AGENDA

1. Welcome/Introductions
2. Commissioner Working Group (Purpose & Responsibilities)
3. EPA Grant Overview and Schedule
4. Overview of Soil/Sediment in the SF Bay Region
5. Existing related Bay Plan Policies
6. Public Comment
7. Commissioner Working Group
   - Schedule

PURPOSE OF THE WORKING GROUP

- Consider whether the San Francisco Bay Plan should be updated to improve policies related to sediment/soil and its beneficial reuse
- Explore the regional needs for sediment/soil reuse, potential sources, mechanisms for connecting the sediment sources to the needs.
- Examine challenges and opportunities
- Develop common ground findings
- Develop proposed policies
- Provide information and advice to the larger Commission on this issue

INFORMATIVE DOCUMENTS

Reports

1. Sediment for Survival: A Strategy for the resilience of Bay Wetlands in the Lower San Francisco Estuary (2021) - can skip the methods section
2. Greening the Bay Report
3. The Baylands and Climate Change (2015; lengthy report but informative)
4. Baylands Ecosystem Habitat Goals (1999) - background to the 2015 updated
5. San Francisco Bay Shoreline Adaptation Atlas (2019)
6. San Pablo Bay Shoreline Change Analysis (2015)
7. Changing Channels Regional Information for Developing Multi-benefit Flood Control Channels (2017)
8. New Life for Eroding Shorelines: Beach and Marsh Edge Change in the San Francisco Estuary (2020)
9. Towards a Coarse Sediment Strategy for the Bay Area (2021)

Scientific Literature

1. Sediment transport in the SF Bay Coastal System: An overview – Barnard et al., 2013 (15 pages; great overview of sediment transport)
2. Sediment supply to SF Bay, Water Years 1995 – 2016 – Schoellhamer et al., 2018 (90 pages; can skip over methods; introduction and discussion should be reviewed; a bit technical)
3. Adjustment of the SF Estuary and watershed to decreasing sediment supply in the 20th century – Schoellhamer et al., 2013 (9 pages; little technical but useful information)
6. Estimates of suspended sediment entering the SF Bay from the Delta – McKee et al., 2006 (18 pages; can skip methods section)

Upcoming Documents

Sand mining studies, facts sheets, story map, etc.,

Questions / Discussion

NEW SEDIMENT MANAGEMENT POLICIES FOR WETLAND RESTORATION AND CLIMATE CHANGE RESILIENCE IN SAN FRANCISCO BAY

EPA WETLANDS DEVELOPMENT GRANT & OCEAN PROTECTION COUNCIL ADAPTATION GRANT
JANUARY 2023 THROUGH DECEMBER 2025

ADDRESSING:

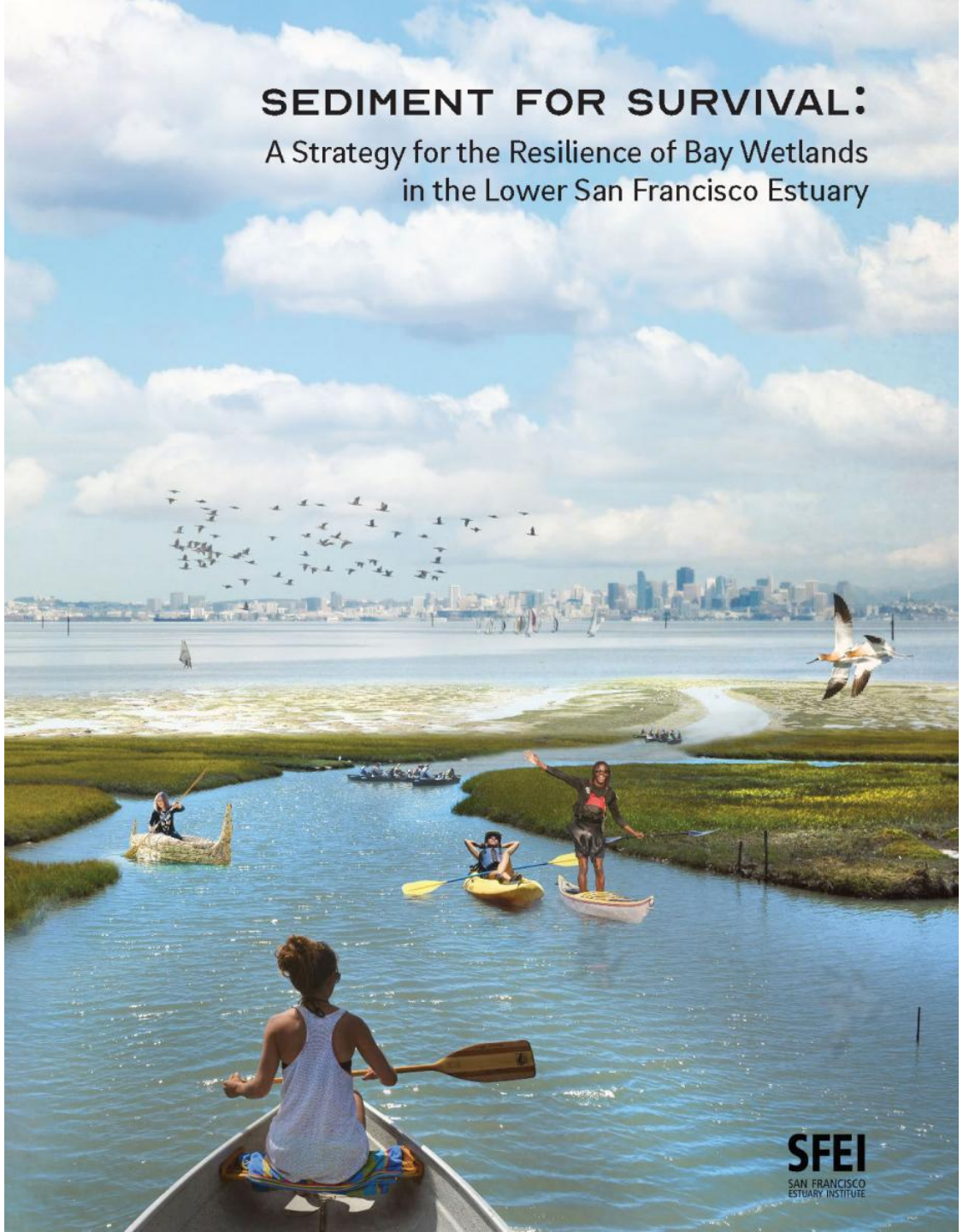
- Sediment and Soil Reuse
- Habitat Restoration
- Climate Adaptation
- Vulnerable Communities

THROUGH:

- Collaboration
- Policy
- Strategy

PARTNERS:

- San Francisco Bay Joint Venture
- San Francisco Estuary Institute
- LTMS agencies
- Bay Area Community



450 – 650 million metric tons of sediment and soil needed to restore marshes and aid adaptation between now and 2100 -

- Navigation dredging
- Flood protection dredging
- Excess construction soils
- Construction debris
- Reservoir sediment

OPEN STANDARDS FOR CONSERVATION PRACTICE

Results Chain Analysis & Road Map

Engage Bay Area's stakeholders to build a coalition of organizations across sectors to provide support for policy change and advance wetland and beach restoration.

Agencies, habitat restoration, dredging, construction, flood protection, adaptation, and environmental justice communities

- Trained Facilitator, 2-day workshop
- Identify roles and responsibilities
- Analyze a range of strategies
- Develop action plans
- Establish a road map

A progression of expected short, intermediate, and long-term actions that lead to regional results

SAN FRANCISCO BAY PLAN

Commissioner Working Group and Proposed Bay Plan Amendment

In 2019, the Commission concluded a Bay Plan Amendment on Fill, noting the sediment supply shortfall as a climate adaptation priority action.

Commissioner Working Group:

- Review findings of recent reports
- Identify key issues and policies
- Propose Bay Plan Amendment

Public Engagement: 3 workshops

- Issue papers
- Presentations
- Dialogue

Policy Development:

- Background documents
- Benefits and impacts
- Draft policy changes
- Public hearings and vote

FINANCING STRATEGY

Financing the Future Working Group and Stakeholders

The LTMS program identified that additional funding is needed to address the incremental cost of taking dredged sediment to beneficial reuse. This cost has varied significantly and there has been no identified source of consistent funding.

Financing Strategy development:

- Stakeholder interviews
- Research costs and funding issues
- Issue papers developed
- Financing Future work group presentations
- Recommendations
- Proposed financing strategy
- Public workshop and Commission presentation
- Bay Area Coalition use

CURRENT STATUS

- Timeline shifted due to administrative requirements
- Request for Proposal under revision
- BCDC position filled
- Contracting underway for project partners
- Partner kick off meeting and update
- Results Chain Analysis – spring 2023
- Commissioner working group January!

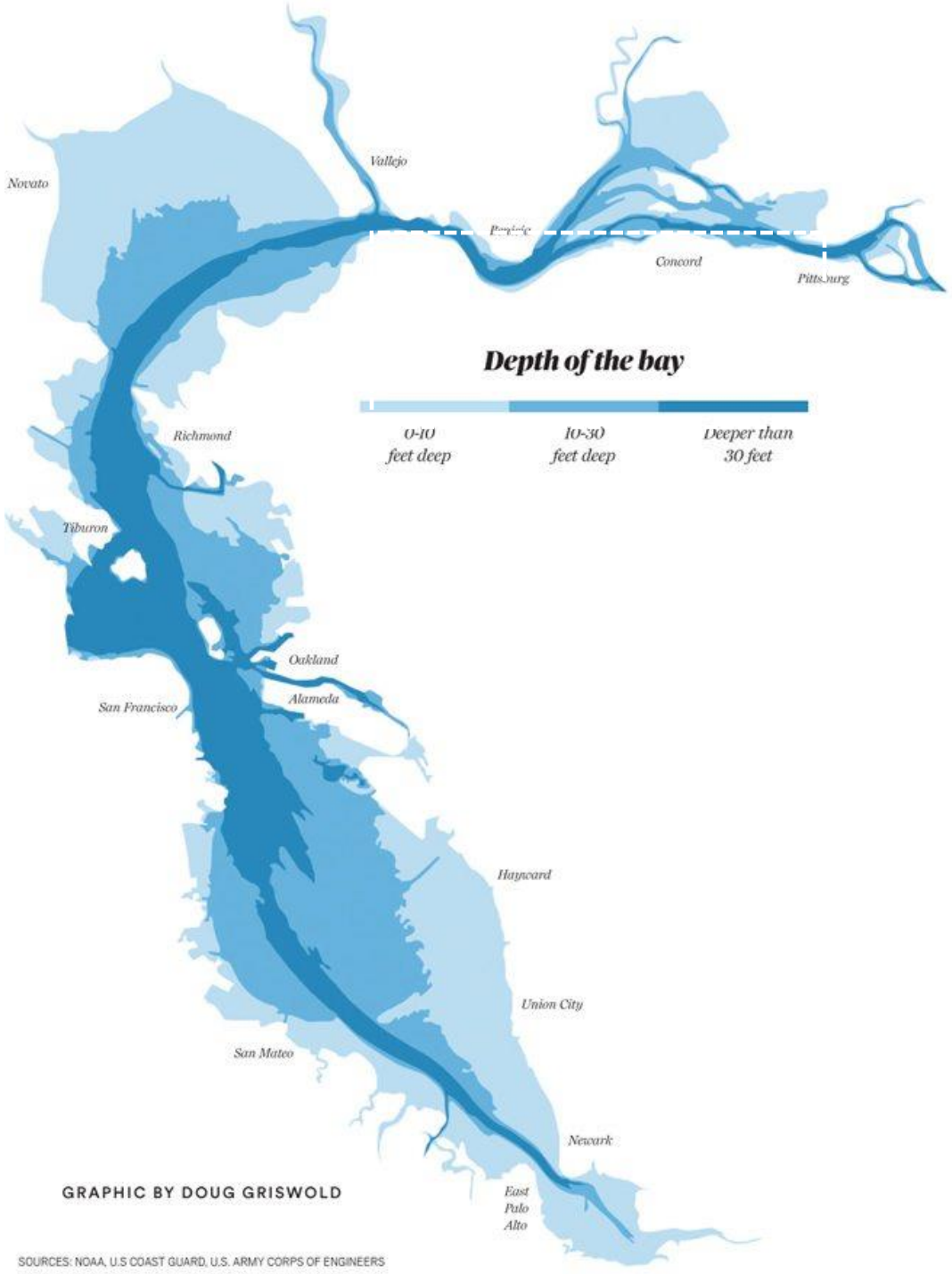
Task	Milestone	Output
1. Results Chain Analysis Scoping, Workplan Formulation, and stakeholder workgroup formation	12/31/22	1. Detailed workplan 2. Work group identified 3. Facilitator solicitation issued, facilitator hired
2. Pre-workshop meeting, pre workshop agenda, stakeholder invitation, background documents developed	2/28/22	1. Agenda developed, pre-workshop meeting held 2. Background documents developed
3. Workgroup workshop, results chain analysis findings, report and regional roadmap	8/30/23	1. Workshop held 2. Results chain analysis report 3. Draft roadmap complete
4. Review literature, develop annotated bibliography, Amendment workplan formulation. Work incorporates outputs of Phase 1.	4/30/23	1. Annoated bibliography 2. Bay Plan amendment workplan
5. Commission hearing and vote on Amendment initiation, establish Commission working group, Stakeholder and Commission public workshops and outreach	10/30/23	1. Stakeholder outreach complete 2. Commission meeting, hearing, vote. 3. Commissioner workgroup established 4. Two Commissioner workgroup meetings held
6. Staff drafts background report, conducts stakeholder interviews, social and environmental justice engagement effort	8/30/23	1. S&E engagement and comments documented 2. Stakeholder interviews document. 3. Background document drafted. 4. Six Commissioner workgroup meetings held
7. Bay Plan Amendment Workshop development, draft agendas, background information, and activities, stakeholder and public noticing, summarize findings	10/30/23	1. Agendas, activities produced 2. Public noticing documents 3. Three workshops held 4. Workshop findings summarized
8. Draft Findings and Policy formulation and Environmental Review	2/31/2024	1. Draft findings and policies complete. 2. Draft CEQA findings complete. 3. Four Commissioner workgroup meetings held
9. Final Amendment Recommendations, Environmental Assessment, Commissioner public hearing and vote, documentation submitted to Office of Adminstrative Law and Coastal Management Office	6/29/24	1. Commission recommendation developed. 2. Commission public hearing and vote 3. Two Commissioner workgroup meetings held
10. Research funding needs, interview target sectors and community practitioners to understand project costs	4/20/23	1. Report on costs and funding needs 2. Draft five issues documents
11. Meet with Financing the Future workgroup to gather input on potential financing strategy and investigate recommendations through coordination with stakeholders.	8/30/24	1. Five agendas and presentations developed 2. Five Financing the Future meetings held
12. Present draft funding strategy at a public Financing the Future workshop and obtain feedback. Circulate draft strategy for feedback from stakeholders. Incorporate feedback and prepare final document.	10/30/24	1. Financing Strategy developed 2. Financing the Future meeting and presentation. 3. Finance Strategy workshop held with stakeholders


Questions?
Discussion

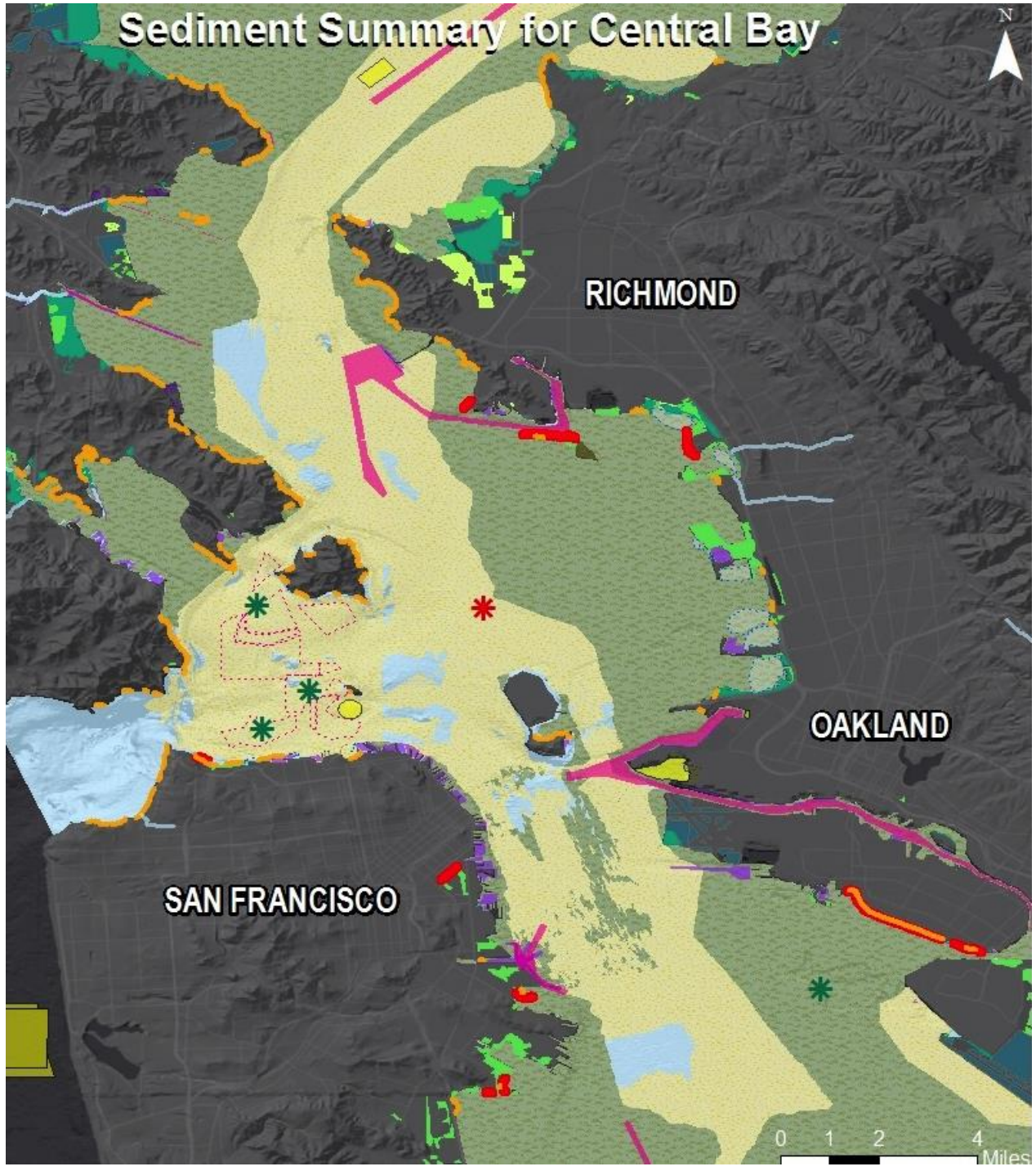
SAN FRANCISCO ESTUARY

Variation in depth, energy, salinity, and sediment composition

- North Bay
  - Combination of shallow & deeper area
  - Mud (shallows) & sand (deeper)
- Central Bay
  - The deepest area of the Bay
  - West: sand and bedrock
  - East: mud dominated
- South Bay
  - Mostly shallow
  - Mud dominated



San Francisco Bay Environment and Activities



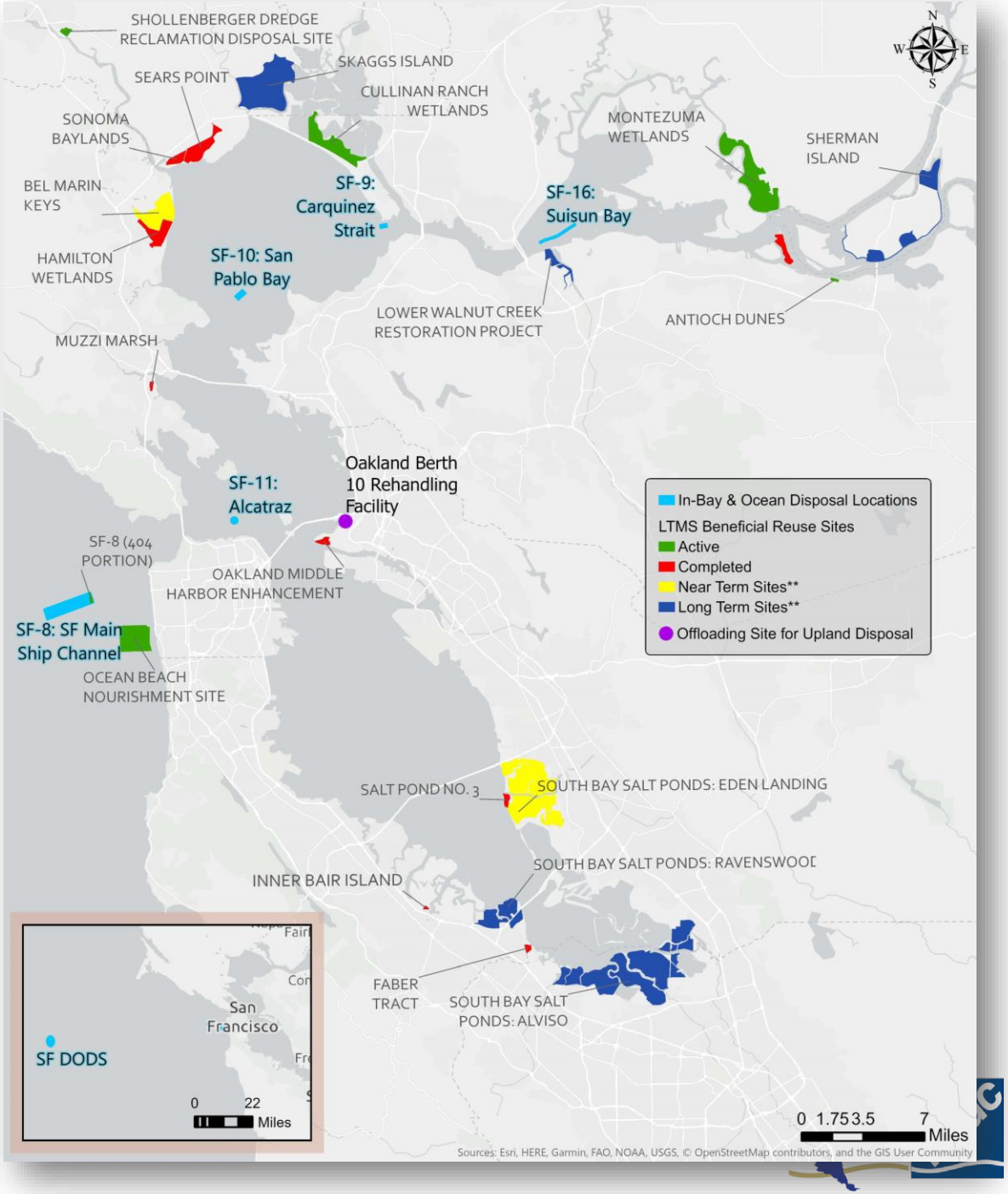
Subtidal Substrate

- Mud
- Sand
- In-Bay Disposal Sites
- Federal Dredging Channels
- Non Federal Dredging Areas
- Beaches
- Diked Wetland
- Tidal Marsh
- Undeveloped Fill
- Storage or Treatment Basin

Sources: NOAA's Office of Response and Restoration, BCDC, U.S. Army Corps of Engineers, EcoAtlas

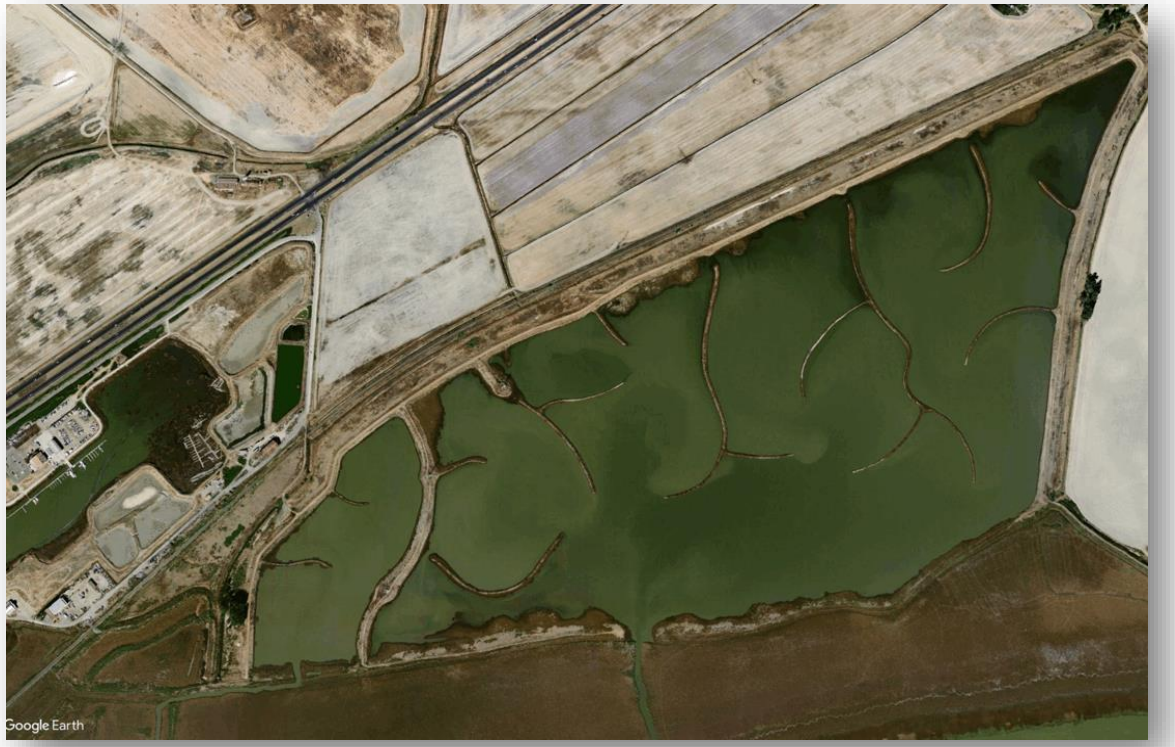
LTMS PROGRAM

- Maintains in an economically and environmentally sound manner those channels necessary for navigation in the San Francisco Bay and Estuary
- Conducts dredged sediment disposal in the most environmentally sound manner
- Maximizes the use of dredged sediment as a resource
- Established a cooperative permitting framework
- DMMO – Sediment Suitability
- Provides programmatic biological opinions and resource agency consultations



BENEFICIAL REUSE OF SEDIMENT

- *"Reusing a waste material that would otherwise be discarded"* – EPA
- San Francisco Estuary
  - Mainly used for habitat restoration (i.e., wetlands)
    - Ex. Sonoma Baylands/Hamilton Wetlands
  - Techniques
    - Direct placement
    - Shallow-water placement (piloting/testing)
    - Marsh spraying (future)



Sonoma Baylands: 2004 vs 2022

SEDIMENT: A CRITICAL RESOURCE

- Bottom-Up Effect
  - Lower trophic levels affect the higher trophic levels communities
- Bay Ecosystems (i.e., wetlands)
  - Stabilization and Growth
    - Habitat coverage increases
  - Promotes ecosystem diversity
    - Plants and Wildlife (land & aquatic)
- Environmental Services
  - Biological sequestration
    - Carbon
  - Nutrient and Mineral source
  - Water Quality

LTMS VS. REGIONAL SEDIMENT MANAGEMENT

- Examines sediment as a system and program
- Recognizes sediment as a resource, not a waste product
- Focused 100% on navigation dredging
- Maximize beneficial reuse
  - EIS/EIR 40% feasibility

Integrated management of littoral, estuarine, and riverine sediments to achieve balanced and sustainable solutions to sediment related needs."

Sediment processes are important components of coastal and riverine systems that are integral to environmental and economic vitality

- Examines sediment as a system
- Can incorporate all sediment related activities
  - Navigation dredging
  - Aggregate mining – sand and shell
  - Flood protection and management
  - Reservoirs and dams
  - Climate adaptation

SOIL AND SEDIMENT

- Mixture comprised of inorganic and organic materials.
- Valuable natural resource.
- Setting
  - Above water-> Soil (excavation)
  - Below water-> Sediment (dredging)
- Variation in type and therefore uses
  - Fine grain – mud, silt, clay
    - Wetland restoration, berms
  - Sand – fine and coarse
    - levee construction, beaches
  - Pebble/cobble
    - limited in region, cobble beaches

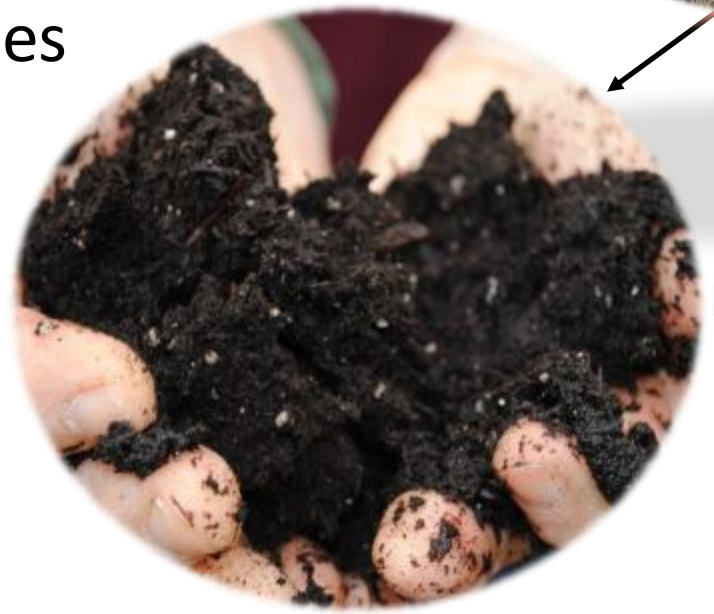


Photo: JerseyRed (Flickr)

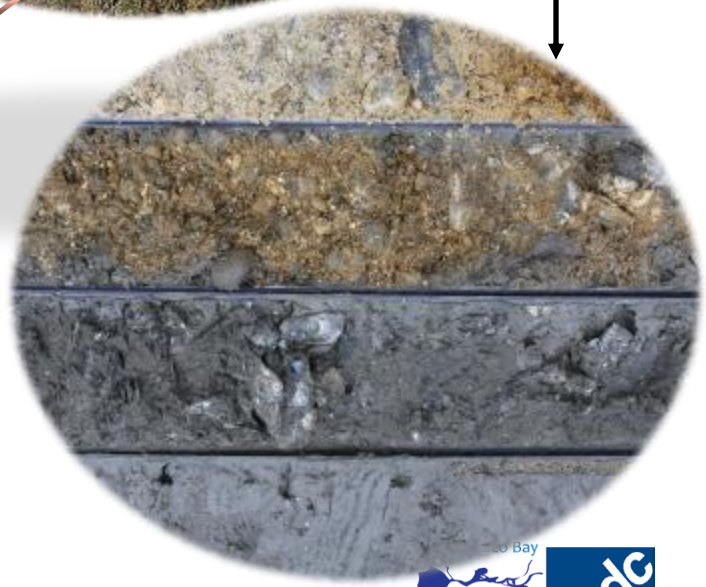


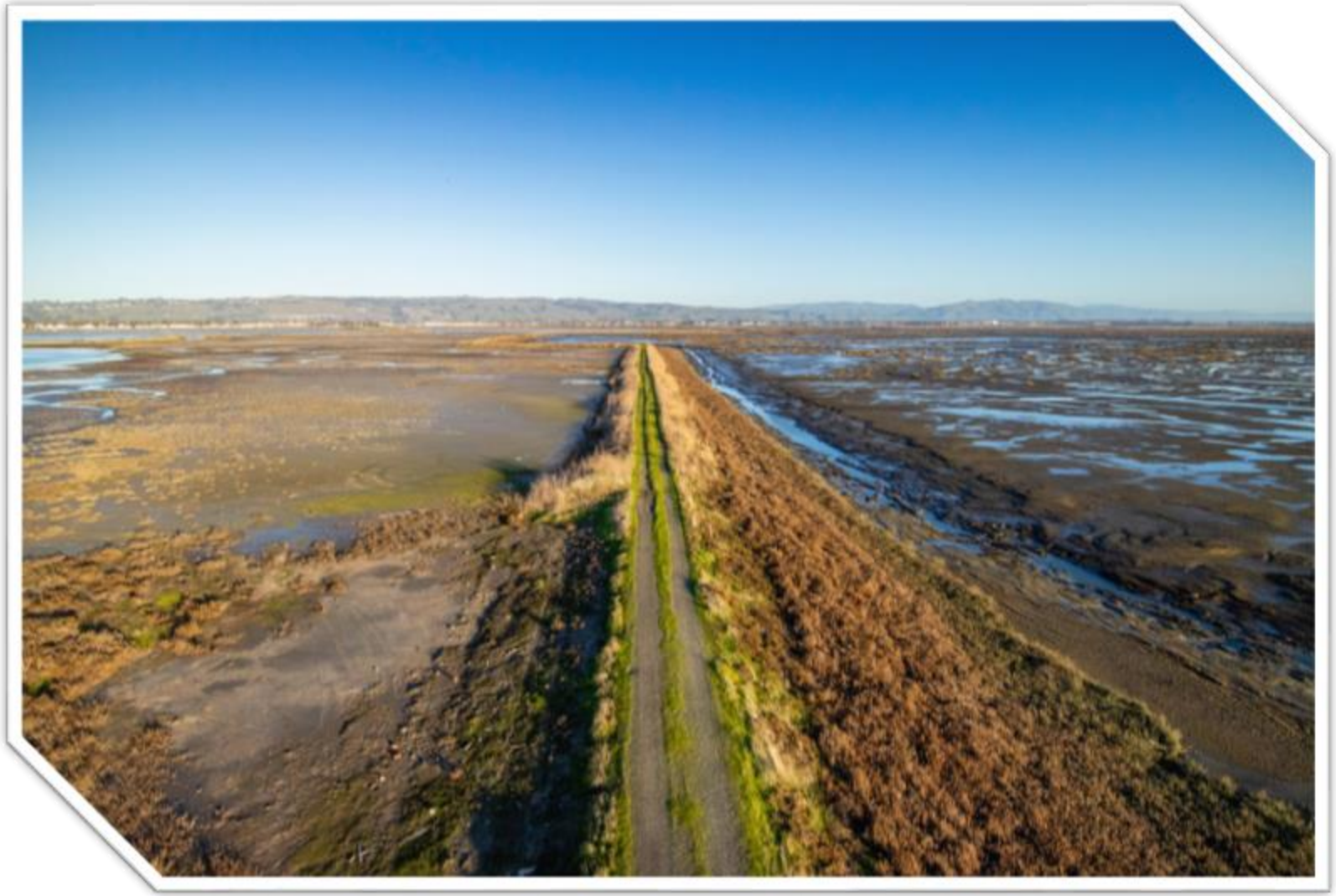
Photo: Wessex Archeology (Flickr)

LANGUAGE OF SEDIMENT

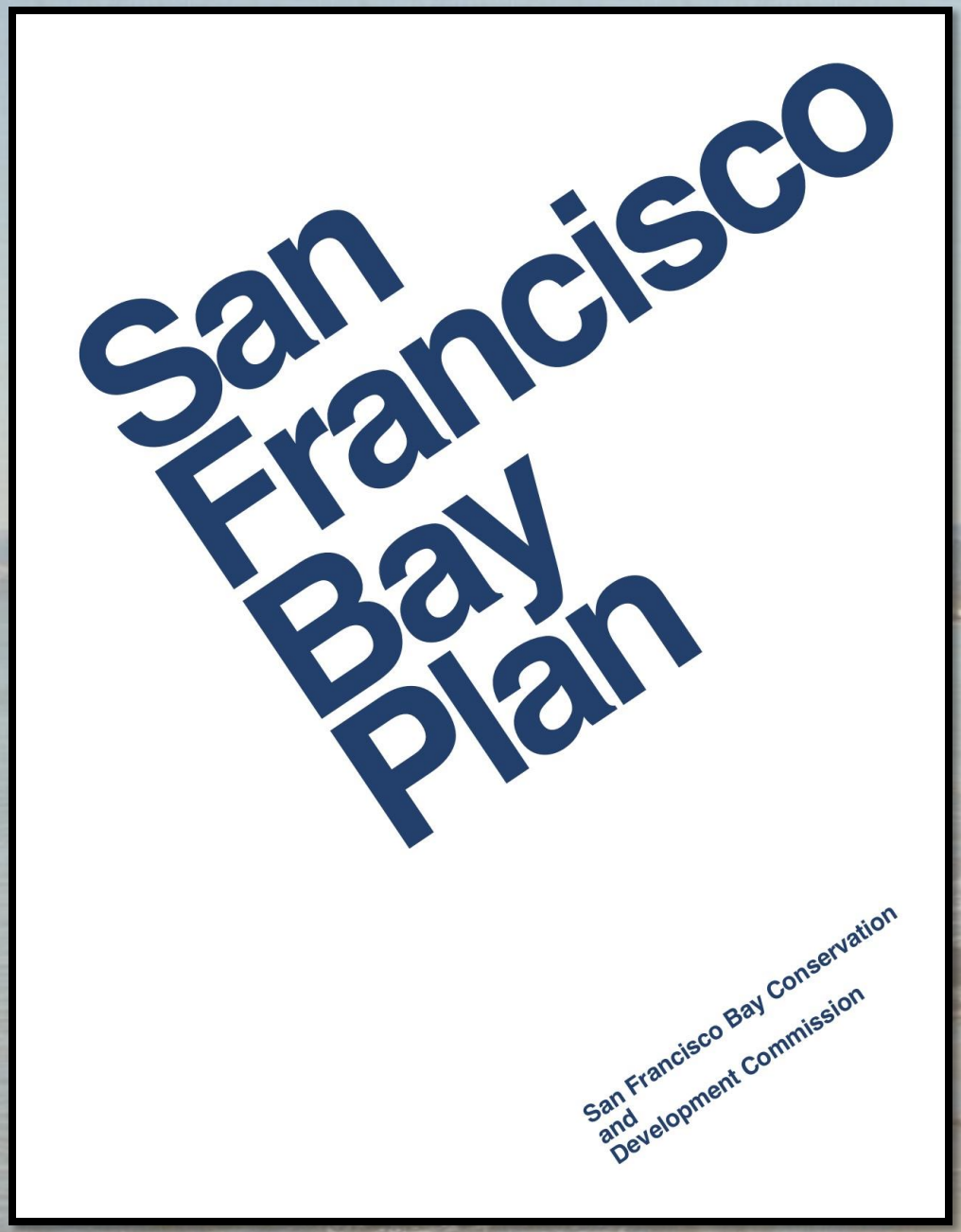
- Dredged material # dredged sediment
- In-Bay disposal vs in water beneficial reuse (SF8 – sand), strategic placement
- Sediment starved
- Sediment deposition vs drowning marsh
- Aggrading vs eroding marsh edge
- Complete marsh = elevation transition, vegetated, and mudflats

Questions?

Discussion



Credit: Cris Benton


San Francisco Bay Plan
San Francisco Bay Conservation and Development Commission

MCATEER-PETRIS ACT

- Chapter 5 – 66663.1

“(b) Examine the potential for and promote using dredged materials as a resource, such as creating new wetlands and maintaining existing levees.”

Chapter 5.5 – Article 1

Long Term Management Strategy

“(a) Evaluation of the use of upland, diked bayland and delta areas for reuse of material dredged from the bay, regulatory constraints and opportunities involving upland disposal, and potential project sponsors and methods to implement those uses.”

“(c) participation in the studies of the economic and environmental impacts of … disposal options, and assistance in the identification of … acceptable disposal sites for material dredged from the bay… with particular attention given to identifying sites suitable for the reuse of dredge material.”

DREDGING POLICIES ENCOURAGING BENEFICIAL REUSE

Policy 1

- "Dredging and dredged material disposal should be conducted in an environmentally and economically sound manner. Dredgers should reduce disposal in the Bay and certain waterways over time to achieve the LTMS goal of limiting in-Bay disposal volumes to a maximum of one million cubic yards per year…."

Policy 5

- "dredging projects should maximize use of dredged material as a resource consistent with protecting and enhancing the Bay natural resources such as creating, enhancing or restoring tidal and managed wetlands"

Policy 10

- "Interested agencies and parties are encouraged to explore and find funding solutions for… transporting dredged material to nontidal and ocean disposal sites"

Policy 12

- The Commission should continue to participate in the LTMS, the DMMO, and other initiatives conducting research on Bay sediment movement, the effects of dredging…alternatives to Bay aquatic disposal and funding…"

BAY PLAN POLICIES SUPPORTIVE OF WETLAND RESTORATION

Tidal Marshes and Tidal Flats	• Policies 1, 4, 5, 6, 10, 11, 12 "where feasible, former tidal marshes and tidal flats that have been diked from the Bay should be restored to tidal action…" (Policy 5)
Fish, Other Aquatic Organisms, and Wildlife	• Policies 1, 2, 3, 5, 6, 7 "Sediment placement for habitat adaptation should be prioritized in (1) subsided diked baylands, tidal marshes and tidal flats… (2) intertidal and shallow subtidal areas to support tidal marsh, tidal flat, … adaptation" (Policy 7)
Water Quality	• Policy 1 "the Bay's tidal marshes, tidal flats, …should be conserved and, whenever possible, restored and increased to protect and improve water quality"
Subtidal Areas	• Policies 6, 8, 9, 10 "fill may be authorized for habitat enhancement, restoration or sea level rise adaptation of habitat if the Commission finds that no other method of enhancement or restoration except filling is feasible" (Policy 8)
Climate Change	• Policies 4, 7(d) "To address regional adverse impacts of climate change, undeveloped areas that are … especially suitable for ecosystem enhancement should be given special consideration for preservation…" (Policy 4)

Questions / Discussion

Meeting Schedules