San Francisco Bay Area Wetlands Restoration Program
Design Review Group

Meeting Summary
January 6, 2003

Attendees:
Myla Ablog (Golden Gate National Parks Association)
Bob Batha (San Francisco Bay Conservation and Development Commission)
Peter Baye [1,2] (Independent Biologist)
Markley Bavinger (Wolfe Mason Associates)
John Brosnan (Wetlands Restoration Program)
Josh Collins (San Francisco Estuary Institute)
Lesley Estes (City of Oakland)
Marti Ikehara (National Geodetic Survey, NOAA)
Paul Jones (U.S. Environmental Protection Agency)
Rachel Kamman [1,2] (Kamman Hydrology)
Jasper Lament [1,2] (Ducks Unlimited)
Roger Leventhal (FarWest Engineering)
Karl Malamud-Roam (Contra Costa Mosquito and Vector Control District)
Laurel Marcus (Laurel Marcus and Associates)
Molly Martindale (U.S. Army Corps of Engineers)
Mike Monroe (U.S. Environmental Protection Agency)
Michelle Orr [1] (Phillip Williams and Associates)
Stuart Siegel [1] (Wetlands and Water Resources)
Becky Smythe (NOAA Ocean Service)
Maxene Spellman (State Coastal Conservancy)
Kristen Ward (Golden Gate National Recreation Area)
Katy Zaremba (Invasive Spartina Project/Coastal Conservancy)
John Zentner (Zentner and Zentner)

[1] Lake Merritt Marsh Restoration Feasibility Analysis Review Team
[2] Crissy Field Monitoring Protocols Review Team

1. Introductions and Agenda Review/Announcements

Mike Monroe chaired the meeting and opened with a roundtable of introductions. John Brosnan stated that the Request for Qualifications (RFQ) for paid members of the Design Review Group (DRG) closed on December 10th and that eight Statements of Qualifications (SOQs) were received; seven of those SOQs reviewed were accepted to create a prequalified list of paid DRG members. John said that the RFQ would soon be re-released as a continuous filing. John also highlighted that the Breuner Marsh Letter of Review was almost complete and that he would be talking to the participating review team members about finalizing it. John added that there is a new page at the Restoration Program's website that details the Design Review Group process, which can be found at www.sfwetlands.ca.gov.

Marti Ikehara stated that the National Geodetic Survey has completed the South San Francisco Bay GPS heights. She handed out a map of the points and added that the measurements for these points will be beneficial to wetlands restoration sites. See www.ngs.noaa.gov for further details.

2. Lake Merritt Marsh Restoration Feasibility Analysis Presentation

Reference material provided: Lake Merritt Wetlands Alternatives Analysis, Administrative Draft, November 2002

Mike introduced Maxene Spellman and Lesley Estes, who presented the Lake Merritt project. Lesley stated that given the recent passage of Measure DD, which has the potential to restore more natural conditions (i.e., habitat, tidal) to Lake Merritt, is wetland habitat at the site appropriate? Initially, the State Coastal Conservancy commissioned Philip Williams and Associates to generate a wetlands restoration feasibility analysis, using Conservancy grant money given to the City of Oakland. This analysis investigated the feasibility of relatively small wetlands restoration sites at the northern part of Lake Merritt. Options at the south end of the Lake are less likely due to boating activities. These analyses have not demonstrated favorable outcomes for wetlands restoration due a to a variety of factors. There is currently no more funding for additional studies.

The stated goal is to create wetlands habitat in Lake Merritt. Lesley posed the question: are we going to get what we want out of this project? The alternatives are down to (1) near-shore restoration along the Glen Echo arm, (2) the near-shore restoration near the parking lot/Sailboat house, and (3) off-shore restoration among the existing islands and near the picnic area. Major constraints include: (1) the managed tidal regime, (2) site size limitations, (3) disturbance factors, and (4) anticipated spotty vegetation establishment.

Questions being asked of the Review Team include:

- Given that the analysis findings state that the constraints (size, tidal regime and disturbance) may not provide significant wetland habitat for shorebirds, should this project be pursued?
- How would the conclusions in these studies be affected if the tidal regime were restored to a more natural condition?
- Are the findings in the analysis regarding the constraints to establishing restored wetland habitat in Lake Merritt (size of project area, amount of buffer areas, impact of highly altered tidal regime, disturbance factors due to proximity to human traffic, expected vegetation type and coverage) consistent with your experience and expertise?

This is a very highly visible, political project; many residents want to see this project pushed through. Measure DD, which levies a tax on Oakland residents to support the Lake Merritt Water Bond, passed by 82%. The measure will remove culverts and install bridges at two locations at the south end of the lake as well as move the Seventh Street pumping station to increase the efficiency of the pump. Alameda Flood Control District controls the pump and the tide gates. At present, tides are inconsistently muted and the tidal system is analogous to a lagoon-type system. Question: **Should we attempt restoration now if there are so many tidal changes to come over the next 20 years? Should the City be looking at floating islands as an**

option? Maxene expounded on the goals of the project, stating that the project seeks to expand waterfowl habitat, create shorebird habitat, and establish a vegetated salt marsh, ultimately increasing the habitat value for current resident species. Lesley added that if this project is not possible, then all options have to have been thoroughly exhausted.

Peter Baye stated that good-quality tidal wetlands could have a 2-foot tidal range. He added that a top layer of sand used in restoration can compensate in a system with too many nutrients. Peter suggested a focus on retaining the Merritt sands, which would correctly adjust the slope of the site and result in intermediate sand flats and mudflats. He added that birds would likely acclimate to the presence of humans, as seen at Ocean Beach (where willits, for example, are not disturbed by people).

Roger Leventhal reminded the group that early analysis lacked electronic data. Peter added that wetlands and coastal lagoons can naturally close off and interrupt a regular tidal regime (as is present at Lake Merritt), so there are natural models that can be used to compare to Lake Merritt. Lesley reminded the group that the lake is listed as an impaired water body with EPA due to dissolved oxygen and floating trash; she stated the lake's reputation for odor. Peter added that use of finer sediments in restoration could lead to more odors.

Laurel Marcus stated that preparation for the analysis done included looking at all existing fish and bird surveys done on the lake. Investigation determined that if pickleweed were to establish, that it would likely be very sparse. Existing marsh vegetation is limited to the holes in the walls around the lake, so the overall outlook for a vegetated community is low. As for the sites, she asked, given the total size of less than one acre, will it attract shorebirds, given the inclusion of sufficient buffers? Laurel also noted that algal blooms can be very large and contribute to the problems caused by trash and a large goose populations. She also noted that the City of Oakland has been planting tamarisk along the lake. She stated that Option 2B (Islands) may be the best bet due to its isolation, since the area is so heavily used by people.

Markley Bavinger pointed out that the Lake Merritt Master Plan seeks to create habitat for the benefit of local residents. She added that all of the sites evaluated in the feasibility analysis are compatible with the Master Plan. Markley stated that boaters have vowed opposition to use of Site 1 in Glen Echo but that the island sites are presently protected from boating. Josh Collins asked if sand had to be imported, and Lesley stated that it is imported at the rate of one truckload per year. Lesley added that the city does periodic dredging in the north arms of the lake. Stuart Siegel wondered about the Flood Control District's aversion to the project given the potential loss of flood buffering capacity.

Rachel Kamman stated that reliance on "restoration" of historical wetlands was not a good idea and suggested using "enhancement" as alternative terminology (this would aid in avoiding preconceived notions for the project). She added that most people would be expecting aesthetic improvements. Lesley agreed and stated that improved water quality is key. Rachel suggested that a circulation study might be required. **The group generally agreed that moving the restoration effort away from the perimeter of the lake and outside of the reach of disturbance would be most beneficial.** Rachel added that active operational measures could improve water quality; Lesley stated that this was not entirely viable since the Seventh Street pumping station has not yet been relocated. Lesley stated that any water level over +3

NGVD will flood adjacent areas and that the BART tube is another consideration in how deep any dredging can go.

In terms of trash maintenance, Lesley stated that the rotary club and the Lake Merritt Institute routinely pick up trash around the lake and that some filters are being installed on storm drains that empty into the lake. Michelle Orr stated that trash is a large problem around, as well as in, the lake. Karl Malamud-Roam called attention to the need for buffers and their impacts on amounts of fill required; he also pointed out that with any excavation, there will be more of the basin to fill, and, thus, a greater tidal prism. **Karl suggested first determining the "must haves" of the flood control district; this will help understand what is doable in the near-term.**

Lesley and her team asked for general feedback on the use of floating islands. Josh Collins revisited the sand issue and said that since sand is more mobile, this could lead to more expensive routine maintenance. Laurel stated that sand has been present at the site since 1916 and that maintenance is minor. Peter asked about wave heights and Roger said that they reach 4 feet across the largest wind fetches. **Peter added that, dependent upon sediment grain sizes, swash bars and sand shoals could be used to stabilize bay mud. He added that there is potential for creation of a tombolo and that some such areas could establish. He suggested determining the precise substrate grain sizes and using a malleable substrate.** Peter added, stating that this was his subjective opinion, that islands are not good educational tools when trying to create educational opportunities about wetlands restoration. Jasper Lament wanted to know if the islands would be fixed and Laurel replied that they could be re-anchored.

Paul Jones suggested linking this restoration effort to the EPA TMDL program in an effort to garner additional funds. He suggested taking this to the Regional Board staff, too, who may have access to additional funding and resources. Lesley asked if the Review Team felt that shorebirds would use this site; Rachel stated that they surely would, especially during a high tide and/or storm event.

3. Break

4. Crissy Field Restoration Monitoring Protocols

Reference material provided: Crissy Field Restoration Project Monitoring Plan and Protocols, Draft, October 2002

Josh Collins and Kristen Ward presented the project. In May 2002, the National Park Service (NPS) released a draft plan for the restoration of Crissy Field marsh. The main objectives in the restoration of the site include (1) tracking development of restored areas, (2) maintaining reference data, and (3) providing educational opportunities. The monitoring protocols enhance and build on existing monitoring exercises. Within the project area, permanent monitoring stations presently measure dissolved oxygen, salinity, and temperature, in addition to nine additional sites where monitoring is done by hand. Samples collected include soil samples, benthic invertebrates (from four sites every summer), fish (quarterly), and birds (two monitoring approaches: area searches and dune surveys). Vegetation sampling has been challenging and the methods have changed many times. NPS is considering the addition of monitoring nutrient inputs from storm drains on a monthly basis.

Peter stated, for background, that the project site is an over-excavated lagoon that has been tidal, partially tidal, and nontidal over the past few years. Kristen stated the stormwater inputs into the lagoon do not provide adequate force to push through the channel mouth at times when it has closed off. Recently, waves blew out the closed channel mouth and it is presently open.

Kristen stated that the initial draft plan was never formally approved by NPS and in order to receive more funding, a peer review of the monitoring protocols must be submitted to EPA as soon as possible. Josh has two specific questions for the group regarding the two different monitoring gauges: (1) Is it s a problem that they are recording at different intervals? (2) Where might they be relocated? Karl said that they should record at six-second interval and Rachel agreed, saying that 12-second intervals may be too sparse. Karl asked what kind of error bars are seen? What about human error in replacing equipment? **Karl suggested calibrating all three sensors to the same time and to located them in places where they are least likely to be moved again.** Rachel stated that six-second intervals will capture more noise in the data and that reviewers should be cognizant of this in filtering data. **She added that if wave height is being sampled, a continuous water level gauge would be most helpful;** there are many factors to be aware of that could dramatically affect samples**.** Peter resounded the need to have a good descriptive record.

Stuart asked about what information was being sought. Josh and Kristen answered (1) tidal range (to tidal curve), then (2) biological functions. Someone suggested adding another gauge instead of moving the existing gauges. Stuart suggested using the Golden Gate instrument. Rachel suggested that water instruments should use staff plates before pulling the instruments; Kristen said that this is done. She also suggested that page 8 of the document should be changed to reflect that topographical and bathymetric surveys are completed twice per year. Stuart added that an acoustic gauge is less likely to malfunction than a transducer.

Kristen said that bathymetric surveys are conducted every 6-8 weeks. Surveys in the channel thalweg are being proposed. **Peter suggesting integrating the measurements with the bedforms (i.e., orientation, size, height).** Rachel pointed out that measurements taken at 8-week intervals will miss the ebb and flow; she suggested performing a spring and neap tide measurement, once in the spring and once in the fall. **Peter suggested taking the measurements quarterly, in January, April, July, and October.** Rachel stated that measurements taken in the inlet would measure the power of the whole system.

Josh stated that the measurements control is set to NGVD 29. He asked if anything should change from this. Stuarts asked what is known of the benchmarks being used and suggested researching what those benchmarks are. **He suggested converting to NAVD 8. Marti Ikehara suggested using a single standard point, if interested in simply change over time. Rachel suggested identifying a single, vertical control point; she added that vertical controls are extremely important over the next 10 years. She also suggested use of more than one control.**

Regarding water quality, Paul suggested following the EPA Standard Operating Procedures for monitoring for fecal Coliform for five weeks in order to obtain geometric means. Rachel stated that water quality measurements taken before 9:30 AM will be collecting a lot of

irrigation run off from the Presidio. Peter advised Kristen and Josh of the groundwater seepage that occurs during irrigation periods and recommended being mindful of this. He added that this might be tied into soil samples for water quality, nutrients, and pollutants. Peter said that the event should be tied to the tide and stressed avoiding reliance on periodicity. He added that soil sampling in spring might be better in addition to sampling in late summer.

Jasper commented on the gear selectivity for fish. **He wanted to make sure that no members of the fish community were missed with seining.** He wondered about habitat sampling at the inlet and natives vs. non-natives, as well. Josh asked about a fixed transect; would this be acceptable? Rachel suggested [aerial] photo monitoring in order to be as accurate as possible. Josh said that he would be circulating these notes over email.

5. Closing Business/Next Meeting Date

The next meeting date was set for Monday, February 10th, from 1 P.M. – 4 P.M. The meeting location will be Room 9, at the State of California Building, 1515 Clay Street, Oakland.

6. Wetlands Mapping Maps

Stuart presented a draft of the South Bay planned and completed wetlands restoration projects. He wanted the group's opinions on the maps and stated that there are approximately 6 projects that are not represented on the map. He added that there is a list of about 20 projects whose sizes are disputed.

ACTION ITEMS:

- John to craft Draft Letter of Review for the Lake Merritt Marsh Restoration Analysis and circulate among Rachel, Michelle, Stuart, Jasper, and Peter.
- John and Josh to craft Draft Letter of Review for the Crissy Field Monitoring Protocols and circulate among Rachel, Jasper, and Peter and others.