



South Bay Salt Pond Restoration Project

Restoring the Wild Heart of the South Bay



Annual Stakeholder Forum meeting, November 15, 2012

Today's Topics

- Phase 1 Progress
- Phase 2 Planning
- Funding Strategies
- South Bay Shoreline Study
- Science Program

Tracking Our Progress: Phase 1



South Bay Salt Pond Restoration Project

Restoring the Wild Heart of the South Bay

2002 Salt Pond Acquisition Area

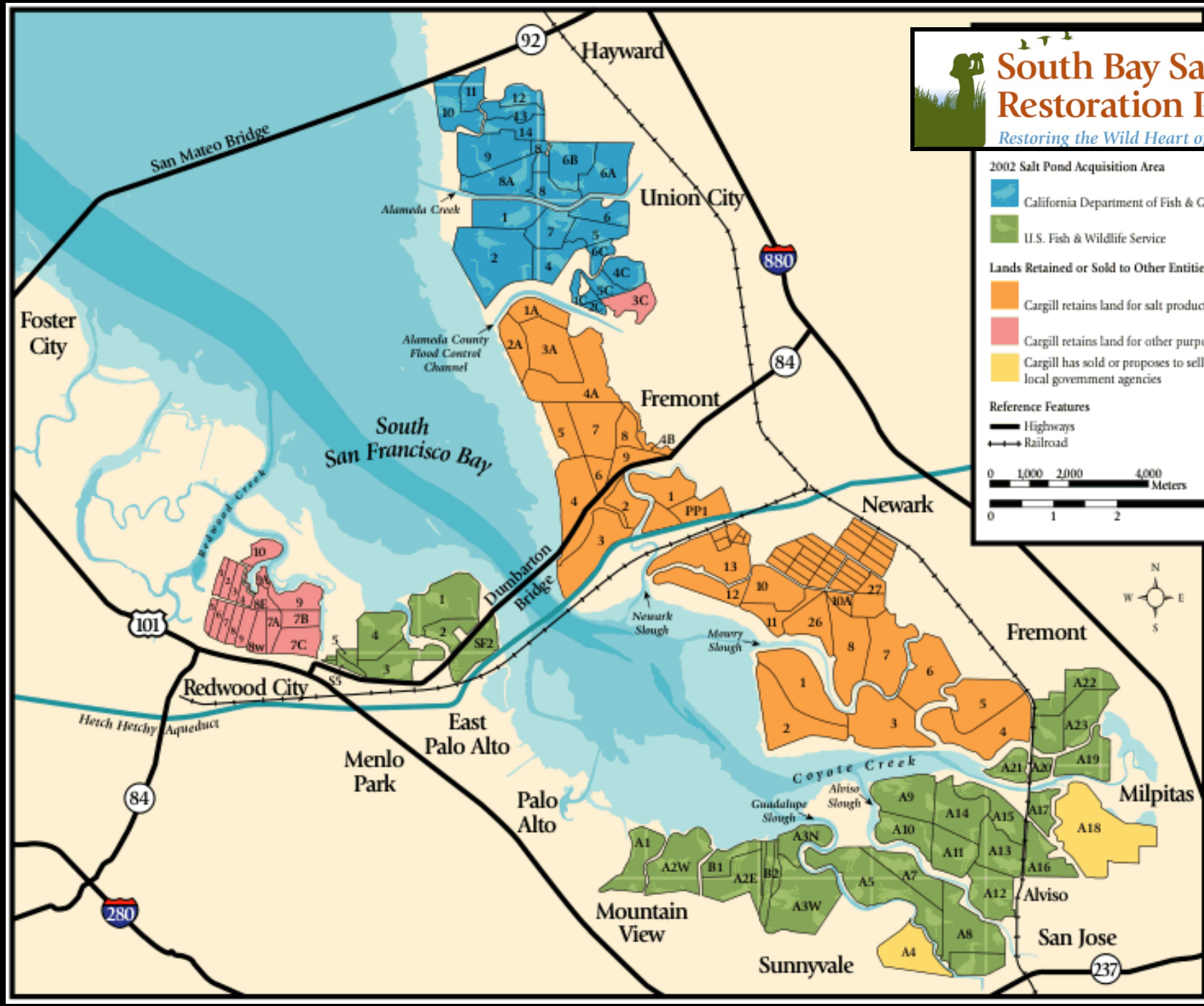
- California Department of Fish & Game
- U.S. Fish & Wildlife Service

Lands Retained or Sold to Other Entities

- Cargill retains land for salt production
- Cargill retains land for other purposes
- Cargill has sold or proposes to sell to local government agencies

Reference Features

- Highways
- Railroad



Key uncertainties

- Wildlife use of changing habitats
- Habitat evolution and sediment dynamics
- Mercury methylation
- Water quality
- Invasive species
- Public access
- Infrastructure support
- Sea level rise and climate change

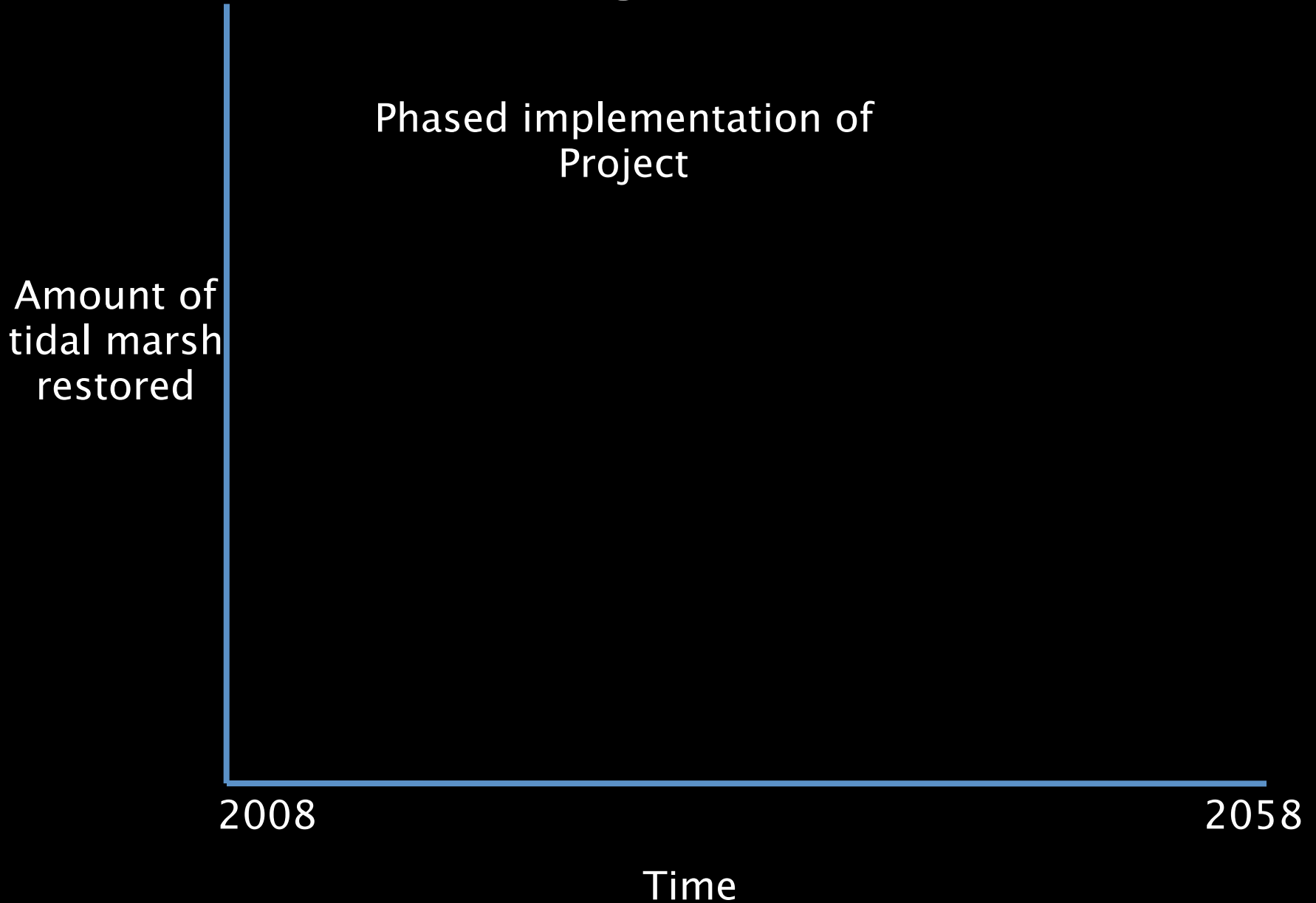


Ecological Trade-offs

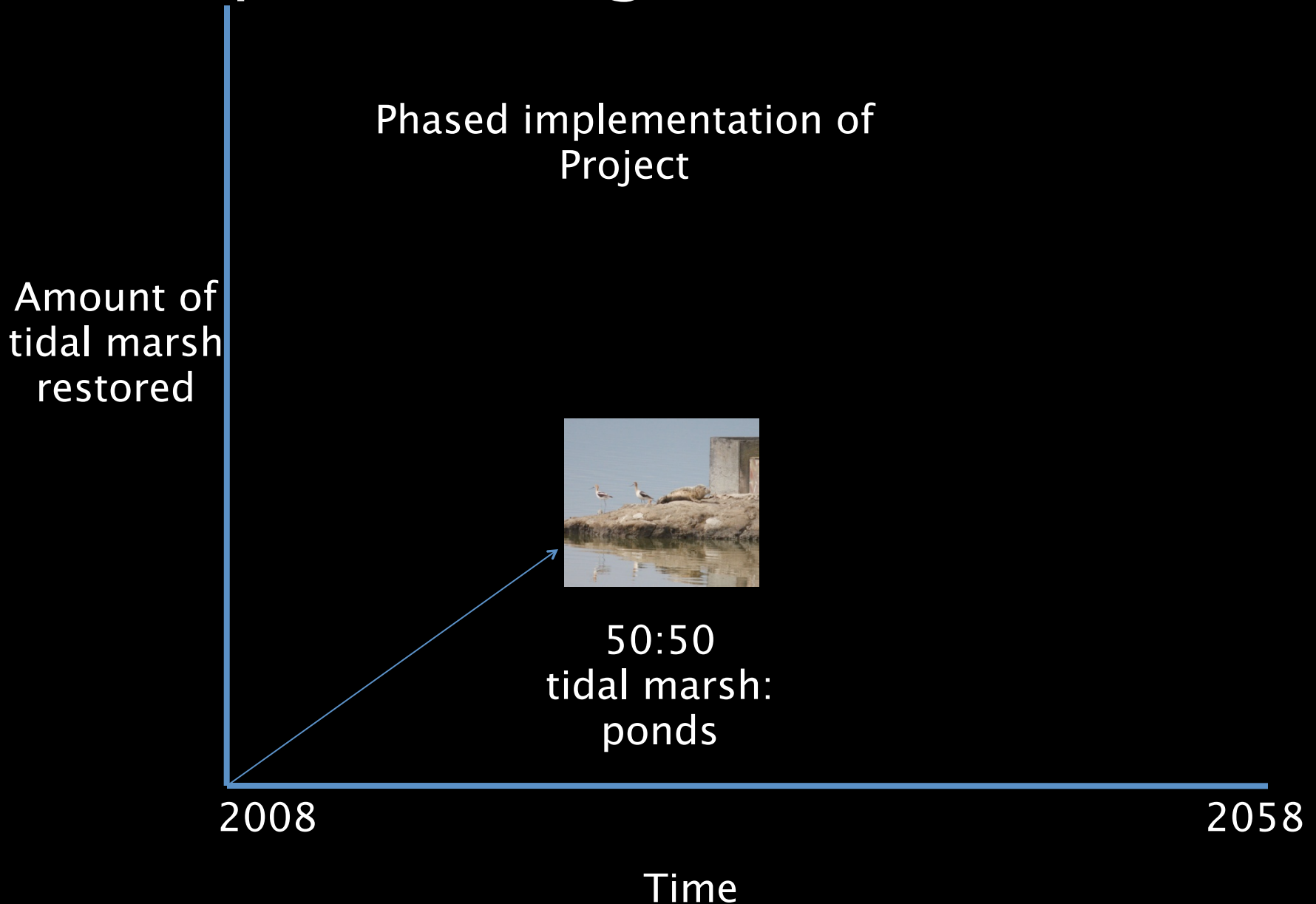
- Tidal Marsh species vs. Salt Pond species



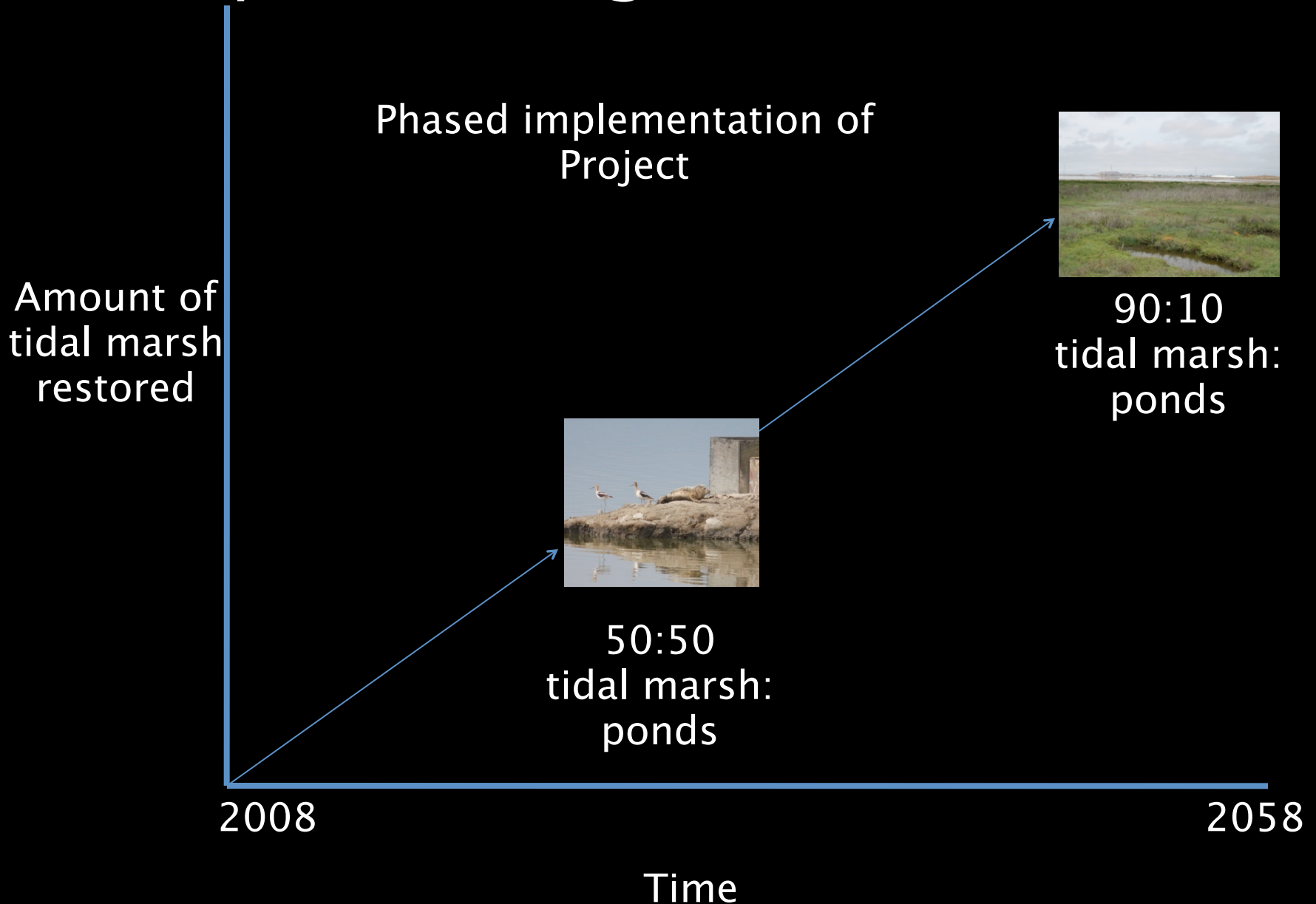
Adaptive Management Restoration



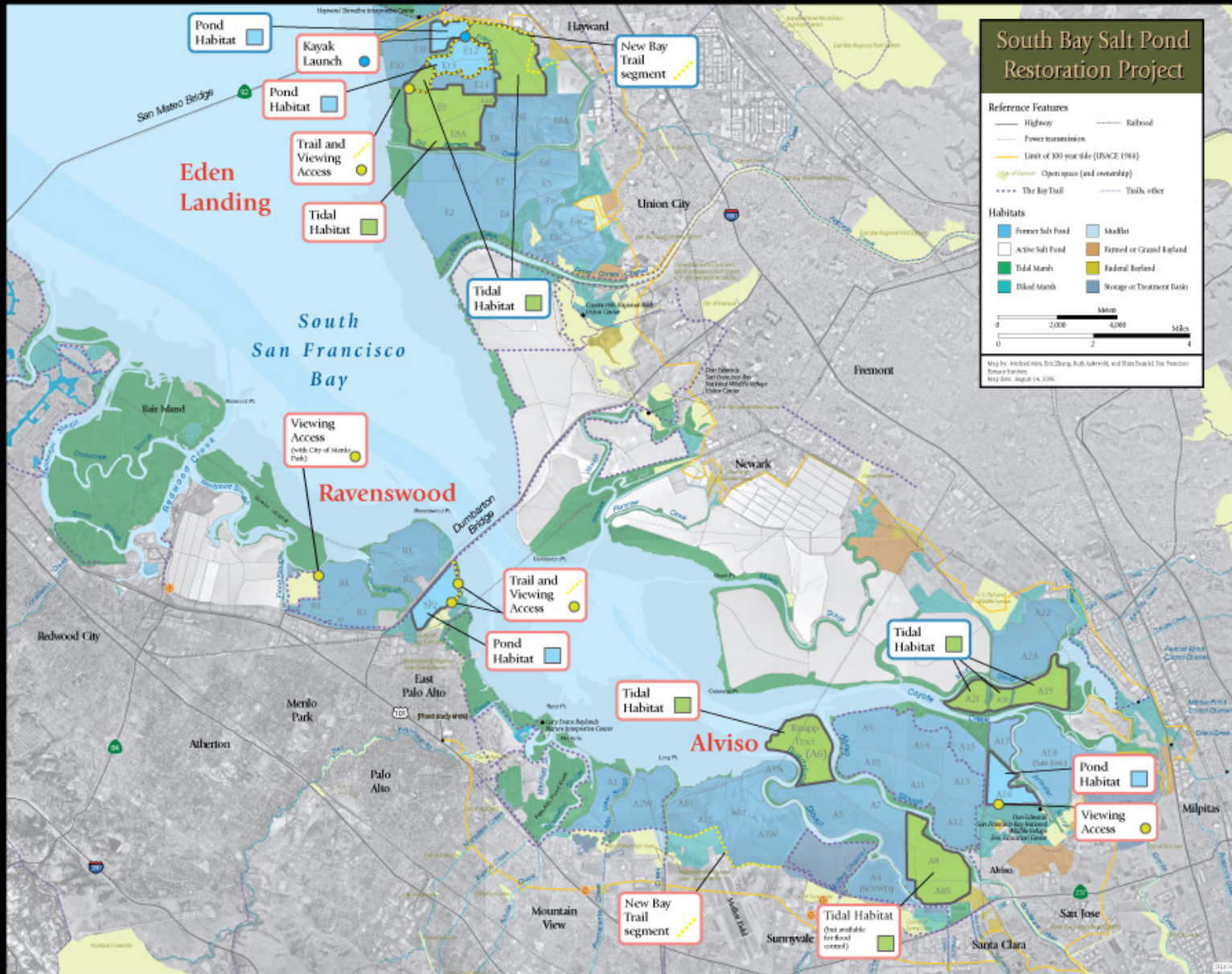
Adaptive Management Restoration



Adaptive Management Restoration



Tracking our Progress: Phase One Actions



Initial Restoration Actions

South Bay Salt Pond Restoration Project

2006 - 08 SBSP Phase 1

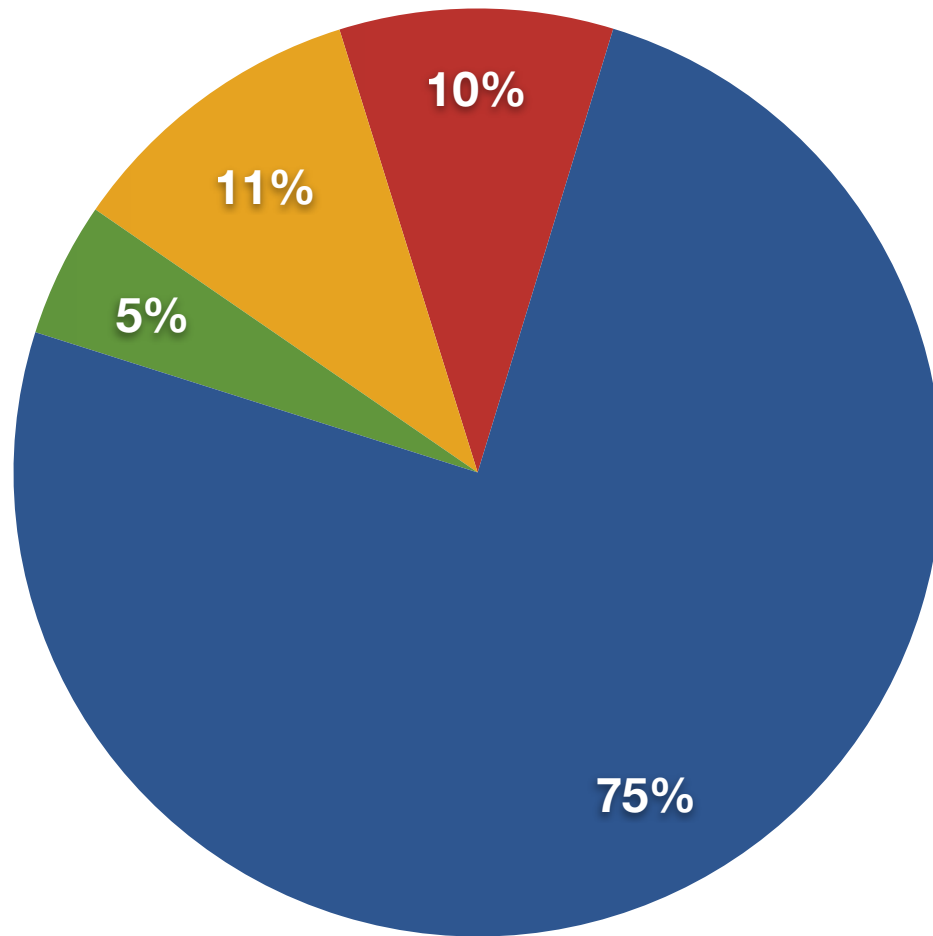






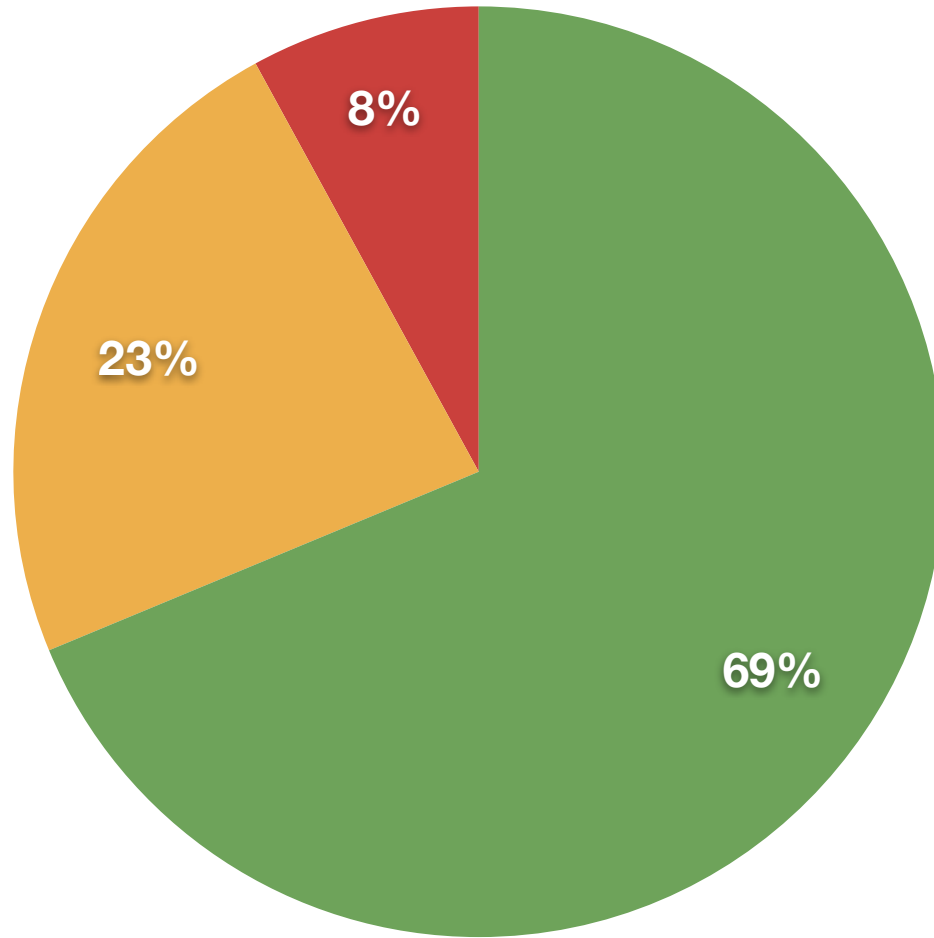


SBSP Phase 1



- Managed Ponds
- Tidal Restoration
- Reconfigured Ponds
- Muted Tidal

Phase 1 Costs



- Managed Ponds
- Reconfigured Ponds
- Tidal Restoration
- Muted Tidal

Phase 2: Overview

Guiding Principles

No actions that will
increase flood risk

Progress toward 50-50
vision (from EIR)

Primary Evaluation Criteria

- Likelihood of progress toward Project objectives
- Opportunities for Adaptive Management studies
- Value in building Project support
- Readiness to proceed
- Not dependent on precedent actions (e.g., construction of a flood levee)
- Input from Stakeholders

South Bay Salt Pond Restoration Project

Project Area

Infrastructure Features

- Highway
- Railroad
- Wastewater Outfall
- PG & E Access Points
- Hetch Hetchy Aqueduct
- Overhead Power Transmission Line
- Sewer Force Main
- Distribution Line

Habitat Features

- Tidal Habitat
- Upland Transition Area
- Managed Pond
- Managed Pond (outside project area)
- Initially Reversibly Tidal, Ultimately Tidal

Flood Management Features

- Proposed Flood Protection Levee
- High Ground*
- Existing Levee Outside Project Area* (includes engineered flood protection levees and non-engineered levees)

*Level of flood protection not specified.
Note: Levees along creeks extend upstream of the endpoints shown. All levee and high ground locations are approximate.

Recreational Features

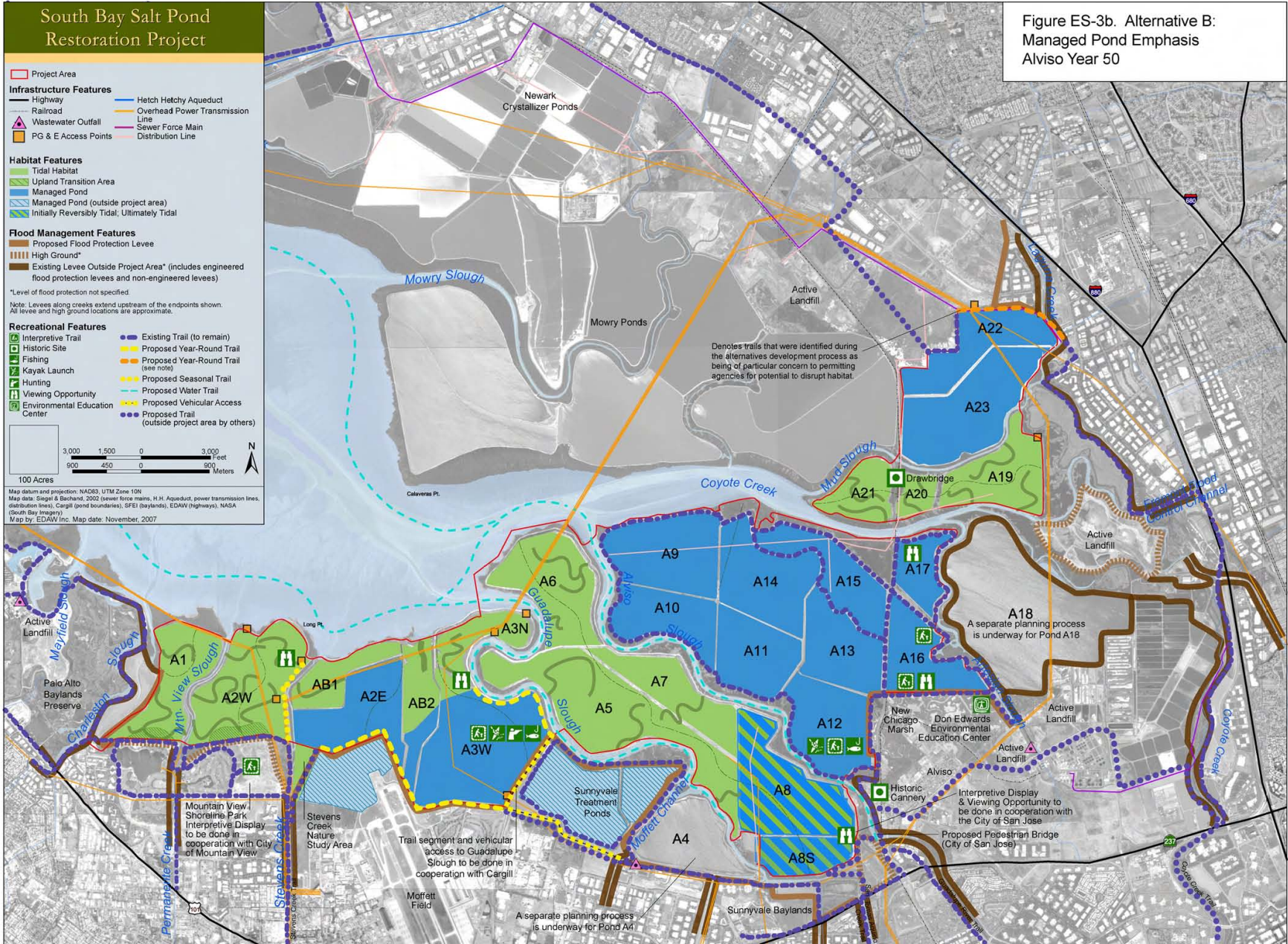
- Interpretive Trail
- Historic Site
- Fishing
- Kayak Launch
- Hunting
- Viewing Opportunity
- Environmental Education Center
- Existing Trail (to remain)
- Proposed Year-Round Trail (see note)
- Proposed Seasonal Trail (see note)
- Proposed Water Trail
- Proposed Vehicular Access
- Proposed Trail (outside project area by others)

Denotes trails that were identified during the alternatives development process as being of particular concern to permitting agencies for potential to disrupt habitat.

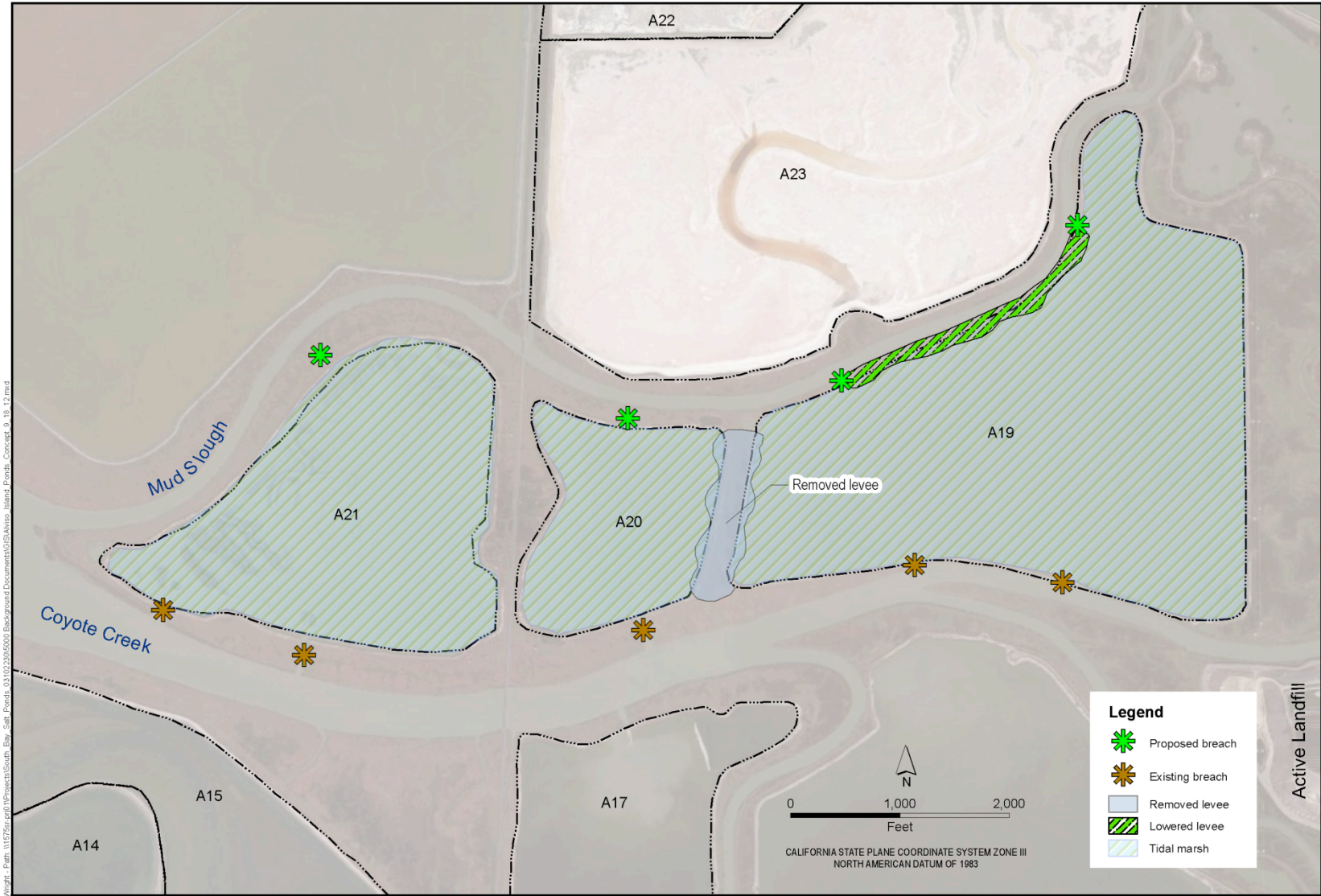
Scale: 0 to 3,000 Feet / 0 to 900 Meters. 100 Acres.

Map datum and projection: NAD83, UTM Zone 10N
Map date: Siegel & Bachand, 2002 (sewer force mains, H.H. Aqueduct, power transmission lines, distribution lines), Cargill (pond boundaries), SFEI (baylands), EDAM (highways), NASA (South Bay Imagery).
Map by: EDAM Inc. Map date: November, 2007

Figure ES-3b. Alternative B:
Managed Pond Emphasis
Alviso Year 50



1/30/2008/0506 07/Alvisogramm_080



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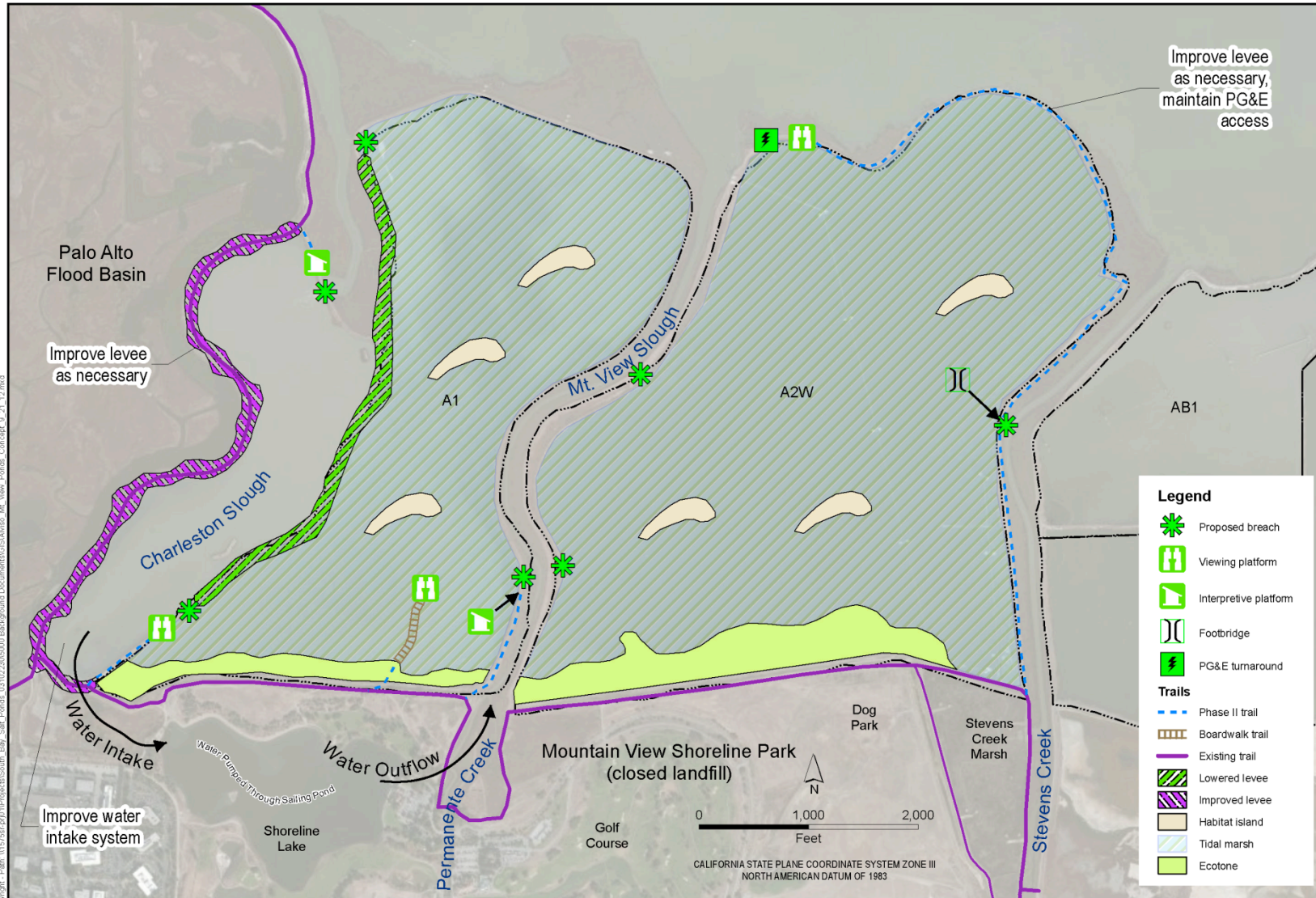


SOUTH BAY SALT PONDS
 ALVISO: ISLAND PONDS
 ALAMEDA COUNTY, CA

DATE OF PREPARATION: 9/21/2012
 DRAFT, FOR INTERNAL USE ONLY
 URS PROJECT NO. 26818346

DRAFT PREFERRED ALTERNATIVE
ALVISO POND COMPLEX-
ISLAND PONDS





URS Oakland CA, K. Wright - Path: \\1575r\p\11\Projects\15\South_Bay_Salt_Ponds_0310220105000_Background_Document\105\SA\Alviso_Mt_View_Ponds_Concept_9_21_12.mxd

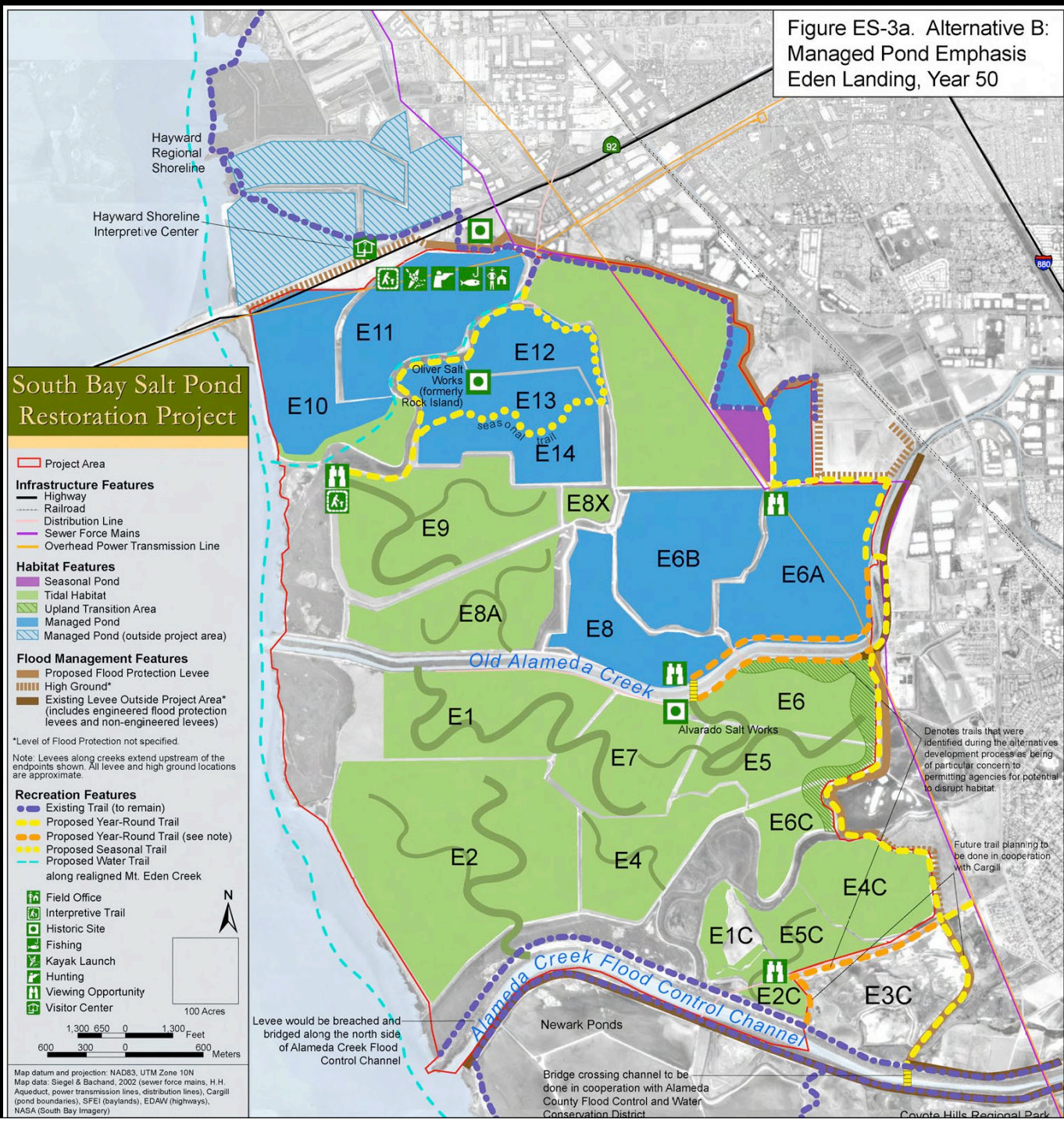


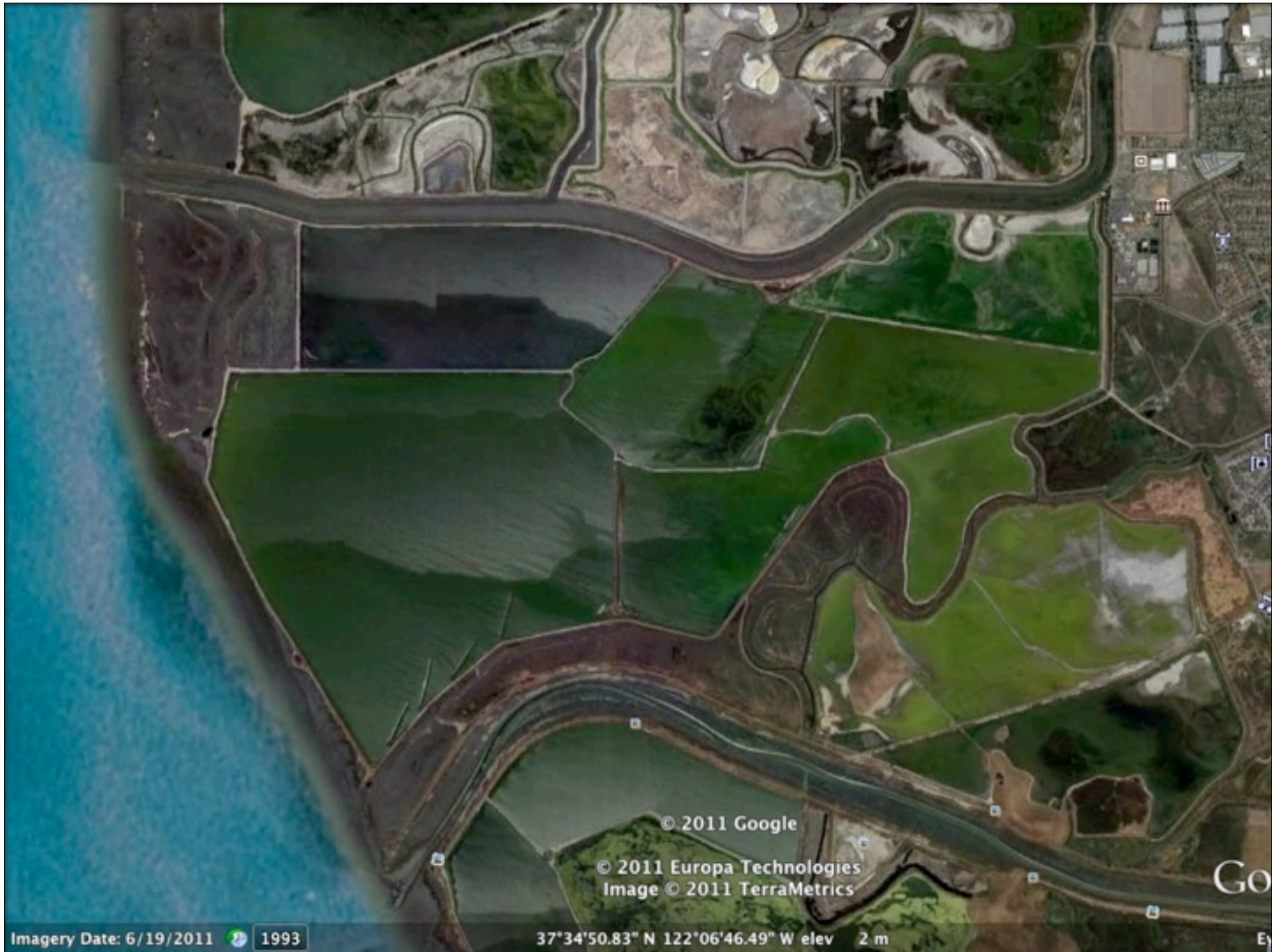
SOUTH BAY SALT PONDS
 ALVISO: MT. VIEW PONDS
 SANTA CLARA COUNTY, CA

DATE OF PREPARATION: 9/18/2012
 DRAFT, FOR INTERNAL USE ONLY
 URS PROJECT NO. 26818346

DRAFT PREFERRED ALTERNATIVE
ALVISO POND COMPLEX-
MT. VIEW PONDS

Figure ES-3a. Alternative B:
Managed Pond Emphasis
Eden Landing, Year 50





© 2011 Google

© 2011 Europa Technologies
Image © 2011 TerraMetrics

Imagery Date: 6/19/2011 1993

37°34'50.83" N 122°06'46.49" W elev 2 m

Go

Eye

South Bay Salt Pond Restoration Project

Figure ES-3c. Alternative B:
Managed Pond Emphasis
Ravenswood, Year 50

Project Area

Infrastructure Features

- Highway
- Railroad
- Overhead Power Transmission Line
- Sewer Force Mains
- Distribution Line

Recreational Features

- Existing Trail (to remain)
- Existing Trail (to be removed)
- Proposed Year-Round Trail
- Proposed Year-Round Trail (see note)
- Proposed Trail (outside project area by others)
- Proposed Water Trail

Habitat Features

- Tidal Habitat
- Upland Transition Area
- Managed Pond
- Tidal Habitat (outside project area)

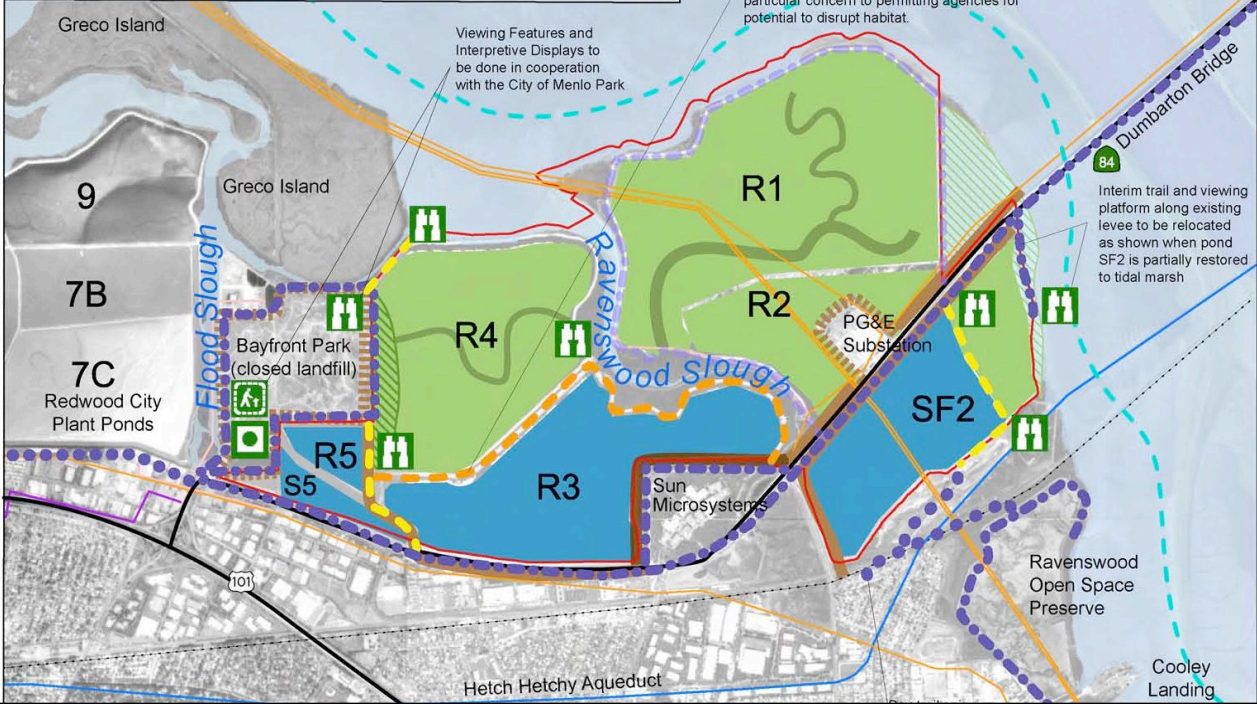
Flood Management Features

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- High Ground*
- Existing Levee Outside Project Area* (includes engineered flood protection levees and non-engineered levees)

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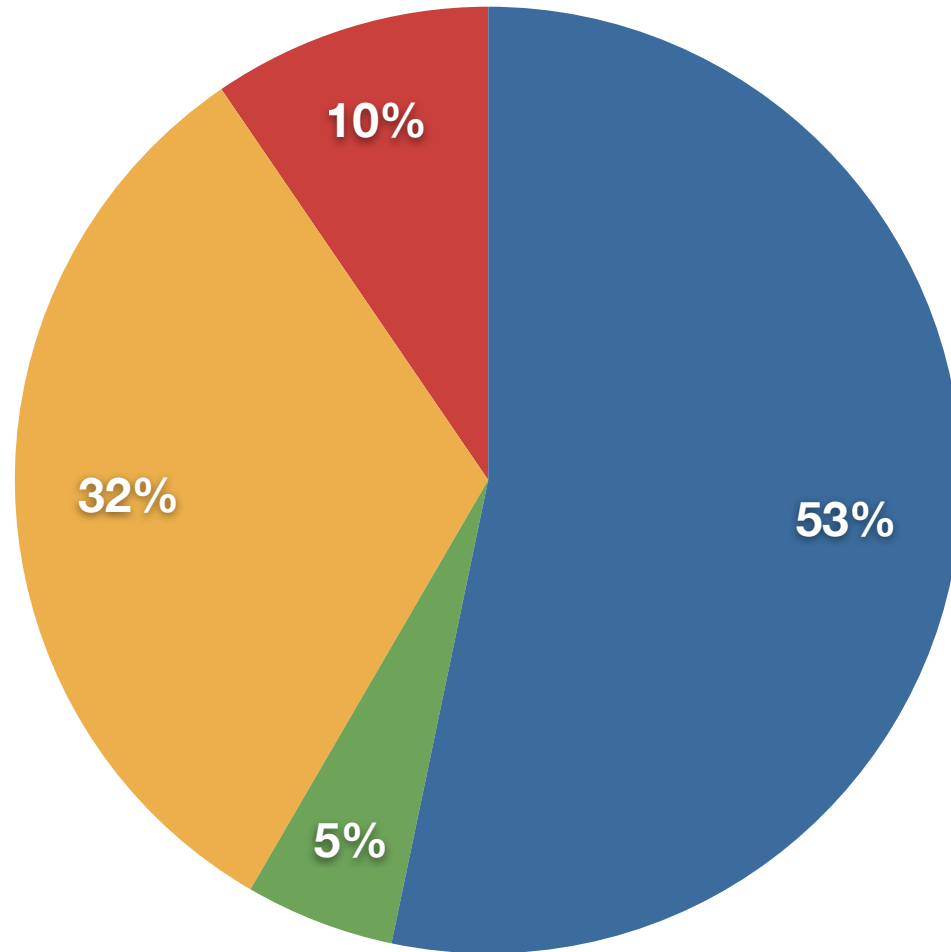
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 Map by: EDAW Inc. Map date: November, 2007





SBSP Phases 1+2

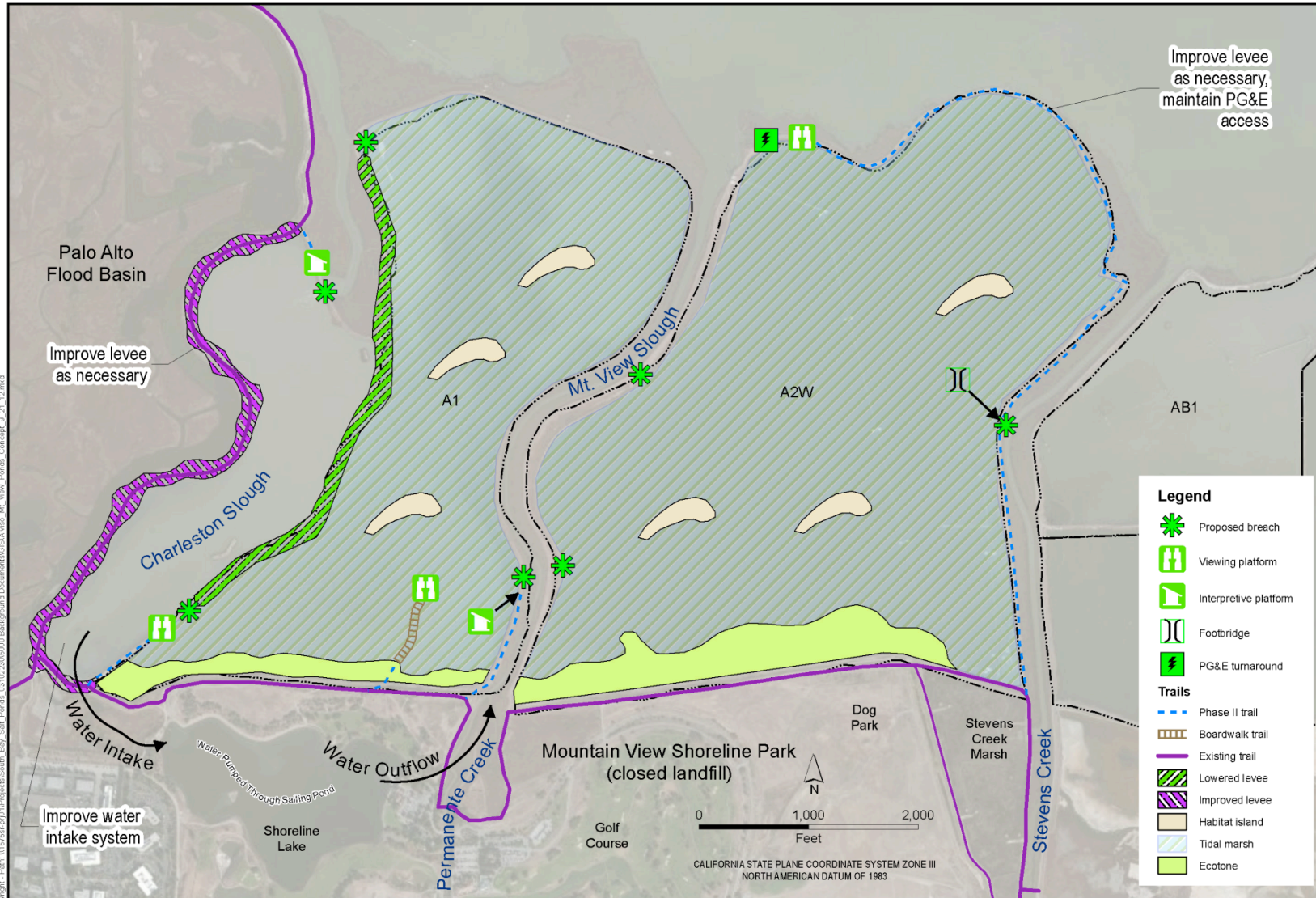


- Managed Ponds
- Tidal Restoration
- Reconfigured Ponds
- Muted Tidal

Transition Zone Creation

Issues:

- Sources (upland vs. dredged material)
- Placement methods (traffic, cost, etc.)



URS Oakland CA, K. Wright - Path: \\1575r\p\11\Projects\15\South_Bay_Salt_Ponds_031022016000_Background_Document\105\SA\Alviso_Mt_View_Ponds_Concept_9_21_12.mxd



SOUTH BAY SALT PONDS
 ALVISO: MT. VIEW PONDS
 SANTA CLARA COUNTY, CA

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DRAFT PREFERRED ALTERNATIVE
ALVISO POND COMPLEX-
MT. VIEW PONDS

10 minute break...

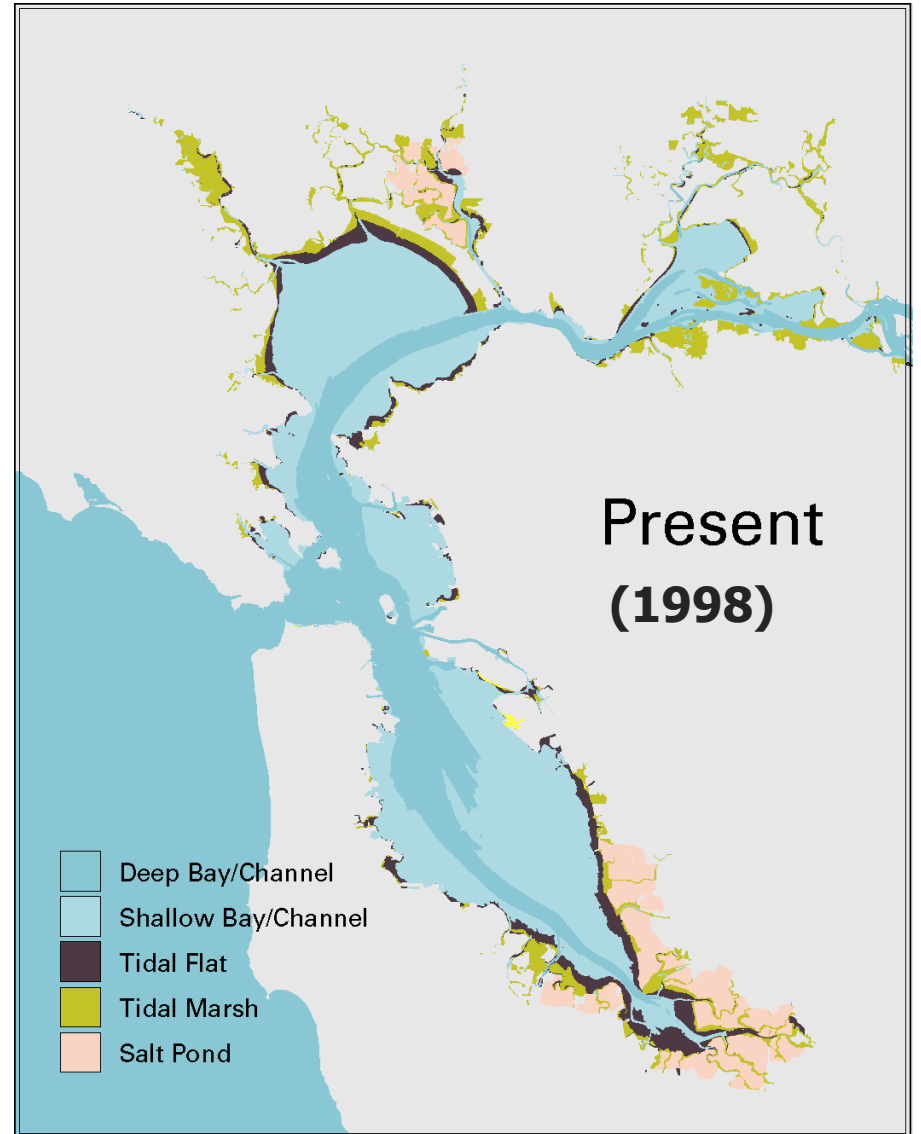
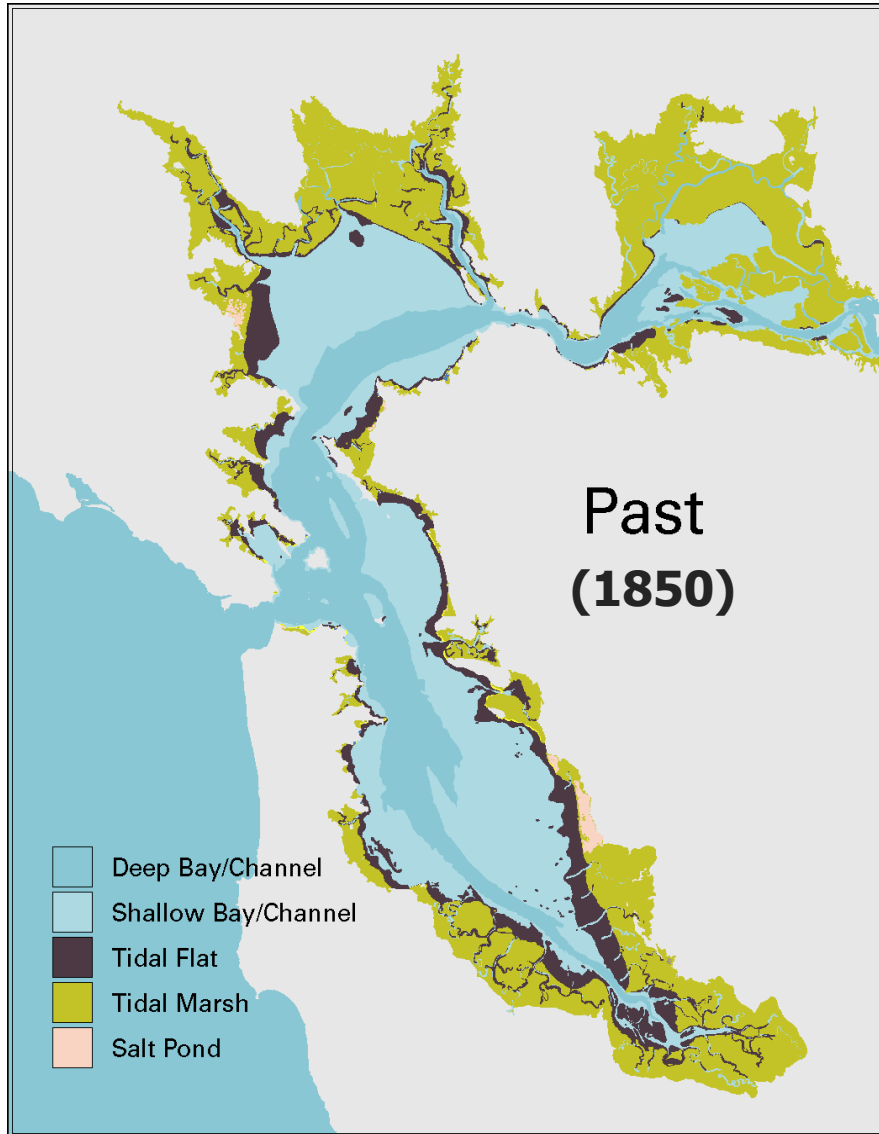
Funding Strategies

- Amy Hutzler, Coastal Conservancy
- Stephen Knight, Save The Bay
- Mandy Ford, The Moore Foundation

Opportunities for Wetland Restoration Funding



Wetlands Past ... and Present



The Last Century



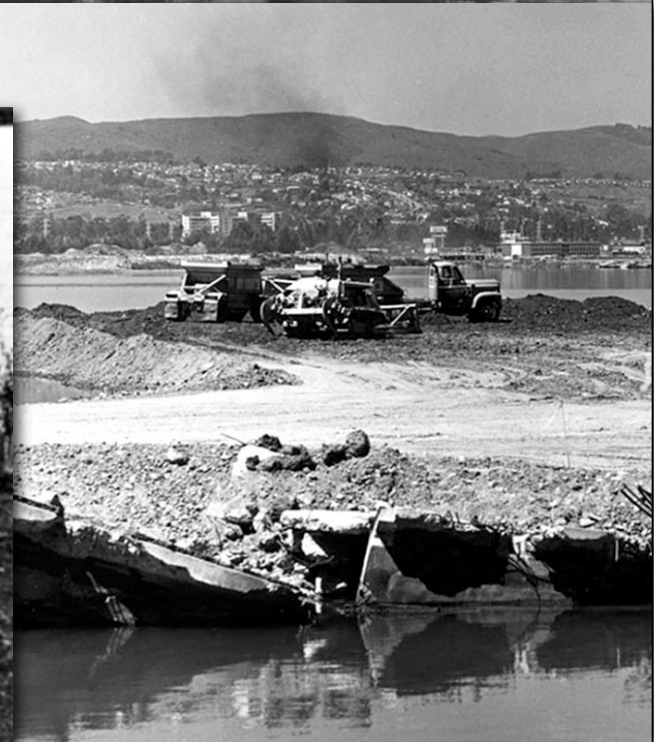
WARNING

Shellfish from this area are potentially hazardous and are not considered safe for human consumption.

DIRECTOR SAN MATEO COUNTY DEPT.
Public Health & Welfare

WARNING

These waters are not



Importance of Restoration



- **Provide Habitat for Fish & Wildlife**
- **Filter out Pollutants & Toxins**
- **Erosion Control & Flood Prevention**
- **Provide Recreation Opportunities**
- **Absorb CO₂ and Greenhouse Gases**
- **Enhance Quality of Life & Local Economy**

Greening The Bay

GREENING THE BAY

FINANCING WETLAND RESTORATION
IN SAN FRANCISCO BAY



SAVE THE **BAY**

- Enact a regional special district to provide necessary local funding
- Ensure regional coordination for maximum restoration

Broad Support of Concept



“I would welcome any mechanism to develop local funding for wetlands restoration.”

- Senator Dianne Feinstein

“Local funding is crucial to protect the Bay’s natural shorelines, safeguard homes and businesses from flooding, and create thousands of jobs in our communities.”

- Jim Wunderman

“This is enlightened self-interest and insurance against a disaster or sea level rise that could happen tomorrow.”

- Carl Guardino



Bay Restoration Authority



Established by Legislature in 2008:

“raising and allocating resources for the restoration, enhancement, protection, and enjoyment of wetlands and wildlife habitat in the San Francisco Bay and along its shoreline.”



East & South Bay Restoration

- ***Eden Landing*** (*Hayward*)
- ***Bair Island*** (*Redwood City*)
- ***Ravenswood*** (*Menlo Park - East Palo Alto*)
- ***Alviso Ponds*** (*Milpitas*)



Central & North Bay Restoration

- *Sonoma Baylands (Sears Point)*
- *Napa/Sonoma Marsh*
- *Hamilton Field / Bel Marin Keys*
- *Cullinan Ranch (Napa)*
- *Crissy Field / Yosemite Slough (SF)*

Public Funding Proposal

A small (\$10-20 per year) tax on Bay Area parcels to raise millions to fund restoration projects for a clean, healthy, and vibrant Bay.

- **Other options exist such as benefit assessments, property-related fees**

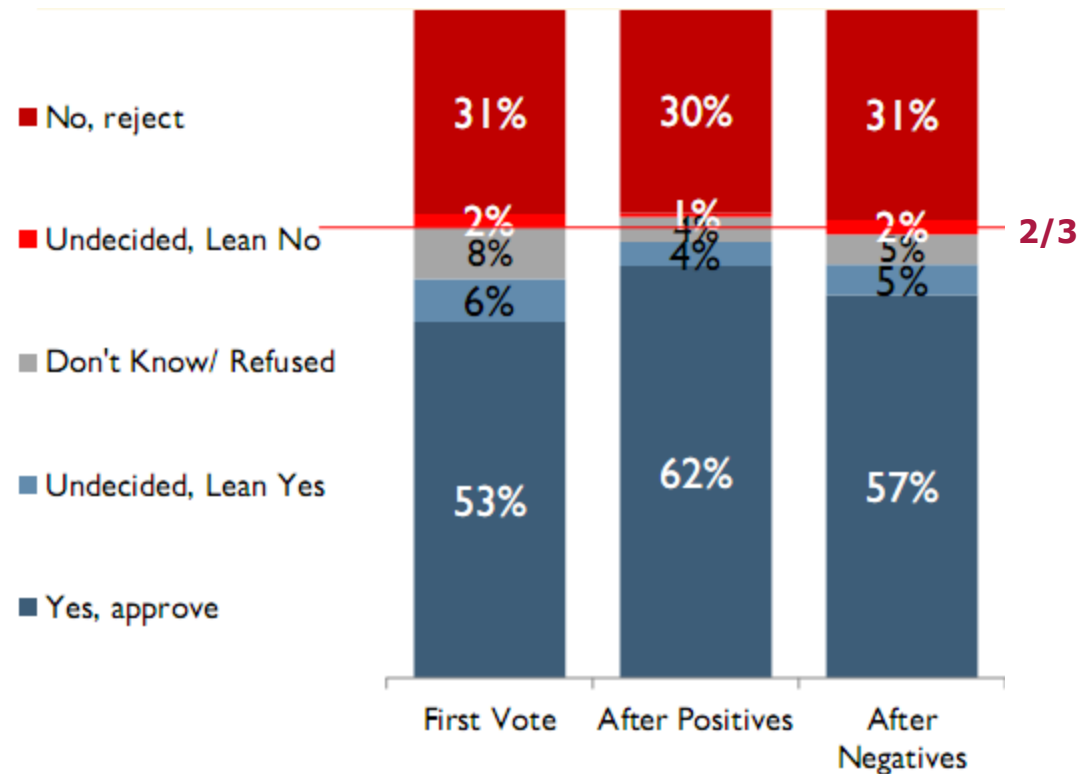


In this Economy, Voters Are Cautious...

Now, I'm going to read you a measure that may appear on the ballot next year:

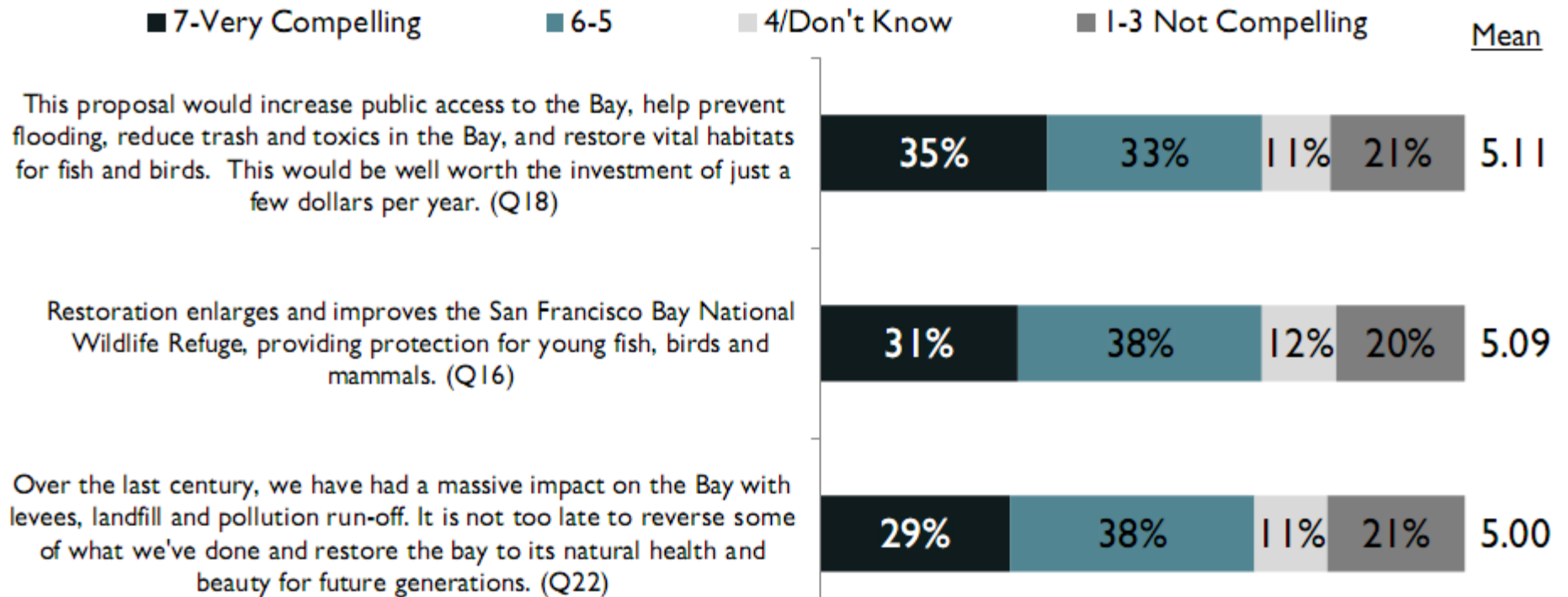
To restore and protect the quality of the San Francisco Bay including: cleaning up trash and pollution; protecting habitat for fish and wildlife; improving water quality; restoring more than forty-thousand acres of wetlands; and, providing flood protection; shall the San Francisco Bay Restoration Authority authorize an annual special tax of ten dollars per parcel for ten years with citizen oversight, audits, and all funds staying in the Bay Area.

If the election were held today, would you vote Yes to approve or No to reject this measure? (Q7)



...Yet Understand Needs

For each statement please tell me how compelling this is as a reason to support the measure. Please use the scale from 1 to 7 where one is not at all compelling and seven is a very compelling reason to support a Bay restoration measure.



Messages that Resonate

- *Proposal would increase public access, help prevent flooding and reduce trash & toxics in and around the Bay*
- *Funding will restore vital habitat for hundreds of fish and bird species*
- *Investing a few dollars per year will result in significant improvements to the Bay*

Key Objective:
***Develop an active, engaged
constituency of 100,000 Bay
Area voters by Dec. 31, 2013***

Sears Point / San Pablo Baylands





Build constituency, through online and offline engagement

Earned media – placement of stories, OpEds, editorials, and events.

South Bay Salt Ponds



www.saveSFbay.org

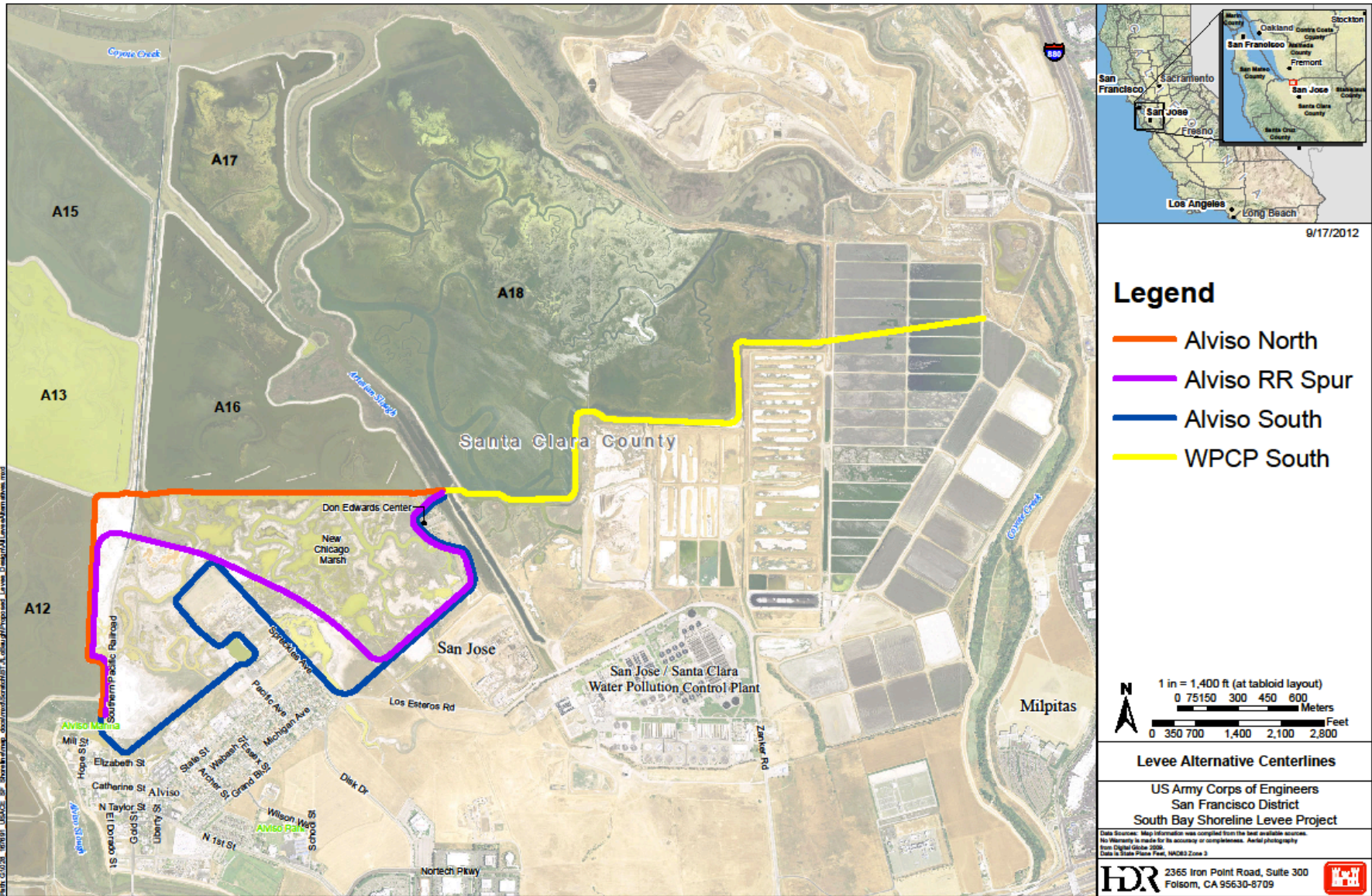
Shoreline Study Update

Flood Protection

Levee options

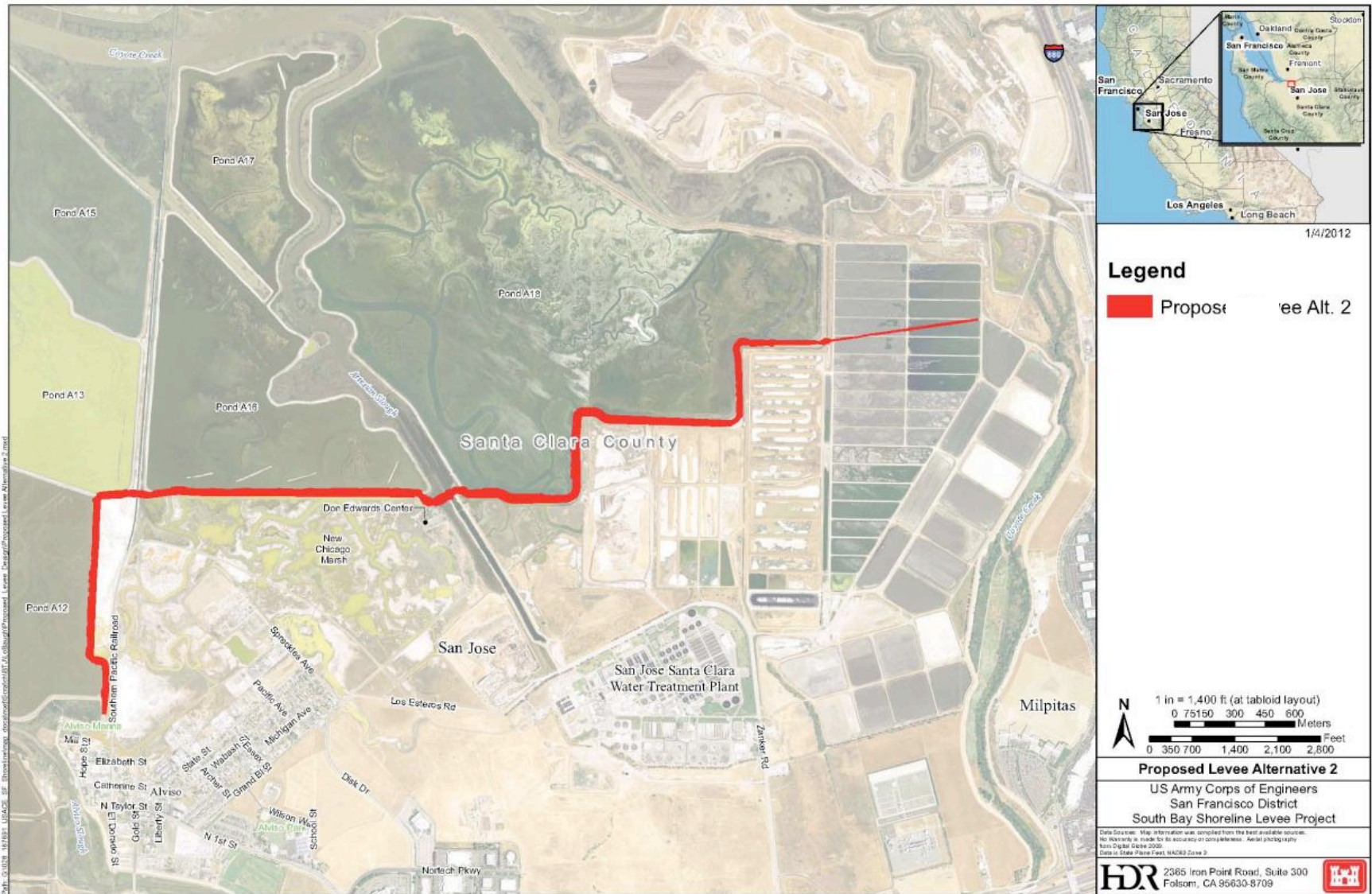


Levee Options, Revised

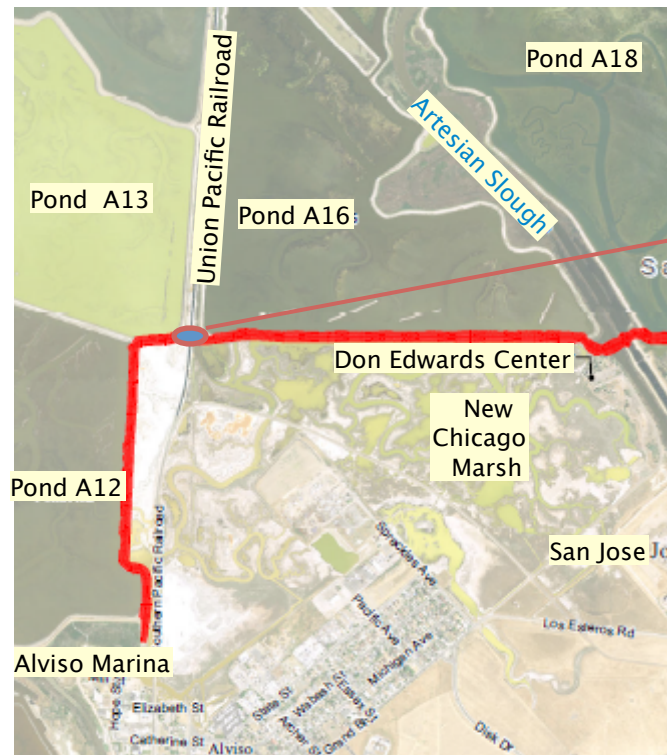


9/17/2012

Recommended Alignment



Reach from the Alviso Marina to the Artesian Slough



Typical Swing Gate Across Railroad

Reach from the Artesian Slough to the Coyote Bypass



Typical Tide Gate Across Slough



Restoration & Recreation



Legend Date: 9/18/2012

- Phase I Shoreline Study Area
- Bench
- Observation Platform
- Existing Trail System
- Surface Street Trail
- Counties

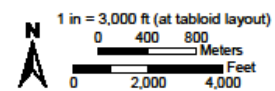
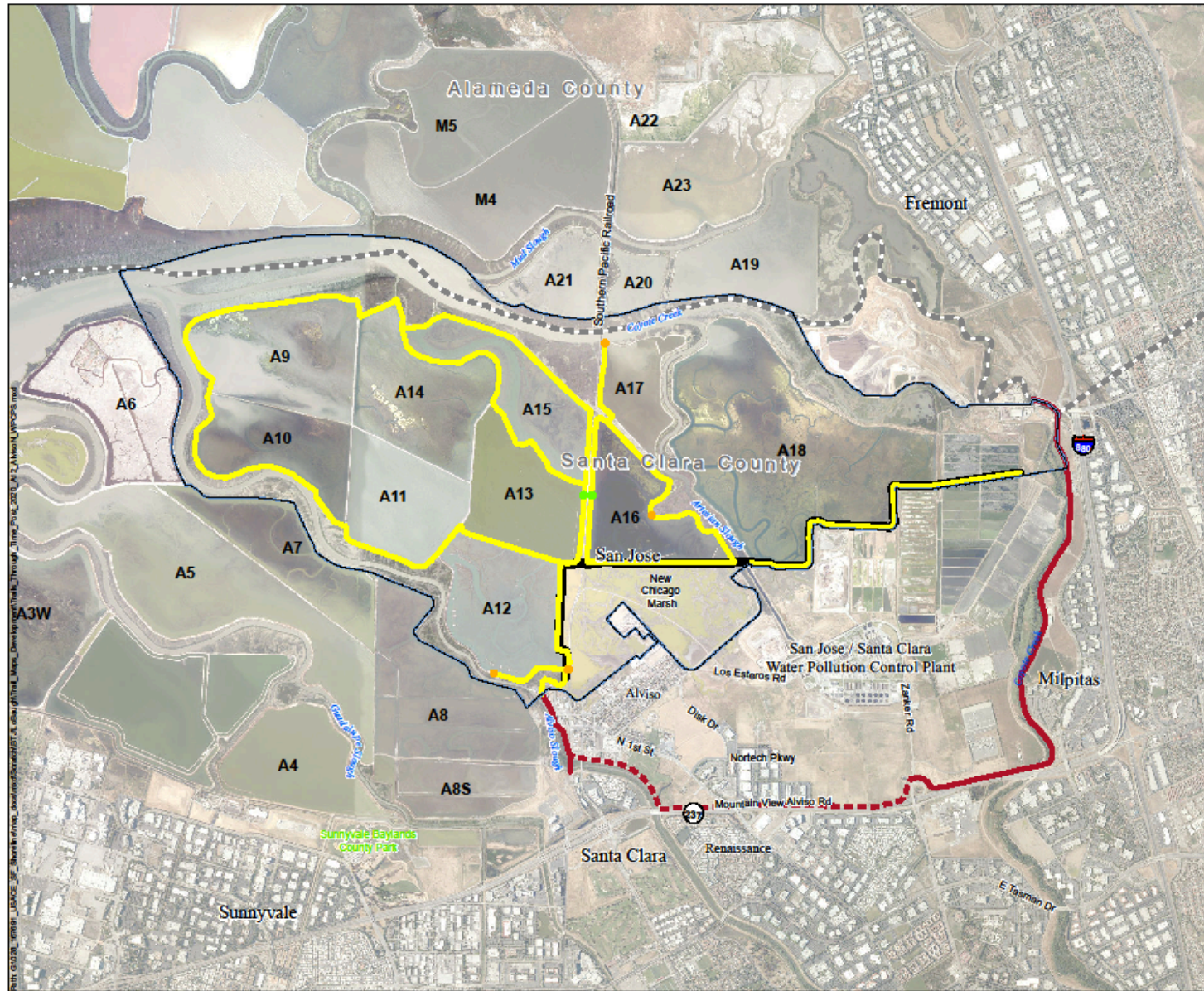


Figure 2: Trail Configuration Existing Conditions

US Army Corps of Engineers
San Francisco District
South Bay Shoreline Levee Project

Data Sources: Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness. Aerial photography from 10/01/2010. Data is State Plane Feet, NAD83 Zone 3.

HDR 2365 Iron Point Road, Suite 300
Folsom, CA 95630-8709



Date: 9/18/2012

Legend

- Bench
- Observation Platform
- Phase I Shoreline Study Area
- Project Trails
- Surface Street Trail
- Existing Trail System
- Alviso North WPCP South Levee Alignment
- Counties

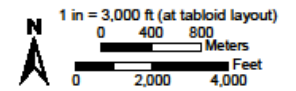
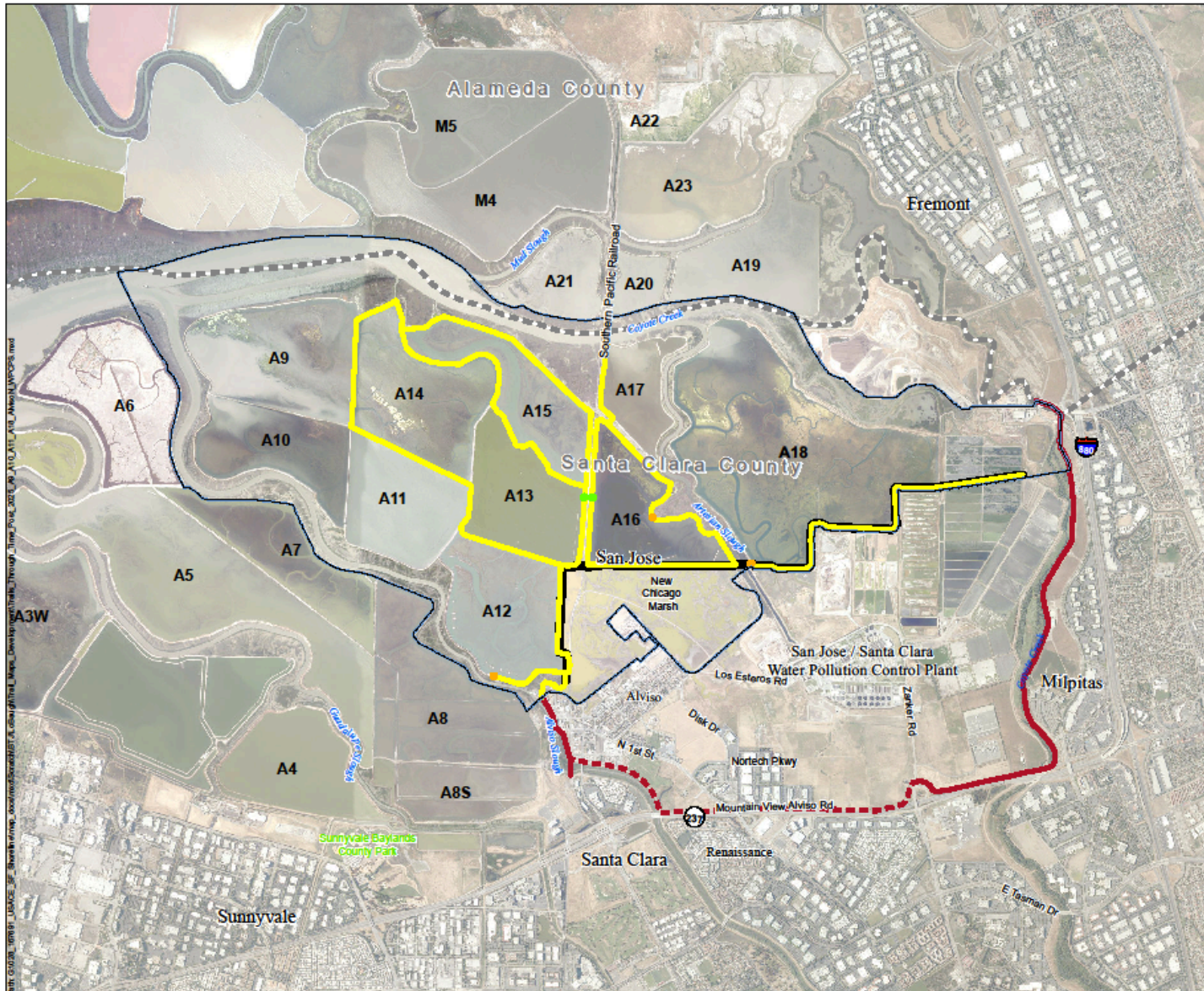


Figure 2: Trail Configuration After A12 Restoration (~2020) Alviso North WPCP South Levee Alignment

US Army Corps of Engineers
San Francisco District
South Bay Shoreline Levee Project

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HDR 2365 Iron Point Road, Suite 300
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Legend

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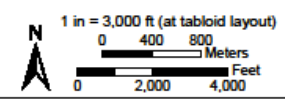
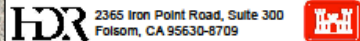
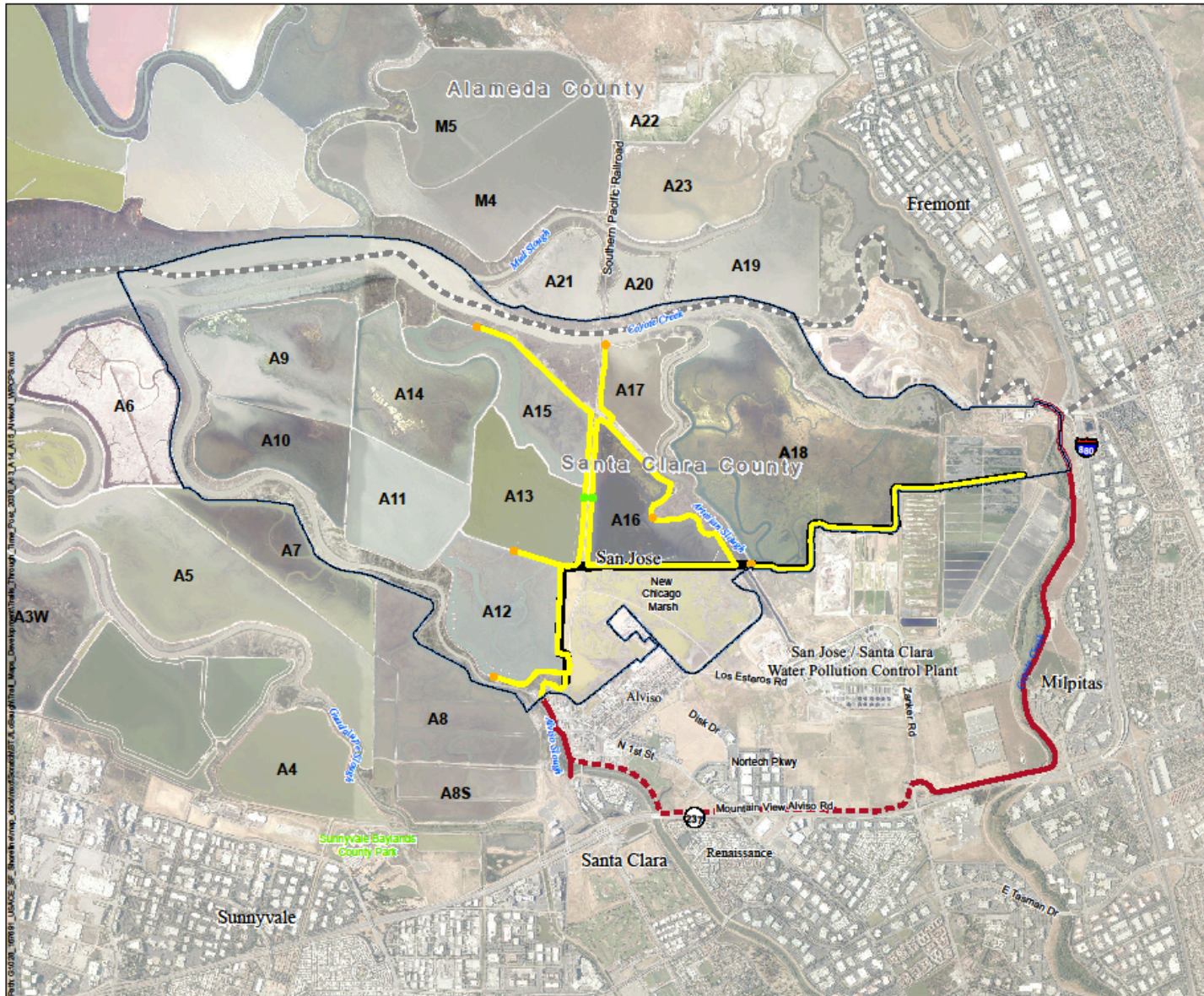


Figure 7: Trail Configuration After A9, A10, A11, A18 Restoration (~2025) Alviso North WPCP South Levee Alignment

US Army Corps of Engineers
San Francisco District
South Bay Shoreline Levee Project

Data Sources: Map information was compiled from the best available sources. No Warranty is made for its accuracy or completeness. Aerial photography from NMAP 2012. Data in State Plane Feet, NAD83 Zone 3.





Legend Date: 9/18/2012

- Phase I Shoreline Study Area
- Bench
- Observation Platform
- Project Trails
- Surface Street Trail
- Existing Trail System
- Alviso North WPCP South Levee Alignment
- Counties

1 in = 3,000 ft (at tabloid layout)

N
 0 400 800 Meters
 0 2,000 4,000 Feet

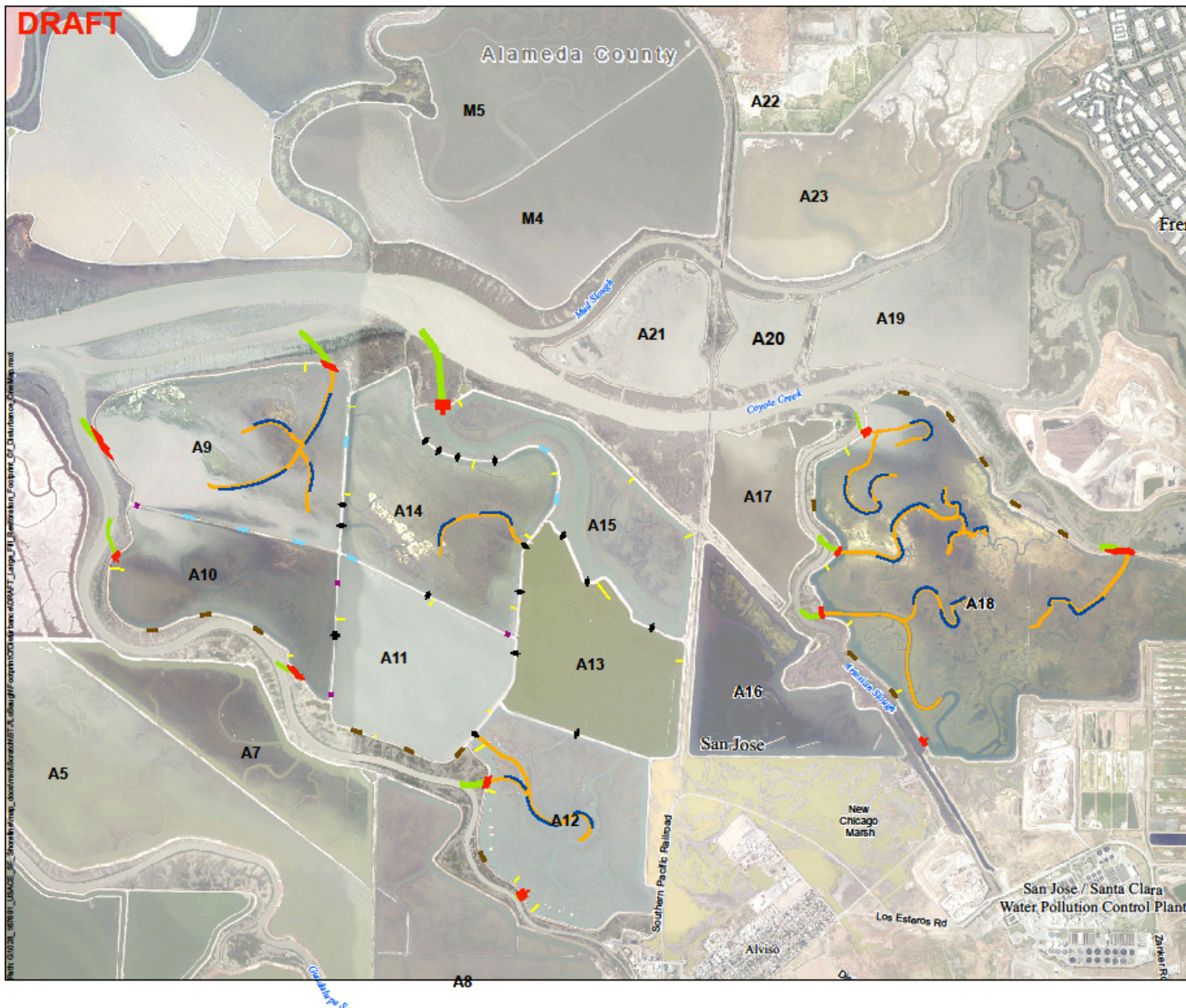
Figure 7: Trail Configuration After A13, A14, A15 Restoration (~2030) Alviso North WPCP South Levee Alignment

US Army Corps of Engineers
 San Francisco District
 South Bay Shoreline Levee Project










Data Sources: Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness. Aerial photography from NMAP 2010. Data in State Plane Feet, NAD83 Zone 3.

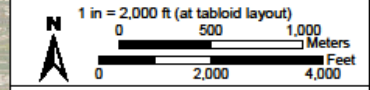
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DRAFT



Date: 9/18/2012



- Legend**
-  Existing Breach
 -  Ditch Block
 -  Internal Berm Breaches
 -  Internal Berm Lowering
 -  Outboard Levee Breach
 -  Outboard Levee Lowering
 -  Pilot Channel
 -  Sidecast Berm
 -  Starter Channel



**Restoration Design
Footprint of Disturbance**

US Army Corps of Engineers
San Francisco District
South San Francisco Bay Shoreline
Project Phase I

Date Source: Aerial photography from Digital Globe 2009. Restoration Design
EBA/PWA 2012
Data is State Plane Feet, NAD83 Zone 3

 2365 Iron Point Road, Suite 300
Folsom, CA 95630-8709 



CO = 200 mg/L, NRC-III, organics = 1 mm/yr
 Start A12 in 2017, A9-11 in 2022, A18 in 2027,
 and A13-15 in 2030. Fill 1:30



- | | |
|-------------------------------|----------------------------|
| ■ Deep Subtidal | ■ Intertidal Mudflat high |
| ■ Shallow Subtidal A | ■ Cordgrass Dominated low |
| ■ Shallow Subtidal B | ■ Cordgrass Dominated high |
| ■ Intertidal Mudflat low | ■ Pickleweed Dominated |
| ■ Intertidal Mudflat mid low | ■ Upland |
| ■ Intertidal Mudflat mid high | |

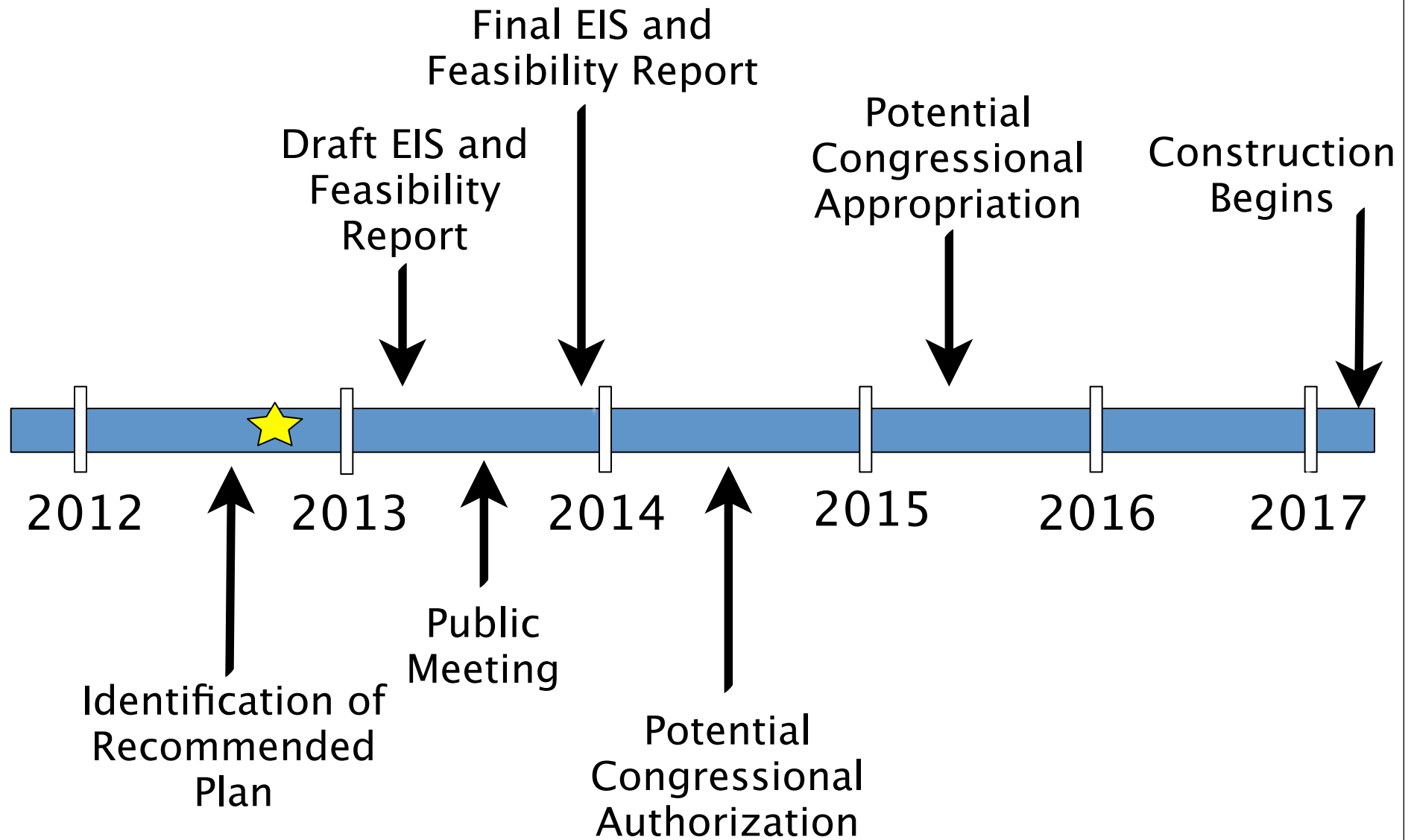
figure 15

Shoreline Study Alternatives
**2067 Marsh Elevations with Prelim
 Alt 2 Transitional - Upland Fill Footprint**

Proj. # 211259



Shoreline Study Timeline



Science Update
Stakeholder Forum
November 15, 2012

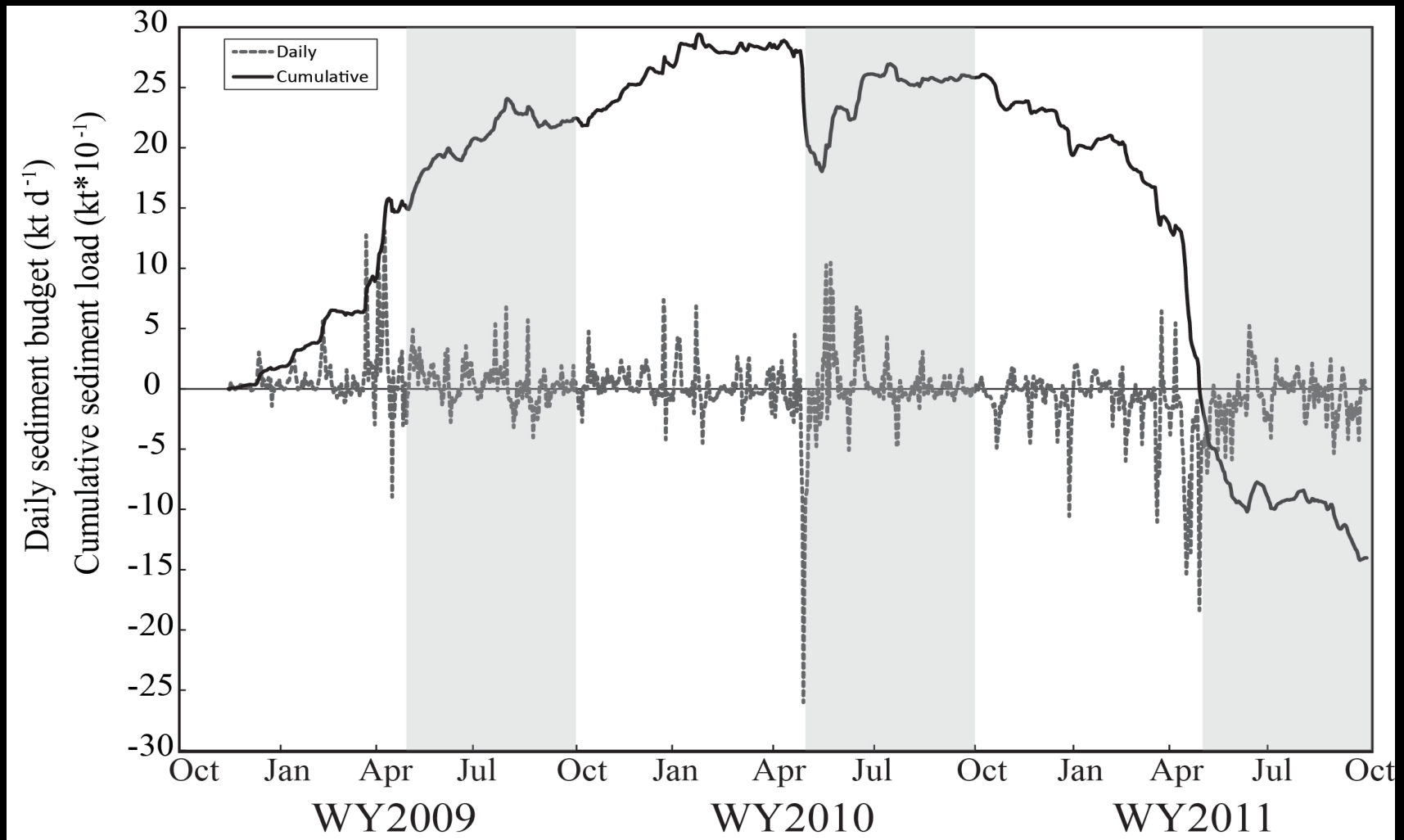
Laura Valoppi
Lead Scientist

Sediment Budget and Mudflats



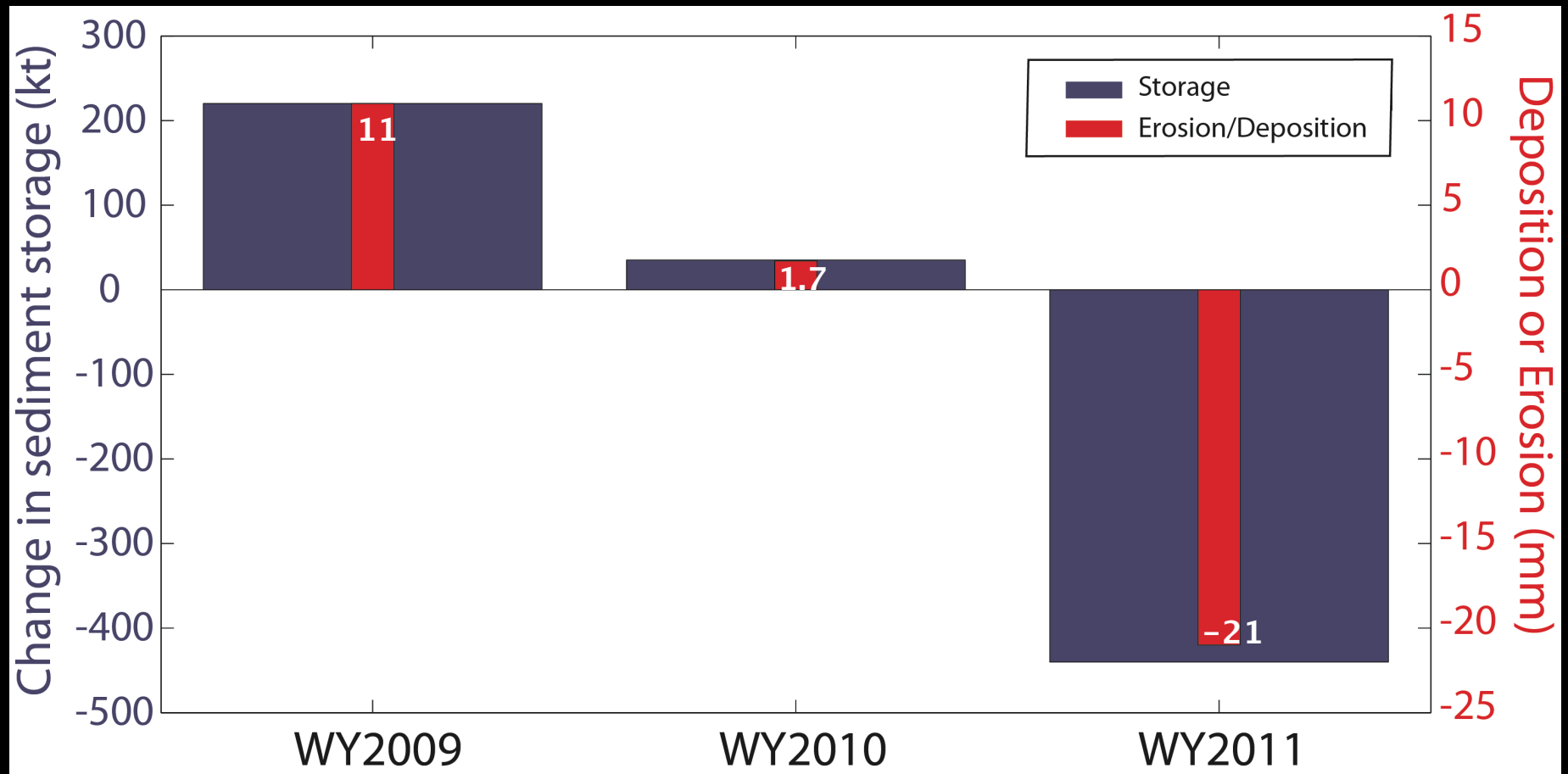
Sediment Budget Results

Positive values are into Far Southern SFB



Sediment Budget Results

Positive values are into Far Southern SFB



Sediment/ Mudflat Conclusions

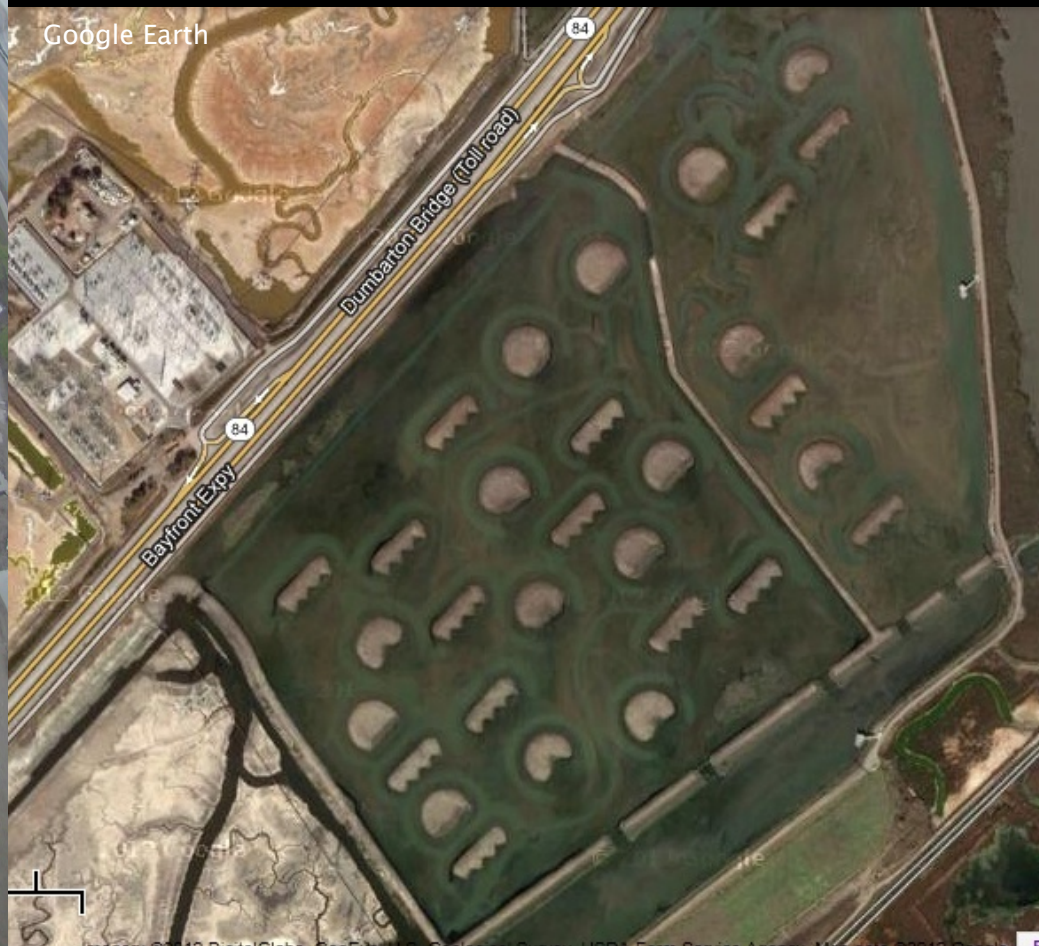
- Dumbarton flux dominates sediment budget
- Dumbarton flux related to Delta flow
- Large uncertainties on sediment flux
- Science Team consensus to do tidal restorations sooner than later – head start for marshes
- Mudflats – did not observe changes in

Breeding Bird Use of Islands



Pond SF2 “Bird Laboratory”

- Enhance pond with nesting islands, plover nesting area
- Controlled tidal flow



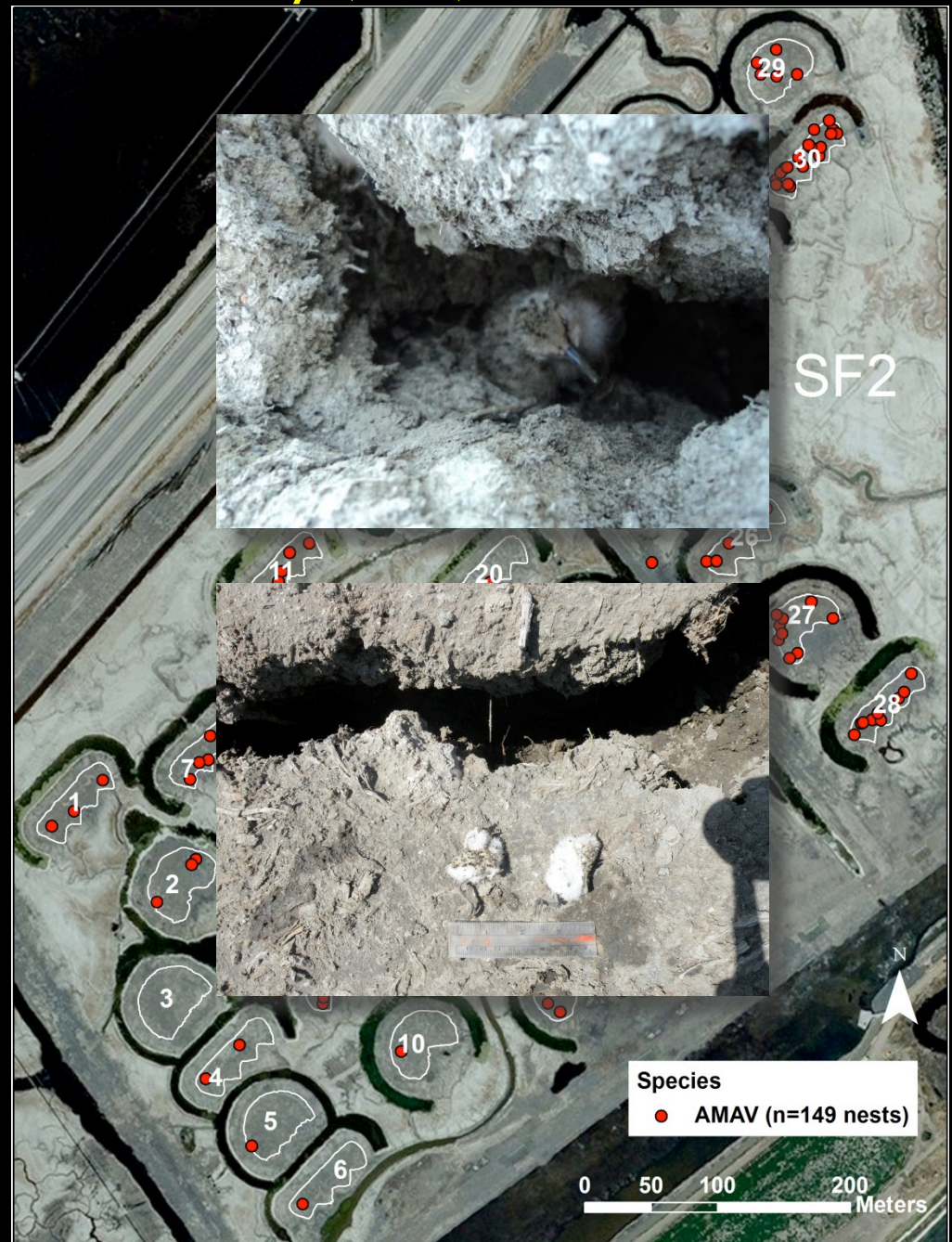
Nest Locations on at Bird Laboratory (SF2) Islands in 2011

2011

193 nests
28 of 30 islands used
80% of nests on islands
6% of nests on levees
14% of nests in cell 3
panne

2012

68 nests
2 of 30 islands used
6% of nests on islands
0% of nests on levees
94% of nests in cell 3
panne

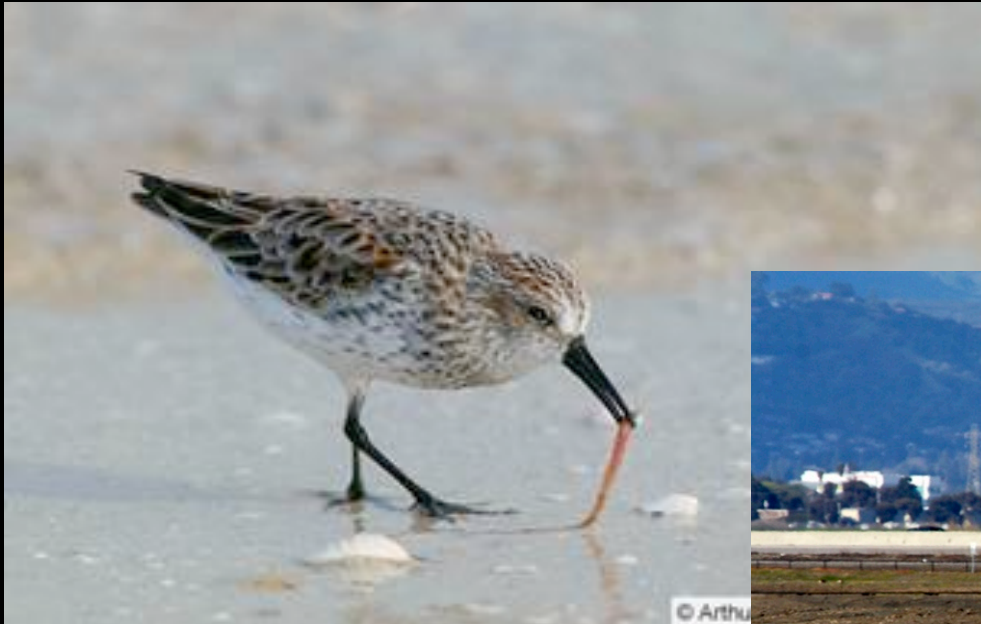


Summary for Bird Islands

- Birds nest on islands
- Nest site selection – island characteristics and other nest locations
- More islands per pond \Rightarrow more nests per pond
- Spread out island among ponds – 1–3 islands/ponds
- **Best:** Medium sized, linear islands

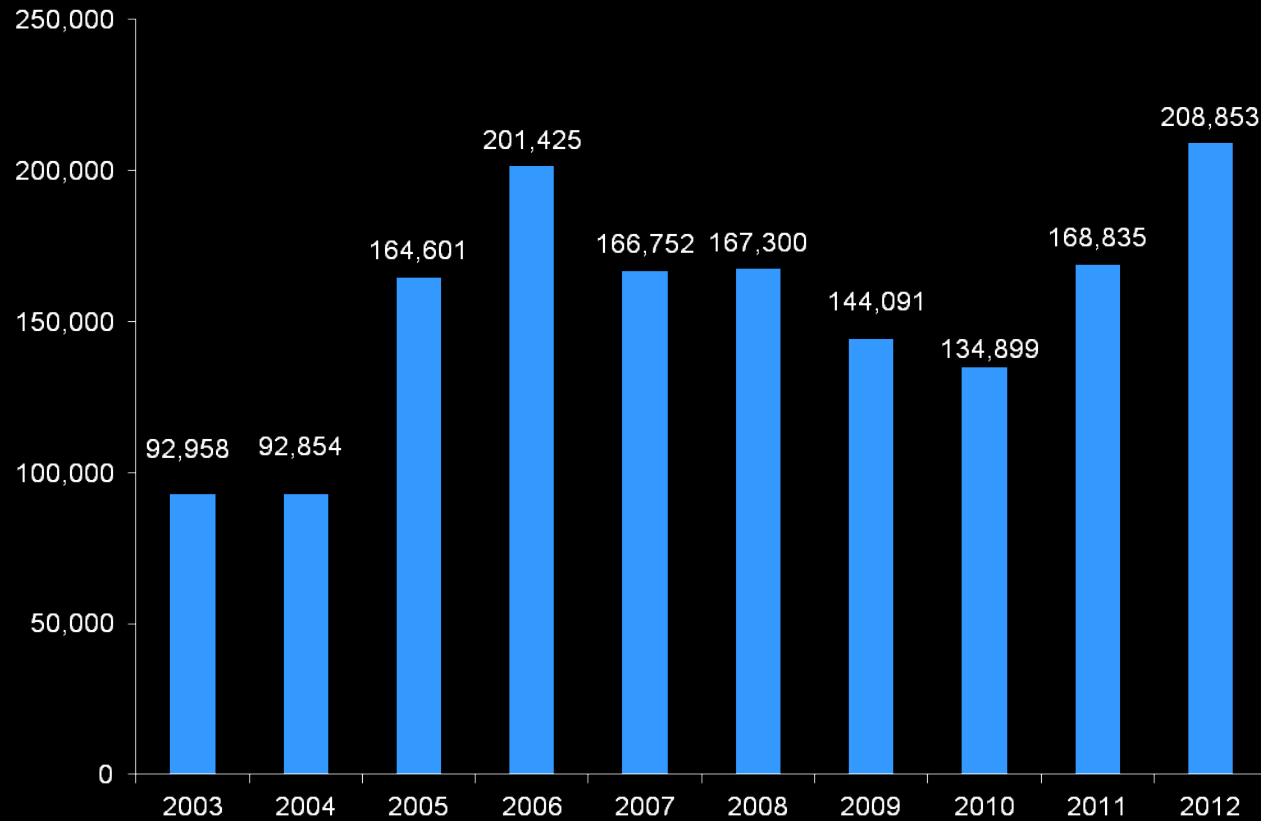


Migratory and Wintering Birds Use of Ponds



Mean Total Birds During Winter

Bird Use of SBSP



Birds increased 125% from Winter



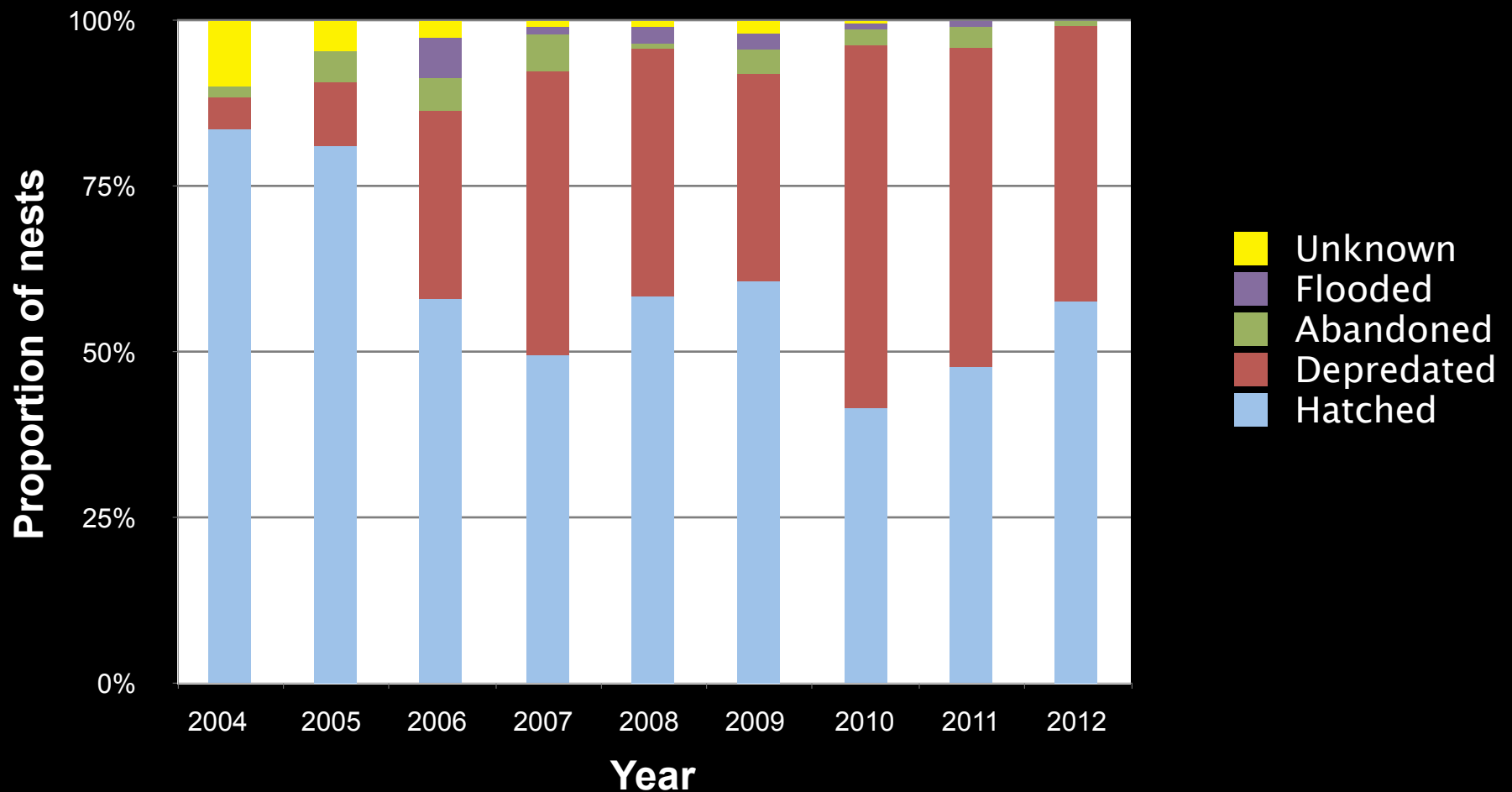
Takekawa, Brand

Western Snowy Plover Monitoring in the South San Francisco Bay



Robinson-Nilsen, Bluso-Demers, Tokatlian, Donehower

Plover Nest Success



Robinson-Nilsen, Bluso-Demers, Tokatlian, Donehower

Plover Fledging Success

Year	Fledging Success	# chicks banded
2008	29%	83
2009	25%	113
2010	41%	39
2011	14%	36



Next Steps

- Complete Phase I at Eden Landing
- Draft environmental documents for Phase II Alviso and Ravenswood
- Alternatives development for Phase II at Eden Landing
- Continue Monitoring and Adaptive Management



South Bay Salt Pond Restoration Project

Restoring the Wild Heart of the South Bay

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