition zone, and (4) shoreline/nearshore zone. It is expected that restoration planning at the scale of OLU should lead to effective and efficient projects.

Characterizing the *historical* F-T interface in the San Francisco Bay includes mapping historical F-T interfaces and assessing the drivers of the F-T interface distribution. There are four historical F-T interface types: disconnected, connected to Baylands, connected to the Bay, and connected to tidal channel. Additional subtypes include disconnected with levee, connected to Baylands with levee, and connected to tidal channel with levee. Scott presented a map of the seven different F-T interface types. The main conclusion from this analysis is that the interplay between sediment supply and stream power is important.

Characterizing the *current* F-T interface requires mapping the current F-T interface types and assessing current sediment delivery and storage at the F-T interface for targeted channels. Seven channels were selected to test methods and results; this effort is about 40% to 50% completed. The selected channels include: Novato, Pinole, Wildcat, Walnut, Alameda, and San Francisquito Creeks, and Guadalupe River.

For example, an analysis of current sediment dynamics for San Francisquito Creek F-T interface demonstrates a balance between sediment delivery and loss (for the period 1984-2007 there was a fluvial input of 323,000 yds<sup>3</sup>, 256,000 yds<sup>3</sup> was exported to the Bay, 43,000 yds<sup>3</sup> removed for flood maintenance and 28,000 yds<sup>3</sup> remained as in-channel storage).

Discussion. Andy commented that deferred flood control channel maintenance is a liability that will require significant future investment. It would be very helpful if FC 2.0 can move forward the discussion about natural infrastructure by defining a value proposition by considering flood protection within each operational unit. This provides a valuable narrative to support natural infrastructure, and Robin noted that FC 2.0 would try to get the conversation at least part of the way toward that narrative.

To a question asked about how site specific will the toolbox be, Scott answered that the tool box starts with higher level items that can lead to more landscape scale specifics. Robin added that each tidal region is different and will require specific project scale design alternatives.

Robin then presented FC 2.0’s thoughts on developing a multi-benefit vision for implementation projects. The goal is to leverage funding to provide better functioning F-T interfaces. Flood control agencies will require partners to develop successful multi-benefit projects.

Robin reported on the three projects that are part of FC 2.0: San Francisquito Creek, Walnut Creek and Novato Creek:

- San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project, San Francisco Bay to Highway 101 (Local Partner: San Francisquito Creek Joint Powers Authority). This is largely a lessons learned project because it was already at

90% design. It has become very complicated due to many regulatory issues and challenges.

- The objectives of the Novato Creek Flood Protection Project are to (1) gain a conceptual understanding of the geomorphic and ecological changes to Novato Creek Baylands over the past 150 years, and (2) to create a restoration vision that meets the needs for flood control and ecological functioning and resilience.
  - The approach to understanding geomorphic and ecological changes included an historical ecology study, compilation of existing geomorphic studies, and establishing landscape metrics.
    - Contemporary characteristics include constrained flood flows, disrupted watershed sediment delivery and decreased supply, subsided/reclaimed marsh area, constrained tidal flows, low tidal prism and aggrading mainstem channel, and in-filled tidal channel network.
    - Two landscape metrics are used: (1) link geomorphic-scale process and ecological functions at the scale needed for natural process and resilience, to (2) track progress towards multi-project “OLU” visions.
    - Changes to geomorphic processes have produced mainstem channel confinement and aggradation, disruption of sediment delivery from watershed, and bayward expansion.
    - Contemporary habitat features include wholesale loss of all tidal habitat types, loss of tidal channel network, and a decrease in broad (low slope) transition zone.
  - A 50-year vision for management was developed through stakeholder participation.
- A regional forum, held in 2013, brought together experts to make recommendations on how to operationalize resilience for the Novato Creek Flood Protection Project. Recommendations included:
  - Use a long-term (200-year vision) to guide short-term and medium-term design.
  - Develop of explicit targets for ecological functions.
  - Use a phased integration of sediment management, wastewater treatment/discharge, flood protection for major infrastructure as part of the wetlands restoration.
  - Design should be consistent with projected Bay and watershed processes
- Lower Walnut Creek Project (Local Partner: Contra Costa County Flood Control and Water Conservation District). This project is in a much larger watershed than the other two, with lots of sediment. It is also complicated but there is room to open a wide area to tidal area. The County recently decided to have the flood control channel “de-authorized” by the Army Corps of Engineers, so the Corps’ design constraints no longer apply.

Discussion: It was noted that flood control agencies do not have the capacity to take on such multi-benefit visions on its own. An IRWMP proposal has been submitted to help with implementation. Andy asked if there are more traditional ways to implement multi-benefit actions. Roger Leventhal responded that a hydrologic study has begun in Novato and they are looking to natural processes to move sediment. However, there are many constraints as

to what can be done. One constraint is the Bel Marin Keys waterfront community comprised of about 700 homes. In response to Louis Blumberg's comment on incorporating climate change, Scott said Roger's team is going to model different future scenarios. Matt added that one challenge would be to recognize that despite the natural typology, existing constraints (such as adjacent urbanization) might dictate the opportunities are available.

Brenda Goeden of BCDC discussed the goals of the regulatory component to FC 2.0. There are two main tasks: (1) review and analyze applicable local, regional, state and federal policies and regulations to inform development of a new draft policy, and (2) develop a guidance document to assist in designing, planning, and permitting channel realignment or habitat restoration projects that includes flood management and sediment reuse.

There are two fundamental questions: (1) Can FC 2.0 provide assistance for innovative projects, (specifically ones that increase sediment conveyance to the Bay and improve habitat) in completing regulatory reviews? (2) Can FC 2.0 identify and recommend improvements to the planning and regulatory process for these types of projects?

Many federal, state and local agencies are involved in review of flood control projects. Projects are also affected by various laws, plans, policies, and regulations. Specialized plans such as habitat conservation plans, species recovery plans and watershed plans can also affect flood control projects. Case studies—project purpose, design, history, community involvement, regulatory actions, lessons learned—can be helpful in developing guidance documents.

FC 2.0 examined four projects: Novato Creek, Napa River, Walnut Creek, and San Francisquito Creek. The findings of the case studies so far are that there are areas of alignment (*e.g.* coarse grain sediment in creeks is good), areas of divergence (*e.g.* whether trees are good in in flood control channels), areas of concern (*e.g.* temporal mitigation), and areas of confusion (*e.g.* sediment TMDLs). Whether a project is a maintenance project or a capital project determines the parties involved, funding, permitting, and timelines. Potential tools include interagency coordination, assistance from flood control management offices, a consolidated flood protection application, and best practices guidance.

In summary, FC 2.0's preliminary findings are that multiple agencies regulate flood control projects, substantial areas of overlap exists between jurisdictions, case studies are used as a tool for regulatory analysis, and areas of additional coordination would benefit projects and agencies.

Next steps include: continue agency guidance reviews and interviews, continue case study development and project tracking, analyze findings, meet with agencies to discuss findings and seek their input on improvement, develop tools and guidance, review with agencies and include their input, and finalize information for project completion.

## **5. Group Discussion: The Baylands Ecosystem Habitat Goals Update (BEHGU)**

Letitia Grenier, science coordinator of BEHGU, led a discussion regarding the draft findings and recommendations of this two-year project. The current schedule is complete the project and issue the final report by the end of the year. The structure of the document includes a 50-page summary of seven science chapters, and a chapter that provides general and specific recommendations.

Letitia guided those present through a review of the introduction and the five overarching recommendations. She noted that the final report will include recommendations at the regional scale, sub-regional scale, and detailed actions at the shoreline segment scale. The first two are overarching recommendations that relate to restoration design/action, while the other three focus on how to organize to accomplish those actions.

Comments and suggestions included:

- Louis Blumberg commented that the nexus of sediment with climate change is sea level rise. Absent any action, projections are that 95%+ of marshes will disappear by 2100.
- Andy noted this is the first time in a public document that “transition zone” is treated as a separate entity with its own definition.
- Letitia noted that the report’s primary audience is agency staff, consultants, and other professionals (“practitioners”), not the general public. The document contains discussion of physical and biological processes that must be recognized and incorporated into restoration planning.
- Louis cautioned that ways to monitor and track progress need to be included. Andy added that metrics for monitoring the progress toward meeting recommendations should be identified (or their development recommended).
- Letitia observed that coordination needs to be increased among Bayland stakeholder organizations to track progress and promote learning, an adaptive management type approach. We need to learn ways to do it and make it happen faster.
- Andy proposed DMMO (Dredged Material Management Office) as a model of what is meant by a commitment to coordination.
- Educating people on what services the Baylands provide will help stimulate engagement, which is essential to generate support for public investment. Jenn Fox noted Tom Steyer’s project Risky Business as a model for engaging the public by focusing on quantifying and publicizing the economic risks from the impacts of climate change.

Letitia noted that she will incorporate the comments from the discussion into the next draft of the report, which should be available for another review in about a month.

## **6. Updates (continued)**

### **a. Coastal Conservancy Climate Ready Grants.**

Matt Gerhart reported the Conservancy has announced a second round of Climate Ready Grants. This second round is focused on implementation-ready projects related to three areas: adapting to sea level rise, agricultural sustainability and resilience, and multi-benefit urban greening projects. John Bourgeois noted there is a need for a funding mechanism for post-project monitoring

activities. Grant applications are due August 22, 2014. A total of \$1.5 million is available for awards through a competitive application process.

#### **b. State Budget News**

Louis Blumberg reported that the fiscal year 2014-15 budget allocates \$870 million generated by the Cap and Trade auction, a component of California's climate program, and also sets up a plan for fiscal 2015-16 and beyond, when the program is estimated to bring in up to \$5 billion annually. Auction proceeds could be a major, stable source of conservation finance through 2020 and potentially to 2035.

TNC, along with other natural resource organizations, helped secure \$108 million:

- \$92 million for forest, wetlands and watershed restoration, agricultural and resource conservation, and energy efficiency (with a focus on water and agriculture).
- \$10.5 million for Climate Coastal Response including \$8 million for Local Coastal Plan updates (\$6 million to Coastal Commission/\$2 million for local grants), and \$1.5 million for Coastal Climate Ready projects (Coastal Conservancy grants).
- \$5 million (\$2.5 million per year for two years) for Climate Science Research including the 4<sup>th</sup> climate change assessment research and report.
- \$500,000 for the Forest Carbon Plan to implement AB 32 scoping plan update.

The BAEECC policy working group sent a letter in support of SB 1184. However, the bill is stuck in the Appropriations Committee, so there will be no action this session. Steve Goldbeck thanked everyone who supported the bill, which will be reintroduced again next session by another author. He added that there was no opposition to the bill.

SB 1217 (Leno) requires state agencies to prepare a climate change strategy that identifies mitigation measures to increase climate change resiliency. It passed the Senate and has been referred to the Assembly's Committee on Natural Resources. [Update: The bill was passed by the Assembly Natural Resources Committee with a vote of 6-2 and will be heard by the Assembly Committee on Appropriations when they return from recess. Anyone wishing an update on this bill and other climate policy issues can email Alex Leumer ([aleumer@tnc.org](mailto:aleumer@tnc.org)) to be added to the Climate Smart Policy listserv.]

**7. Review of action items, other business.** No items.

#### **8. Adjourn**

The meeting was adjourned at 2 p.m.