

## **SAN FRANCISCO BAY REGIONAL SEDIMENT MANAGEMENT PLAN CENTRAL BAY PORTION**

### **I. PROGRAM DESCRIPTION**

#### **Introduction:**

The Coastal Sediment Working Group (CSMW) is funding a portion of the development of the Central San Francisco Bay Regional Sediment Management Plan (SFBRSM) for the eastern part of San Francisco Littoral Cell (Central San Francisco Bay to the mouth of the Golden Gate) (“Project Area”). This portion of the SFBRSM program will compliment the Coastal Regional Sediment Management Plan CRMSP for the western portion of the San Francisco Littoral Cell, which is being undertaken by the Association of Bay Area governments (ABAG). The SFBRSM, being undertaken by the San Francisco Bay Conservation and Development Commission (BCDC) is intended to formulate consensus-driven regional sediment management guidance and recommended policy for the sand fraction of San Francisco Bay sediment management plan. The sandy portion of San Francisco Bay is primarily limited to the Central Bay and is a significant part of the San Francisco Littoral cell. There was approximately 27 miles of beaches and dunes in San Francisco Bay historically, however, few remain. In recent years there has been considerable interest in expanding beach habitat in areas where it is sustainable for its own intrinsic value, recreational opportunities and as a buffer to sea level rise.

The SFBRSM will build on the Long Term Management Strategy for the Placement of Dredged Sediment (LTMS Program) to continue to encourage beneficial reuse of sediment, but will be focused on sand resources in the Bay. This program will gather existing data; identify sand sources and areas of need; work with partners to enhance, restore and maintain coastal beaches; identify policy issues associated with proposed projects; reduce shoreline erosion and coastal storm damage; and support recreation and tourism. This project will also examine existing CSMW tools appropriate for the outer coast and adapt them to enclosed estuarine projects.

BCDC will work with local governments, state and federal agencies and coordinate with non-governmental organizations. The Central SFBRSM will be based on 1) be based upon region-specific coastal processes with particular attention to recent US Geological Survey findings; 2) regional economic, environmental, geographic and societal data; 3) utilize current reports, data, educational, process, regulatory and informational tools developed and compiled by CSMW as part of the Sediment Master Plan, but adapted to an estuarine environment; and 4) be driven by the needs of local and regional governments as well as local non-governmental stakeholders. The Central SFBRSM prepared based on this information will promote beneficial reuse of sandy sediment in enhancing and restoring beaches throughout the Central Bay portion the San Francisco Littoral Cell; collaboration with the CRSMP; and adoption of the Central SFBRSM by ABAG and its incorporation into Local Coastal Plans are integral to this goal.

#### **Project Area:**

The focus of the project is the area bound by Central San Francisco Bay to Point Bonito and Point Lobos, the San Francisco Bar (Figure 1). Recent studies have verified that there is significant sediment exchange between San Francisco Bay and the outer coast. While the California Sediment Working Group documentation (CSMW, 2006) separates the Central Bay from the southern San Francisco littoral cell, it is reasonable to consider a different configuration of the San Francisco littoral cell, especially one that includes the sediment-shed for forty percent of California’s landmass. In addition, redefining the San Francisco littoral cell offers more management opportunities for agencies with jurisdiction on both sides of the Golden Gate.

## **Project Goals and Objectives**

The project goal is to prepare a regional sediment management plan for the sandy area stretching from Central San Francisco Bay to the Golden Gate, Point Bonitas to Point Lobos, a portion of the San Francisco littoral cell, in coordination with the SFCRSMP and create to sediment management tools applicable to estuarine systems. This project is a subset of the larger SFBRSMMP that will address the entire San Francisco Bay, including both sand and mud substrates and habitats.

The objectives are the following:

- Identify, gather and review existing information on coarse grain sediment dynamics, sensitive species and critical habitat;
- Identify research and management needs for Central San Francisco Bay and the San Francisco littoral cell;
- Update conceptual sediment dynamic model for Central San Francisco Bay and the connection to the San Francisco littoral cell;
- Define the existing critical erosion areas within the Central San Francisco Bay;
- Summarize the current dredging and disposal activities, aggregate mining and the economic feasibility of sediment management activities in key sediment erosion or accretion areas.
- Identify permitting requirements and funding sources for future development of regional sediment management for San Francisco Bay and the outer coast.
- Prepare a Central SFBRSMMP for coarse grain sediment that identifies key management challenges, and provides recommendations on how to address these challenges.

## **II. GENERAL SCOPE OF WORK**

Funding from the California Sediment Management Workgroup would assist BCDC in undertaking the activities described below.

### **A. Governance Structure and Regional Partners – San Francisco Bay has many overlapping jurisdictions, laws and policies at the local, state and federal level.**

- Determine and propose modification to the LTMS program, as appropriate to provide guidance and governing structure for the SFBRSMMP. If the LTMS governance structure is not appropriate, determine a more appropriate model.
- Identify regional partners
- Identify and map jurisdictions, boundaries and regulatory issues with the Central Bay region.

BCDC will work to incorporate regional sediment management plan recommendations into their management practices and policies. Once the pilot project is complete, lessons learned will be applied to the larger San Francisco Bay Regional Sediment Management Plan and will be available to other areas with an outer coast and estuarine interface.

### **B. Plan Development and Regional Sediment Management Tools**

The primarily deliverable of this project is a comprehensive guidance and policy document that focuses on identifying how regional sediment management can be implemented in an expeditious, cost-effective, and environmentally sound manner in the project area. The plan will include the following elements:

**Task 1: Compile Existing Information and Identify Data Gaps and Research Needs.** Under an existing grant from CIAP, a literature review of existing San Francisco Bay resource information (including data on sediment dynamics, shoreline degradation, sediment loads, shoreline erosion, regional sediment budgets) has been conducted.

- Refine literature search to identify literature specific to project area and coarse grain sediment types.
- Through consultation with local governments, identify areas of erosion within the project area.
- Convene a technical advisory committee to determine existing research and data gaps throughout the coarse grain “sediment-shed.”

*Deliverable:*

- (1) A workshop for sediment scientists and managers to discuss existing science and research needs based on management goals.
- (2) An annotated bibliography of relevant research and data sets.
- (3) A prioritized set of recommendations on how to address existing data gaps.

**Task 2: Identify Critical Species and Habitat.**

- Identify potential critical species and habitats associated throughout the project area.

*Deliverable:*

- (1) GIS layers from existing sources of critical habitat and species of special concern within the project area.

**Task 3: Sediment/Sand Budget Assessment.**

- Analyze data from the sand provenance study by USGS, the recent multi-beam work, USGS modeling of the system, and existing data on dredging and mining activities, to inform a coarse grain current sediment budget for the Central Bay and its connection to the CSRMP and the outer coast.
- Plan and conduct 2 meetings with the technical advisory committee to discuss and confirm the coarse grain budget and to the extent possible, coarse grain sediment pathways.

*Deliverable:*

- (1) A coarse grain sediment budget for Central Bay to the extent information is available.

**Task 4: Locate Critical Erosion and Sediment Deficit Areas.**

- Meet with local agencies to identify areas of erosion within Central Bay and if possible, get erosion rates and extent to be included in BECA
- Create GIS layer and map, with appropriate metadata, areas of critical erosion within Central San Francisco Bay.

*Deliverable:*

- (1) Description of Beach Erosion Concern Areas (BECAs).
- (2) A GIS layer identifying location of BECAs within Central Bay.

**Task 5: Identify Potential Sediment Sources for Beneficial Reuse.**

- Investigate coarse grain sediment sources and potential methods of delivery to BECAs, including quality and quantity available.
- Conduct a sediment-site matching exercise for the identified BECA
- Determine if a pilot projects to be undertaken by interested stakeholders.

*Deliverables:*

- (1) Description of type and quantity of potential sediment sources for use at BECAs
- (2) A GIS layer identifying location of sediment sources.

**Task 6: Evaluate Recharge/Disposal Sites.**

- Evaluate BECAs for potential to create “sediment recharge areas” either on shore or in the nearshore environment to supplement existing coarse grain sediment supply.
- Develop recommendations for a test case.

*Deliverable:*

- (1) An analysis and recommendations for beach recharge sites on shore or in the nearshore environment adjacent to BECAs.

**Task 7: Identify Permitting Requirements.**

- Confer with regulatory and resource agencies to identify policy and permitting issues facing sediment recharge projects.

*Deliverables:*

- (1) A summary of the jurisdictions, regulatory requirements, and processes.
- (2) A strategy for efficiently meeting the regulatory requirements for pilot projects.

**Task 8: Economic Analysis.**

- A contractor will complete an economic analysis of the value of beach nourishment opportunities in the Central Bay.

*Deliverable:*

- (1) An analysis of economic analysis of potential sediment nourishment projects.

**Task 9: Identify Potential Funding Sources for Sediment Management.**

- Identify potential local, regional, state and federal funding opportunities for costs associated with managing coarse grain sediment and BECAs.

*Deliverable:*

- (1) A summary of potential funding sources for pilot projects and additional regional sediment management work.

**Task 10: Identify Key Management Challenges and Recommendations.**

- Identify key regional management challenges for coarse grain sediment
- Prepare recommendations to address the challenges for the project area.

*Deliverable:*

- (1) A summary of key management issues to be addressed by an ongoing regional sediment management program.

### **C. Outreach Program**

BCDC with partners identified through the work program described above, will develop an outreach program that will ensure the public is involved throughout the planning and implementation stages of this project. The public outreach program will include informational presentations, public regional sediment management stakeholder meetings and public outreach materials, including a special programs section on BCDC's website.

- Develop a public outreach plan that appropriately identifies stakeholders from the public, non-governmental organizations, and agencies.
- Plan and conduct six informational presentations and stakeholder discussions to ensure adequate and inclusive public input and participation.
- Conduct agency coordination and development of a stakeholder advisory group (BASS) and a technical advisory group.
- To increase knowledge of regional sediment management issues BCDC will include a regional sediment management webpage in the special programs section of the BCDC website.

*Deliverable:*

- (1) A public outreach program that includes stakeholder meetings, information available via BCDC's website, and public review and comment on the pilot project.

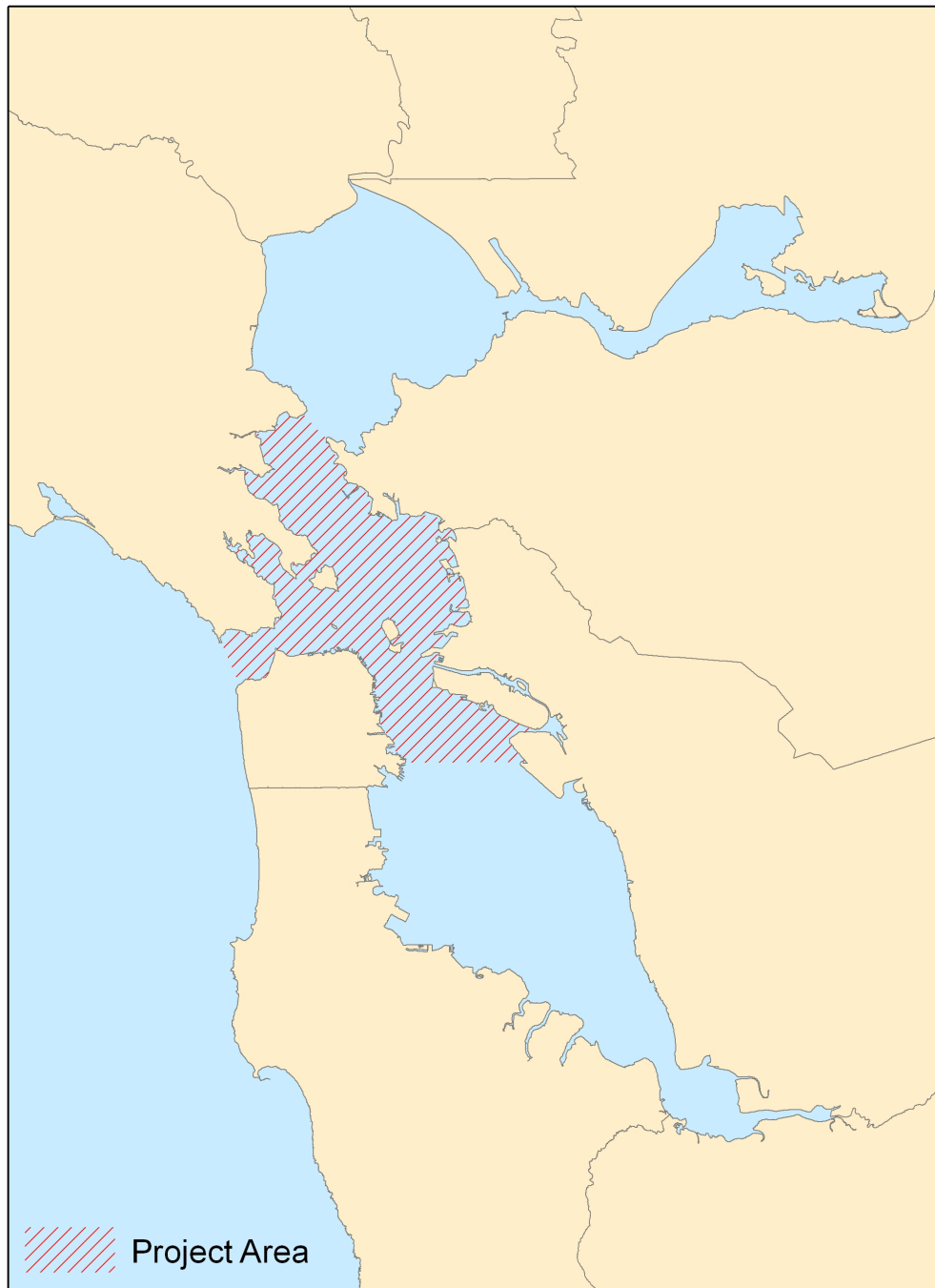
### **D: Coordinate public review of SFBRSM (Central Bay)**

- Coordinate public review of report: issue public notice of report availability; assist CSMW in compiling comments and coordinating response to comments; and coordinate with CSMW on announcement of final document, include final version on BCDC website.

### **E. Project Management**

- Work with the consultant and CSMW on each task to ensure that they adequately reflect the needs of the region and state.
- Manage contract(s)
- Prepare and submit invoices quarterly.

**Figure 1.**



**San Francisco Bay  
CSMW Regional Sediment Management**

