

San Francisco Bay Sediment for Wetland Adaptation Project (SWAP)

Sediment and Beneficial Reuse
Commissioner Working Group Meeting
October 18, 2024



SF Bay Conservation and Development Commission
Regional Sediment Management Program



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Agenda

- **SWAP Project Updates**
- **Overview of Bay Plan Amendment Process**
- **Overview of Bay Plan Policies on Sediment**
- **Public Comment**
- **Adjourn**

Meeting Ground Rules

- **To ask a question or add a comment please either:**
 - Raise your hand virtually
 - Add your question or comment to the meeting chat
- **Re-state your name/affiliation when coming off mute**
- **Be respectful**

Project Updates

Sediment for Wetland Adaptation Project

Goal:

“Increase beneficial reuse of sediment and soil for wetland habitat restoration, resilience, and sea level rise adaptation in the San Francisco Bay Area.”

Project Objectives:

- Increased Collaboration
- Sediment to Wetlands Action Plan
- Possible Policy Changes
- Financing Strategy

SWAP Timeline

2023-2024

***Phase 1* – Stakeholder Engagement**

- Sediment to Wetlands Action Plan
- Coalition building

2025

***Phase 2* – Potential Bay Plan Amendment**

***Phase 3* – Financing Strategy**

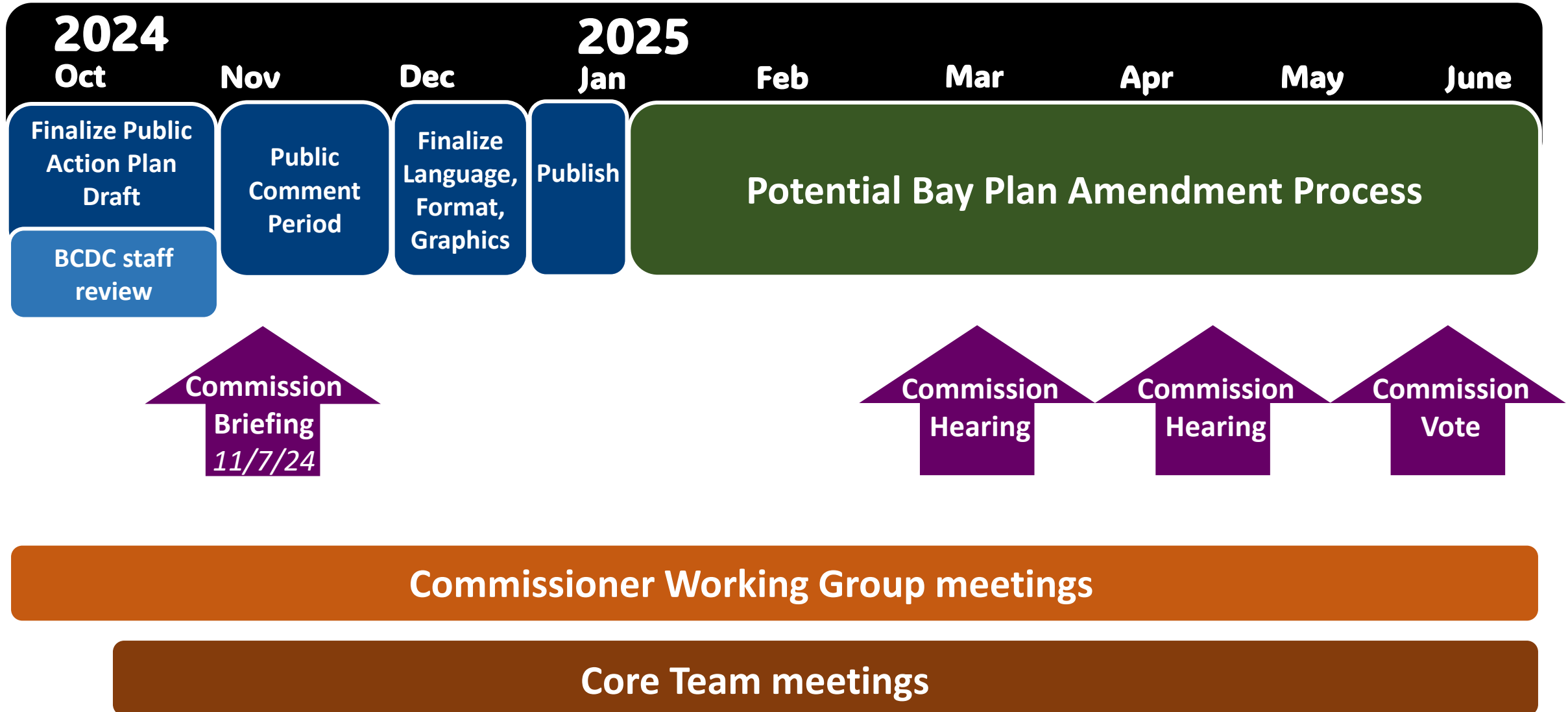
Commissioner Working Group meetings

Core Team meetings

Steps to Release Action Plan

- **Survey workshop participants** ✓
- **Publish Action Plan**
 - Outline Action Plan ✓
 - Review/Revise Actions (*in progress*) ✓
 - Brainstorm and draft with Core Team members ✓
 - Determine Action Plan structure ✓
 - Internal review period
 - Post to BCDC website for public comment
 - Hold a briefing at a Commission meeting
 - Finalize Action Plan graphics and language
 - Post finalized Action Plan to BCDC website
- **Complete Issue Papers**

Updated Timeline



Questions / Discussion



Photo: Hamilton Wetlands

Bay Plan Amendment Process

San Francisco Bay Plan

- **Guides the review of projects under the McAteer-Petris Act**
- **Policies related to:**
 - Protection of the Bay as a Resource
 - Development of the Bay and Shoreline
- **Policies are updated periodically**



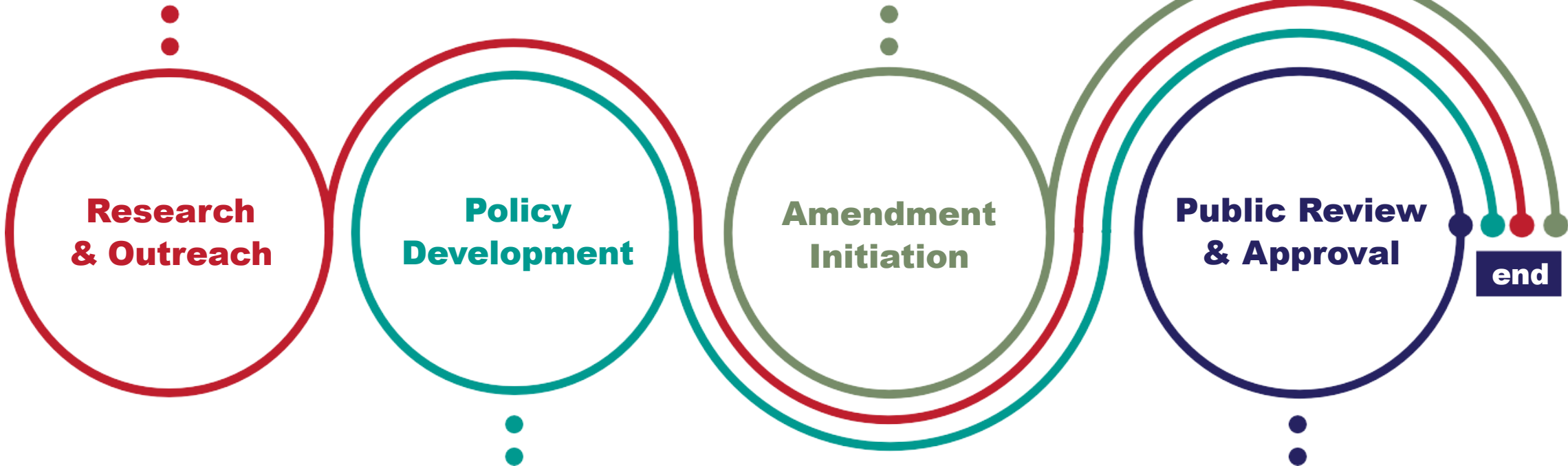
Bay Plan Cover (Source: BCDC)

Bay Plan Amendment Process

begin

After the Commission directs Staff to amend the Bay Plan, Staff conduct research and outreach to subject matter experts and conduct meaningful community engagement.

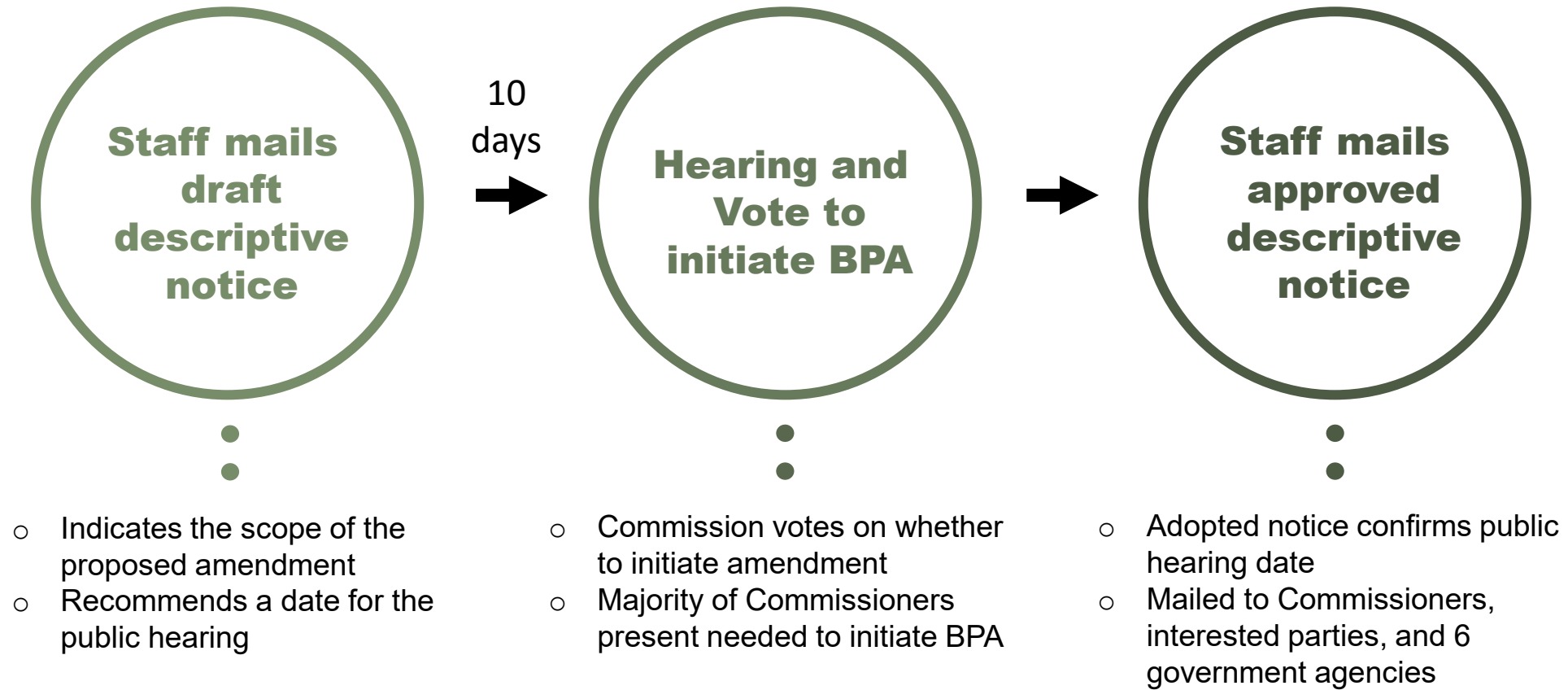
At a public hearing, Commissioners vote on whether to initiate the amendment. A majority of Commissioners present at the hearing must vote in favor to initiate the amendment.



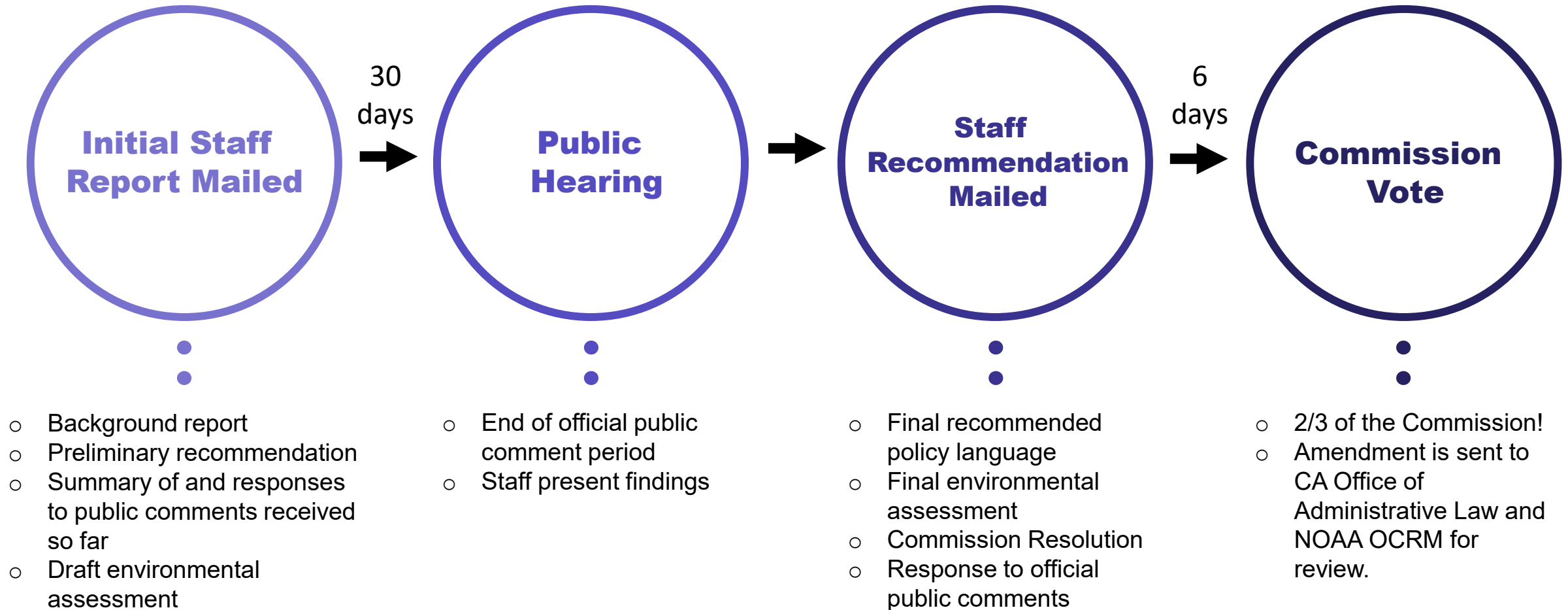
Staff develop policy by analyzing and integrating results of research and outreach.

At a public hearing, the Commission reviews Staff's preliminary recommendation and policy language, and the 30-day public comment period starts. At a later public meeting, the Commission votes on the amendment based on Staff's final recommendation.

Amendment Initiation



Public Review & Approval



Questions / Discussion



Bay Plan Policies on Sediment

Brenda Goeden, BCDC

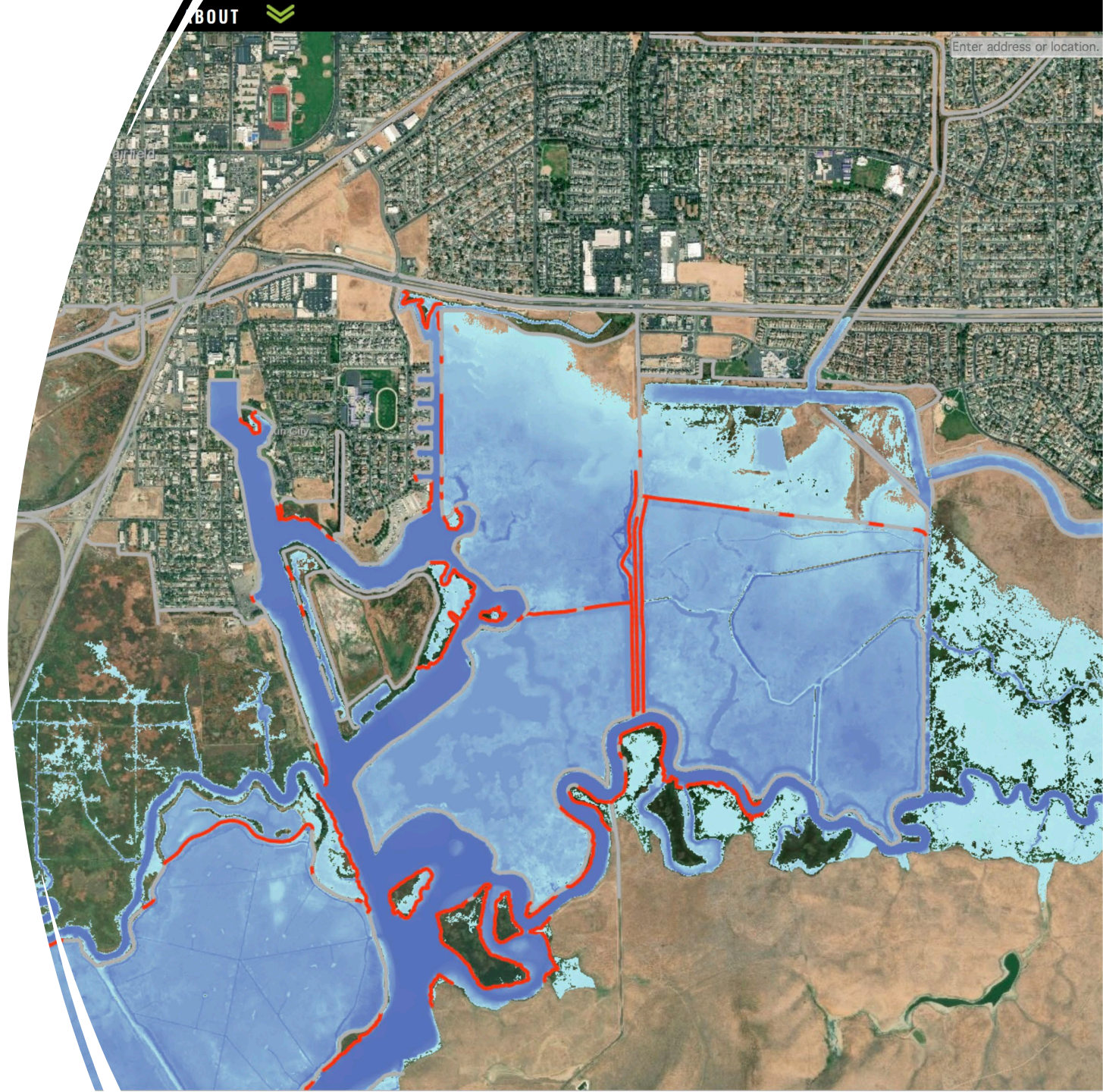
San Francisco Bay Plan Sediment Policy Overview

Brenda Goeden, Sediment Program Manager
San Francisco Bay Conservation and Development Commission
Commissioner Sediment and Beneficial Reuse Working Group
October 18, 2024

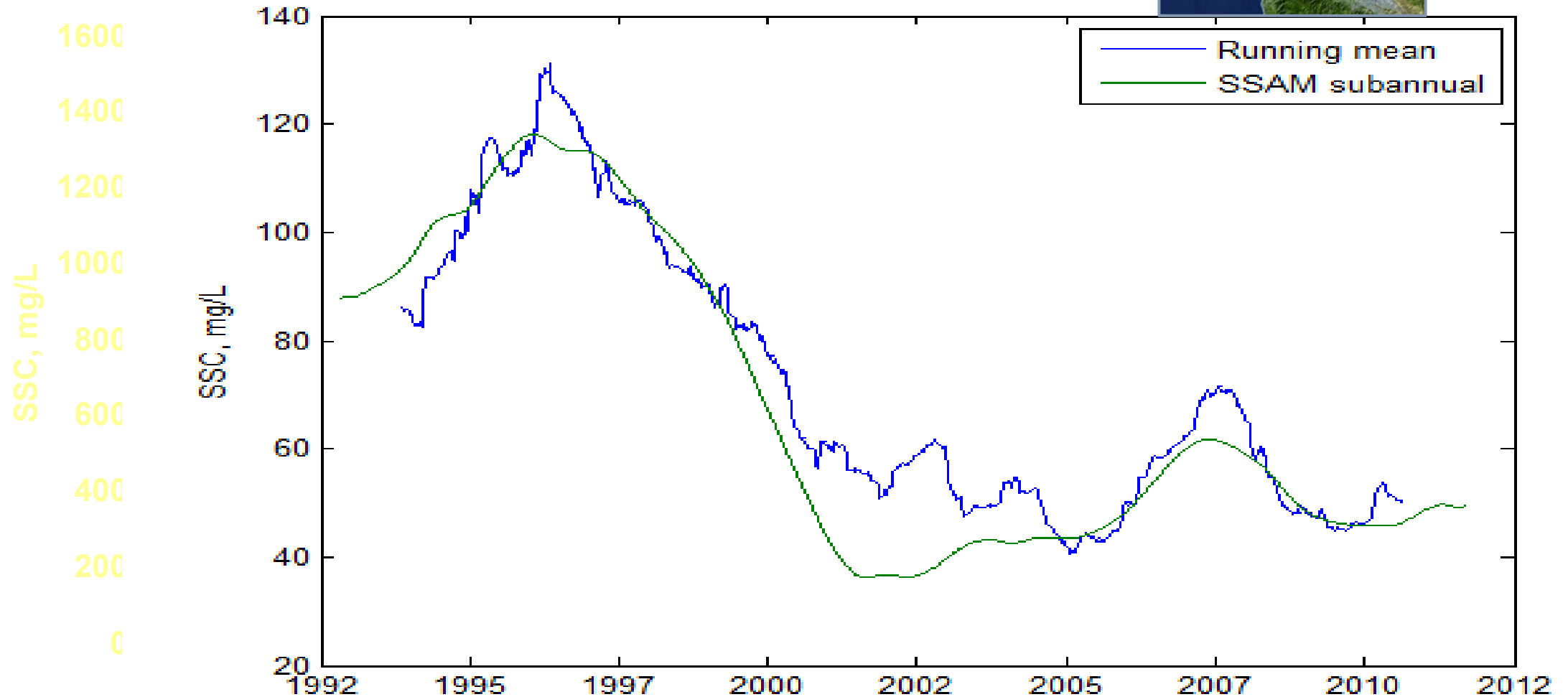
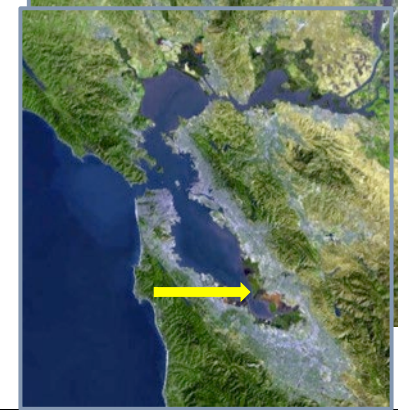


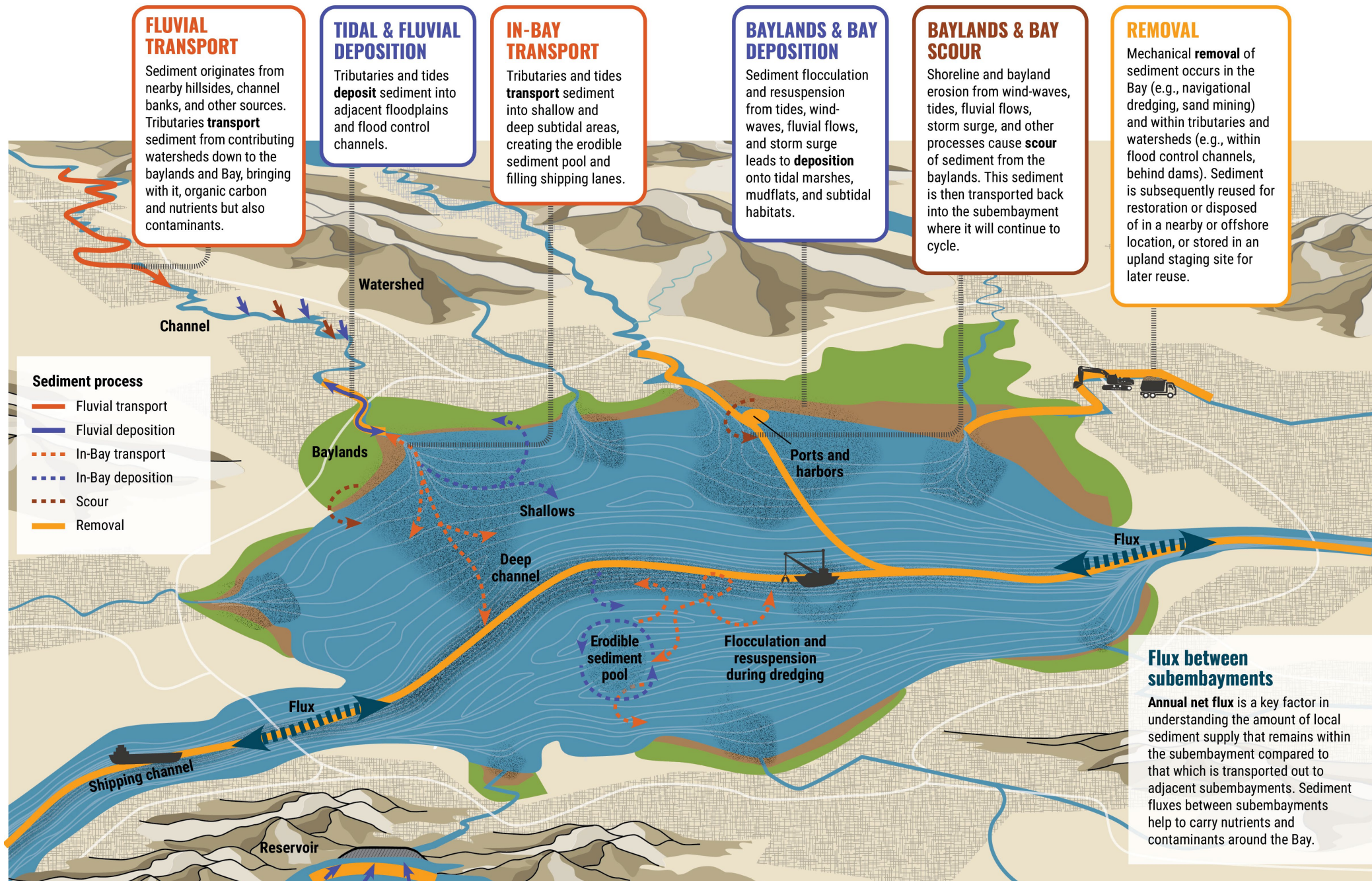
Making San Francisco Bay Better

Sea Level is Rising



Decline in Suspended Sediment Supply from the Delta





SFEI, Fine Grain Sediment Conceptual Model, in preparation

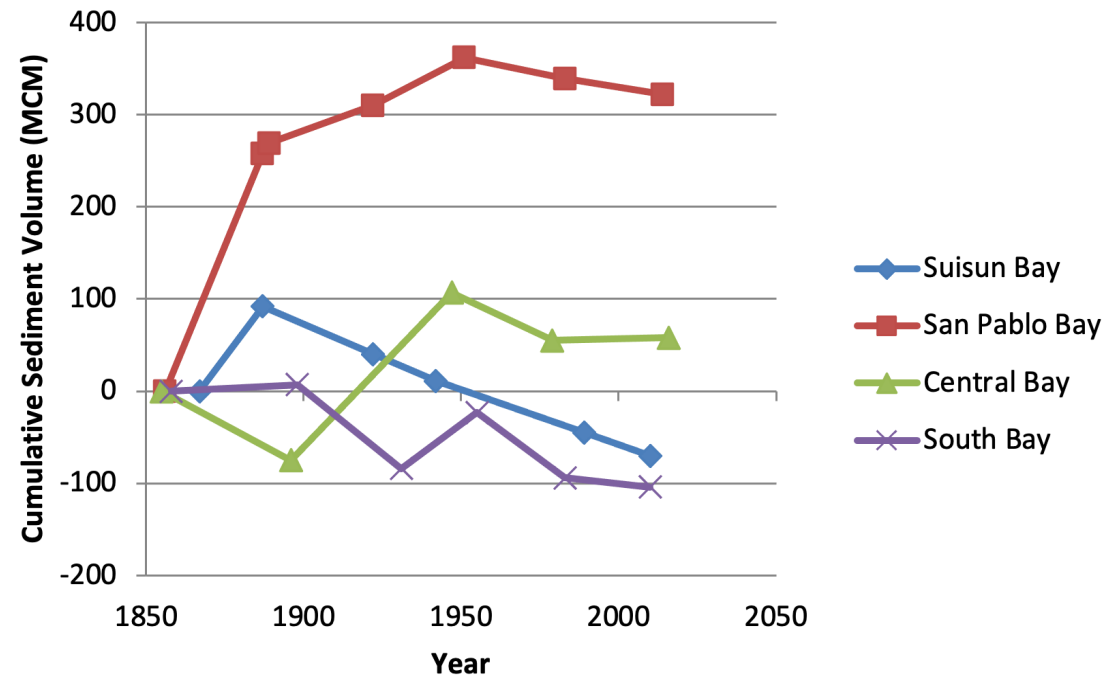
Changes in Bay Sediment Volume

Overall: Approximately 25 MCM loss

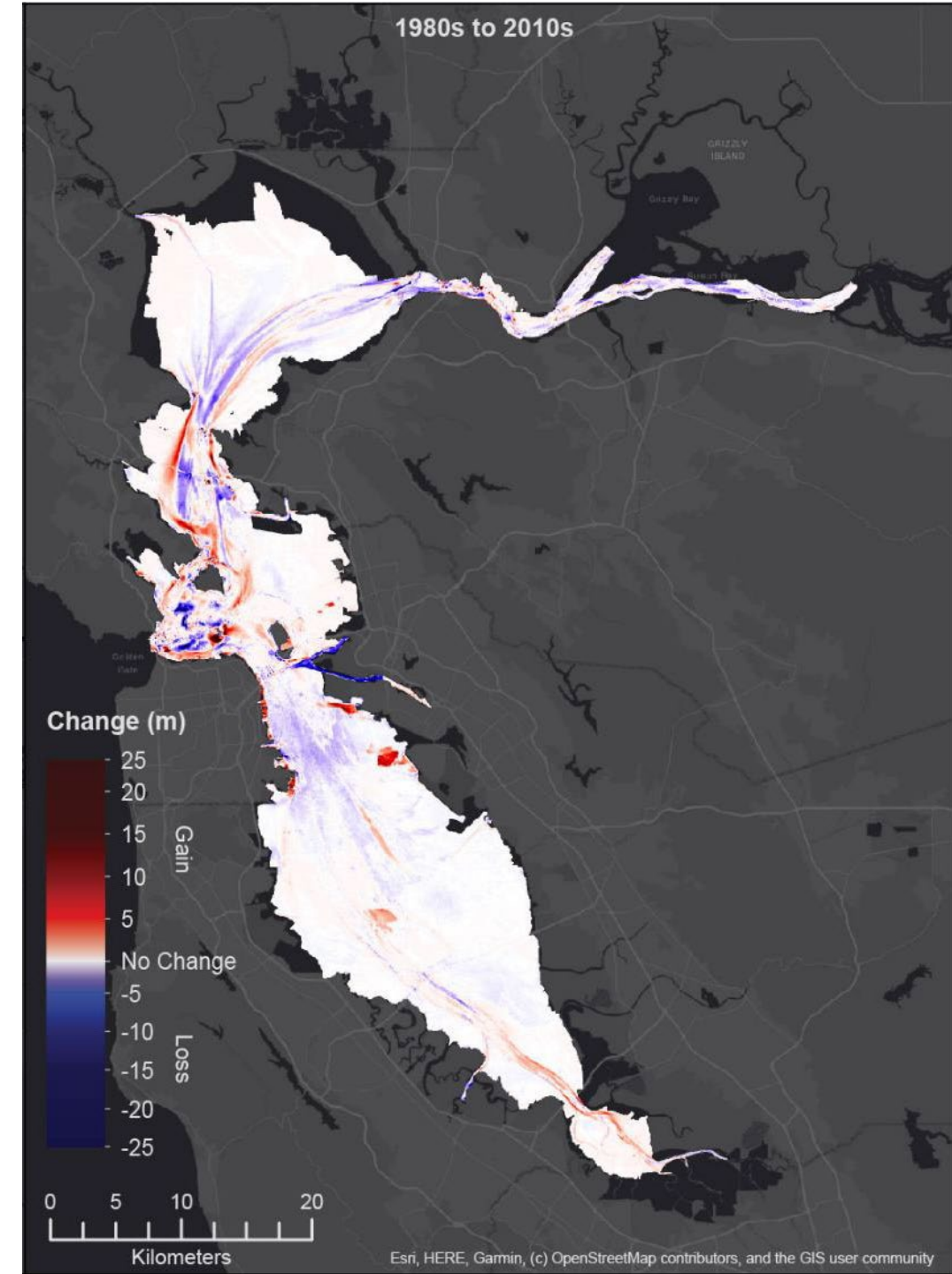
San Pablo Bay: 17 MCM loss

Central Bay: 3 MCM gain

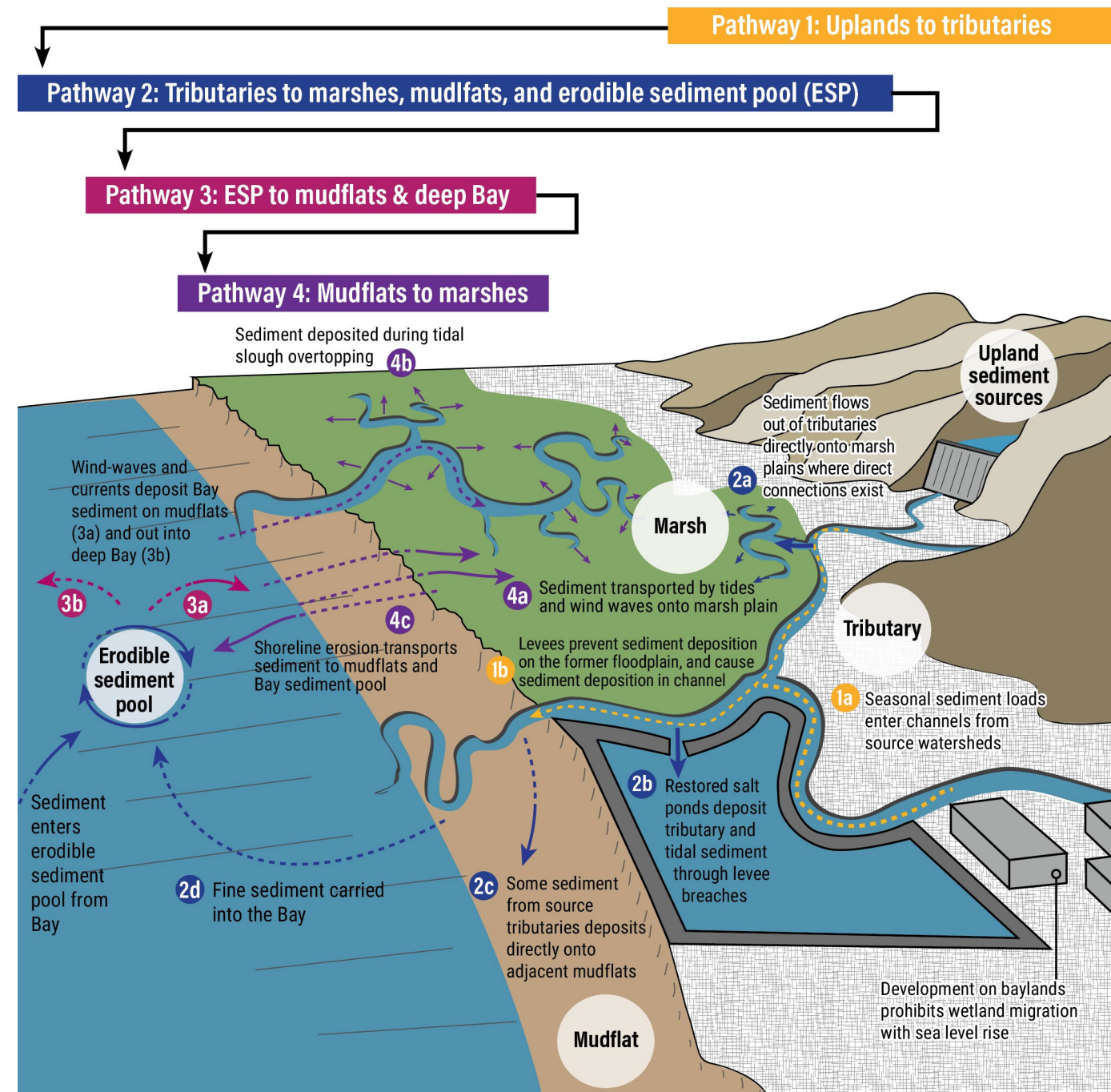
South Bay: 10 MCM loss



Jaffee, B. et.al., USGS, 2021



Sediment Transport Mechanisms to Marshes





San Francisco Bay Conservation and Development Commission

McAteer Petris Act

- San Francisco Bay Plan

Suisun Marsh Preservation Act

- Suisun Marsh Protection Plan

Coastal Zone Management Act

- San Francisco Bay Coastal Zone Management Program
 - McAteer Petris Act
 - San Francisco Bay Plan



San Francisco Bay Conservation and Development Commission

McAteer Petris Act Jurisdiction (66610)

- Bay – tidal areas
- Certain Waterways – specific tributaries
- Shoreline Band – 100 feet from Bay
- Salt Ponds and Managed Wetlands

CZMA Jurisdiction

- Effects to the San Francisco Bay Coastal Zone

McAteer-Petris Act

66605, Further filling of the Bay –

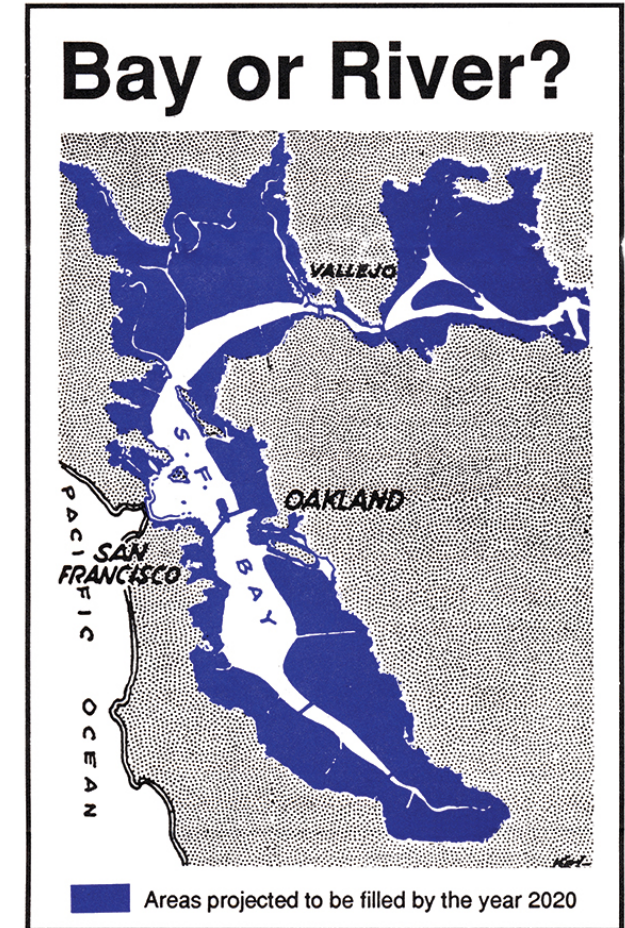
- Public benefits outweigh the detriments, and is for a water-oriented use
- No alternate upland location
- Minimum necessary to achieve the purpose of the fill
- Minimize harmful effects to the Bay Area..."environment"
- Protects public health, safety, and welfare
- Establish a permanent shoreline
- Valid title to the land

PRC 21060.5. "Environment" means the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, **minerals**, flora, fauna, noise, objects of historic or aesthetic significance.

McAteer-Petris Act

66632, Permits required for Fill, Extraction of Materials, or Substantial Change in Use of Land, Water, or Structure.

- For purposes of this title, “fill” means earth or any other substance or material, including pilings or structures placed on pilings, and structures floating at some or all times and moored for extended periods, such as houseboats and floating docks



Courtesy Oakland Tribune

McAteer-Petris Act

66663. Dredging. The Legislature hereby finds and declares that because of the shallowness and high rate of sedimentation of the San Francisco Bay, dredging is essential to establish and maintain navigational channels for maritime commerce, which contributes substantially to the local, regional, and state economies, as well as for military navigation, flood control, recreational boating, and other public purposes.

66664.4. “Dredging.” “Dredging” means the extraction of sand, mud, or other materials from San Francisco Bay, its tributaries, the delta, or coastal state waters.

San Francisco Bay Plan Structure

Part I – Summary

Major Conclusions and Policies

Part II - Objectives

1. Protect the Bay as a great natural resource
2. Develop the Bay and shoreline to its highest potential with minimum filling

Part III – The Bay as a Resource

Part IV –Development of the Bay and Shoreline

Part V - Bay Plan Maps



The Bay as a Resource

Fish, Other Aquatic Organisms, and Wildlife

7. Sediment placement for habitat adaptation should be prioritized in (1) subsided diked baylands, tidal marshes, and tidal flats, as these areas are particularly vulnerable to loss and degradation due to sea level rise and lack of necessary sediment supply, and/or in (2) intertidal and shallow subtidal areas to support tidal marsh, tidal flat, and eelgrass bed adaptation. **In some cases, sediment placement for a habitat project in deep subtidal areas may be authorized if substantial ecological benefits will be provided and the project aligns with current regional sediment availability and needs.**

The Bay as a Resource

2. Water quality in all parts of the Bay should be maintained at a level that will support and promote the beneficial uses of the Bay as identified in the San Francisco Bay Regional Water Quality Control Board's *Water Quality Control Plan, San Francisco Bay Basin* and should be protected from all harmful or potentially harmful pollutants. The policies, recommendations, decisions, advice and authority of the State Water Resources Control Board and the Regional Board should be the basis for carrying out the Commission's water quality responsibilities.

3. New projects should be sited, designed, constructed and maintained to prevent or, if prevention is infeasible, to minimize the discharge of pollutants into the Bay by: (a) controlling pollutant sources at the project site; (b) using construction materials that contain non-polluting materials; and (c) applying appropriate, accepted and effective best management practices, especially where water dispersion is poor and near shellfish beds and other significant biotic resources.

The Bay as a Resource

Tidal Marshes and Tidal Flats

6. Any habitat project should include clear and specific long-term and short-term biological and physical goals, success criteria, a monitoring program, and as appropriate, an adaptive management plan. Design and evaluation of the project should include an analysis of: (a) how the project's adaptive capacity can be enhanced so that it is resilient to sea level rise and climate change; (b) the impact of the project on the Bay's and local embayment's sediment transport and budget; **(c) localized sediment erosion and accretion**; (d) the role of tidal flows; (e) potential invasive species introduction, spread, and their control; (f) rates of colonization by vegetation; (g) the expected use of the site by fish, other aquatic organisms and wildlife; (h) an appropriate buffer, where feasible, between shoreline development and habitats to protect wildlife and provide space for marsh migration as sea level rises; (i) site characterization; (j) how the project adheres to regional restoration goals; (k) whether the project would be sustained by natural processes; and (l) how the project restores, enhances, or creates connectivity across Bay habitats at a local, sub-regional, and/or regional scale.

The Bay as a Resource

Tidal Marshes and Tidal Flats

10. Based on scientific ecological analysis, project need, and consultation with the relevant federal and state resource agencies, **fill may be authorized for habitat enhancement, restoration, or sea level rise adaptation of habitat.**

12. The Commission should encourage and support research on:

(a) Habitat restoration, enhancement, and creation approaches, including strategies for: **increasing resilience to sea level rise, placing fill**, evaluating habitat type conversion, enhancing habitat connectivity, and improving transition zone design;

(b) **The estuary's sediment processes;**

(c) Detection and monitoring of invasive species and regional efforts for eradication of specific invasive species.

The Bay as a Resource

Subtidal Areas

1. Any proposed filling or dredging project in a subtidal area should be thoroughly evaluated to determine the local and Bay-wide effects of the project on: (a) the possible introduction or spread of invasive species; **(b) tidal hydrology and sediment movement**; (c) fish, other aquatic organisms and wildlife; (d) aquatic plants; and **(e) the Bay's bathymetry**. Projects in subtidal areas should be designed to minimize and, if feasible, avoid any harmful effects.
3. Any subtidal habitat project should include clear and specific long-term and short-term biological and physical goals, success criteria, a monitoring program, and as appropriate, an adaptive management plan. Design and evaluation of the project should include an analysis of: (a) the ecological need for the project; (b) the effects of relative sea level rise; **(c) the impact of the project on regional and local sediment budget and transport**; (d) localized sediment erosion and accretion; (e) the role of tidal flows; (f) potential invasive species introduction, spread, and control; (g) rates of colonization by vegetation, where applicable; (h) the expected use of the site by fish, other aquatic organisms and wildlife; (i) characterization of and changes to local bathymetric features; (j) how the project will adhere to the best available and regionally appropriate science on subtidal restoration and conservation goals; and (k) whether the project would be sustained by natural processes.

The Bay as a Resource

Subtidal Areas

8. Based on scientific ecological analysis and consultation with the relevant federal and state resource agencies, **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.
10. The Commission should continue to support and encourage expansion of scientific information on the Bay's subtidal areas, including: (a) inventory and description of the Bay's subtidal areas; (b) the relationship between the Bay's physical regime and biological populations; **(c) sediment dynamics, including sand transport, and wind and wave effects on sediment movement**; (d) oyster shell transport; (e) areas of the Bay used for spawning, birthing, nesting, resting, feeding, migration, among others, by fish, other aquatic organisms and wildlife; (f) where and how habitat restoration, enhancement, and creation should occur considering species/habitat needs and suitable project sites; and (g) if, where, and what type of habitat type conversion may be acceptable.

Development of the Bay and Shoreline

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. The LTMS agencies should implement a system of disposal allotments to individual dredgers to achieve this goal only if voluntary efforts are not effective in reaching the LTMS goal. In making its decision regarding disposal allocations, the Commission should confer with the LTMS agencies and consider the need for the dredging and the dredging projects, environmental impacts, regional economic impacts, efforts by the dredging community to implement and fund alternatives to in-Bay disposal, and other relevant factors. Small dredgers should be exempted from allotments, but all dredgers should comply with policies 2 through 12.

Development of the Bay and Shoreline

2. Dredging should be authorized when the Commission can find: (a) the applicant has demonstrated that the dredging is needed to serve a water-oriented use or other important public purpose, such as navigational safety; (b) the materials to be dredged meet the water quality requirements of the San Francisco Bay Regional Water Quality Control Board; (c) important fisheries and Bay natural resources would be protected through seasonal restrictions established by the California Department of Fish and Game, the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service, or through other appropriate measures; (d) the siting and design of the project will result in the minimum dredging volume necessary for the project; and (e) the materials would be disposed of in accordance with Policy 3.

3. Dredged materials should, if feasible, be reused or disposed outside the Bay and certain waterways. Except when reused in an approved fill project, dredged material should not be disposed in the Bay and certain waterways unless disposal outside these areas is infeasible and the Commission finds: (a) the volume to be disposed is consistent with applicable dredger disposal allocations and disposal site limits adopted by the Commission by regulation; (b) disposal would be at a site designated by the Commission; (c) the quality of the material disposed of is consistent with the advice of the San Francisco Bay Regional Water Quality Control Board and the inter-agency Dredged Material Management Office (DMMO); and (d) the period of disposal is consistent with the advice of the California Department of Fish and Game, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service.

Development of the Bay and Shoreline

4. If an applicant proposes to dispose dredged material in tidal areas of the Bay and certain waterways that exceeds either disposal site limits or any disposal allocation that the Commission has adopted by regulation, the applicant must demonstrate that the potential for adverse environmental impact is insignificant and that non-tidal and ocean disposal is infeasible because there are no alternative sites available or likely to be available in a reasonable period, or because the cost of disposal at alternate sites is prohibitive. In making its decision whether to authorize such in-Bay disposal, the Commission should confer with the LTMS agencies and consider the factors listed in Policy 1.
5. To ensure adequate capacity for necessary Bay dredging projects and to protect Bay natural resources, acceptable non-tidal disposal sites should be secured and the Deep Ocean Disposal Site should be maintained. Further, dredging projects should maximize use of dredged material as a resource consistent with protecting and enhancing Bay natural resources, such as creating, enhancing, or restoring tidal and managed wetlands, creating and maintaining levees and dikes, providing cover and sealing material for sanitary landfills, and filling at approved construction sites.
6. Dredged materials disposed in the Bay and certain waterways should be carefully managed to ensure that the specific location, volumes, physical nature of the material, and timing of disposal do not create navigational hazards, adversely affect Bay sedimentation, currents or natural resources, or foreclose the use of the site for projects critical to the economy of the Bay Area.

Development of the Bay and Shoreline

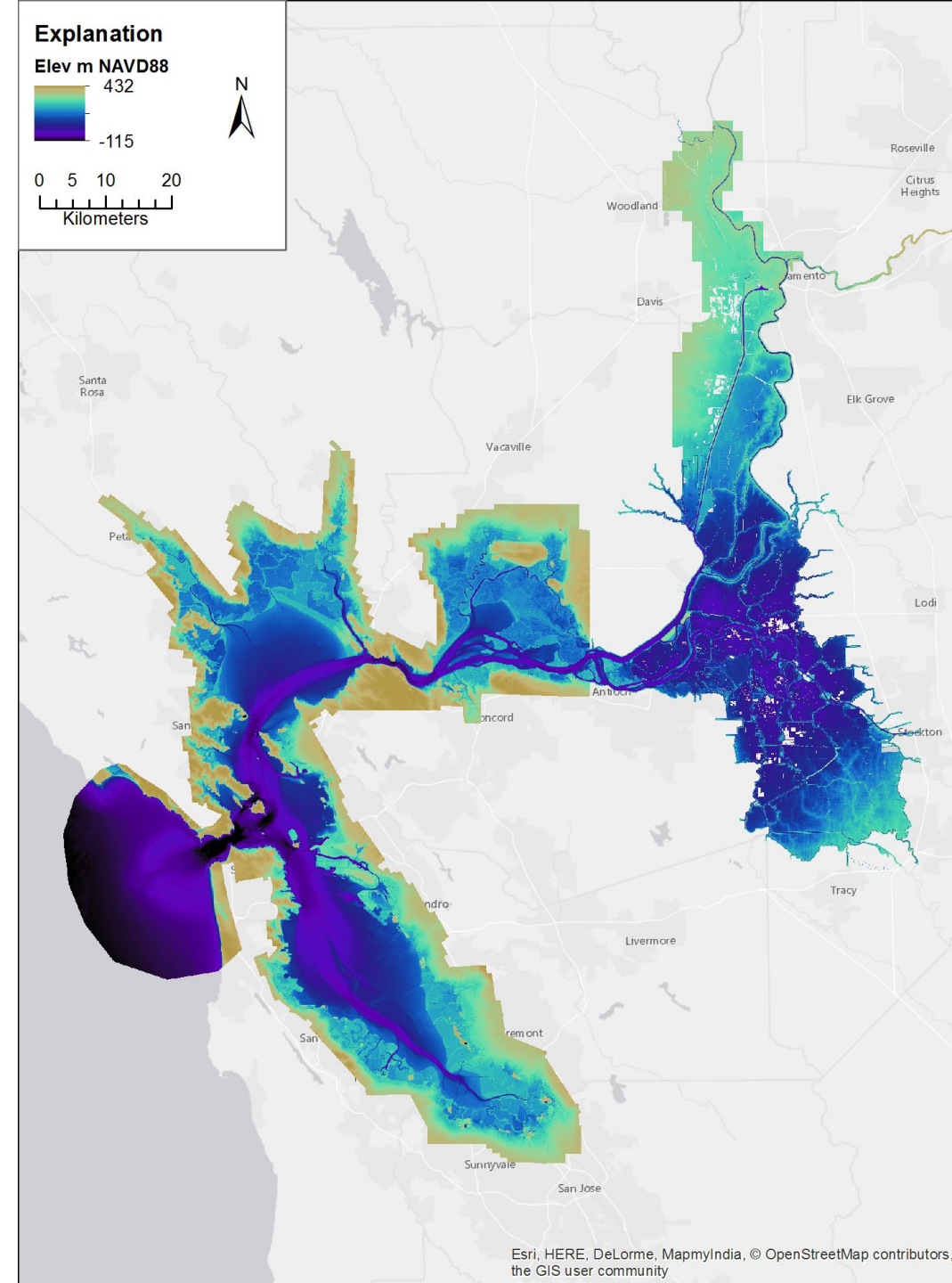
8. The Commission should encourage increased efforts by soil conservation districts and public works agencies in the 50,000 square-mile Bay tributary area to continuously reduce soil erosion as much as possible.

10. Interested agencies and parties are encouraged to explore and find funding solutions for the additional costs incurred by transporting dredged materials to nontidal and ocean disposal sites, either by general funds contributed by ports and other relevant parties, dredging applicants or otherwise.

Policy 11 & 12 – how in bay sediment projects should be conducted, monitored, and relationship to Middle Harbor Enhancement Project.

What's Not in the Bay Plan?

- Sediment as a resource & connectivity between bay, marshes, and shoreline
- Specific consideration of work in flood channels and streambed maintenance
- Use of upland soils
- Shoreline protection impacts on sediment transport
- Other?



Public Comment

3 minutes per comment

Adjournment