

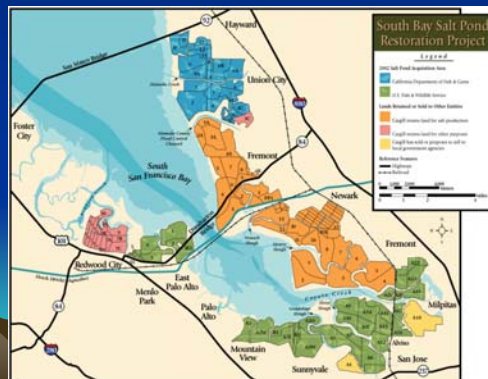
Eden Landing Ecological Reserve and the South Bay Salt Ponds Restoration Project

a view of the Alameda Creek Watershed from
it's intersection with the SF Bay

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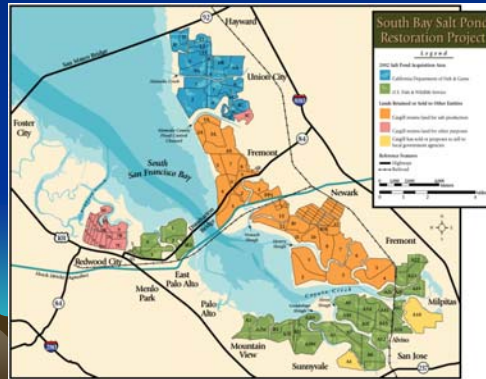
South Bay Salt Ponds Restoration Project Overview and Goals

- Collaboration between federal, state and local agencies and partners
- USFWS, DFG, SCC and ACFCWCD, SCVWD with USGS, NOAA, CSUS-CCP, RLF
- Completed FEIS/R, received permits, beginning implementation

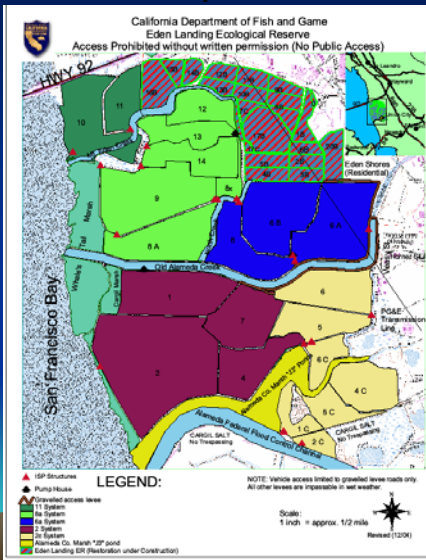


South Bay Salt Ponds Restoration Project Overview and Goals

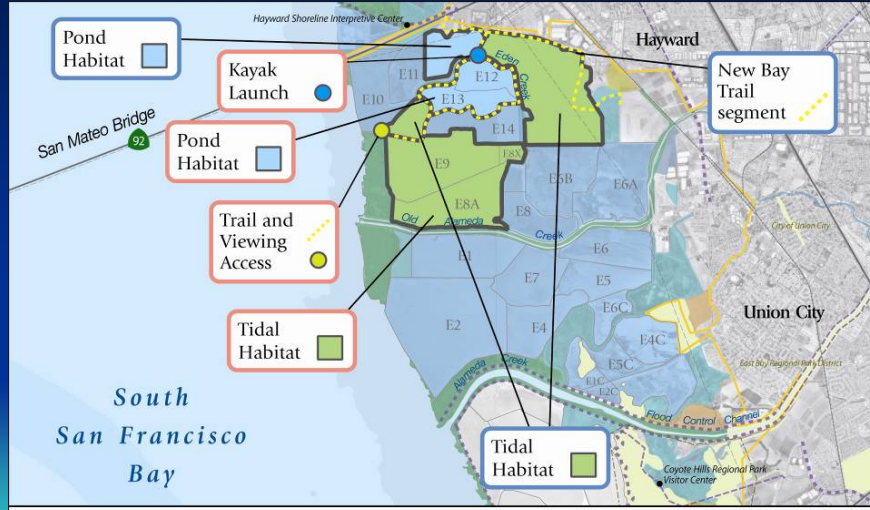
- Wetland habitat restoration and enhancement
- Flood protection
- Wildlife-oriented public access and recreation facilities



South Bay Salt Ponds Restoration Project Initial Stewardship at Eden Landing



South Bay Salt Ponds Restoration Project Phase 1 at Eden Landing

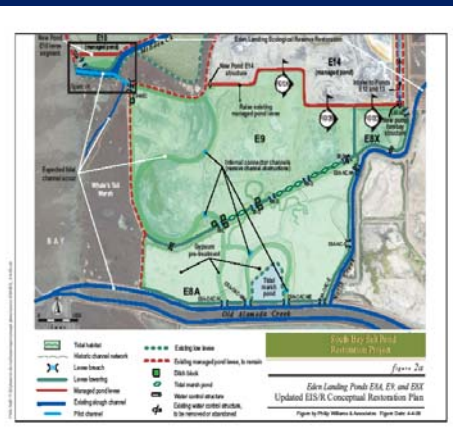


Initial Restoration Actions
South Bay Salt Pond Restoration Project—Eden Landing Area

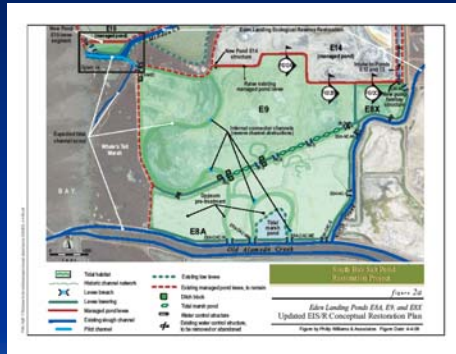
2006 - 08 Proposed Phase 1

South Bay Salt Ponds Restoration Project Phase 1 at Eden Landing

- Ponds E8A, E9, and E8X will be restored to create approx. 630 acres of tidal salt marsh and channel habitat and improve flood protection near Old Alameda Creek
- Preliminary design is being funded by the Alameda County Flood Control and Water Conservation District (ACFCWCD). 90% complete



South Bay Salt Ponds Restoration Project Phase 1 at Eden Landing



- Habitat Restoration through levee breaching, excavation of pilot channels through fringe marsh outboard of certain levee breaches, levee lowering, and borrow ditch blocks/filling.
- Designed to maintain or improve existing levels of flood protection in Old Alameda Creek.
- Reuse of sediment from OAC: Pond 10 levee; Pond 8A borrow ditch?

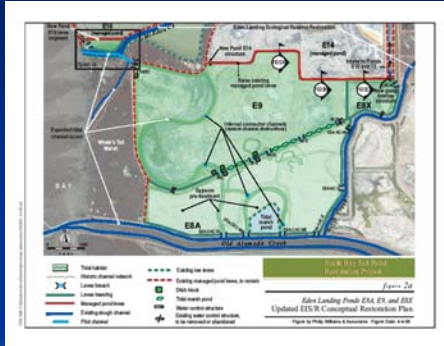
South Bay Salt Ponds Restoration Project Phase 1 at Eden Landing

Construction funds: \$7.1 million
 NOAA ARRA stimulus funds (\$3.2M),
 State bond funds (\$1.5M),
 USFWS National Coastal Wetlands
 Conservation Program grant (\$1.0M),
 ACFCF funds (\$0.8M),
 National Fish and Wildlife Foundation
 grant [leopard shark poaching
 penalties] (\$0.6M),
 Resources Legacy Fund grant for
 monitoring (\$1.3M for SBSP overall).

Construction anticipated to begin in
 January 2010 and be complete in
 November 2011.



South Bay Salt Ponds Restoration Project Phase 1 at Eden Landing



- **Uncertainties:**
Will restoration activities always result in a net decrease in flood hazard? Metric is elevation, (water levels) a function of fluvial flows from upstream watershed, tides, bathymetry, and bed characteristics.
Increased tidal prism will scour slough channels (months to years), expected to reduce flood hazard, while changes in tidal elevations and prism in sloughs may increase flood hazard.

Applied Studies/Monitoring included in project design to reduce uncertainty, informing decisions for future Phases.

South Bay Salt Ponds Restoration Project Phase 2 at Eden Landing

- Improving Flood Protection for Alameda Creek Flood Control Channel through Integration with the South Bay Salt Pond Restoration Project at Eden Landing
- ACFCC is a major flood control facility, drains ~700 sq miles
- Current conveyance (capacity) reduced by sedimentation in lower 5 miles.
- Alternative for Improving Flood Conveyance for ACFCC (vs. dredging)



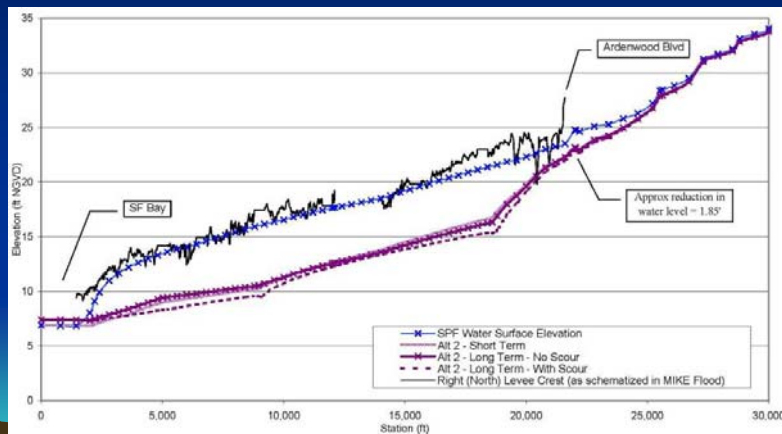
South Bay Salt Ponds Restoration Project Phase 2 at Eden Landing

- Hydrodynamic Model used by Phillip Williams & Associates (PWA)
- (Figures from previous work, presentation by Vince Geronimo, PWA)
- Primary tool for alternatives analysis
 - Breach location/sizing
 - Levee lowering
- Simulates the interaction of creek flows and Bay tides
- Evaluate Alternatives based on:
 - SBSP Restoration Project and ACFC&WCD Flood management priorities
 - Hydrodynamic modeling – Baseline, Short-term, & Long-term
 - Long-term geomorphic evolution – In Context of SBSP Restoration



South Bay Salt Ponds Restoration Project Phase 2 at Eden Landing

- Hydrodynamic Model (Figure from previous work, presentation by Vince Geronimo, PWA)
- Suggests that flood protection is improved.



South Bay Salt Ponds Restoration Project Phase 2 at Eden Landing

Earlier studies indicate ACFCC design conveyance is restored using Eden Landing ponds as floodplain, facilitating tidal marsh restoration; bay and fluvial sediment.

(Figure from previous work, presentation by Vince Geronimo, PWA)



South Bay Salt Ponds Restoration Project Phase 2 at Eden Landing

Hydrodynamic model indicates ACFCC design conveyance is restored using Eden Landing (act as floodplain), facilitating tidal marsh restoration;

Sediment from bay (primary) and fluvial sources (episodic).

Continue to develop habitat restoration and flood protection concepts and details, including landward levee alignment, and public access features.



(Figures from previous work, presentation by Vince Geronimo, PWA)