First Annual Report
Montezuma Wetlands Restoration Project
Technical Review Team

Produced by

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Introduction

Purpose of the TRT

Special Condition #1 in the U.S. Army Corp of Engineer's Permit No. 19405N, dated September 24, 2001, authorizing construction and operation of the Montezuma Wetlands Project (Project), specifies that the Project permittee, Montezuma Wetlands LLC (MWLLC), will contract with a non-profit organization to coordinate and manage a technical review team (TRT) to provide expert and objective analysis and recommendations on subjects associated with the construction, monitoring, and performance of the Project. The TRT reviews and comments on matters pertaining to, but not limited to, the following:

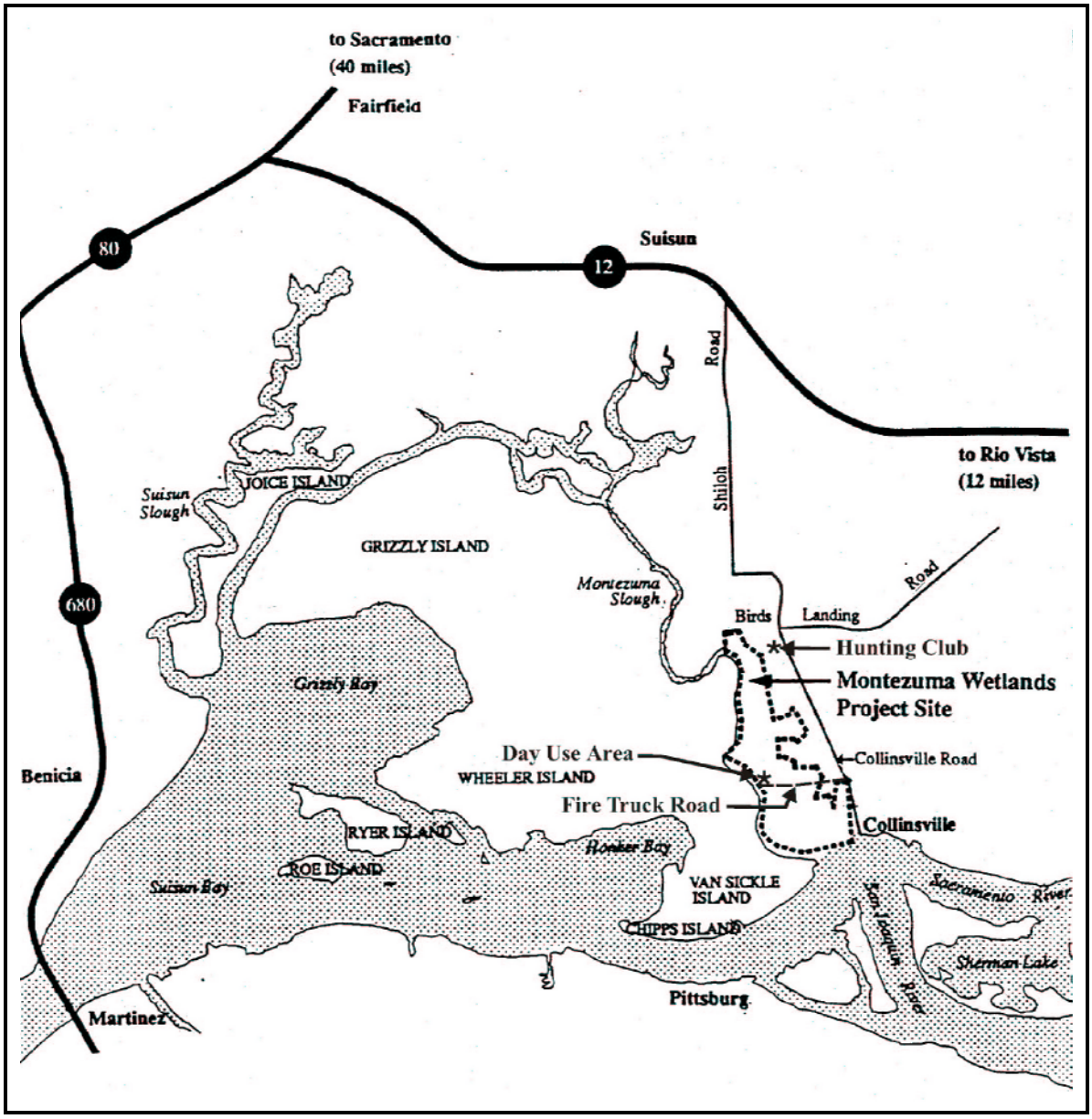
- quality of the monitoring data, analyses, results, and conclusions;
- assessment of the monitoring results relative to project goals and requirements;
- compliance with performance standards;
- initiation of new Phases;
- determination of when a completed Phase may be breached;
- establishment of appropriate reference sites for monitoring purposes;
- optimum contingency measures to be implement if needed; and
- adaptive management changes to retrieve better monitoring information and to enhance habitat establishment and Project performance.

The TRT is not a decision-making body; its purpose is solely advisory. The Project will be monitored during its construction and for at least 10 years after the Project has been completed. The TRT is expected to continue for as long as the Project is monitored.

Project Description

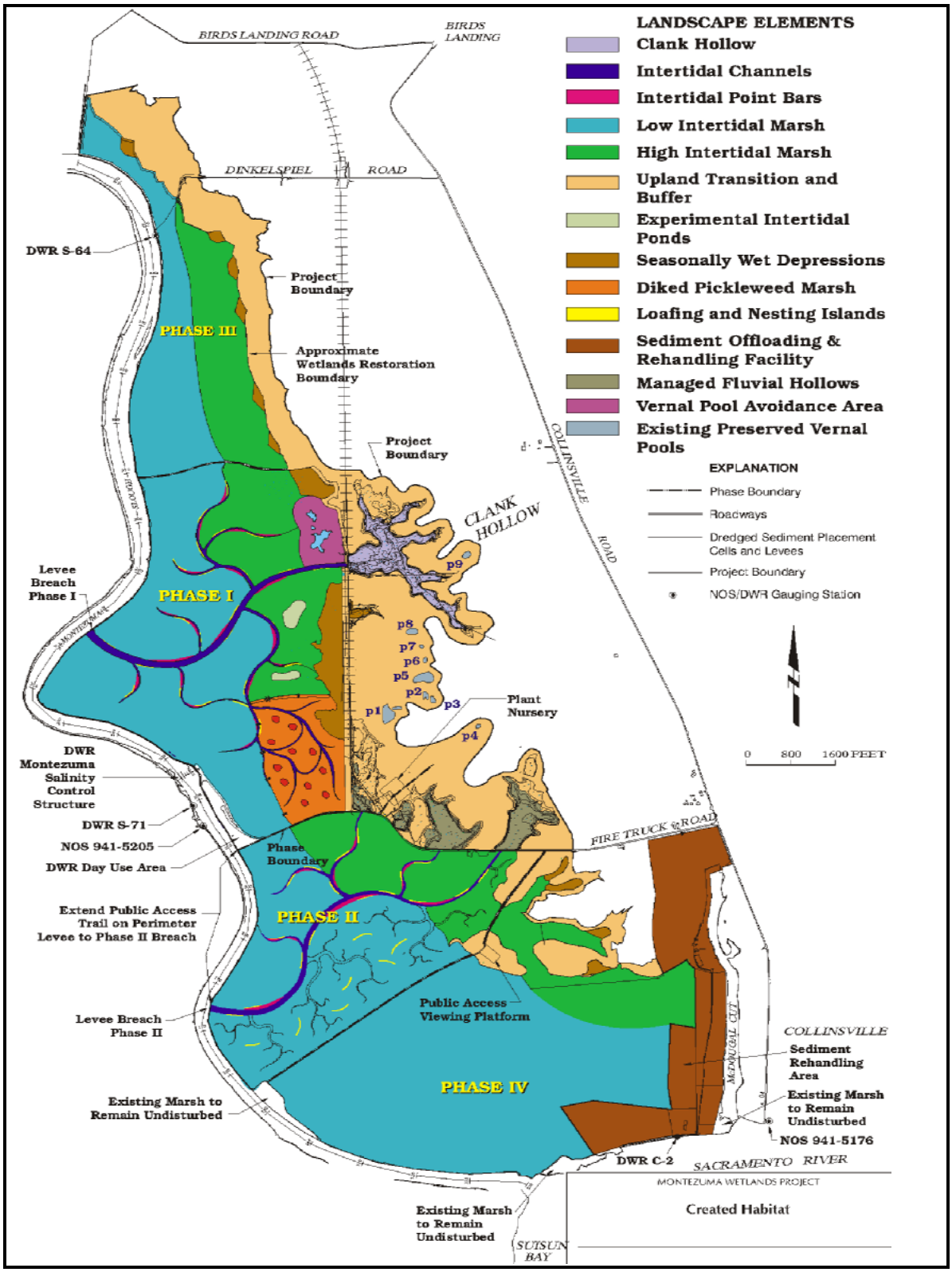
The Project is permitted to use sediment dredged from the San Francisco Bay-Delta system to convert approximately 1,800 acres of reclaimed tidelands into tidal and seasonal wetlands along the northeastern side of Montezuma Slough, near the town of Collinsville, in Solano County, California (Figure 1). The site was reclaimed for agriculture more than a century ago. Since then, the site has subsided up to 10 feet. According to Project plans, approximately 17 million cubic yards of sediment will be used over the next 15 years to raise the surface of the site to elevations suitable for tidal marsh restoration. Two categories of sediment will be used: non-cover sediment will be placed away from any food webs; cover sediment will form the substrate for new habitats.

Figure 1. Montezuma Wetlands Project Site Location



The site is subdivided by levees of different heights into Project Phases and smaller Sediment Cells (Figure 2). The Phases are designed to minimize temporal loss of existing wetlands; the Phases with the lowest existing habitat values will be implemented first, so that habitat can be restored before subsequent phases, where more wetland habitat exists, are impacted. The Cells are designed to facilitate placement of sediment according to design and permit specifications. Cells that will take noncover sediment have a second set of levees inside the cell that form a noncover subcell. These levees are designed to keep noncover sediment at least 200 feet laterally from constructed channels and surface water and to facilitate placement of at least three feet of cover sediment over the noncover subcell. The outside slopes of the Cell levees will also form the banks of the constructed tidal channels.

Figure 2. Project Phases and Restoration Design



Project operation involves barging acceptable sediment from sources in the Bay-Delta system to the Project site, mixing with water to form a slurry, and pumping it to the cells for dewatering. Water for mixing with sediment is drawn from a 30-acre holding pond (the Makeup Water Pond) that contains a mixture of onsite groundwater pumped from sands adjacent to the river, and recycled decant water from the sediment cells. The sediment-water mixture is pumped to selected Sediment Cells where sediment is settled and dewatered. Water is removed (i.e., decanted) from noncover sediment cells through filter drains in the levee sidewalls, and over weirs from the cover sediment cells. The decant water is routed through a network of ditches (known as the return water channel) back to the Makeup Water Pond, where it is reused for slurrying new incoming sediment. The sediment placement operation is continued until target elevations in the Cells are achieved. The Project is also designed to re-handle sediment that is suitable for on-site use in levee construction and for off-site reuse. The rehandling facility will accept only cover sediment. The Project began pumping sediment into the first selected Sediment Cell of Phase I in late December, 2003.

The Project is large, technically complex, and innovative. It has been subject to almost a decade of environmental review. The habitat designs and monitoring plan reflect the input of many stakeholders, including agencies at all levels of government. The monitoring effort involves a variety of contractors working for the MWLLC to routinely measure a broad range of chemical, geophysical, and ecological parameters.

TRT Organization

The purpose of the TRT, the role of the MWLLC, and the role of SFEI are explained in the Charter (Appendix 1). The Charter also describes the technical review process, the TRT membership criteria, and the ground rules for communication and meetings.

The MWLLC will contract with SFEI to administer the TRT for consecutive contract periods of 18 months each, beginning 1 July 2002. The contract can be revised for each new contract period to reflect changes in monitoring and responsibilities of the TRT or SFEI, subject to approval by both SFEI and the MWLLC. SFEI and the MWLLC work closely together to plan TRT work loads and meetings. SFEI reports the annual findings and recommendations of the TRT to the MWLLC and the USACE.

The TRT includes multiple experts on each major subject of the monitoring effort for the Project (Appendix 2). TRT members can consult with their colleagues as needed to provide the required advice and review. The TRT roster can be revised over time to reflect changes in the focus of the monitoring effort.

The TRT can create sub-teams to address matters of special concern or importance. At this time, the TRT includes sub-teams to address high marsh designs, tidal datums and benchmarks, contaminant monitoring, and hydrological monitoring. The commentary from the sub-teams are integrated into the overall annual report of the TRT.

SFEI maintains a complete record of TRT activities. The record includes final versions of all TRT planning documents, information packages, and the reviewed minutes of

meetings of the full TRT and its sub-teams. SFEI also maintains a record of written and telephone correspondence with SFEI, the MWLLC, or any TRT member relating to the activities of the TRT. All of these records are archived at SFEI.

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Year 1 TRT Milestones

The TRT achieved all of its assigned tasks for Year 1. The list of tasks and the TRT schedule was flexible to accommodate changes in the start date for the Project. Few data were available for review during Year 1. The TRT therefore focused on organizing itself, gaining familiarity with the Project, reviewing the proposed monitoring plans, and reviewing reports related to Project construction.

Year 1 Milestones

July 1, 2002: MWLLC contracts with the San Francisco Estuary Institute (SFEI) to establish, coordinate, and manage a TRT.

September 23, 2002: MWLLC and SFEI finalize the TRT Charter (Appendix 1) for authorization by the USACE.

October 15, 2002: SFEI finalizes the TRT Roster.

November 15, 2002: SFEI plans and holds the formative meeting of the Contaminants Sub-team of the TRT.

November 19, 2002: SFEI plans and holds the formative meeting of the full TRT, and initiates task assignments to TRT members.

June 24, 2003: SFEI plans and holds mid-year meeting of the Full TRT, and revises task assignments to reflect changes in Project schedules.

September 11, 2003: SFEI plans and holds Contaminants Sub-team meeting and discusses Project priorities for contaminant review.

October 31, 2003: The web page for the Montezuma Wetlands Project is posted on the Wetland Tracker. Three password-protected file listings are made available for the TRT, USACE, and Project Team.

November 20, 2003: SFEI plans and holds first annual meeting of the full TRT, finalizes Year 1 task assignments, and finalizes Year 1 Annual Report outline.

December 23, 2003: The Project starts receiving and placing sediment into Phase I.

February 20, 2004: SFEI issues Year 1 Draft Annual Report.

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Summary of Year 1 Reviews and Recommendations

Description of Review Process

The TRT has completed its review of the ten reports provided to the TRT during Year 1: the Mitigation, Monitoring, and Reporting Plan (Appendix 3); Interim Enhancement Plan (Appendix 4); Operations and End of Year Construction Reports (Appendix 5); the Contaminants QAPP and Background Groundwater Characterization (Appendix 6); the Biology Report (Appendix 7); the Sediment Confirmation Sampling Plan (Appendix 8); the Summary of Dioxins/Furans and Radiation (Appendix 9); and the Results of Water Level Monitoring of Domestic Wells (Appendix 10). The TRT has also initiated its discussion of the High Marsh Designs (Appendix 11), begun a list of Research Considerations, and identified General Recommendations to improve either Project monitoring or the effectiveness of the TRT.

The following steps were taken to construct this summary.

- TRT members agreed to the Charter and accepted assignments.
- TRT members began to conduct their assignments, which included information exchanges with the MWLLC technical representatives through SFEI.
- SFEI conducted a mid-year meeting of the TRT to facilitate and coordinate completion of the TRT assignments.
- SFEI conducted an annual meeting for the TRT to review the completed assignments, plus MWLLC responses, as compiled and summarized by SFEI.
- The TRT finalized all remaining assignments and prioritized its recommendations.
- SFEI produced the final draft summary of reviews and recommendations for final review by the TRT and the MWLLC.

Priority Recommendations about the TRT Process

1. Now that the Project has been formally started with sediment import and placement within the Project site, the focus of the TRT will change from review of monitoring plans to review of monitoring data. However, follow-up is needed to the methodological recommendations contained in this report, and monitoring plans and methods will continue to be subject to TRT advice and review.
2. The TRT recommends that two meetings be held each year, once during spring or early summer and once during late fall or early winter. Each meeting should involve a site visit. These meetings should be scheduled at least 6 months in advance.
3. The schedule of meetings or conferences of the sub-teams of the TRT should remain flexible and responsive to the status and needs of the Project.
4. Once field data reports are made available to the TRT through SFEI, individual reviews by TRT members or sub-teams should take no longer than 4 weeks.

5. The TRT would like to use the Internet to post and access data reports, interim and final reviews, minutes of meetings, TRT schedules and assignments, and other TRT information.

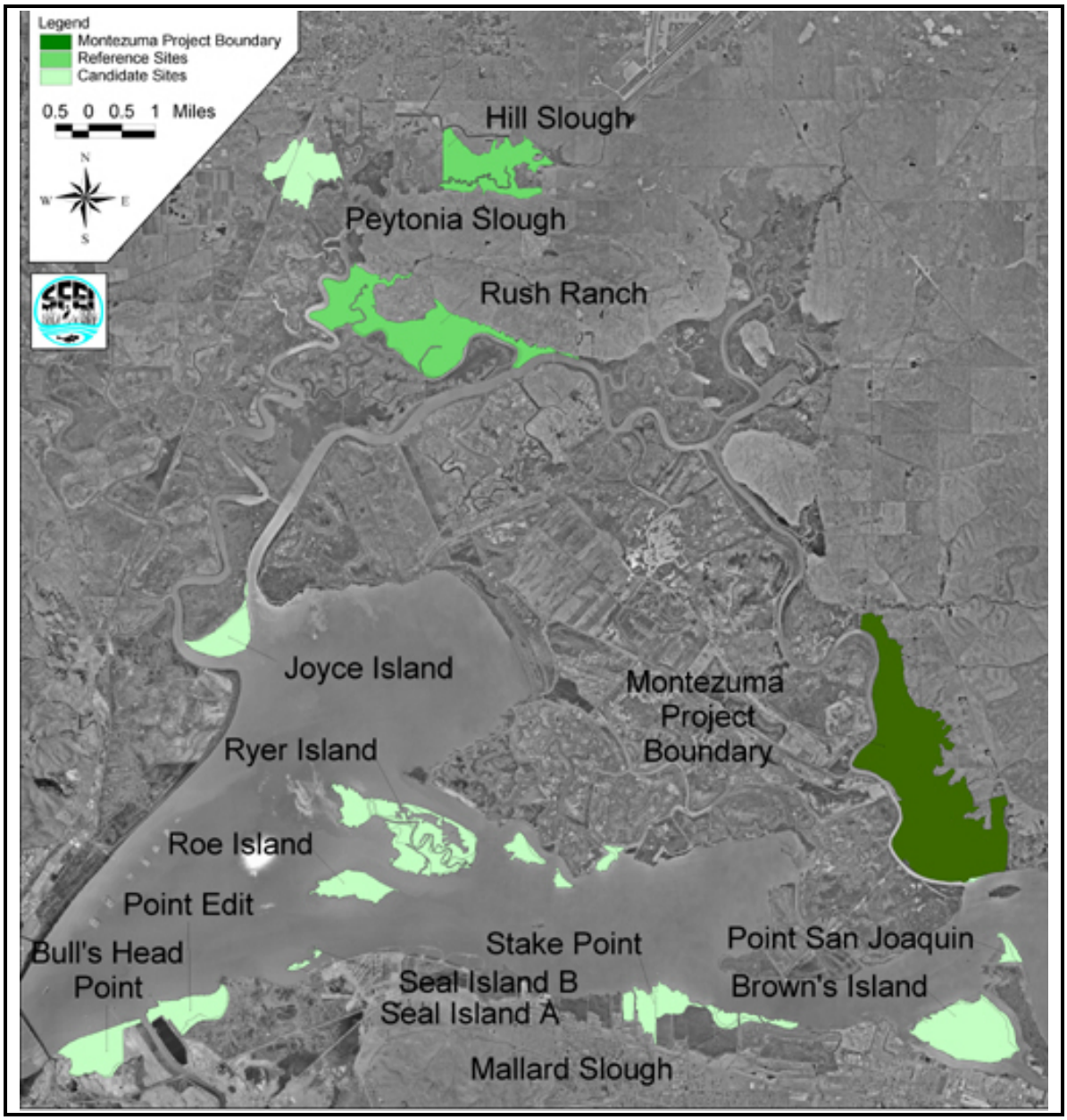
Priority Recommendations about Monitoring Program Design

1. The TRT renews its commitment to optimizing the efficiency of the monitoring program by focusing on the most cost-effective approaches to assess Project performance.
2. The TRT recommends changes to some Project performance criteria. Recommendations have been discussed for fish support, salt marsh harvest mouse support, and bioaccumulation of contaminants of concern. Additional recommendations may be introduced in future. Changes are recommended to make fish and salt marsh harvest mouse performance criteria more reflective of typical Suisun Marsh habitat parameters. Changes to bioaccumulation criteria are recommended to focus on mercury as a chemical of concern, and to rely more heavily on analysis of contaminant concentrations in the tissue of aquatic biota, especially fish.
3. Develop an overall conceptual model. The size and complexity of the monitoring makes it difficult for the TRT to conceptually integrate how different monitoring elements relate to each other. The TRT's review of the Project monitoring results could be enhanced by developing a basic conceptual model of how the major monitoring elements (e.g., biology, contaminants, hydrology) interact spatially and temporally. It is possible that the TRT could make recommendations on ways to optimize sampling parameters and schedules and identify beneficial linkages to other sampling efforts in the region.
4. The TRT recommends that the Project develop a GIS to help visualize and integrate the sampling efforts, providing digital maps of sample sites on-site and at reference sites. The TRT recommends that a website be developed to display sampling maps as overlays on the Project site base map. Such a web site may serve as the foundation for eventually linking Project data and other information to interactive maps. At this time, however, the needs of the TRT for visualizing the sampling effort would be met with on-line access to digital overlays of the various sampling stations, plots, grids, aerial photo boundaries or flight lines, etc.
5. Formalize the selection of reference sites. Thus far, reference data for contaminants have been collected at Montezuma Slough, Hill Slough, and Rush Ranch. MWLLC has expressed in meetings and documents that these three areas are part of a larger set of candidate reference sites (Figure 3). The rationale for choosing the reference sites should be explored further by the TRT. The TRT recommends expanding the selection of reference sites to also include sites for determining a reference condition for the salt marsh harvest mouse (SMHM). This should include density studies and measures of plant community structure. The TRT considers the performance criteria for percent pickleweed for the SMHM to be unrealistic and suggests first assembling existing data (e.g., IEP) and secondly collecting new data to address any data gaps. The TRT suggests also considering Browns Island, which could be a good reference site for rails,

passerines, SMHM, and contaminants of concern, and should provide specific comments on the list of candidate reference sites.

6. Facilitate more collaboration with other monitoring efforts in the region. The TRT recognizes that the purpose of the monitoring program is to assess Project performance and provide an intelligent basis for informed decisions on implementing contingency and adaptive management measures, not to contribute to other monitoring or research efforts. However, the TRT recommends that the Project meet with the leaders of certain data collection efforts, including especially the Interagency Ecological Program, the Breach II Project and Integrated Regional Wetlands Monitoring Pilot of the Bay-Delta Authority, the Monitoring Group of the Bay Area Wetlands Restoration Program, the Regional Monitoring Program for Trace Substances, and the Vegetation Mapping Initiative of the CDFG to determine if these efforts can contribute monitoring protocols, reference data, or cost-sharing opportunities to the Project.

Figure 3. Selected and Candidate Reference Sites



Priority Recommendations about Monitoring Methods

1. The TRT made several recommendations pertaining to establishing and maintaining tidal benchmarks at the Project site. These recommendations are presented in the Hydrology section of the summarized review of the Mitigation, Monitoring, and Reporting Plan (Appendix 3 of this report).
2. The TRT recommended strengthening the monitoring of bioaccumulation by focusing on a few indicator species, both on-site and within the reference sites, and through coordination with other existing and planned monitoring efforts in the region. Pertinent, specific recommendations are provided in the Contaminants and Bioaccumulation section of the summarized review of the Mitigation, Monitoring, and Reporting Plan (Appendix 3 of this report).

Initial Discussion of High Tidal Marsh Design

Part of the TRT scope is to provide advice on restoration designs for high tidal marsh. In response, the TRT formed a High Marsh Design sub-team. The sub-team has initiated discussions on a variety of related topics. The MWLLC expects that a synthesis of these discussions will be needed in by fall 2004; high marsh restoration is scheduled to begin in 2005.

In this context, the term "high marsh" refers to restored habitat for the salt marsh harvest mouse (SMHM) in the diked pickleweed marsh in Phase I, as well as high tidal marsh habitat.

1. Concerns about the survival of the SMHM throughout the region, and about the ability of the Project to support the SMHM in the future, affect many aspects of Project design and scheduling. The TRT is concerned that the Project has adopted a saline model of habitat for the SMHM that may not be appropriate for the brackish setting of the Project. The Project is located at the edge of the geographic distribution for this species. This means that the restored brackish marsh habitat for SMHM will have different characteristics than more saline habitats and may be more variable over time. The local populations that inhabit brackish marshland may be critically important to the ability of the larger regional population to adapt or accommodate changes in salinity at any given site, and to track changes in habitat location due to estuarine transgression.

   The TRT recommends that the density of SMHM be compared to temporal and spatial changes in plant community structure in brackish regions. The result would be a revised and more realistic set of habitat goals, and a reasonable assessment of the range of acceptable reference condition to assess Project performance, relative to the SMHM. The TRT recommends that the MWLLC determine the brackish reference condition for SMHM by assembling existing data, and conducting new studies if necessary to fill data gaps, on SMHM density

and associated vegetation metrics at high-elevation brackish tidal marshes, such as Browns Island and Nurse Slough.

2. The TRT will continue to discuss the alternative approaches to establishing high tidal marsh habitat, including the creation of effective SMHM habitat at high intertidal elevations before the habitat is restored to tidal action.

Interim Enhancement Plan

The purpose of this plan is to protect and enhance existing habitat for SMHM and shorebirds in Phases II through IV prior to tidal restoration, to the extent possible using onsite water management infrastructure.

The main TRT recommendations are discussed below. Refer to Appendix 4 for more detailed TRT commentary and MWLLC responses.

1. The timing, duration, and depth of inundation (i.e., hydroperiod) of the "interim" habitats will tend to vary seasonally and from year to year, due to variations in annual rainfall, and perhaps groundwater height. In order to prevent extreme conditions for the SMHM, such as prolonged flooding or an absence of seasonal wetlands, the MWLLC may need to manage the surface water supply. In preparation for such management, the MWLLC should develop an understanding of the relationship between hydroperiod, rainfall, and water management.
2. The TRT remains concerned that the existing and proposed temporal and spatial patterns of wetting and drying of seasonal habitats in Phases II, III, and IV may promote the methylation of mercury and subsequent contamination of seasonal wetland food webs. While the TRT recognizes that the concerns about methylmercury as a contaminant have grown since the Project was planned and permitted, it also recognizes that the concerns might be justified. The TRT appreciates that the MWLLC embraces the concepts of adaptive project management, and recommends that the MWLLC implement these concepts by planning to adjust its monitoring regime to accommodate methods of methylmercury monitoring that are now being reviewed and developed by other research efforts in the region.

Future Research Considerations

The TRT recognizes the importance of segregating recommendations that can improve restoration success from research topics that could improve the efficacy of overall monitoring and restoration efforts in the Bay-Delta Area. The TRT understands that these research ideas are outside the scope of the Project. The TRT suggests that the Project could be a site for some of the recommended research.

1. Tidal Marsh Rooting Depths. While the prescribed depth of cover material seems adequate, the supporting data are not abundant. The TRT recommends that a study be conducted of the vertical distribution of live plant root biomass with distance away from tidal channels large and small in low-elevation and high-

elevation brackish tidal marsh, and of the ability of the same vegetation to bring contaminants of concern into above-ground stems, leaves, flowers, and seeds.

2. Salt Marsh Harvest Mouse Habitat. Please refer to item 1 for the Interim Enhancement Plan on page 18 of this report for recommended approach to develop a brackish model of SMHM habitat for this Project.

3. Food Web Contamination Indicator Development. The Project is happening at a time when scientific views and methods to assess contaminants and bioaccumulation are rapidly evolving. The Project could benefit greatly from a study of brackish tidal marsh food webs and indicators of bioaccumulation of contaminants of concern at high trophic levels. Such studies that are conducted along elevation gradients, or across sites of different stages of restoration or evolution, would especially benefit the Project. For example, the MWLLC should investigate how the food web studies that are currently being conducted by CalFED and IEP might benefit the Project.

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Appendix 1
Montezuma Wetlands Project
Technical Review Team (TRT) Charter
September 2002

1.0 INTRODUCTION

This Charter Agreement ("the Charter") is established in accordance with Special Condition #1 in the U.S. Army Corp of Engineer's – San Francisco District ("USACE") Permit No. 19405N, dated September 24, 2001, authorizing construction and operation of the Montezuma Wetlands Project ("the Project"). Special Condition #1, proved as Attachment A, specifies that the Project permittee, Montezuma Wetlands LLC ("MWLLC"), is to enter into a contract with a non-profit organization to coordinate and manage a technical review team ("TRT") to provide expert and objective analysis and recommendations on subjects associated with the construction, monitoring, and performance of the Project. This Charter will become part of the contract between MWLLC, and the non-profit entity selected to manage and contract with the TRT. The San Francisco Estuary Institute ("SFEI") is currently selected by MWLLC to be the non-profit entity.

1.1 Project Summary

The Project will restore approximately 1,820 acres of tidal, seasonal, and managed wetlands in an eastern portion of Suisun Marsh where the Project site has been diked and used for agriculture for more than 100 years. The approximately 2,400-acre site is located on the eastern side of Montezuma Slough near the town of Collinsville, California in Solano County. As a result of perimeter levees that isolate the site from Bay-Delta tidal waters and the historical pumping of surface water off the site for agricultural purposes, the current surface elevations have subsided about 4-6 feet below sea level. Approximately 17 million cubic yards of sediment dredged from the San Francisco Bay-Delta will be used to raise surface elevations to conditions suitable for tidal marsh to be re-established at the site. Material dredged from the Bay-Delta (cover and noncover sediment suitable for restoration purposes) will be barged to the site, off-loaded, and placed in settling cells until target elevations are reached. The Project also includes a sediment rehandling facility that will be used to dry additional incoming dredged sediments (cover sediment only) for both on-site use and for off-site reuse.

The Project will be monitored during Project construction (estimated to take 15 years) and for at least 10 years after the Project has been completed. The monitoring program is extensive and covers a wide range of physical, chemical, and biological elements including levee stability, settlement, sediment and water quality, and vegetation and special status species surveys. Much of the monitoring data will be compared to data collected from selected reference sites throughout Suisun Marsh and the Bay-Delta region; reference site monitoring will be conducted as part of this Project and/or as part of other related projects in the region. Details of the Project's monitoring program are

presented in the *Mitigation, Monitoring, and Reporting Plan,* dated June 20, 2000, which is updated as needed and in accord with the Project's local, State, and Federal permits.

Monitoring data and specific Project aspects, as requested by the USACE to MWLLC, will be evaluated by a technical review team ("the TRT") that will provide expert and objective analysis and recommendations on subjects associated with Project construction, operations, and performance.

1.2 Charter Purpose

The purpose of the Charter is to outline the working framework and provide the basic understanding between the MWLLC and the non-profit entity, SFEI, selected to administer the TRT. The Charter provides the guidelines for how the TRT will provide their expert and objective analysis and recommendations, how SFEI will manage the TRT, how each of the main entities (MWLLC, SFEI, TRT, and USACE) communicate throughout this process, and the responsibilities of each of these groups. This Charter can be changed only through the agreement of MWLLC and USACE.

1.3 Charter Outline

The elements described in this Charter are provided below in the following Sections:

Section 2.0 Technical Review Process

Section 3.0 Technical Review Team (TRT) Membership

Section 4.0 Expectations of the TRT

Section 5.0 Expectations of SFEI

Section 6.0 Expectations of MWLLC

Section 7.0 Ground Rules for Communication and Meetings

Section 8.0 Primary Contacts

2.0 THE TECHNICAL REVIEW PROCESS

The overall technical review process and flow of information between the TRT, SFEI, MWLLC and USACE is described below; the main elements of this process can be described sequentially as follows:

A. USACE will provide a statement of need to MWLLC for specific tasks to be performed by SFEI and the TRT. The tasks may be broad in scope (e.g., assess whether the monitoring results are meeting project objectives) or specific in scope (e.g., assess whether the design elevation in certain portions of the high marsh in Phase I should be lowered by 0.5 to 1.0 feet).

B. MWLLC will contract with a non-profit entity, in this case SFEI, to provide services specified in the scope of work ("the Scope") developed from the USACE statement of

need. To initiate the Contract, the first Scope may consider Condition #1 in the USACE Permit No. 19405N to be USACE's "statement of need." Clarifications of the Scope requested by SFEI shall be addressed by MWLLC who, if necessary, will contact USACE to clarify the Scope.

C. SFEI will select and subcontract with individuals for membership and participation in the TRT to implement the Scope requested by MWLLC. Some members of the TRT may be government agency personnel who may not require a subcontract with SFEI.

D. Under contract to MWLLC (or their representatives), the Project's consultants will conduct monitoring, collect data, analyze and interpret data in summary and detailed reports, develop final design plans, or provide any other deliverable required by SFEI to conduct the Scope, and deliver these products to the USACE and SFEI according to the requisite time schedules provided in the Project permit.

E. MWLLC (or their representatives) will compile, synthesize, and make copies of data and evaluations from Project monitoring and distribute that information by hard copy via regular mail, electronic mail, or via a web-based data management system to SFEI and the TRT members (as well as to agencies as required by the Project permits).

F. The TRT will provide analysis of and/or recommendations pertaining to the data and deliverables as requested in the Scope. The Scope could include matters pertaining, but not limited, to the following elements:

- quality of the monitoring data, analyses, results and conclusions;
- assessment of the monitoring results relative to project goals and requirements;
- compliance with performance standards;
- initiation of new Phases;
- determination of when a completed Phase may be breached;
- establishment of appropriate reference sites for monitoring purposes;
- optimum contingency measures to be implement if needed; and
- adaptive management changes to retrieve better monitoring information and to enhance habitat establishment and Project performance.

G. TRT members will review data and information provided by MWLLC for adequacy and provide reports of key findings and recommendations to SFEI and MWLLC. The TRT is not a decision-making body, its purpose is solely advisory.

H. SFEI will summarize the key findings and recommendations and provide a report to the USACE and MWLLC, with copies to the TRT members. MWLLC will provide copies of this summary report to other agencies as needed.

3.0 SELECTION OF TRT MEMBERS

The TRT is expected to be comprised of a variety of scientists and wetland restoration practitioners who will ultimately need to cover a wide range of expertise and subjects, including: wetland restoration science, biology, chemistry, toxicology, ecology of special

status species, plant ecology, and hydraulic and restoration engineering. Because of the overlapping areas of expertise commonly observed in science and in restoration practice, one TRT member can cover more than one area of expertise. Individuals selected to satisfy the range of expertise required are anticipated to come from a variety of sources, including local, state, and federal agencies, universities, non-governmental organizations, and the private sector.

The final selection of TRT members, including any changes made to the team throughout the course of its lifetime, will be at the sole discretion of the non-profit entity, SFEI. Although the final selection of TRT members will be made solely by SFEI, their list of designated TRT members will be submitted to MWLLC for comment prior to contracting with TRT members. SFEI shall submit the list of TRT members to the USACE for review and approval solely as to the sufficiency of the technical qualifications of each designee to cover the tasks the USACE requested the permittee (MWLLC) to evaluate.

3.1 Conflicts of Interest

No individual or immediate family member of an individual currently receiving financial compensation from MWLLC (or from their subcontractors) for performing work related to the study, monitoring, or assessment of the Project may serve on the TRT. Individuals who have worked directly for MWLLC or their contractors on the Project at some time in the past but have ceased their work for MWLLC and their contractors on the Project are not prohibited from participating on the TRT. Similarly, no individual who is receiving compensation from or is associated with any of the entities that have current litigation (or formal threats thereof) pending against the Project or any of their permits may serve on the TRT.

It is the responsibility of any potential (or selected) TRT member to make such relationships known to SFEI and the other TRT members. All TRT members will strive to avoid real or appearances of conflicts of interest to ensure that the review process is fair, objective, and unbiased.

3.2 Termination and Replacement of Membership on the TRT

Membership on the TRT is at the sole discretion of the non-profit entity, in this case SFEI. A member may resign at any time, although a 30-day notice is desirable.

A member may be removed at the sole discretion of SFEI for the following reasons (not all inclusive):

- a member has a conflict of interest as described in Section 3.1;
- a member misses three consecutive unexcused meetings;
- a member fails to meet schedule and budget as outlined in the Scope or in the subcontract that member has with SFEI;
- a member fails to comply with communication ground rules of Section 7.

4.0 EXPECTATIONS FOR THE TECHNICAL REVIEW TEAM (TRT)

A. In accordance with the Scope, TRT members are expected to review the relevant documents (provided by MWLLC) focusing on elements required by the Scope and that fall within the members' areas of expertise. The TRT is not a decision-making body; its findings are solely for advisory purposes. The tasks for a TRT member may vary as the Project progresses and there is a change of needed expertise. However, in general, the USACE is interested to know if during implementation of the Project proper QA/QC procedures are followed, if the monitoring data provide sufficient information to evaluate Project performance, and if conclusions reached by the monitoring contractors to MWLLC are scientifically valid.

B. TRT members may consult as necessary with colleagues on the MWLLC team responsible for collecting and analyzing the monitoring data or generating design plans, provided that the information remains confidential until the related report covering that information is released by SFEI. TRT members shall keep a communication log of contacts with MWLLC representatives. The consultation of TRT members directly with MWLLC contractors or subcontractors is to be primarily for obtaining clarification of technical procedures and findings and gaining additional insight to augment the expertise of the TRT.

C. TRT members need to recognize that they are part of an adaptive management process. As such, TRT participants may be asked to provide recommendations to the SFEI, MWLLC, and USACE on the phasing of the Project, potential changes to the monitoring methods or performance standards currently described in the MMRP, location of reference sites or on important project design and operating elements. In these and all other instances, the TRT members are solely providing advice to the SFEI, MWLLC, and USACE, and final decisions regarding actual implementation of corrective actions, phasing, alterations or revisions to any aspect of the MMRP will reside with the USACE and the relevant permitting agencies.

D. Subjects related to wetland policy, regulations, and other non-technical issues are not within the purview of the TRT and its members should refrain from making comments on issues outside of the relevant technical or scientific realm.

E. TRT members are expected to attend the meetings required to conduct the Scope. There will likely be at least one annual meeting of the entire group and no more than three other meetings per year.

5.0 EXPECTATIONS FOR SFEI

A. SFEI will be responsible for all administrative aspects for implementing and managing the TRT. SFEI will select and subcontract with individual members that serve on the TRT; subcontracts are not required for TRT members associated with government agencies (e.g., USEPA, RWQCB, BCDC, CDFG, USFWS, NMFS).

B. SFEI will establish a schedule of meetings for the calendar year, prepare agendas for that meeting, provide a facilitator, prepare minutes of the major elements of the meetings, and distribute the minutes within 6 weeks of the meeting date to the TRT members, MWLLC, and the USACE.

C. SFEI will prepare at least one report each year that summarizes the results of the TRT's evaluations and recommendations. SFEI will strive to achieve consensus on the advice, recommendations, and findings provided by the TRT. In SFEI's summary reports, SFEI shall indicate the majority findings of the TRT and, if necessary, include the minority view (including comments by MWLLC), where consensus was not achieved. In all delivered reports, SFEI shall certify the validity, accuracy, and quality of the analysis, conclusions, and any recommendations therein.

6.0 EXPECTATIONS FOR MWLLC AND ITS REPRESENTATIVES

A. MWLLC will prepare a Scope based on the USACE "statement of need" which will direct the efforts of SFEI and the TRT. This Scope can be changed at the request of the USACE, and any changes requested by USACE will be immediately conveyed to SFEI by MWLLC.

B. MWLLC will provide to the SFEI and TRT all necessary Project data, information, and reports required for the TRT to conduct work specified in the Scope.

C. MWLLC will be responsible for providing copies of all relevant data, information, and reports to the necessary agencies as the Project permit requires.

7.0 GROUND RULES FOR COMMUNICATION AND MEETINGS

7.1 Ground Rules for Activities Conducted Outside Regularly Scheduled Meetings

A. TRT members are free to contact any other TRT member or SFEI staff to discuss findings and analyses, or to ask administrative questions.

B. TRT members may contact the MWLLC scientists or technicians who collect or evaluate data and information that is under review for clarification or to answer technical questions (see also Section 4.0.B).

C. TRT members may work with colleagues and associates outside the TRT to complete technical reviews of the TRT. TRT members shall keep a written record of the people who are contacted by the TRT to provide outside technical input, the nature of that input requested or provided, copies of any written input provided from outside the TRT, and the dates of the contacts. (See also Section 4.0.B).

D. TRT members should not disclose to anyone outside the TRT the results of individual or collective TRT reviews until such time as the related reports of the TRT are produced

by SFEI and provided as final report to the USACE. Any unsolicited inquiries from agencies, the general public, or the press who are not contacted by a TRT member for technical input shall be referred directly to SFEI. (See also Section 4.0.B).

E. TRT members shall not talk to the press or any member of the television or radio media about matters related to the Project without express approval of SFEI and MWLLC.

F. MWLLC and their representatives may contact members of the TRT for the purposes of providing new or clarifying data, information, or responding to questions raised by a TRT member.

7.2 Ground Rules for Meetings

The following simple rules shall be followed by each of the TRT members and all meeting attendees:

1. We agree to disagree respectfully.
2. One person speaks at a time; let others finish without interruption.
3. Each person is responsible for coming to the meeting prepared and having completed tasks as agreed to in advance.
4. Encourage each other to speak freely and safeguard confidential statements.
5. Confine your discussion to the present agenda topic.
6. Issues raised within the TRT belong to its whole membership that is responsible for discussing and resolving the issue.
7. There can be no personal attacks; be hard on the issues, soft on the people.
8. Check your own assumptions.
9. Respect time limits; arrive on time; start and end on time; and come back from breaks on time.
10. Always fully comply with the purpose of the TRT as set forth in this charter.

8.0 LIST OF PRIMARY CONTACTS

Montezuma Wetlands LLC (and its Representatives)

Doug Lipton, Ph.D. Project Manager Lipton Environmental Group P.O. Box 966 Healdsburg, CA 95448	Rachel Bonnefil Project Ecologist 286 Bradford St. San Francisco, CA 94110 Roger Leventhal, P.E. Chief Engineer FarWest Restoration Engineering 538 Santa Clara Avenue Alameda, CA 94501	Jim Levine, P.E. Managing Member MWLLC 1900 Powell Street, 12th Floor Emeryville, CA 94608

SFEI	**USACE**	**USEPA**
Josh Collins, Ph.D. TRT Project Manager SFEI 7770 Pardee Lane Oakland, CA 94621	Elizabeth Dyer Regulatory Branch USACE 333 Market Street, 9th Floor San Francisco, CA 94105	Paul Jones USEPA, Region 9 75 Hawthorne Street San Francisco, CA 94105

Appendix 2
TRT Roster

Last Name	First Name	Role/Area of Expertise	Organization
Batha	Bob	Operations	SF Bay Conservation & Development Commission
Bonnefil	Rachel	Montezuma Project Ecologist	Acta Environmental
Breaux	Andree	Vegetation/wildlife	SF Bay Regional Water Quality Control Board
Christian	Beth	Contaminants	SFRWQCB, Region 2
Collins	Josh	Monitoring Design/TRT Project Manager	San Francisco Estuary Institute
Davis	Jay	Contaminants	San Francisco Estuary Institute
Didonato	Joe	Wildlife	East Bay Regional Parks District
Dyer	Elizabeth	USACE Permit Manager	US Army Corps of Engineers
Greenfield	Ben	Contaminants	San Francisco Estuary Institute
Grosso	Cristina	Data Management/TRT Project Assistant	San Francisco Estuary Institute
Herbold	Bruce	Aquatic Wildlife	US Environmental Protection Agency
Jones	Paul	Facilitator	US Environmental Protection Agency
Koufsoftas	Demetrious	Geotechnology/ Engineering	Arup
Leventhal	Roger	Montezuma Chief Engineer	FarWest Engineering
Levine	Jim	Managing Member	Montezuma Wetlands LLC
Lipton	Doug	Montezuma Project Manager	Lipton Environmental Group
Malamud-Roam	Karl	Physical Processes/Vector Control	Contra Costa Mosquito & Vector Control District
Orr	Michelle	Physical Processes/Hydrology	Philip Williams & Associates
Polson	Eric	Operations/ Engineering	Consulting Civil Engineer
Shellhammer	Howard	Terrestrial Wildlife	Independent Consultant
Thompson	Bruce	Benthic Ecology	San Francisco Estuary Institute
Yee	Donald	Contaminants	San Francisco Estuary Institute

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Appendix 3
TRT Commentary and MWLLC Responses to The Mitigation, Monitoring, and Reporting Plan (MMRP)

This summary focuses on the advice and recommendations provided by the TRT. Simple requests for information and the associated responses from the MWLLC are excluded from this summary. Unless no other commentary exists, affirmations by the TRT that the materials it has reviewed are adequate are also excluded from this summary.

The MWLLC responded to all the substantive comments from the TRT. Comments to which the MWLLC did not respond are usually minor or they pertain to matters that are slated for review after Year 1.

Since the Project did not start receiving sediment (i.e., the actual beginning of project operations) until December 2003, more than a year after the TRT was formed, the TRT focused on the adequacy of the planned monitoring methods to assess project performance relative to criteria stipulated in the Project's MMRP.

The TRT is not certain that all the criteria are optimal for measuring project performance. The TRT understands that most of the criteria in the MMRP are stipulated in the project permits (e.g., from the County, BCDC, RWQCB, and the USACE) and cannot be changed without substantive agency interaction and approval. The TRT also understood from comments by participating agencies that altering criteria before project operations and monitoring are started would be premature. Therefore, the TRT will take a harder look at criteria after monitoring data and reports are generated by the Project.

The MMRP (the Project's main monitoring and performance assessment document) is organized into major monitoring subjects. Subjects were assigned to TRT members based on their expertise. The review of the MMWRP is summarized by the major subjects.

Geology and Seismicity

TRT Commentary

Evaluate the anticipated rates of pore pressure dissipation and consider whether it is practicable to wait for pore pressure dissipation before repairs are implemented and levee construction can resume.

Inclinometers should be installed at strategic locations so that they would be representative of particular segments of the levees where the conditions are reasonably uniform. The average spacing of 5,000 feet seems too large to provide useful results.

The inclinometers should be installed at the toe of the levee or at mid-height of the slope, where the soil deformations are typically the greatest.

The measurements made with the inclinometers should be related to the physical conditions of levee construction and the rate of sediment placement. It would be useful to plot the lateral deformations as a function of the thickness of sediment placed at the crest of the levee.

In addition to inclinometers, consider installing survey stakes every 200 feet or so along the toe (or near the toe) of the levee. The stakes can be surveyed optically (using laser technology) to detect the lateral deformations. The results of the measurements can be used to identify unstable segments of the levee, and to control the rate of sediment placement to avoid instability.

Evaluate the feasibility of using wick drains to accelerate pore pressure dissipation.

In order to identify the formation of underwater mudwaves, it is necessary to perform multiple surveys at predetermined time intervals during levee construction.

Visual observations cannot be used to evaluate the state of shear stresses in the foundation soils in order to maintain the desired factor of safety of 1.5. However, given the scale of this project, it does not appear practicable to install sufficient instrumentation to control the rate of construction of the levees.

Consider constructing one or more prototype test fills to gain experience with the rate of placement of sediment and collect information about the lateral deformations and settlements of the levees and also to provide a check on the results of the stability evaluations.

Construct one or more well instrumented prototype test fills to provide the necessary background data and evaluation criteria to be used during construction of the levees, and perform the necessary analysis to develop guidelines for evaluating the measured settlements.

Evaluate the economic feasibility of supplemental construction activities for accelerating the consolidation of soft foundation soils.

MWLLC Response

Levee construction at the site began in Summer 2002 (road construction at the site was initiated in Fall 2001). Thus, the Project has essentially had the "test fill" suggested by the TRT. That provided an ideal opportunity to evaluate the construction and monitoring methods used. Based on that experience, certain levee construction and monitoring approaches have been modified and enhanced in ways that are in line with many of the TRT thoughts and suggestions. In particular, levee construction approaches now include: using more compacted on-site peat to create lighter-weight levee cores; using stability berms (low, wide smaller levees) or water behind the berms to provide a counterbalance in areas

containing substantial underlying peats; and extending the time to allow for each levee layer to settle and stabilize the foundation. A detailed technical response will be prepared by the project geotechnical engineer (Ed Hultgren of Hultgren-Tillis Engineers) prior to the June 2004 TRT meeting.

Hydrology

TRT Commentary

Use the same vertical control (consistent datums) for water level and ground elevation surveys.

Establish multiple benchmarks spaced throughout the site and re-survey them frequently to assure their integrity, adhering to professional standards.

Develop, evaluate, and publish local concordance between the following tidal elevation heights: standards (NAVD 88, NGVD 29, MLLW 60-78, MLLW 83-01, MHW 60-78, MHW 83-01, MHHW 83-01, MSL 83-01, MLW 83-01) and local (construction control, DWR gage, etc.).

Compare NGS, DWR, and USGS published tidal elevation heights in the Project vicinity.

Specify quality criteria/scope of work for all survey data collection, for example feet vs. meters, NAVD vs. NGVD, GPS vs. optical, accuracy/precision/closure (does accuracy of 2 cm mean 1 standard deviation?), "absolute" (vs. other NAVD benchmarks, tidal datums, etc.) vs. "relative" (internal consistency on-site) heights, reference SOPs/methods (calibration of hydraulic calculations, models, subsidence slope).

Specify quality/scope for data collection relative to water levels, for example which tidal datum, which tidal datum epoch, datum vs. means for other time periods, and boundary condition vs. shallow water means or overbank means.

Clarify the stability of the benchmarks used by the Project (e.g., substrate/distance to refusal, frequency of resurvey of benchmarks).

Coordinate with the California Department of Water Resources (DWR) on its effort to update the benchmarks in the Suisun region.

When will bathymetric monitoring data be made available for TRT review?

MWLLC Responses

The pre-construction hydrographic survey as required by the permit was conducted by Noble Consultants (March 2000) and tied to an NGS benchmark.

Although additional bathymetric surveys are not required, they we may be conducted in the future, if visual evidence of mudwaves is noted at the site during construction and sediment placement activities. Regardless, a bathymetric survey will also be performed at the end of Phase I construction activities.

Montezuma has used licensed surveys throughout the design and construction period to set and verify project benchmarks. As we prepare for site operations, we have hired Environmental Data Solutions to reoccupy and verify project benchmarks. We completed a tidal reckoning study in Spring 2004 which will be made available for review prior to the June 2004 TRT meeting.

Contaminants and Bioaccumulation

TRT Commentary

Assess the risk that the 6-month period of non-cover Sediment Cell exposure will result in either recruitment of benthos or recovery of benthos in the dredged sediment, resulting in a pathway for food web contamination

MWLLC Responses

6 months is the period of time within which cover sediment must be placed over the non-cover sediment. The time does not start until the placement of non-cover sediment in a Cell ceases. Based upon advice from the USFWS, the 6-month timeframe is reduced to 2 months during the migratory waterfowl season (October through April).

No one really knows how fast the sediment ponds might be colonized by invertebrates before tidal action is restored. A lot of the incoming sediment is dredged from depths below estuarine benthos and in-fauna (especially in channel deepening projects like the Port of Oakland's), so large portions of the sediment are not likely to contain many invertebrates. The sediment is later subjected to violent mixing and pumping that soft-bodied organisms probably may not survive. To test these assumptions, some samples of imported sediment will be examined for invertebrates. Regardless, bird monitoring in and around the sediment placement cells, with a focus on the noncover cells, will be conducted on a daily basis to assess feeding behavior that will provide an indirect sense of invertebrate availability.

TRT Commentary

In addition to monthly avian monitoring, add at least one more observation day per month should be added.

MWLLC Response

Monitoring staff are at the site daily during filling operations, and several times per week even when no sediment is delivered to the site. Monitors have been recording daily notes of bird use in all open sediment cells.

TRT Commentary

Consider that any applicable EPA screening criteria for tissue should be used as a performance criterion.

Consider that whether project samples meet screening levels for adverse effects in biota is as important as whether they are significantly higher than background concentrations.

MWLLC Response

Screening levels for biological effects can be used to help assess data, but they should be used with caution since available screening guidelines are commonly derived from gross assumptions and data that may have little relevance to the site conditions and local exposure scenarios. Additionally, the application of sediment bioaccumulation-based screening concentrations as criteria, if they are lower than existing background concentrations in Suisun Marsh, goes against the overall public-agency intent to restore wetlands within an Estuary that is known to have elevated levels of several important contaminants, notably mercury.

TRT Commentary

Since bioaccumulation is monitored annually, consider adjusting the performance criteria to "mean acceptable levels are measured for 2 consecutive years."

Consider that bioaccumulation of mercury is probably the contaminant issue of greatest concern with regard to this project.

It will be important to coordinate contaminant monitoring of this project with other major efforts in the region through the contaminant sub-team of the TRT.

Coordinated monitoring should focus on small fish (silversides), invertebrates (clams or crabs or crayfish), and possibly amphipods.

MWLLC Response

The Project has sampled resident fish and invertebrates in Suisun during our January 2004 work at reference sites. These samples were analyzed for all chemicals of concern, including the bioaccumulative chemicals like Hg, Se, and chlorinated organics. Additional attention was given to mercury; in addition to total mercury, methyl mercury was analyzed in invertebrates as suggested by the TRT. Plant tissues are still being sampled because such sampling is included in the MMRP, and because it can inform the Project about the potential of different marsh plants to concentrate contaminants. The Project should focus on what is likely to yield the most information most efficiently. We have expressed a willingness to collaborate and communicate with other monitoring efforts in the region.

TRT Commentary

Biomarker work is a lower priority than tissue chemistry. Fish bioassays with site water would be more valuable than biomarker studies.

Reference sites must be carefully chosen to yield information comparable to the environmental setting of the Project. It is not clear where the reference sites are, what data are being collected at the sites, and where within the sites the data are being collected.

As important as whether project samples are significantly higher than background concentrations is whether they meet screening levels for adverse effects in biota. For example, you may have results higher than background, but still well below documented effects levels, which may warrant further examination but not necessarily immediate action. Conversely, you may have results not significantly higher than background (either by low statistical power, or background concentrations near or above effects levels) but still above effects levels. The latter case should receive more attention than the former, as negative impacts on biota are more likely.

MWLLC Responses

The Project has already identified reference sites, and has conducted significant sediment chemistry work there over the past two years. This includes Rush Ranch, Montezuma Slough, and Hill Slough. Reports on that work have been forwarded to the TRT.

There are plenty of sediments in Suisun that contain mercury and other contaminants of concern in concentrations below the related performance criteria for the Project, and that are within the range of sediment condition that is acceptable for placement in the Project site. While the concentrations of mercury may not be as "low" in these sediments as one may ideally like, it is important to remember that the Project monitoring tasks ands performance criteria are designed to compare the Project to ambient Suisun Marsh conditions as well as available criteria. It is not necessarily the role of the Project to evaluate whether or not any low-level of concentration of contaminants of concern pose a risk. That's a much larger policy issue for the responsible agencies. The monitoring data can help inform the community about whether or not the policies are protective of the environment, but it's not the purpose of the monitoring program or the TRT to change policies. Please advise if you know of a "yardstick" that is better than what's proposed.

TRT Commentary

With regard to mercury, the concentrations of methylmercury in the food web matter most. This is the best "yardstick" or indicator. Total mercury in sediment or water is not a reliable or precise predictor of methylmercury in the food web. Methylmercury in clams and in silversides are excellent predictors of food web mercury. The impact of the project on mercury should be gauged by comparing mercury in selected species of invertebrates and fish at the project site to the same species from reference locations.

Consider deployment of bagged bivalves, depending on salinity. Bivalves would be valuable for tracking trace organics. Resident species would work fine for this, and might be valuable for methylmercury.

MWLLC Responses

The Project's reference site work has actively pursued the collection of invertebrates and fish in order to assess mercury (along with dozens of other COCs) in the food web. The recent reference site sampling effort (in January 2004) was successful in collecting enough tissue for analyses. As suggested by the TRT, methyl mercury (in addition to total mercury) will be measured in only invertebrate tissue since that tissue, unlike fish tissue, is known to contain a large portion of non-methylmercury.

As noted above, the monitoring program and the WDRs for the Project require deployment of bivalves, but there is plenty of time to adjust this approach, since the tides will not be restored to any part of the site for at least 2-4 years.

TRT Commentary

Consider sampling the mercury indicators more frequently than annually to get a handle on the mercury response and its causes. Annual sampling may yield a very skewed picture of impact. Sampling larger fish (silversides) in the vicinity of the Project (perhaps just downstream) may also be valuable.

MWLLC Responses

Over the next couple of years, while background data are collected, the Project plans to do bioaccumulative evaluations at least twice per year.

Sampling large fish that are not resident at the Project site probably will not tell us much about the Project's potential or actual direct impacts, but further discussion of this approach may be warranted. We will endeavor to collect resident fish in Suisun marsh to reflect background conditions in its Sloughs and tidal channels.

TRT Commentary

The Project should remain flexible for bioaccumulation monitoring because related science is advancing quickly.

MWLLC Response

The Project appreciates that there is lots to learn and to coordinate, and looks forward to incorporating methods that enhance our ability to assess bioaccumulation effectively and efficiently. However, while mercury is the "hot" contaminant of concern for now, the others cannot be discounted.

TRT Commentary

The contingency measures state that "if analyses of higher trophic level species indicates an adverse impact …", but the MMRP makes no specific mention of

higher trophic species to be sampled. The project needs to develop a more specific plan for monitoring higher trophic levels.

MWLLC Response

The future potential bioaccumulation testing/evaluation of higher trophic organisms will be informed by the initial efforts of the monitoring program (that are now focusing on invertebrates and resident fish), and guided by input from the TRT, and ultimately will be subject to agency review. The implementation of contingency measures for the project is formalized by our many project permits, and each permitting agency has the power to stop our project from proceeding at many steps, including: proceeding to a new phase, opening a phase to the tides, receiving sediment, or simply continuing to operate.

Biological Resources

TRT Commentary

Consider monitoring benthic community composition and succession. These metrics can provide information about project system responses to chemical changes in the water and/or sediment, including changes in the salinity regime. Such changes may be localized, and unless documented, may confound comparisons between conditions at the Project and at the reference sites.

To monitor benthos as fish and bird food resources, consider comparisons of specific prey items in sediments and in bird and fish guts, rather than simple measures of benthos biomass. This is a potentially powerful approach commonly used in stream work but not much applied, yet, in wetland restoration projects.

Need a measure of how well the sediment community is becoming established. There are no other such Performance Measures in Table 5 that address sediment habitat assessments. Vernal pool invertebrates are being sampled, and it seems that the same effort should be made in the largest part of the main restoration project that includes subtidal sediments in channels.

MWLLC Responses

To the extent possible, the monitoring program for the Project will count and identify the invertebrates, as recommended, except that identification to genus, not species, seems sufficient in some instances.

It would be great if benthos could be used to effectively evaluate restoration success. The project will be spending large sums of money annually to get at the "success" question, so if benthos could inform the answers better than other monitoring efforts, then benthos should be a major focus. However, as you indicate, benthos are not the most commonly used biological assessment tool. Rather benthos are a more common topic for research, not for the assessment of wetland restoration projects, and not as a performance criterion for any wetland

restoration project in this region. Please let us know where and how benthos have been used successfully to assess wetland restoration efforts like this Project.

While enhancing the intertidal marsh benthos sampling efforts can add value, those efforts should not necessarily be at the same level as the efforts to sample invertebrates in vernal pools. Unlike any Suisun Marsh benthos, some vernal pool invertebrates are a major ESA species requiring substantive protocol-level surveys, mitigation, preservation, and creation at the Project site.

The suggestion to sample prey items in fish and bird guts seems like a fine "research" project to be conducted outside of this project.

TRT Commentary

Exotic invasive species should be ranked according to the severity of their threat.

MWLLC Responses

While a formal ranking of weed species in order of importance has not been developed, in practice the Project would prioritize control efforts as follows:

* *Top priority: Phragmites, Arundo, Lepidium*
* *Second priority: Centaurea, Cotula*
* *Third priority: Polypogon, Lolium*

Please provide any specific recommendations you have on prioritizing weed control efforts.

TRT Commentary

Include poison hemlock (*Conium maculatum*) in the list of exotic invasive species.

Organize all the exotic species in Appendix D as one list with habitat types as separate column, and indicate responsibilities for weed control

MWLLC Response

Conium maculatum will be included in the weed monitoring and control efforts. Appendix D already discusses each habitat type (including weed species that each habitat is vulnerable to) in separate sections. Your suggestion of compiling a master list for those species and who will be responsible for implementing weed monitoring and control will be considered further.

TRT Commentary

Does corrective action begin when *all* exotic species reach 5% with a maximum allowable cover of 20%, or is this rule just for *L. latifolium*? If so, what are the rules for other exotics?

MWLLC Responses

In response to comments received during preparation of the project's EIR/S and MMRP, L. latifolium was addressed as the weed with the greatest potential to impact formation of native marsh vegetation on the Project site. Therefore, the weed control requirements (including the percent cover criteria) apply specifically to L. latifolium.

Weed control efforts will follow an adaptive management approach that allows flexibility, depending on the results of past Project performance. It is anticipated that a "take action" threshold of 5% cover (combined total of all priority weed species) will most likely be applied to other highly invasive and undesirable plants (e.g., Phragmites, Arundo) in vulnerable habitats such as the high- and low-marsh plain, and intertidal channel banks. Some weeds are of primary concern in particularly sensitive habitats onsite (such as Medusa head or Lolium in the created vernal pools), and in those habitats an action level of 5% cover (combined total of priority weed species) would also be appropriate. In less vulnerable areas (for example the upland buffer zone) and with less invasive weeds (for example Polypogon) weed control efforts would be implemented as resources allow.

TRT Commentary

Provide reports on exotic species inspection and control prior to construction in each phase of the project.

MWLLC Response

Weed monitoring began in 2000 and is described in the Biological Surveys Reports for 2000/2001 and 2002. Construction in Phase I was not initiated until September 2001.

TRT Commentary

Categories for bare ground and dead vegetation should also be included on the data sheets.

MWLLC Response

The data sheets will be modified as per your suggestion.

TRT Commentary

In addition to pickleweed, consider planting alkali heath and spearscale (but not salt grass) in the upper tidal portions of the Project site.

MWLLC Response

Alkali heath and spearscale will be incorporated in to the re-vegetation plans for the diked marsh. As more detailed re-vegetation plans are developed for the diked

marsh, more input from the TRT will be useful. Natural recruitment of appropriate vegetation will preclude the need for planting in the tidal marsh.

TRT Commentary

Attaining the target of 4.0 mice per 100 TN in the diked marsh may be difficult unless the habitat is managed for higher salinities than are characteristic for the expected reference tidal marshes. Consider targeting population levels more typical for the high areas of tidal Suisun Marsh; contact Patty Quickert of DWR on SMHM trapping in Suisun Marsh to determine habitat design characteristics.

MWLLC Response

Patty Quickert was contacted in 2002 and a copy of her draft report was obtained. The draft did not contain details such as percent cover of various plant species at the trapping sites, although it provided very general descriptions of the trapping sites (e.g., "halophytes"). We followed up with her again in fall 2003 to see if she had completed the final report and/or could provide more detailed information on plant species composition and percent cover at the various trapping sites, so that we can correlate these with her trapping results. She informed us that no final report had been prepared and that no details on vegetation characteristics at trap sites are available at this time. Addition of salts to the diked marsh as well as the tidal high marsh is one approach recommended by the Corps and USFWS for encouraging halophyte dominance.

TRT Commentary

What are the methods of predator monitoring and how will predator control be implemented?

MWLLC Response

Signs of predation will be observed during monitoring of SMHM populations in unfilled Phases. Predation will also be monitored in each Phase after tidal restoration (not likely to occur before 2007 in Phase I). Predator control methods will vary depending on the predator species observed. If a predation problem is observed during other monitoring, we will confer with the project's consulting biologists, the TRT, and the relevant agencies to determine if controls are needed to protect onsite populations, and what control measures are appropriate.

TRT Commentary

For the SMHM, it is important to prevent extensive growth of brackish water species such as cattails and various bulrushes as well as peppergrass in the high marsh. How will these species be controlled?

MWLLC Response

Emergent vegetation such as cattails and bulrushes, and exotic species such as Lepidium latifolium that are undesirable in SMHM habitat will be monitored and controlled as described in the MMRP. This is an important issue that needs to be considered when the subteam assesses our high marsh elevation; i.e., making the high marsh too low could enhance the potential for non-desirable vegetation to predominate.

TRT Commentary

Typical rates of successful relocations of wildlife species, especially birds, are low, so the details of any relocations of burrowing owls (i.e. sustained in on-site aviaries, placed near other nesting territories, age of birds) will need to be evaluated before relocations are attempted.

MWLLC Response

Active relocation of burrowing owls was described in the EIR/S, and therefore also in the MMRP (Solano County required that all EIR/S measures be addressed in the MMRP). However, on the recommendation of consulting biologists and with the concurrence of CDFG, only passive relocation methods, (i.e., construction of mitigation nests and exclusion of owls from impact areas prior to construction) have been implemented to date. We agree that the details of any future relocation efforts need to be reviewed by the TRT, as well as by CDFG and the permitting agencies.

TRT Commentary

All captured burrowing owls should be banded to aid in the monitoring efforts and evaluation of the relocation's success.

MWLLC Response

There are no plans at this time to trap or relocate burrowing owls. The details of any active relocation would need to be further developed prior to implementation of that option. As described in the MMRP, any active relocation of owls would need approval from CDFG.

TRT Commentary

Is the performance target a total numbers of turtles, ratios for adults and juveniles, or some evidence of breeding? Some evidence of breeding should be quantified or at least addressed if not observed.

MWLLC Response

Monitoring will include observation of the presence/absence and numbers of juveniles to determine that breeding and recruitment is taking place. The most recent biological survey reports (dated February 19, 2002 and July 25, 2003)

contain information on the sizes of turtles and presence/absence of juveniles observed in pre-construction surveys conducted from 2000 to 2002.

TRT Commentary

In addition to the proposed approach to fish sampling, consider incorporation of the Project into IEP (i.e. UC Davis) Suisun Marsh sampling program.

MWLLC Response

The intent of the Project was to use a combination of both approaches.

TRT Commentary

The Project will need to obtain concurrence from CDFG as well as NMFS to remove the fish screen objective before construction of the outfall pipe is complete.

MWLLC Response

We discussed the fish screen requirement with CDFG, USFWS, and the Corps of Engineers during preparation of the MMRP and the Project permits. CDFG personnel were fine with removal of the fish screen requirement, although they didn't write a specific approval letter. The Corps's formal comments to FWS on its draft Biological Opinion noted that the fish screen requirement didn't make sense for outfall pipes and emphasized that no intakes are proposed at the site. In response, FWS revised that condition in the final Biological Opinion to say that if any intakes are proposed in the future, they must be screened.

TRT Commentary

Consider adjusting habitat targets to better correspond to reference habitats in Suisun Marsh for the desired species. Point bars, as designed, may not be appropriate.

MWLLC Responses

As discussed after the June 24, 2003 meeting of the TRT, the Project is open to the idea of removing the point bars from the restoration design. They are currently planned for construction after completion of the sediment placement cells, so there is time to consider this option. Of course, removal of point bars from the design would require concurrence from FWS, CDFG, NMFS, Army Corps of Engineers, and BCDC. A written recommendation from the TRT, outlining the reasons why point bars might be inappropriate, would help in obtaining their concurrence. After Year 1, the TRT might further consider such design modifications.

Re-calibrating the habitat targets would be a substantial revision for Phase I that is already designed and under construction. Fish monitoring will not begin until after the tides are returned to Phase I, which is not likely to occur before 2007.

For Phase II design, it would be helpful if the TRT (or IEP, UCD) could provide recommended habitat parameters or reference sites that would represent desirable habitat. Please note that the tidal channels were oversized to allow natural processes (i.e., sedimentation) to shape the final form of the channels. Regarding the use of reference sites, the MMRP says we'll use reference sites OR criteria approved by the agencies OR we'll use IEP data as reference data to evaluate fish use of the restored site. Which of these options are used and in what proportion they are used will depend on project resources, availability of reference data, and agency (and TRT) recommendations.

TRT Commentary

Consider using some form of Fyke net attached to permanent poles to compare movements of fish off the marsh-plain and among channels of different sizes.

For consistency with other fish monitoring efforts in the region, consider beach seining on the major channels in the project.

MWLLC Response

We will evaluate including anchor points in the restoration design, and would welcome any specific recommendations you have as to how many poles and what general locations in the marsh would be optimal. Again, such considerations pertain to the site after it is restored to tidal action. There is time between now and then for the TRT to consider such matters in detail.

TRT Commentary

The effort to monitor striped bass does not seem justified. The effort must be clarified before monitoring plans are developed.

MWLLC Response

This measure is in our Biological Opinion from NMFS, with whom we discussed how nebulous and hard to implement this measure seems to be. We could try again to clarify or refocus this monitoring effort. A formal TRT recommendation that this measure is unlikely to yield meaningful data would be helpful.

TRT Commentary

All reports and summaries of SMHM monitoring surveys should include a table that identifies location, number of trap nights, numbers of species trapped and the capture efficiency for SMHM, in addition to the data already presented.

Capture efficiency (CE) is referred to in various reports but not calculated in the trapping reports. It is important to be able to assess CEs from various years for comparison purposes.

Valuable data might be missed by not characterizing the trap lines and grids as they are run each year. It is important to know the average plant species composition, average percent cover by each species and bare ground, and the average height of the tallest vegetation, and average height of pickleweed last two measures may be the same) for each trapping line or grid.

It is prudent to collect as much data as possible about the vegetation at other trapping sites throughout the Suisun Bay. The project should assemble the trap and vegetation data from comparable efforts and sites.

MWLLC Response

Project biologists have recorded basic vegetation information at the trap sites. MWLLC has asked biologists to collect more detailed vegetation data as the TRT recommends; these data were collected during SMHM monitoring in summer 2003 and will be presented in the next Biological Survey Report in spring 2004. CEs were calculated for past trapping efforts and compared with past data (see Section 2.5 and Appendix E of the 2000/2001 biology report, and Section 2.4 and Appendix D of the 2002 biology report).

Operations Monitoring

TRT Commentary

The TRT had no major concerns about the operations monitoring for cultural values, roads, dust, noise, etc.

Appendix 4
Interim Habitat Enhancement Plan for Unfilled Phases
Summary Commentary and Responses

This summary focuses on the advice and recommendations provided by the TRT. Simple requests for information and the associated responses from the MWLLC are excluded from this summary. Unless no other commentary exists, affirmations by the TRT that the materials it has reviewed are adequate are also excluded from this summary.

The MWLLC did not respond to every comment from the TRT. Comments to which the MWLLC did not respond are usually minor or they pertain to matters that are slated for review after Year 1.

TRT Commentary

It is not clear whether the monitoring will cover just appropriate habitat (i.e., bare ground and vegetation) or actual presence/absence of shorebirds, waterfowl, and SMHM. The locations, number of transects, etc. described on page 11 seem appropriate, especially if quantitative data will be collected regarding bird and SMHM use of these habitats. If so, then the methods need to include exactly what quantitative data will be collected. If no data collection for birds or SMHM use is intended, then it should be described just how the success or failure of the proposed methods will be assessed.

MWLLC Response

Monitoring efforts specifically for interim enhancement will focus on habitat and will not include quantitative measurements of bird or SMHM use of these habitats (see Section 7.0 of the Interim Enhancement Plan). Annual SMHM population monitoring will of course continue as described in MMRP Table 5 lines 65-66 and Appendix F). Success or failure of the proposed methods will be assessed as described in Section 5.0 of the Interim Enhancement Plan, i.e., through comparison of habitat conditions with the objectives presented in that section.

TRT Commentary

Monitoring results from other projects defines vernal pool tadpole shrimp habitat as being ponded for 60 days, whereas this Project uses the time span of 30 days. Is there a standard definition or is the 30-day concept Project-specific? This is a large difference in the estimated number of days required for ponding to assure tadpole shrimp survival.

MWLLC Response

As discussed at the June 24, 2003 meeting, 30 days of ponding is not a performance criterion for the Project's vernal pools. Instead, the potential to hold water for at least 30 days was used by the surveying biologists as one of the

criteria for identifying potential listed branchiopod habitat during pre-construction surveys. Using 60 days of ponding as a criterion for defining potential habitat would be less environmentally conservative, and would inappropriately restrict the extent of preconstruction surveys.

TRT Commentary

There are a few areas where fairy or tadpole shrimp cannot be avoided. Consider using soil from those pools to inoculate the created pools.

MWLLC Response

Since the vernal pools within the area of the Project that will be restored are dominated by weeds, and since the mitigation area is dominated by natives and vernal pool-affiliated plants, we do not propose to inoculate the created pools with soils from the impact area pools. It is anticipated that the created pools will be colonized with native flora and fauna from nearby high-quality natural vernal pools via wind, overland flow, and birds. However, soils from the impact area pools will be scraped and stockpiled in case future inoculation of created pools with those soils is requested by the USFWS or other agencies.

TRT Commentary

This plan states that *Lepidium latifolium* should be managed at less than 10% and 20% cover (both thresholds are stated). The MMRP states 20%. There seems to be contradiction that should be corrected.

MWLLC Response

The Project permit stipulates that the maximum allowable percent cover of Lepidium latifolium in SMHM habitat is 20%. The Interim Habitat Enhancement Plan is designed to maximize SMHM habitat, and therefore sets a goal of no more than 10% relative cover L. latifolium. In other words, the Project is required to meet the 20% threshold, but will strive to achieve the 10% threshold.

TRT Commentary

The schedule for interim habitat enhancement seems to have been written almost a year ago. Were the expected targets met or were there unanticipated delays that have altered the schedule provided in the report?

MWLLC Response

As discussed at the June 24, 2003 meeting, delays in sediment delivery and contracting have altered the site construction schedule. Interim habitat enhancement cannot start until the necessary water management infrastructure is in place. Infrastructure was completed in winter 2003.

TRT Commentary

Several sections of this plan mention the lack of vegetation negatively affecting shorebird nesting habitat. Caution should be taken during the course of vegetation enhancement to retain broad areas of unvegetated habitat for nesting shorebirds. In particular, killdeer, American avocets, and black-necked stilt will nest in unvegetated areas, especially near water, in higher densities than in areas covered in vegetation. Densely covered areas will likely support more waterfowl nests and exclude nesting shorebirds.

MWLLC Response

Page 9 of the plan states: "Vegetative cover should be increased in some areas to provide a greater variety of habitat types." Page 11 of the plan states that "Heavy grazing pressure has reduced the variety of habitat types available and decreased the value of the seasonal wetlands as breeding habitat for some species of waterfowl and shorebirds." Bare or sparely vegetated areas dominate the Project site and will continue to provide sufficient habitat of that kind. The plan proposes to limit grazing in some areas to increase the variety of habitats available.

TRT Commentary

The extent of warm, shallow, standing, freshwater in dense vegetation should be carefully controlled during the months of August, September, and October to minimize mosquito production.

MWLLC Response

The places where such conditions might occur are in the existing drainage ditches and in the Phase I borrow areas. We are in communication with Solano County Mosquito Abatement District and will continue to work with them to implement appropriate mosquito control measures as needed. The makeup water pond is less conducive to mosquito production because it experiences significant mixing due to wind wave action, and water circulation can be actively controlled by water management (aerators are also planned for the makeup pond), such that the breeding cycles of mosquitoes can be disrupted if necessary. The diked pickleweed marsh can also be actively managed to minimize mosquito production. Ultimately, the restored marsh will be much less conducive to mosquito production because it will have regular tidal exchange.

TRT Commentary

The turnaround times on lab analyses and storage volumes on the makeup ponds must be sufficient to ensure that results on the makeup water are available before it is released to the habitat, and that no additional decant or other water is introduced between sample collections. Perhaps a large number of smaller ponds

(e.g. subdivide the existing area of ponding into 3 or 4 separate ponds) would help ensure that tested and approved makeup water is not contaminated with decant water of unknown quality, and to ensure that suitable water can be continuously available for enhancement and other project needs.

Pumping is scheduled to optimize salinity and water supply for pickleweed growth. Since these areas are not currently inundated in the dry season, one possible unintended consequence of the dry-season flooding could be mercury methylation. It commonly occurs in newly inundated, shallow water habitats, and although the inundation and some mercury methylation might occur naturally during the wet season, the proposed enhancement actions might expose wildlife to mercury in quantities and at times in their life cycles when exposure does not normally occur. This and other possible impacts should be considered and evaluated.

MWLLC Responses

Subdividing the pond and isolating tested volumes of water until lab results are received is not feasible. Water levels in the makeup water pond must be maintained to ensure sufficient water supply to the Liberty offloader. And transfer of decant water back to the makeup water pond must be maintained during operations to avoid flooding the site. However, water quality in the sediment cells and in the makeup water pond is monitored frequently (daily for conventional parameters, weekly to every two weeks for inorganics, and monthly for organics), and as described in the MMRP, contingency measures will be implemented if concentrations are more than one-half the discharge limits.

While methylmercury production might be enhanced in pickleweed areas upon the addition of recycled water during the dry season (similar to what may occur naturally during the rainy season), we do not believe that these areas would support additional wildlife use or potential exposure routes. Consequently, the concern about enhanced methylmercury production in these areas seems only hypothetical and not a significant concern; please advise how potential exposure routes to methylmercury are increased under this scenario. We could monitor bird use in these areas, but historically we have not observed significant use in pickleweed areas.

Appendix 5
Operations and End of Year Construction Reports
Summary Commentary and Responses

This summary focuses on the advice and recommendations provided by the TRT. Simple requests for information and the associated responses from the MWLLC are excluded from this summary. Unless no other commentary exists, affirmations by the TRT that the materials it has reviewed are adequate are also excluded from this summary.

The MWLLC did not respond to every comment from the TRT. Comments to which the MWLLC did not respond are usually minor or they pertain to matters that are slated for review after Year 1.

This review pertains to the 2002 End of Construction Report, and the May through July 2003 Construction Progress Report. The review depended on site visits as well as communication with the MWLLC.

TRT Commentary

Given the persistent winds and extensive areas of sparse vegetation at the Project site, there is a potential for very dusty conditions during the dry season. Neighboring residences are downwind.

MWLLC Response

While strong winds were not uncommon, and at times extremely gusty, no significant construction impacts were encountered and no complaints were received.

TRT Commentary

The facilities and the entire operations area were inspected by the TRT. In general everything appeared well-maintained during all site visits. Materials, setup, and workmanship for the Off-Loader Facility were found to be good to excellent. The facility should provide good service throughout this long duration of the Project.

The most recent report indicated previous stability problems with levees on Sediment Cells 2 and 3 and Phase 1, and solutions were proposed. Please indicate whether or not the solutions are working.

MWLLC Response

Sediment Cells 1 and 2 have been completed, and Cell 3 has been started. Additional geotechnical analyses and evaluations have been conducted to enhance levee construction methods; see section 13.1 in the 2003 Updated Operations Plan, dated October 13, 2003.

TRT Commentary

The MWLLC reported that some settling of the existing outboard levee was noted in a 100-foot area along the Re-handling Facility area, and that a geotechnical repair was planned for about September 2003. Were the geotechnical repairs made and have they solved the problem?

MWLLC Response

Yes, the necessary geotechnical repairs were made in October 2003 along a 100-foot length of perimeter levee adjacent to McDougal cut, and no additional settling has been observed in that area. This will be reported in the Year-end construction report due in Spring 2004.

Appendix 6
Contaminants QAPP and Background Groundwater Characterization Summary Commentary and Responses

This summary focuses on the advice and recommendations provided by the TRT. Simple requests for information and the associated responses from the MWLLC are excluded from this summary. Unless no other commentary exists, affirmations by the TRT that the materials it has reviewed are adequate are also excluded from this summary.

TRT Commentary

Section 3.0 of the QAPP currently identifies personnel and responsibilities, and it is possible to piece together a hierarchy from that, but an organizational chart would help.

MWLLC Response

Since the text appears to suffice for understanding roles and responsibilities and this is not a technical issue, we would await a request from the agencies for such an effort.

TRT Commentary

The QAPP does not mention data backup or data security, or present an overall strategy for keeping track of and resolving discrepancies or corruptions between dataset versions. Explain how parties will be notified and provided with updates to the QAPP.

MWLLC Response

The Project will incorporate a description of data security procedures in the next update of the QAPP. However, the QAPP will not likely be revised until after our monitoring reports are submitted to the agencies and they determine an updated QAPP is necessary. We have recently contracted with SFEI to manage the Project's monitoring data, and anticipate that data security procedures will be similar to those that SFEI already employs in managing the RMP data.

TRT Commentary

The MMRP mentions field surveys of vegetative coverage, waterfowl usage, etc, that should be addressed in the QAPP, by indicating the type of information that will be taken, training, verification, validation, etc. If this QAPP is to be comprehensive, then it must address all monitoring activities.

MWLLC Response

The QAPP is only required for contaminant monitoring. Protocols, quality assurance and Standard Operating Procedures for other project elements (e.g., biology and engineering) are included in the MMRP and/or detailed in the individual monitoring reports.

TRT Commentary

The sediment monitoring section of the QAPP (Section 5.1.1) has a formula for calculating sample size based on a known population mean and standard deviation to achieve a 95% confidence level that contaminant concentrations levels are acceptable for chemicals of concern. But the formula can yield sample sizes less than 1 (i.e., $n<1$), which doesn't really make sense, as one need at least $n=2$ to even get an estimate of the variance of the population.

MWLLC Response

The QAPP states in Section 5.1.1 that, regardless of what the statistical calculation produces (e.g. if n is <1, or 2, 3, or whatever) that "at a minimum" samples will be taken from the incoming barges (at least 1 in 20) and from each sediment cell being filled (at least monthly). The "Sediment Confirmation Sampling Plan" (Lipton Environmental Group, July 31, 2003) also clarifies the minimum number of samples that will be collected.

TRT Commentary

The water monitoring section of the QAPP (Section 5.2.1) describes monitoring in the receiving waters (Sacramento River/Suisun), stating that "samples will be collected 100 ft downcurrent of the discharge point. Wet season samples are collected upriver (east) of the discharge point on the ebb tide. Dry season samples are collected west (downriver) of the discharge point on flood tide." Check to make sure this isn't backwards. If ebb tide flows west, then wet season samples as described would be capturing water before the discharge and dry season samples west of the discharge point on flood tide would capture waters before they pass the discharge point as well.

MWLLC Response

The description pertains to background conditions for the receiving waters. The Project intends to sample background conditions in conjunction with the actual downstream sample in the receiving waters. This adjustment will be reflected in the 2004 water quality monitoring reports, and in the next QAPP update as required by the agencies.

TRT Commentary

Section 5.3 of the QAPP mentions 10 monitoring wells (LF-1 to 4, and 3 shallow and 3 deep in Phase I) and refers to Figure 3. None of those wells are labeled on

the figure. It is therefore not clear if the 6 well clusters mentioned in 5.3.1 (MWP1-1A/B to 3A/B) are the same.

MWLLC Response

It was an oversight not to include those monitoring wells in Figure 3. However, all those wells are shown in Figure 2 in the last groundwater monitoring report; "Summary of Results of Background Groundwater Characterization" (LFR, August 11, 2003).

TRT Commentary

It's not totally clear from Section 10.2 of the QAPP whether the data will be stored and reported as congeners, Aroclors, or both. There is no mention of the acceptance criteria for the internal standards and response factors. However, reference to the EPA method requirements may suffice.

MWLLC Response

PCBs will be analyzed and reported as Aroclors. However, we plan to also analyze and report a fraction of the samples (e.g., about 10-20%) as congeners, especially in areas that might reveal concentrations approaching or exceeding PCB criteria. Future monitoring reports will reflect this, and the fraction of PCB analyses reported as congeners will be increased as deemed necessary by the TRT and the agencies. As noted, the QAPP references the EPA methods 8080, 8081, and 8082, and since these analyses will be conducted by State-certified labs (not the Project's lab), the issue of compliance with internal standards and response factors is the domain of the analytical laboratory.

TRT Commentary

Section 16 of the QAPP includes evaluation of QA/QC data, but no mention is made of its availability or planned presentation with the rest of the data. There are different approaches - summary tables, narrative reports noting primarily failures to meet DQOs, buried in warning flags with data, etc. Although blank contamination flagging is mentioned in Section 16, there is nothing provided about other DQO problems.

MWLLC Response

Future monitoring reports (quarterly once sediment arrives at the site) will present the data, interpretations, and QA/QC problems. In fact, the Project has contracted with SFEI's data management group to validate Project data submitted electronically by the State-certified labs. Therefore, we will be working directly with SFEI to present the data most effectively in quarterly reports.

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Appendix 7
Biology Report, Fall 2001-2002
Summary Commentary and Responses

This summary focuses on the advice and recommendations provided by the TRT. Simple requests for information and the associated responses from the MWLLC are excluded from this summary. Unless no other commentary exists, affirmations by the TRT that the materials it has reviewed are adequate are also excluded from this summary.

TRT Commentary

All of the work was performed according to accepted protocols. The TRT found the survey methods adequate. This finding is also reflected in the TRT summary commentary and recommendations about biological resources.

MWLLC Response

No response was provided or needed.

Appendix 8
Sediment Confirmation Sampling Plan
Summary Commentary and Responses

This summary focuses on the advice and recommendations provided by the TRT. Simple requests for information and the associated responses from the MWLLC are excluded from this summary. Unless no other commentary exists, affirmations by the TRT that the materials it has reviewed are adequate are also excluded from this summary.

TRT Commentary

From the sampling plan (MMRP), it appears that the actual minimum number of samples will be 5, and sample size would be calculated primarily to determine the number of additional analyses of sediments with contaminants more variable and/or nearer the statistical mean. This is appropriate. It has also been stated that the calculation sheets would be removed from the document. This is acceptable, but then the SW-846 methodology should be cited. It also might be noted in the document that the sample size calculation is only relevant for samples sizes greater than or equal to 2.

MWLLC Response

The sampling plan contains all the details of the statistics, and also references the SW-846 methodology.

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Appendix 9
Summary of Dioxins/Furans and Radiation in the Suisun Marsh and Port of Oakland Sediments
Summary Commentary and Responses

This summary focuses on the advice and recommendations provided by the TRT. Simple requests for information and the associated responses from the MWLLC are excluded from this summary. Unless no other commentary exists, affirmations by the TRT that the materials it has reviewed are adequate are also excluded from this summary.

TRT Commentary

The measured amounts of these materials seem greater than the findings of the USEPA's Environmental Monitoring and Assessment Program (EMAP) sediment sampling in San Francisco the Bay. However, this is not unexpected, given the spatial variability in contamination. The TRT had no major concerns with the report.

MWLLC Response

No response was provided or needed.

Appendix 10
Results of Water Level Monitoring of Domestic Wells to Assess Potential Impacts from Groundwater Extraction
Summary Commentary and Responses

TRT Commentary

Pending review comments.

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Appendix 11
High Marsh Design Elevation
Summary Commentary and Responses

This summary focuses on the advice and recommendations provided by the TRT. Simple requests for information and the associated responses from the MWLLC are excluded from this summary. Unless no other commentary exists, affirmations by the TRT that the materials it has reviewed are adequate are also excluded from this summary.

TRT Commentary

There will be problems applying "standard dogma" or "saline model" for SMHM habitat to the Suisun Bay. The Suisun Bay marshes tend to be less saline than those in the rest of the Bay and tend to have less uniform stands of pickleweed and more diverse mixtures of halophytes. It might be inappropriate and possibly difficult to create the more "standard" or S.F. and San Pablo conditions within the confines of the Montezuma Project. The diked area could be controlled to produce more pickleweed-dominated habitat, i.e. mimic the general model, and would insure that mouse habitat could be produced so that the project could proceed to the next step.

MWLLC Response

The performance criteria for the SMHM have been developed in accord with strict directions and conditions from CDFG and USFWS, including the USFWS Biological Opinion. As indicated by statements of TRT members who are also permitting agency staff, the Project has been directed not to change critical performance criteria until after Project operations start (sediment was received December 23, 2003) and initial monitoring results are available for review by the TRT and the agencies. In the meantime, we are characterizing vegetation at the trap sites as recommended by the TRT, which should provide valuable information about SMHM habitat associations at the site.

TRT Commentary

Ignoring at this time the need to convert all elevations from NGVD 29 to NAVD 88, suitable mouse habitat can probably be established in the diked/managed marsh at an elevation at 1.9 feet NGVD, but raising the elevation by at least one foot might improve opportunity for later restoration to tidal action. Establishing the diked pickleweed marsh at 1.9 NGVD could result in a lack of drainage of the marsh. If that turns out to be true then there will be less halophytic vegetation in the diked marsh as most of them cannot withstand prolonged inundation. There should be a careful prognosis of the hydroperiod of the proposed diked marshlands.

MWLLC Response

We are receptive to the idea of placing the diked pickleweed marsh at the high marsh elevation of 2.9 feet NGVD, provided that the higher elevation would not compromise flexibility in water management and would enhance chances for SMHM establishment. In the long-term, constructing the diked marsh at 2.9' would allow possible conversion of the diked marsh to tidal marsh at some point in the future, whereas a diked marsh at 1.9' would likely have to remain diked in perpetuity. We recommend that the possibility of raising the diked marsh elevation from 1.9' to 2.9 feet continue to be evaluated by the High Marsh Design sub-team.

TRT Commentary

The elevation of the high marsh in several, nearby reference marshes should be used to confirm or adjust the 2.9-foot NGVD target. Nearby marshes with conditions desired for the high marsh cells should be surveyed as to elevation to help fine-tune the elevation you select for the tidal marsh cells. All design elevations should be referenced to local MHHW.

MWLLC Response

As discussed at the June 24, 2003 meeting of the TRT, the High Marsh Design sub-team will review and discuss fine-tuning of the high marsh target elevations, with the goal of reaching a decision in 2004. Surveying reference tidal marshes in Suisun will be implemented to inform the TRT decision. The Project won't be building the high marsh cells (or even the diked SMHM cells) until late 2004 at the earliest, most likely not until 2005. The deadline for finalizing the commentary on design elevations should be summer 2004.

TRT Commentary

There is concern that the intervals between phases will be very long because of the time it might take to reach various performance criteria for plants and animals. It may take many years for the high marsh to mature to meet criteria for vegetation, especially that will support SMHM, if there is a considerable "undershoot" of the fill elevation in relation to the final design elevation. That may prevent the opening of future areas for sediment placement.

For the tidal high marsh, the MWLLC might consider establishing SMHM habitat at the highest appropriate elevation under diked conditions to assure stability of the sediments, persistence of the target elevations, abundant pickleweed, and actual habitation by SMHM, before the tides are restored. The diked high marsh might be developed the same way, but either not restored to the tides, or restored at a later date, if and when adequate support of the SMHM in restored tidal marsh has been assured. This approach will also minimize the risk that slow natural development of high tidal marsh habitat in Phase 1 delays other Project Phases.

MWLLC Response

This is a potentially a large modification of the planned approach to high tidal marsh restoration. However, the potential benefits of raising the high marsh elevation are significant as well, including increased capacity for imported sediment, and more rapid achievement of the high marsh performance criteria. The MWLLC suggests that the High Marsh Design sub-team, and perhaps the full TRT, consider these modifications more fully.

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Appendix 12
TRT Record of Communications, 2002-2004

Date	TRT Member(s)	Contact Description	Action
11/15/02	Contaminants Team: Jay Davis, Ben Greenfield, Don Yee	Kick-off meeting held at SFEI from 10:30a to 12 noon.	Separate meeting held since Contaminants Team could not attend 11/19/02 meeting.
11/19/02	All TRT Members	Kick-off meeting held in Bird's Landing from 9a to 3p.	N/A
12/12/02	Howard Shellhammer	Submitted written comments on Table 5 and the SMHM Design Elevations (Special Project #3).	N/A
12/20/02	All TRT Members	Distributed Minutes from November TRT meetings.	N/A
1/31/03	Howard Shellhammer	SFEI assisted Howard with reviewing digital photos for SMHM habitat.	N/A
5/15/03	Bob Batha, Eric Polson	Mailed *2002 End of Construction Progress Report* for review	N/A
5/15/03	Joe Didonato, Karl Malamud-Roam, Howard Shellhammer	Mailed *Interim Enhancement Plan for Unfilled Phases Report* for review	N/A
5/16/03	All TRT Members	Emailed regarding review of Table 5 Performance Criteria and Table 1 TRT Assignments	N/A
5/27/03	Bob Batha, Andree Breaux, Bruce Herbold, Michelle Orr, Eric Polson, Donald Yee	Mailed *Interim Enhancement Plan for Unfilled Phases Report* for review	N/A
5/30/03	Andree Breaux	Andree questioned why is there no Mitigation Measure associated with the Performance Criteria specified in Table 5, line	Rachel's email response (6/2/03): There's no mitigation measure there because there was not one in the EIR/S. FYI, the County originally wanted

Date	TRT Member(s)	Contact Description	Action
		item 58.	the MMRP to include only the mitigation measures in the EIR/S, but there were several major items (like this one) for which the EIR/S did not specify mitigation measures, so we added them.
6/2/03	SMHM Subteam: Bob Batha, Karl Malamud-Roam, Michelle Orr, Howard Shellhammer	Mailed Special Project #3 subteam Restoration Plan, Section 3.1 and Howard Shellhammer's comments to review	N/A
6/3/03	Beth Christian	Mailed background materials, Table 5, *and Interim Enhancement Plan for Unfilled Phases Report*	N/A
6/9/03	Michelle Orr	Mailed a copy of the *Restoration Plan*	N/A
6/10/03	Joe Didonato	Submitted written comments on Table 5 and the Interim Enhancement Plan.	Doug Lipton responded on 6/13/03.
6/11/03	SMHM Subteam: Bob Batha, Karl Malamud-Roam, Michelle Orr, Howard Shellhammer	Submitted written comments regarding the SMHM Design Elevations.	Doug Lipton responded on 6/13/03, clarifying the difference between high SMHM marsh and managed SMHM designs.
6/13/03	Howard Shellhammer	Howard and Doug discussed via email setting up a telephone conversation to discuss the SMHM Sub Team's comments, including surveying elevations of reference high marsh in Suisun.	Howard and Doug discussed the SMHM Design Elevations Sub Team's (Special Project #3) comments on 6/16/03. Topics discussed included obtaining good survey info (elevation and plant) from high marshes in Suisun and how CDFG code 4700 affects Montezuma's future phases II-IV.

Date	TRT Member(s)	Contact Description	Action
6/17/03	Andree Breaux	Submitted written comments on the Interim Enhancement Plan.	Doug Lipton responded on 6/17/03 and requested comments should be submitted in memo format and not on agency letterhead. Andree resubmitted her comments on 6/17/03 in memo format. This administrative item was added to the 6/24/03 meeting agenda.
6/17/03	Bruce Thompson	Submitted written comments on Table 5.	Doug Lipton responded on 6/18/03. He suggested maintaining a list of research suggestions that are outside of the scope of the Project's requirements.
6/18/03	Michelle Orr	Submitted written comments on Table 5. She noted her review of the Interim Enhancement Plan and Special Project 3 will be submitted at a later date.	N/A
6/20/03	Donald Yee	Submitted written comments on Table 5 and the Interim Enhancement Plan from the Contaminants Team.	Doug Lipton responded on 10/8/03.
6/24/03	All TRT Members	Annual meeting held at SFEI from 10:00a to 2:30p.	TRT Members were asked to submit any pending comments by June 30th.
6/25/03	Bruce Herbold	Submitted written comments on Table 5 & the Fishery Monitoring Plan.	N/A
7/8/03	Howard Shellhammer	Submitted written comments from the SMHM Design Elevation Subteam.	N/A
7/8/03	All TRT Members	Distributed Minutes from Annual Meeting held on 6/24/03.	N/A
7/15/03	Deme Koutsoftas	Mailed background materials, Table 5, *Restoration Plan*, Table	N/A

Date	TRT Member(s)	Contact Description	Action
		1, and TRT Contact List (did not send *Interim Habitat Enhancement Plan*).	
7/15/03	Donald Yee and Beth Christian	Mailed *Quality Assurance Project Plan* for review (Doug sent Beth her copy).	N/A
7/15/03	Andree Breaux	Submitted written comments on Table 5.	Josh Collins responded on 7/17/03.
7/15/03	Andree Breaux	Inquired about discussing project with consultants doing similar field work and analysis (e.g., Tom Kucera is monitoring salt marsh harvest mice) and requested a color-coded map of the existing vegetation described as "Plant Patch Types".	Doug Lipton responded on 7/18/03. He said he was comfortable with Andree checking with the Project's subcontractors but to refer to the Charter Agreement for more details. He explained that the request for a color-coded vegetation map would have to wait until Rachel's return in early August.
7/28/03	Andree Breaux	Suggested consolidating maps in Biological Reports into one or a few maps containing all sampling points	Josh responded on 7/28/03 that the TRT needed a consolidated map containing what is measured where and when. Doug Lipton responded on 7/28/03 asking to hold off on this task until Rachel's return on August 4th.
8/5/03	Deme Koutsoftas	Submitted written comments on Table 5.	Doug Lipton responded 8/11/03. He clarified the project's levee construction and the reporting of modifications to the levee design.
8/6/03	Howard Shellhammer and Joe Didonato	Mailed a copy of *Report on Biological Surveys, Fall 2001-2002* for review.	
8/8/03	Andree Breaux and Howard Shellhammer	Rachel Bonnefil found discrepancies in the 6/24/03 TRT Meeting Minutes and suggested	Josh suggested that once these comments have been reviewed by Andree and Howard, the Meeting Minutes should be

Date	TRT Member(s)	Contact Description	Action
		alternate text for Andree Breaux's discussion on the *Interim Habitat Enhancement Plan* and Howard Shellhammer's request for historical trapping information.	revised accordingly.
8/12/03	Deme Koutsoftas	Submitted responses to Doug's comments on 8/11/03.	Doug suggested on 8/12/03 that Roger Leventhal should be included on all correspondence with TRT engineers and that new members should be briefed on the project basics before beginning review of reports.
8/13/02	Contaminants Subteam: Beth Christian, Jay Davis, Ben Greenfield, Don Yee	Mailed a copy of *Sediment Confirmation Sampling Plan* for review.	N/A
8/18/03	Howard Shellhammer	Submitted clarifying comments regarding his request for historical trapping information and suggested collecting plant data in a systematic way that is comparable to other Bay Area studies and providing plant results with the trap records.	June 24th Meeting Minutes were revised accordingly.
8/19/03	Jay Davis	Submitted written comments on Table 5.	Doug responded on 8/21/03. He requested suggestions regarding sampling of invertebrates.
8/21/03	Jay Davis	Submitted additional comments on Table 5 addressing Doug's comments of 8/21/03. His responses primarily focused on mercury being the biggest contaminant of concern.	Doug responded on 8/25/03. He encouraged the detailed discussion on the project's monitoring design.

Date	TRT Member(s)	Contact Description	Action
8/28/03	Joe Didonato	Submitted written comments on the *Report on Biological Surveys (2001-2002).*	Doug responded on 8/29/03.
9/9/03	Jay Davis	Suggested inviting Darell Slotton, an expert in mercury bioaccumulation monitoring, to the Contaminants Subteam meeting and as a TRT member.	Doug responded on 9/9/03. He commented that it was too late to include Darell at the 9/11/03 meeting, since all new TRT participants need to be brought fully up to speed and agree to the terms of the TRT charter, conditions, and responsibilities (not to mention budget constraints) before their participation. He suggested seeking his (or others outside the TRT) advice in a professional way on broad items, such as best monitoring approaches for Hg.
9/9/03	Jay Davis	In response to Doug's comments, Jay pointed to his email that suggested adding Darell to the TRT (8/21/03) and inquired what the desired outcome is on agenda item 4 (best approach to assess bioaccumulative COCs) (e.g., a detailed recommendation or a preliminary discussion).	Doug responded 9/9/03. Doug commented that due to lack of time before the 9/11/03 meeting, it is not realistic to ask Darell to participate, although he thinks he could be a great addition to the TRT. In regards to Jay's questions about agenda item 4, Doug expected the goal of the meeting was to confirm understandings/discussions exchanged through email and expand on the conversation in terms of any details people can bring forth in the time allotted.
9/11/03	Contaminants Subteam: Beth Christian, Jay Davis, Ben Greenfield, Don Yee	Meeting of Contaminants Subteam and Project Representatives to discuss QAPP and Sediment Confirmation Sampling Plan.	N/A
9/12/03	Jay Davis, Beth Christian, and	Doug emailed the Contaminants Subteam	N/A

Date	TRT Member(s)	Contact Description	Action
	Don Yee	contact information for the different members of the Project Team.	
9/17/03	Don Yee	Don spoke with Anita Balaraman regarding the SW-846 methodology recommended by EPA to determine the sample size for the *Sediment Confirmation Sampling Plan.* Anita emailed Don a copy of Chapter 9 of the SW-846 methodology dealing with sample size determination.	Don agreed that the approach used for determining sample sizes was satisfactory for the objectives of the conformational sampling plan. He suggested citing the SW-846 methodology in the Plan and noting the calculation is only relevant for n=2 or higher. Anita confirmed that the conformational sampling plan contains all the details of the statistics and references the SW-846 methodology.
10/07/03	Josh Collins, Jay Davis, Bruce Thompson, Bruce Herbold, Don Yee, and Ben Greenfield	Doug requested recommendations for better ensuring the success of collecting enough invert and fish tissue for chemistry analyses. He noted that if there was not enough tissue, the priorities will be: Hg, including MeHg in inverts, Se, and then PCBs.	*See 10/31/03, 11/03/03, and 11/4/03 entries.*
10/28/02	Robert Batha and Eric Polson	Mailed a copy of the "May through July 2003 Construction Progress Report" for review.	N/A
10/31/03	Jay Davis	Responded to reference sampling methods email of 10/07/03. Suggested speaking with K. Hieb at CDFG and P. Moyle at UCD, but had no suggestions for experts in invert sampling. Also suggested after	Doug responded on 11/03/03. He stated the TRT will be informed as to the result of collection efforts so they can provide input on priority analyses. However, he emphasized that these types of project-oriented decisions are resolved within 4-24 hours, so

Date	TRT Member(s)	Contact Description	Action
		collections to update the TRT on what has been caught so they can assist in determining the analyses to perform.	it is more likely that TRT input would impact future sampling and analysis.
10/31/03	N/A	The web page for the Montezuma Wetlands Project was posted on the Wetland Tracker. Three password-protected file listings are available for the TRT, USACE, and Project Team.	N/A
11/03/03	Ben Greenfield	Followed-up on Jay Davis' email of 10/31/03 to Doug. Suggested contacting Isa Woo at USGS in Vallejo in regards to a pilot study of restoration marshes adjacent to San Pablo Bay in which beach seining was used as the sampling method.	Doug responded on 11/03/03.
11/3/03	Joe Didonato	Requested that the dates of future TRT meetings be posted as far in advance as possible.	Future meeting dates were added as an agenda item for the 11/20/03 Annual Meeting and will be posted to the TRT web page once approved.
11/4/03	Jay Davis	Follow-up response to Doug's 10/07/03 request for input on tissue collection. Jay stressed the importance of collecting the same species from different locations in order to do spatial comparisons and suggested making decisions on what to analyze after samples have been collected since there is uncertainty involved in biota	N/A

Date	TRT Member(s)	Contact Description	Action
		sampling.	
11/4/03	All TRT Members, Beth Dyer, Jim Levine, Jim Campi, Eric Tattersall, Cecilia Brown, Beth Campbell, Carl Wilcox, Dave Plummer, Brian Ross	Distributed Contaminants Subteam Meeting Minutes	N/A
11/07/03	Howard Shellhammer	Provided a summary of his overall positions in reference to the project.	N/A
11/11/03	Bruce Thompson	Suggested posting a list/schedule of reports to be reviewed by the TRT	
11/18/03	Don Yee	Submitted written comments on the *QAPP*.	N/A
11/20/03	All TRT Members	TRT Annual Meeting held in Bird's Landing	N/A
11/21/03	Andree Breaux	Approved revisions to June TRT meeting minutes as proposed by Rachel on 8/8/03.	Meeting Minutes revised accordingly.
11/24/03	Andree Breaux	Doug provided written responses to Andree's 6/16/03 comments on the *Interim Enhancement Plan*.	N/A
11/24/03	Andree Breaux	Doug provided written responses to Andree's 7/15/03 comments to Table 5.	N/A
11/24/03	Andree Breaux	Doug provided written responses to Andree's 7/15/03 general comments on the TRT.	N/A
11/24/03	Joe DiDonato	Doug provided written responses to Joe's 6/9/03 comments on Table 5.	N/A
11/24/03	Howard Shellhammer	Doug provided written responses to Howard's	N/A

Date	TRT Member(s)	Contact Description	Action
		12/12/03 comments on Table 5.	
11/24/03	Bruce Herbold	Doug provided written responses to Bruce's 6/25/03 comments on Table 5.	N/A
11/24/03	Howard Shellhammer	Doug provided written responses to Howard's 6/25/03 comments on the High Marsh Design Project.	N/A
11/25/03	Howard Shellhammer	Approved revisions to June TRT meeting minutes as proposed by Rachel on 8/8/03.	Meeting Minutes revised accordingly.
12/12/03	Don Yee	Doug provided written responses to Don's 11/18/03 comments on the QAPP.	N/A
12/18/03	Michelle Orr	Doug provided written responses to Michelle's 6/18/03 comments of Table 5.	N/A
12/23/03	Jay Davis	Doug provided additional written responses to Jay's 11/04/03 email regarding methods for tissue collection.	Jay responded on 12/24/03. He expressed concern that the samples one ends up with depends greatly on what you go out looking for. He noted that it takes a concerted effort to get samples that can be statistically compared across locations.
1/14/04	All TRT Members	Distributed a Draft Annual Report for prioritization of TRT comments.	N/A
1/15/04	Howard Shellhammer	Noted all of his comments in the Annual Report are of equal importance. He suggested a meeting/conference call with the agencies with the hope of sensitizing them to the potential variability	Doug Lipton responded to summary on 1/20/04. He agreed with the suggestion to meet with the agencies and recommended March-April. Doug asked Josh to include time for the meeting in the new scope of work. Josh

Date	TRT Member(s)	Contact Description	Action
		of vegetation outcomes and their effects on SMHM population sizes.	responded on 1/20/04 and agreed with the importance of timing for the agency meeting. He agreed to incorporate the meeting in the scope of work.
1/27/04	Beth Christian	Requested to no longer be an official TRT member.	N/A
1/27/04	Deme Koutsoftas	Noted that he had no changes or additions to his comments. He requested official responses and additional data from Ed Hultgren.	Doug Lipton responded on 1/27/04. He has contacted Ed Hultgren and will send the information requested within the next week or two.
1/27/04	Ben Greenfield	Provided a summary of the Contaminant Team concerns and prioritized comments.	N/A
1/28/04	Andree Breaux	Noted one outstanding question: should *Cotula* be ranked as the same level of threat as *Centaurea* and more of a threat to wetlands than *Lolium* or *Polypogon*? Andree provided a list of ranked SFB exotic species.	N/A

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Appendix 13
TRT Meeting Minutes

November 15, 2003: First Contaminants Sub-team Meeting Minutes

MONTEZUMA WETLANDS PROJECT
TECHNICAL REVIEW TEAM (TRT)

"Kickoff Meeting" – SFEI Contaminant Team
MINUTES

November 15, 2002
San Francisco Estuary Institute
10:30am – 12 noon

Facilitator: Paul Jones
Attendees: Rachel Bonnefil, Josh Collins, Jay Davis, Ben Greenfield, Cristina Grosso, Doug Lipton, and Donald Yee

Document distributed: Restoration Plan

Introductions and Purpose of Meeting – After brief introductions by members, Paul Jones stated the purpose of the meeting was to introduce the Contaminants Team to the project and TRT process, since they will be unable to attend the November 19th meeting due to another meeting commitment. Due to the limited amount of time, Josh Collins will work with the Contaminant Team at another time to allocate their budgeted hours and explain the document review schedule.

TRT Overview – Doug Lipton briefly described the goals and objectives of the TRT and the general scope of the Montezuma Project TRT Charter Agreement.

Montezuma Project Overview – Doug Lipton provided an overview on the restoration goals, the project's four phases and use of cover and noncover (foundation) sediments, the monitoring design in regards to containing contaminants, and water management for the project. He emphasized that this project was the first of its type to include scientific review of wetlands monitoring and thus, the need for making the project efficient and cost-effective for future studies.

The Monitoring Program ("the MMRP") – Doug Lipton briefly explained the topics addressed in the Mitigation, Monitoring, and Reporting Plan (MMRP) and the established performance criteria and contingency measures. Highlights from this session included:

- Jay Davis suggested also tracking the food web in order to determine how contaminants (e.g., Hg and PCBs) accumulate and emphasized that short-term tests are not an accurate indication of long-term accumulation. It is also the most

cost effective way to monitor contaminants, since it addresses the core of the question.

- Since methylmercury will not be measured, the need for assessing bioaccumulation was emphasized by the Contaminant Team.

TRT Contaminant Review Tasks for Coming Year – Doug Lipton and Rachel Bonnefil discussed the documents/data that will need to be reviewed by the Contaminant Team in 2003.

Documents/Data Results for Review:

- Confirmation Sampling Plan – The agencies are requiring a review of the confirmation sampling, and statistical analysis must meet the 95% confidence limit compared to project criteria. Doug will be finalizing this document the beginning of 2003.
- QAPP for Overall Chemical Monitoring – Rachel is currently writing this document, which is also intended to be a document that can be taken into the field to assist with the project's implementation; it will be finalized the beginning of 2003.
- Background Sampling in Reference Marshes – Doug explained that background sampling (started in 2002) was focused on sediment chemistry, but will extend into animal tissue chemistry in 2003. Jay Davis emphasized the urgency in implementing ambient sampling as soon as possible, in order to be able to better interpret the data results in future years.
- Data Results after Sediment Placement – Doug discussed that the first shipment of sediment is expected to come from the Port of Oakland in May 2003. Water and sediment chemistry will be analyzed.

Format of Data Reviews:

- The format for TRT written review of data results was briefly discussed. Reviews should be short and concise (one page report or email) and address the quality of the data, the quality of the methods and their ability to meet the performance criteria, assessment in regards to the identified performance criteria, a brief statement on the meaning of the data, and if applicable, how the data compare to other data results and any additional research ideas.

Additional Research Efforts:

- Members had suggestions for additional monitoring efforts. However, due to the long permit approval process and existing permit conditions, Doug Lipton explained that significant changes to the monitoring design are unlikely to occur in the project's first year of operation. However, the Project Representatives encourage suggestions for improving the monitoring design and for additional external research efforts.

Map of Sampling Sites:

- ***(Action Item)*** Josh Collins requested a map of the sampling sites, including the reference sites, to allow TRT members to review the spatial distribution of sampling efforts.

November 19, 2003: First TRT Meeting Minutes

MONTEZUMA WETLANDS PROJECT
TECHNICAL REVIEW TEAM (TRT)

"Kickoff Meeting" MINUTES

November 19, 2002
Birds Landing Hunting Reserve Clubhouse
9am – 3pm

Facilitator: Paul Jones
Attendees: Bob Batha, Rachel Bonnefil, Andree Breaux, Josh Collins, Joe Didonato, Cristina Grosso, Bruce Herbold, Roger Leventhal, Doug Lipton, Karl Malamud-Roam, Michelle Orr, Eric Polson, Howard Shellhammer, and Bruce Thompson

Members unable to attend: Dick Arnold, Peter Baye, Jay Davis, Ben Greenfield, Larry Stromberg, John Takekawa, and Donald Yee

Documents distributed: (1) Restoration Plan,
(2) updated TRT roster list, and
(3) Mitigation, Monitoring, and Reporting Plan (MMRP), excluding the appendices (relevant portions of the appendices were distributed according to members' areas of expertise).

Field trip to Montezuma Project Site – The meeting began with a brief overview of the project and a visit to the DWR Day Use Area, Phase I cell construction, and the rehandling facility and make-up water pond adjacent to the wharf.

Introductions and Purpose of Meeting – After brief introductions by members, Paul Jones stated the purpose of the meeting was to introduce the project to TRT members, summarize membership objectives and the role of the TRT, and review the communication ground rules. The risk to TRT members being asked to participate in any litigation was discussed; the overall opinion of the group was that there was not a high risk to individual members.

TRT Overview – Josh Collins provided an overview of the TRT's goals, objectives, scope of work, membership, and communication procedures. Highlights from this session included:

Goals, Objectives, Scope of Work:

- The main goal of the TRT is to serve as an advisory body to the project and agencies, and to provide scientific review on the overall project's monitoring effort.

- The first annual report will be published in June 2003. The TRT will meet as a group to discuss the best way to synthesize the data from the individual reports into an Executive Summary. In addition, all of the unabridged individual team member comments will be included in the report.
- The handling of non-consensus opinions was discussed. Members agreed that an official policy (beyond what is already in the Charter) was not needed at this time and that this issue would be dealt with as needed.
- In *Table 3: Expected Average Hours of Work For a TRT Member During FY 2002 and FY 2003*, two meetings (Kick-off and Post-construction) are scheduled for November 2002. However, both of these meetings were combined in the November 19th meeting.
- Josh Collins suggested an evaluation component needs to also be included in the TRT process, however, the specifics will be determined at a later date.

Membership:

- Agency members contribute not only their scientific expertise, but also serve an informal liaison role with decision-making bodies.
- ***(Action Item)*** If an area of expertise is identified as missing from the TRT, additional members can be added. The TRT will assist in the selection of future members. Adding a soil scientist and geotechnical engineer was suggested.

Communication Procedures:

- All TRT members should be included on emails regarding technical matters since it could generate other discussions.
- Due to the confidentiality of data results before being released in an official report, TRT members should not talk with the press without approval from the Project Representatives.
- Due to the long-term nature of this project and the infrequency of TRT meetings, it was suggested that an official website would be very useful for the project to include such items as an email list of TRT members, performance criteria for the mitigation measures, TRT assignment schedules, and data results.
- ***(Action Item)*** On page 6 of the TRT Charter Agreement, ground rule 7.0C, which pertains to discussing the project with colleagues or associates outside of the TRT, was addressed. It was agreed that the Charter Agreement would be revised to allow informal discussions with colleagues.

Montezuma Wetlands Project - Doug Lipton distributed copies of the MMRP and explained *Table 5: Mitigation, Monitoring, and Reporting Requirements*, which outlines the performance criteria and contingency measures for each mitigation measure. Highlights from this session included:

Distribution of Data for Review:

- If TRT members need any historical data or background information, Doug Lipton or Rachel Bonnefil should be contacted. Direct communication among Doug, Rachel, and the TRT members is encouraged, however, SFEI should also be included in any communications regarding modifications.
- ***(Action Item)*** To facilitate the review process, when data results are distributed to TRT members, a cover letter should also be included describing the relevant performance criteria, the appropriate line items from Table 5, and clarification on

any aspects of the criteria that may have changed during the permit process. Once monitoring results are generated, a standard method for transferring data to the members will also need to be established.

Documentation:

- ***(Action Item)*** In order to inform the agencies and future TRT members, the group strongly emphasized documenting any clarifications (explanation of certain aspects of the performance criteria, monitoring design, etc.) and modifications (changes requiring agency approval) made to the project design and resolutions of questions/issues. However, before a change is implemented, the entire TRT must be notified to avoid any unexpected consequences. The annual report will also serve as an official record of changes, including why and when changes were implemented.
- ***(Action Item)*** Each member should keep a record of all communications, since they may be asked to submit this information to SFEI each year.

TRT Tasks for Coming Year - Individual assignments for TRT members were discussed. Highlights from this session included:

Table 1: Montezuma Wetland Project TRT Assignments 2002-03:

- ***(Action Item)*** The group agreed that it would be very useful if Table 1 could also include the line items from Table 5 of the MMRP and relevant secondary data sets that should be sent in addition to the data results for each monitoring activity/task.
- ***(Action Item)*** The group reviewed Table 1 and made adjustments to member assignments and monitoring activities/tasks. The physical monitoring subteam (K. Malamud-Roam, M. Orr, and E. Polson) will meet separately and determine the appropriate assignments for monitoring activities listed on page 1 of the table. A revised Table 1 will be distributed to TRT members for additional comments.
- ***(Action Item)*** After reviewing Table 1, members should contact Josh Collins with their estimated time requirements so contracts can be developed for those members who require one. For logistical reasons, leads will need to be identified for subteams; additional time requirements for participating as a lead should be included in these time estimates. Doug Lipton stressed that the overall budget for SFEI to administer this TRT cannot be exceeded at this time.
- ***(Action Item)*** While the establishing of subteams (e.g., physical monitoring) will evolve over time, a mechanism should be developed at a later date.

Review of Performance Criteria:

- ***(Action Item)*** Members were asked to review Table 5 of the MMRP for their area of expertise and make recommendations for clarifications, modifications, and/or additions to the performance criteria. Doug Lipton will compile the recommendations, respond to comments and provide background rationale for criteria, and distribute results to all TRT members. To focus this review process, it was suggested to avoid recommending additional goals and to review the criteria as realistic, unrealistic, irrelevant to meeting the objective, or missing a critical piece of information. Any persisting recommendations will be included in the annual report.

Format of Data Reviews:

- The format for the written review of data results was discussed. Reviews should be short and concise (one page report or email) and address the quality of the data, the quality of the methods and their ability to meet the performance criteria, assessment in regards to the identified performance criteria, a brief statement on the meaning of the data, and if applicable, how the data compare to other data results and any additional research ideas.

Additional Research Efforts:

- Many members had suggestions for additional monitoring efforts. However, due to the long permit approval process and existing permit conditions, Doug Lipton explained that significant changes to the monitoring design are unlikely to occur in the project's first year of operation. However, the Project Representatives encourage suggestions for improving the monitoring design and for additional external research efforts. Research efforts undertaken at the Montezuma site will need to be approved by Jim Levine.
- Since the Montezuma Wetlands Project provides a rare research opportunity, the role of the TRT as a research gatekeeper, with members generating and/or reviewing research ideas, was briefly discussed. It was decided to address this issue on a case-by-case basis and that the protocols for research opportunities should be reviewed for similar groups (e.g., National Estuarine Research Reserve and Romberg Tiburon Center).

June 24, 2003: Mid-Year TRT Meeting Minutes

Revised
Montezuma Technical Review Team Meeting
June 24, 2003 – 10am to 2:30pm
San Francisco Estuary Institute

Facilitator:	Paul Jones
Attendees:	Bob Batha, Rachel Bonnefil, Andree Breaux, Beth Christian, Josh Collins, Jay Davis, Ben Greenfield, Cristina Grosso, Bruce Herbold, Karl Malamud-Roam, Eric Polson, and Howard Shellhammer
MWLLC Representatives:	Rachel Bonnefil, Roger Leventhal, and Doug Lipton
Members Not Attending:	Joe Didonato, Michelle Orr, Bruce Thompson, and Donald Yee
Outside Visitors:	There were no visitors attending the meeting.

Documents Distributed at Meeting:

- Table 1: TRT Assignments, 2002-2003 (rev. May 2003)
- Montezuma Wetlands Project Contact List, 2003
- Draft TRT Comment: Table 5
- Draft TRT Comment: Interim Habitat Enhancement Plan for Unfilled Phases

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Agenda Item: Introductions and New TRT Members

Josh introduced Beth Christian from the SFRWCQB to the group. Her area of expertise is in sediment quality and she will work with the other members of the Contaminants Subteam.

Action Item #1: Josh will work on finding a geotechnical engineer and rare plants specialist to assist with the TRT. Peter Baye is not available to participate. Karl suggested Allison Brown as a possible replacement.

Agenda Item: Status of Project

Doug provided a brief update on the status of the project. The site is being prepared to receive the first load of sediment from the Port of Oakland in August. The sediment delivery schedule depends on finalizing the Corps contract, which could delay sediment delivery further. The first two cells and a portion of cell three were completed in 2002; additional cells will be completed once the Corps contract is finalized this year. He expects Phase I will be finished and the levees breached in 3-5 years; timeframes are

dependent on Corps and Port dredging and sediment delivery rates. **Note: Filling could be completed in 3-4 years, but breaching could take another year afterwards, depending on a variety of monitoring items.**

Agenda Item: Review of Table 5 of the MMRP

All TRT members were asked to review the mitigation measures assigned to them in Table 5. Each member summarized their comments and concerns for further discussion by the group.

Action Item #2: Josh encouraged all TRT members to submit their comments on Table 5 in writing to the Project Representatives in order for the comments to be accurately recorded in the Annual Report. Verbal comments made during meetings of the TRT are considered preliminary and incomplete. However, reviewed and accepted minutes of the TRT meetings that contain comments from the members will be considered as part of the final commentary from the TRT.

Action Item #3: It was agreed that TRT members should primarily focus their review comments for Table 5 on the ability of the monitoring methodologies to show whether or not the performance criteria are being met, and secondarily on the appropriateness of the performance criteria. The TRT should not review project designs except when specifically requested. The review of the high marsh design elevation is a specific request for review by the Design Elevation Subteam.

Action Item #4: The TRT requested that the Project Representative provide the Team with a list of background reports conducted for the Project that are available for reference.

Action Item #5: Roger will work with the subteam of Karl and Eric in developing a scope of work for updating the elevations, verifying the tidal datums, verifying the benchmarks, and for vertical control on-site and at reference sites.

Action Item #6: Table 1 of TRT Assignments should be revised to include Mitigation Measures P-SED-1 and P-SED-2 (Lines 14-20) for sediment quality.

Action Item #7: Due to the complexity of contaminants, it was decided that the Project Representatives and SFEI should meet separately with the Contaminants Subteam to further discuss the monitoring details and performance criteria associated with contaminants.

Action Item #8: Karl suggested that members carefully define terminology, such as weed and percent cover, when preparing review comments.

Action Item #9: Howard requested any vegetation data that was collected during past trapping efforts. Rachel noted she can provide Howard with Tom Kucera's 2000 and 2002 field data sheets, which include notes on vegetation composition at the trap sites. Howard also suggested that vegetation data be collected from all grids and line in the

future. Such data should include species composition, percent cover and the height of the tallest plant and the tallest pickleweed in 1 square meter plots adjacent to 20 to 30 % of the trap sites within each grid or line. Any vegetation data collected in past trapping efforts should be archived. Plant data should be collected in a systematic way comparable to what is being done elsewhere around the Bay and these plant results should accompany the trap records. Howard noted that the Project Team will probably want to show how the trap data compares with vegetation data when comparing earlier trapping with times in the future, when it is determined the vegetation and SMHM levels have met the specified criteria.

Action Item #10: Paul suggested that a member of the vegetation subteam attend an EMAP workshop being planned by PRBO and SFEI for this fall on using aerial photography to map plant communities. Josh will extend an invitation to the Vegetation Subteam.

Agenda Item: Review of Interim Habitat Enhancement Plan

Andree Breaux presented her review of this report to the group
In regards to vernal pools, Andree questioned the origin and appropriateness of the 30-day minimum ponding criterion, in light of another project, which uses 60 days of ponding as a vernal pool performance criterion. Rachel Bonnefil clarified that 30 days of ponding is not a performance criterion for the project's vernal pools. Instead, the potential to hold water for at least 30 days was used by the surveying biologists as one of the criteria for identifying potential listed branchiopod habitat during pre-construction surveys. Using 60 days of ponding as a criterion for defining potential habitat would be less conservative, and would inappropriately restrict the extent of preconstruction surveys.

Action Item #11: Since it is not intended to revise this Plan, the TRT agreed that an Addendum should be produced to incorporate the TRT's comments.

Action Item #12: Karl strongly suggested speaking with someone from the mosquito abatement district especially with the threat of West Nile virus. A potential liability exists since the Plan does not address mosquitoes or incorporate mosquito-related Health and Safety Codes of California. He also suggested delaying the time period for adding water from October to November through April in order to minimize mosquito problems.

Action Item #13: Josh suggested removing fixed dates from the schedule in Section 8.0 and instead use environmental triggers, such as onset of wet season or initiation of bird migrations.

Agenda Item: End of Construction Report

Bob and Eric will coordinate their review comments and submit a written review to the Project Representatives.

Agenda Item: Status of Design Elevations Reviews

Josh explained that a Subteam, consisting of Bob Batha, Karl Malamud-Roam, Michelle Orr, and Howard Shellhammer, had been established to discuss the SMHM design elevations in the high marsh. This Subteam will continue their discussions with the Project Representatives and notify the TRT of any major decisions. Doug noted that construction of the high marsh cells will not occur before Summer 2004, so decisions in Winter 2003-4 should suffice.

Agenda Item (added at meeting): Reference Sites

Action Item #14: The TRT will need to address the topic of reference sites for describing the typical plant-elevation relationship and for setting design elevations for high tidal marsh. Doug gave Karl a map of potential reference sites for his review. Josh requested that Doug provide the map of candidate sites to all the TRT members to facilitate a discussion of reference site selection in the context of defining design elevations.

Agenda Item: Preview of Upcoming Reports

Doug explained that several reports will require TRT review within the next 2-4 weeks. These include the Quality Assurance Project Plan, the Biology Report, and the Sediment Confirmation Sampling Plan.

Agenda Item: Next Steps and Administrative Items

Everyone agreed that a memo format be used for written reviews and not agency letterhead. Reference line items and page numbers should be included when appropriate. Doug mentioned that separating necessary project recommendations from research-related ideas would be useful, and that a list of research suggestions outside the scope of the project will be maintained.

Action Item #15: TRT members were asked to submit their written comments by June 30th to SFEI and the Project Representatives. SFEI will then compile all the comments into an Annual Report and distribute the draft for TRT review. The target deadline for a final Annual Report is August 31st.

September 11, 2003: Second Contaminants Sub-team Meeting Minutes

Montezuma Wetlands Project
TRT Contaminants Subteam Meeting
September 11, 2003 – 10am to 1pm
San Francisco Estuary Institute

Attendees: Beth Christian, Josh Collins, Jay Davis, Cristina Grosso, Donald Yee

MWLLC
Representative: Doug Lipton

Outside Visitors: There were no visitors attending the meeting.

The following Final Reports prepared by MEC Analytical Systems, Inc. were distributed:

- Sediment Reference Values for the Montezuma Channel Adjacent to Montezuma Wetlands Project Area, March 2002
- Results of Physical and Chemical Characterization of Two Montezuma Reference Areas: Hill Slough and Rush Ranch, June 2003
- Results of Dioxins/Furans Analysis and Radiation Testing of Sediment Collected from Oakland Harbor, California, July 2003

Agenda Item: Project Status
Doug explained an extension for the completion of construction has been requested, and the first delivery of sediment to the Project Site is expected in early November.

Agenda Item: Project Priorities for Contaminant Review

1. Quality Assurance Project Plan (QAPP), July 11, 2003
   (prepared by Lipton Environmental Group [LEG])
   - Don questioned if the aroclor data will also be analyzed using EPA Method 8080 or 8081/8082 as described on pages 26-27. He said he would research this issue further and follow-up with Doug if he still has uncertainties.

Project Response (11/03): Doug confirmed that pesticides will be analyzed by 8081, and PCBs by 8082.

- **Action Item #1:** Don explained that while conditions for calibrations are specified, the report does not specify what happens if a sample fails in the lab and suggested reviewing EPA's guidelines.

Project Response (11/03): Doug commented that clarification would be added to the document. Upon further review of the QAPP, Doug believes that further clarification in the document is not necessary because Sections 4.9 and 16.0 clearly show that significant QA/QC and data validation will be implemented. Samples failing QA/QC protocols or requiring re-analysis will be noted in the database and reported in the quarterly monitoring reports.

- **Action Item #2:** Don will email Doug additional review comments on the QAPP.

2. Sediment Confirmation Sampling Plan, July 31, 2003 (prepared by LEG)
   - **Action Item #3:** Beth commented that it was unclear if the term "regulatory criteria" in the last sentence of Section 1.2 on page 2 refers to site-specific project criteria or sediment acceptance criteria per the waste discharger permit. Doug explained that it's both for this project and that clarification would be incorporated in future reports.

   - Don questioned the equation for determining the sample size in Section 2.1 on page 4. Doug explained the statistics were calculated from empirical existing data from the Port of Oakland, and that the equation used to generate the sample size was determined appropriate by his statisticians. Once sediment arrives at the site and monitoring data are obtained, the Project Team can assess the adequacy of the statistical approach and revise the Plan if need be.

   - **Action Item #4:** Don suggested that Table 1 should also include dioxins/furans. Doug stated that he would update the table to include recent background data for all contaminants of concern.

   - **Action Item #5:** Per Doug's suggestion, Don will contact Anita Balaraman, the Project Toxicologist and Statistician, before writing up his comments.

   Project Response (11/03): After follow-up with Anita, Don agreed the statistical approach used was valid.

   - **Action Item #6:** Beth questioned the aquatic criteria listed in Table 1. She thought the DDT cover criterion of 3 ppb in sediment was low and that this threshold should be revisited since it is lower than the one for Hamilton. Josh suggested that Beth organize an agency meeting to re-evaluate this value and determine the right threshold.

3. Report on Dioxins and Radiation in Port of Oakland and Suisun Marsh Sediments, September 9, 2003 (prepared by LEG)
   - Doug explained that the Project Team is researching benchmarks for dioxins and radiation values.

- **Action Item #7:** Doug explained measurements were taken in the sloughs at the surface and at a depth of 3-4 feet. Josh stated that he would look at the data in regards to the spatial distribution of values.

- **Action Item #8:** Per Jay's suggestion, Doug said that in future reports, n values and error bars would be included in the data tables.

4. Table 5 of the MMRP
   - Doug explained that MeHg has been added to the list of analytes. Jay suggested that analyzing MeHg in the food web is most important, especially in invertebrates, while it is not as necessary in fish since 95% of mercury in fish is MeHg.

   - **Action Item #9:** Doug will outline in an email what is being done to measure MeHg and the methods being used to collect animal tissues for analyses.

   Project Response (11/03): Doug provided this information via email on 10/7/03.

   - Jay suggested adding Darryl Stanton from the University of California at Davis to the TRT since he is heading the CALFED Mercury Restoration Project. Doug and Josh will review the budget and determine if there is money available for his participation, since the TRT also needs a statistician and plant expert.

   - **Action Item #10:** Josh will contact Darryl regarding his interest in participating in the TRT and to check on his availability and cost.

   - Due to the difficulty in obtaining invertebrate tissue samples, Jay suggested the following prioritization of analyses: (1) mercury, (2) organics, and (3) dioxins/radiation.

   - **Action Item #11:** Doug will respond to Don's Table 5 comments.

   Project Response (11/03): Doug provided a response via email on 10/8/03.

<u>Agenda Item: Contaminant-related Items for Review in Near-Future</u>

1. Groundwater Background Report
   - **Action Item #12:** Doug will send this report to the Contaminants Subteam. If possible, he would like the review comments included in the Annual Report.

   Project Response (11/03): This report has been provided to SFEI.

2. Monitoring Data after Sediment Delivery and Placement

- Doug explained the first monitoring data from sediment delivery is expected December 1st. Reports will be generated on a quarterly basis and more frequently if problems occur.

Agenda Item: Confirm Understandings and Next Steps

- **Action Item #13:** A new timeline was outlined for the Annual Report.

November 20th: TRT Annual Meeting (preliminary draft of Annual Report will be distributed)

December 31st: Final Annual TRT Report due

- Josh suggested that the TRT does not need to know the political context nor should they comment on these issues. TRT members should just state their review.

- Josh noted that some measure of effectiveness needs to be included in the Annual Report so that the TRT can judge if it is being effective.

- Jay suggested including a bulleted list in the Annual Report that contains both the TRT recommendations and the Project's response to these recommendations.

Meeting adjourned at 1:00 pm.

November 20, 2003: Annual TRT Meeting Minutes

Montezuma Technical Review Team Meeting
November 20, 2003 – 9:00am to 3:00pm
Bird's Landing Clubhouse, Bird's Landing

Attendees:	Bob Batha, Josh Collins, Ben Greenfield, Cristina Grosso, Demetrious Koutsoftas, Michelle Orr, Karl Malamud-Roam, Eric Polson, and Donald Yee
MWLLC Representatives:	Tim Fleming, Roger Leventhal and Doug Lipton
Members Not Attending:	Andree Breaux, Beth Christian, Jay Davis, Joe Didonato, Bruce Herbold, Howard Shellhammer, and Bruce Thompson
Outside Visitors:	There were no visitors attending the meeting.

Documents Distributed at Meeting:

- Verbatim Reviews, Commentary, and Recommendations
- Draft Annual Report, including outline, Executive Summary, and Summary of Reviews, Commentary, and Recommendations

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Agenda Item: Field Trip to Montezuma

- The group visited three areas on the site, including the DWR Day Use Area, Phase 1 Cell 1 construction, and the offloading facility and make-up water pond. Since last year's TRT visit, the system is now operational and is waiting for the delivery of dredged sediment material at the end of the month. In addition, four acres of vernal pools have been created in the vernal pool preservation and creation area.
- Roger noted that the Operations Plan has been updated and it also includes Standard Operating Procedures, including information on daily/weekly/periodic monitoring details. While the document is available to TRT members, it does not need to be reviewed since the procedures are based on the MMRP and are detailed in the QAPP, which the TRT is reviewing.
- The group briefly discussed potential mosquito problems and solutions in the return water channels, noting the need to monitor changes in density of emergent vegetation.
- Although not in the current design plans, Karl suggested that the Project may want to consider connecting Phase 1 and Phase 3 in the future, by lowering the Phase boundary levee planned to isolate those two phases.

Action Item #1: Karl questioned the tidal datums being used by the Project and suggested that uncertainties be recognized and reported clearly. Roger will send Karl surveying benchmarks, tidal data analysis, and information on the short-term tidal reckoning study that is scheduled to be conducted from November to January to update site specific tidal data.

Agenda Item: Introductions and Purpose of Meeting

- Josh introduced Demetrious Koutsoftas from Arup to the group. Demetrious is a geotechnical engineer with a specialty in soft sedimentary materials and will work with the other members of the Physical Monitoring Subteam.
- Josh explained that he had contacted Darryl Slotton from UCD, but has not heard back from him yet regarding his interest in participating in the TRT, and noted that the addition of a statistician to the TRT needs further discussion once Project data begin to flow to the TRT.
- Josh explained that one of the meeting's main objectives was to fill in missing report reviews from TRT members. Therefore, he asked that members review the Minutes carefully and to revise and augment comments as necessary.

Action Item #2: Demetrious offered his time for a day to learn the background of the Project and the TRT process. Roger suggested that he meet with the Project's geotechnical engineer. The meeting will be arranged by Roger and Demetrious.

Agenda Item: TRT Progress

Achieving Goals for Year 1:

- Doug reported that he was happy with the overall progress of the TRT, and noted specific TRT recommendations that the Project Team has incorporated into its monitoring efforts.
- The group discussed the role of the TRT and re-affirmed the following tasks: (1) review monitoring data, (2) ensure that the monitoring design is appropriate, (3) assess if data collected answer the questions and if any data collection is redundant, (4) answer specific questions, and (5) offer guidance in the long-term so the process is most effective.
- The group agreed that it was not necessary for the TRT to review daily monitoring data results, which is in line with the intent and scope of the TRT Charter.

Missing TRT Report Reviews:

- Bob commented that he defers to Eric for review of construction reports, concurs with Andree in her review of weeds in Table 5 of the MMRP and the *Interim Habitat Enhancement Plan*, and had no major concerns with the cultural and dust performance criteria outlined in Table 5 of the MMRP.
- Don noted that the results in the *Summary of Dioxins/Furans and Radiation in the Suisun Marsh and Port of Oakland Sediments* seem higher than the results from the Environmental Monitoring and Assessment Program's (EMAP)

sediment sampling in the Bay. However, this is not unusual due to the variability in contamination, and he had no major concerns with the report.
- Don commented that he reviewed the *Summary Results of Background Groundwater Characterization* and had no major concerns with the report.

Status of Annual Report:
- The Project Team decided to postpone the Annual Report to mid-February in order to incorporate all review comments and end of the year progress.

Action Item #3: TRT review comments and revisions are due by January 1st. After the Project Team provides responses, the TRT will make final recommendations. If necessary, the Project Team can append a letter to the final report.

Project's Webpage:
- The current online data management process was discussed. While the primary purpose is a repository for data files, GIS capabilities can also be incorporated in the future.
- The Project Team intends to use the TRT password-protected area to post monitoring reports and data for review.

Agenda Item: The Annual Report
Overview of Report Objectives and Sections:
- Bob noted that one of the goals of the Annual Report is to address any problems or issues that have arisen with the Project.
- Doug noted that it was not necessary to include the verbatim e-mail communiqués in the Annual Report, instead the salient points should be summarized in the report and the detailed information kept at SFEI for review as necessary.
- Instead of summarizing review comments in paragraph format, Doug suggested capturing salient points in a table.

Action Item #4: Josh noted that the Project Team needs to respond to each comment and asked TRT members to prioritize their comments in regards to a Project Team's response. SFEI will send electronic files of both the summary of comments and verbatim comments to TRT members so they can make additions, changes, and clarifications as necessary, including prioritizing their comments. Based on these priorities, Josh will draft an Executive Summary.

MMRP Table 5:
- The Team discussed including a brief introduction/summary for each topic area. However, it was decided that this was not necessary, especially since most comments are specific and difficult to summarize in a few points.
- Karl made several suggestions in regards to the topic of geology and seismicity, and provided the following written suggestions after the meeting:
  - develop, evaluate, and publish local concordance between the following tidal elevation heights: standards (NAVD 88, NGVD 29, MLLW 60-78, MLLW

83-01, MHW 60-78, MHW 83-01, MHHW 83-01, MSL 83-01, MLW 83-01) and local (construction control, DWR gage, etc.).
- compare NGS, DWR, and USGS published tidal elevation heights in the Project vicinity.
- specify quality criteria/scope of work for all survey data collection, for example feet vs. meters, NAVD vs. NGVD, GPS vs. optical, accuracy/precision/closure (does accuracy of 2 cm mean 1 standard deviation?), "absolute" (vs. other NAVD benchmarks, tidal datums, etc.) vs. "relative" (internal consistency on-site) heights, reference SOPs/methods (calibration of hydraulic calculations, models, subsidence slope).
- specify quality/scope for data collection relative to water levels, for example which tidal datum, which tidal datum epoch, datum vs. means for other time periods, and boundary condition vs. shallow water means or overbank means.
- clarify the stability of the benchmarks used by the Project (e.g., substrate/distance to refusal, frequency of resurvey of benchmarks).

Action Item #5: Roger and the Project Team will work with Karl to incorporate his suggestions into the tidal surveys planned for this 2003-04. Karl will review the survey's documents and make recommendations on interpreting the data. Karl indicated that he has done some tidal analysis work in nearby areas and would be available to help with the requested tidal and surveying analyses.

Interim Habitat Enhancement Plan for Unfilled Phases:

- Karl suggested limiting the extent of warm shallow standing freshwater during the months of August, September, and October. He also recommended that the Project Team attend the Suisun Management Plan workshop on Tuesday, November 25th from 1pm-3pm by the Solano Mosquito Abatement District. The workshop will provide a marsh update and may be useful to the Project since it is in the same county.
- Michelle said she had reviewed the Plan and had no particular comments, since habitat enhancement at the site is limited to the infrastructure in place. She questioned if there were specific habitat goals to be met, in which Doug responded there were not beyond the general criteria outlined in the MMRP and described in the Plan.
- Ben noted that more habitat may not always be better if it results in increased levels of methylmercury.
- Josh suggested reviewing the Suisun Management Plan in regards to methylmercury.

Construction Reports:

- Roger explained that since the end of July, the following construction-related activities have taken place on the Project site: (1) additional levee construction, (2) the placement and testing of the Liberty on site, (3) electrical and mechanical hook-ups, and (4) declaration that the site is ready for sediment delivery.

- Based on the site visit, Eric commented that the construction looks first class and very safe.
- Eric requested that Demetrious also review the construction reports, as part of the first Annual Report.

Action Item #6: The group agreed that the Annual Report should include a review of the site's end-of-year construction progress that readied the site for receiving dredged material. Since the last Construction Report was through July 2003, Roger will provide an End of the Year Construction Report for August to December 2003 to the TRT by January 15, 2003.

Action Item #7: Roger, Eric, Demetrious, and Michelle will meet after the meeting to finalize the comments on the construction reports. Eric will then submit his comments to the Project Team

Contaminants QAPP:

- Don questioned if there was also a QAPP for vegetation and overall ecology. Doug responded that the agencies only required a QAPP for contaminants/chemistry, and that each Annual Biology report contains the protocols used by the monitoring biologists.

High Marsh Design Elevation:

- Doug and Roger explained that the Project will not be constructing any high marsh cells until likely 2005 and that the high marsh design will be informed by the current tidal reckoning study, and actual settlement monitoring of sediment placed in 2003-04. Therefore, the Project Team does not need final comments from the TRT on the high marsh design elevation until January-February 2005, although Fall 2004 would be preferable.
- Michelle commented that the High Marsh Design Subteam will need to meet again as a group to further discuss their recommendations.

Action Item #8: Doug clarified the difference between the high marsh and the managed pickleweed marsh (i.e., "the mouse farm"), and explained that an additional scope of work needs to be added for a Diked Pickleweed Marsh Subteam. Roger noted that the "mouse farm" will probably be built in 2005, but may occur in 2004. Therefore, the Project Team would like comments on the design of the marsh farm sometime in Spring 2004.

Future Research Considerations:

- The TRT discussed the possibility of integrating the Project with existing and future research and monitoring efforts.
- Karl noted by coordinating with other projects in the area, the Project could incorporate more efficient ways of monitoring and reduce costs by benefiting from existing monitoring efforts that are similar to what the Project is intending to do, e.g., IEP is sampling fish in the area, NERR has federal

money to collect data on Rush Ranch, and IWRM will be sampling on Brown's Island.

Action Item #9: Don suggested adding wetland wetting and drying and its impacts on methylation to the list of future research considerations.

Action Item #10: Josh asked TRT members to identify future research considerations when conducting their reviews and ranking of their comments.

Review of Main Areas for Consensus:

- The group decided to delay this agenda item since all the TRT members were not present at the meeting to establish a consensus. Instead, the TRT will prioritize review comments for the Project Team's response and generate overarching statements for review by the whole TRT via email at the web site.

Agenda Item: Overarching Comments and TRT Tasks for Year 2

Overarching Comments:

Josh compiled several overarching questions for the group's discussion:

- Doug responded that more frequent reporting was not necessary and that one Annual Report was appropriate for the needs of the Project, at least until problems are revealed that may indicate more frequent reporting is needed.
- Doug also commented that a more rapid process of responding to questions would be helpful to the Project Team. This means that SFEI will issue interim compilations of Project Team's responses for each topic.
- Josh suggested that the Project Team provide the TRT with a "roadmap" of data collection (i.e., a flowchart of datasets and how they are integrated with each other, plus a map of all sampling locations within the Project site and at the reference sites.
- There was lengthy discussion on integrating monitoring among the various parameters and collaborating with other studies to help reduce costs and redundancies, emphasizing the need for such integration.

Action Item #11: Josh presented the topic of measuring the TRT's effectiveness and lack of any specific measures noted in the TRT Charter Agreement. Doug suggested including an additional column in the table of TRT contacts to record "follow-up action by Project". The TRT concurred with this approach.

Action Item #12: Josh requested a map of reference sites and where inside a site samples are taken and from which habitat strata. Doug responded that reference site sampling was summarized in general terms in the QAPP, and more specific maps and details of sampling are provided in the reference monitoring reports. He also indicated that eventually a GIS map could be placed on the website. The TRT recommended that such a map was needed for the TRT to recommend ways to increase monitoring efficiency and to integrate with other monitoring or research efforts.

Action Item #13: Josh suggested that when data results are given to the TRT for review, they should be in tabular form and include a sampling locations map and charts when appropriate. Doug responded that all monitoring reports provide that information (e.g., tabulated data and sampling maps).

Action Item #14: Roger noted that the Project Team would provide a simple figure of the locations of what is being monitored and the reference sites, with a note that the individual monitoring reports should be referred to for more information. The group agreed that this roadmap would be useful to send to other monitoring efforts in the area for the possibility of establishing collaboration. Josh will provide Roger with contact names for collaboration efforts.

TRT Tasks for the Near-future:

- ***Annual Report:*** TRT members will submit review comments by the end of 2003, the Project Team will provide responses by the second week in January 2004, and the Annual Report will be finalized in mid-February.
- ***Reports for TRT Review:*** Doug discussed the upcoming reports that will require TRT review. These include quarterly sediment and water quality reports (more frequent if exceedences of criteria occur), construction reports, engineering operations, scope of work for the marsh farm, reference site monitoring, Biological Survey Report in February.
- ***2004 TRT Meetings:*** In order to provide Team members with plenty of advanced notice for meetings, the 2004 TRT meetings are scheduled for Thursday, June 24th and Thursday, November 18th.
- ***Subteams for Special Tasks:*** A subteam is reviewing the high marsh design, which is ongoing until 2005. That same subteam will also work on reviewing the diked pickleweed marsh design ("the mouse farm"). The contaminants subteam is an ongoing effort to review sediment and water quality, and reference site work pertaining to contaminants. The hydrology subteam will proved review of tidal surveys and hydrologic issues.