



South Bay Salt Pond Restoration Project

Restoring the Wild Heart of the South Bay



Alviso Santa Clara Working Group Meeting, September 23, 2010. 1-4 p.m.

Today's Agenda

- Introductions and Welcome
- Track Our Progress Project-wide
- Track Our Progress: Phase 1 at Alviso
- Looking Ahead: Phase 2 in Alviso
- South San Francisco Bay Shoreline Study Update
- Wrap Up

Tracking Our Progress Project-wide

Project Management & Funding

Project Funding

- Federal funds
 - Appropriations
 - Grants
- Mitigation/penalty funds
- Local funds
- State funds (bonds)

Federal Funds - Appropriations

- USFWS appropriations for construction
 - \$4.9 million FY 08
 - \$4 million FY 09
 - \$2.5 million in FY10?
- USGS appropriations for science
 - \$0.5 million FY 08
 - \$0.5 million FY 09
 - \$1.0 million in FY10?



Federal Funds - Grants

- NOAA-ARRA
 - \$1.6 million – Pond A6
 - \$1.0 million – Pond A8
 - \$3.2 million – Ponds E8A/9/8X
 - \$1.6 million – Invasive Spartina Control
- USFWS-NCWC
 - \$1.0 million – Ponds E8A/9/8X
- USEPA/SFEP
 - \$0.4 million – Applied Studies

Mitigation/Penalty Funds

- \$1.1 million Caltrans Ravenswood Pier
- \$0.49 million Menlo Park Bay Account
- \$0.58 million NFWF (Leopard Shark)



Local Funds

- Santa Clara Valley Water District
 - Pond A8
 - South Bay Shoreline Study
- Alameda County Flood Control District
 - Ponds E8A/9/8X



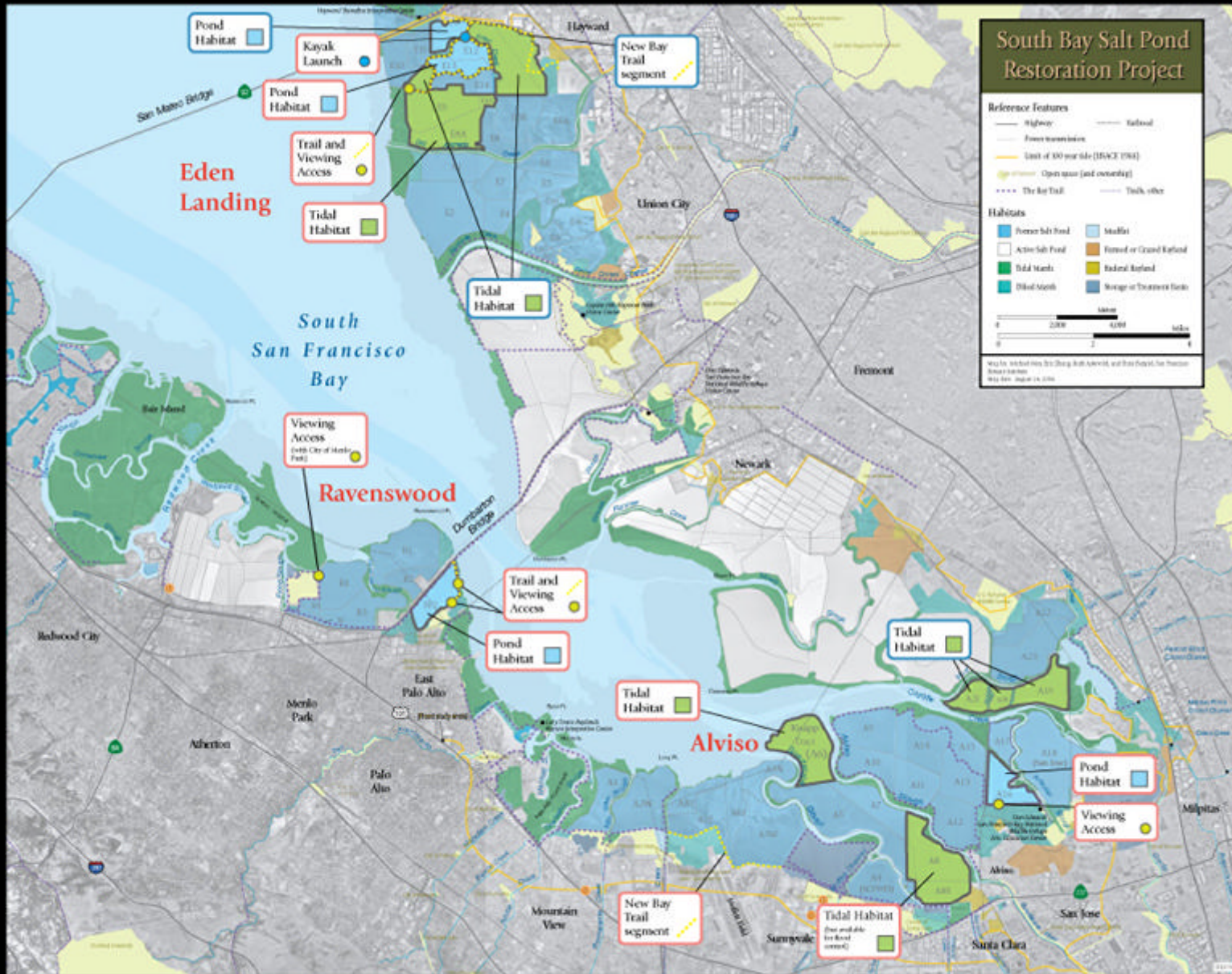
State Funds

- Coastal Conservancy
 - Design and public participation contracts
 - \$1.5 million – Pond SF2 => Ponds E8A/9/8X
 - \$0.75 million – Applied Studies now
 - \$0.75 million – Applied Studies future
- Wildlife Conservation Board
 - \$10 million – Restoration future



**Tracking Our Progress:
Project-wide Phase 1
Construction**

Tracking our Progress: Phase One Actions



Initial Restoration Actions
South Bay Salt Pond Restoration Project

2006 - 08 SBSP Phase 1

PHASE ONE: RAVENSWOOD PONDS



Initial Restoration Actions

South Bay Salt Pond Restoration Project—Ravenswood Area

 proposed Phase 1

Pond SF2

Proposed: Managed pond reconfiguration with nesting islands



Construction



Status: Construction complete.
Opened on September 7, 2010



Photo Copyrighted

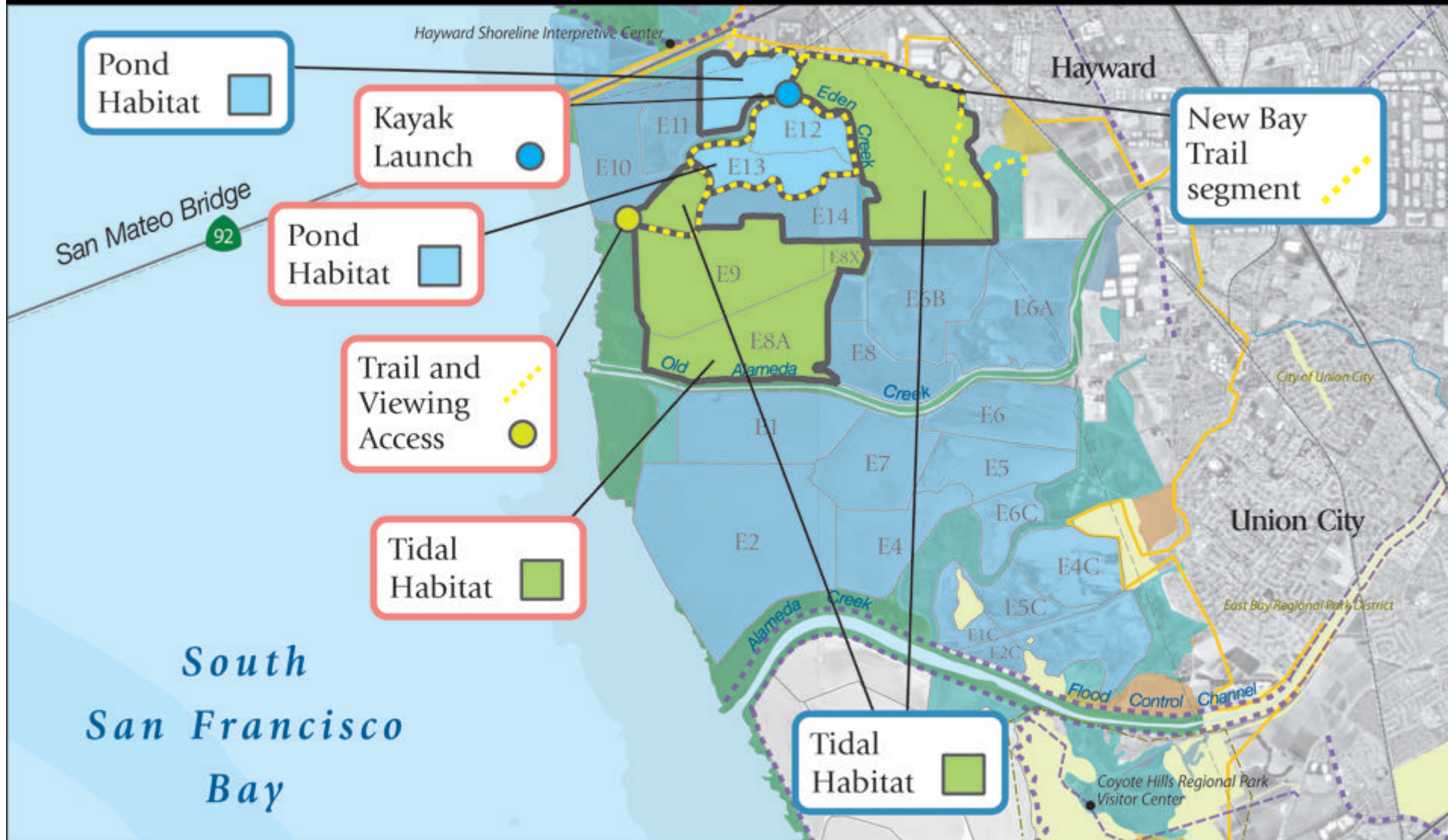


Photo Copyrighted

Bedwell Bayfront Park: interpretive signage installed summer, 2010



PHASE ONE: EDEN LANDING



Initial Restoration Actions

South Bay Salt Pond Restoration Project—Eden Landing Area

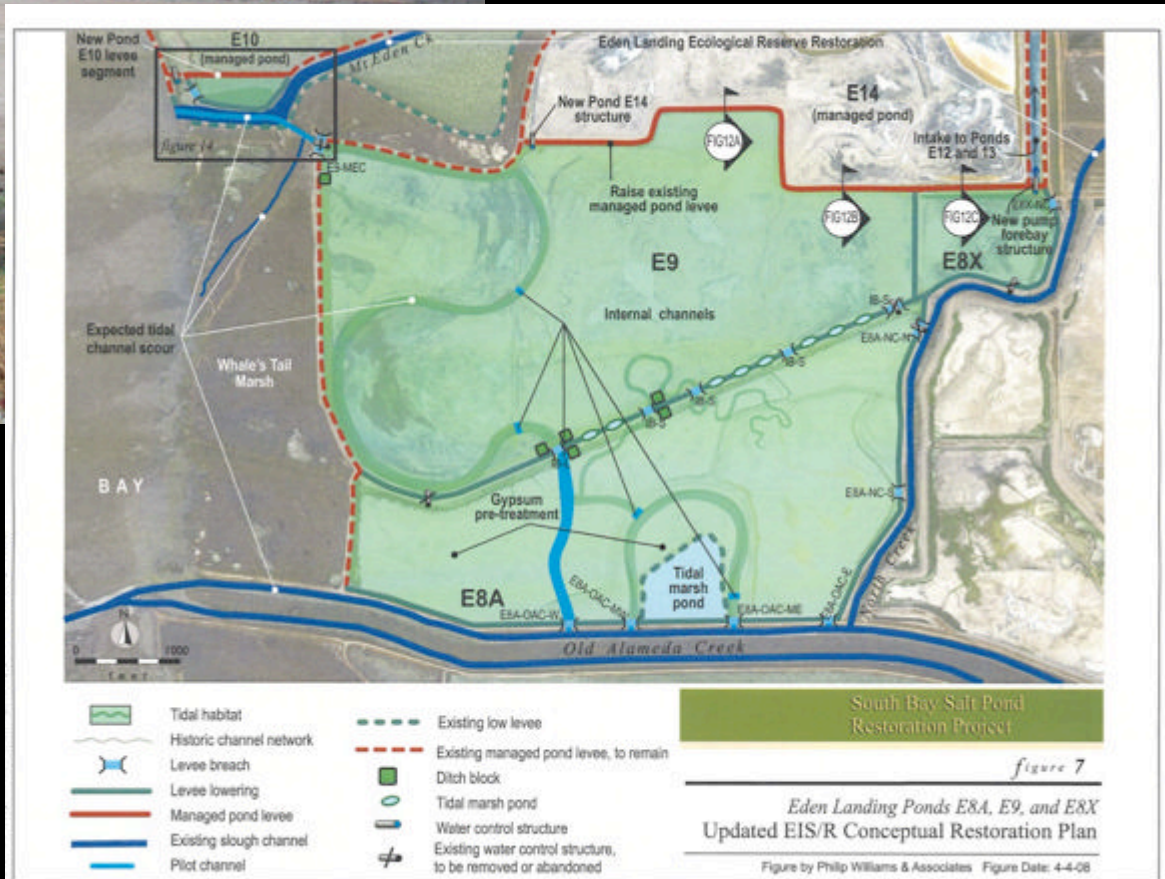
 2006 - 08
 SBSP Phase 1

PHASE ONE: EDEN LANDING



Ponds E8A/E9/E8X

Proposed: Tidal Marsh (630 acres)



Ponds E8A/E9/E8X

Status:
Under construction



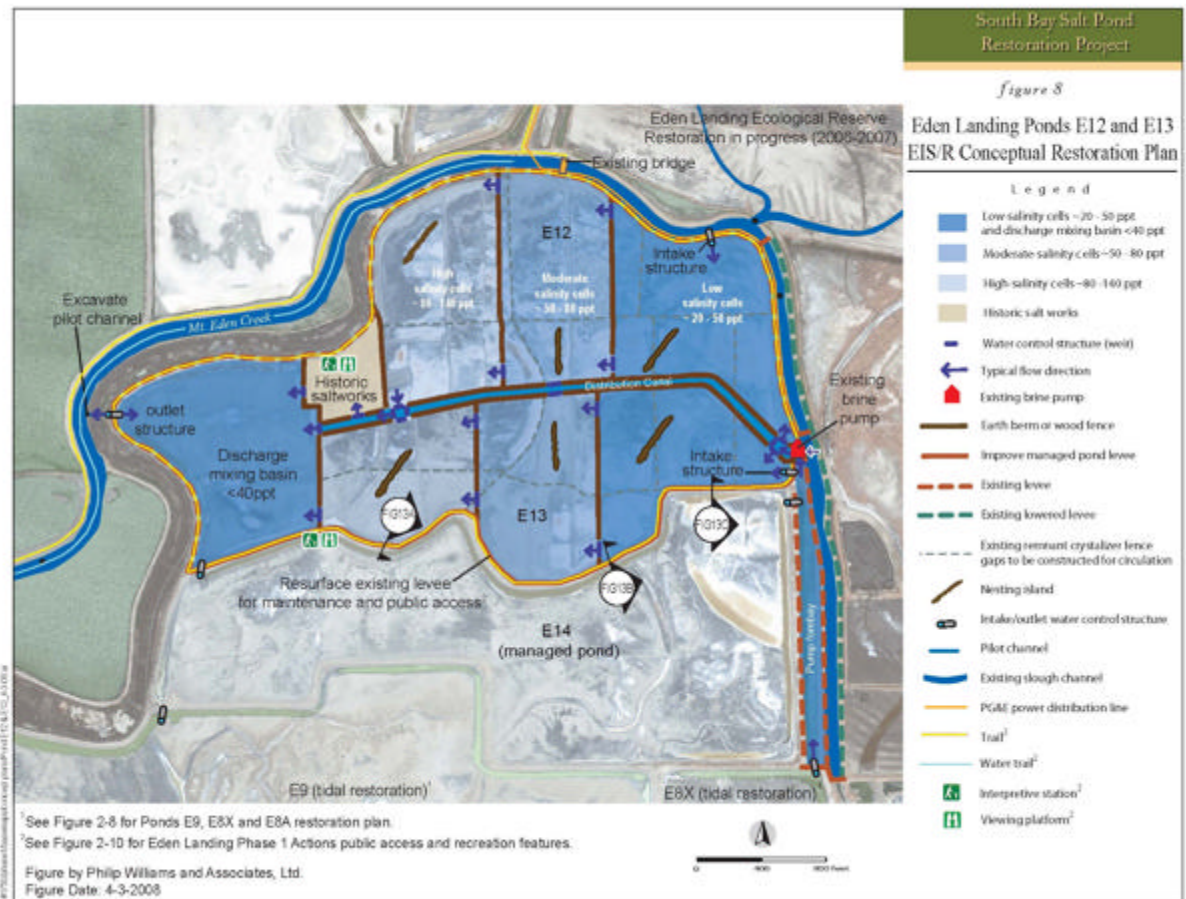
Completion expected
Fall 2011

PHASE ONE: EDEN LANDING

Pond E12

Proposed:
Reconfigured
Managed Pond
(230 Acres)

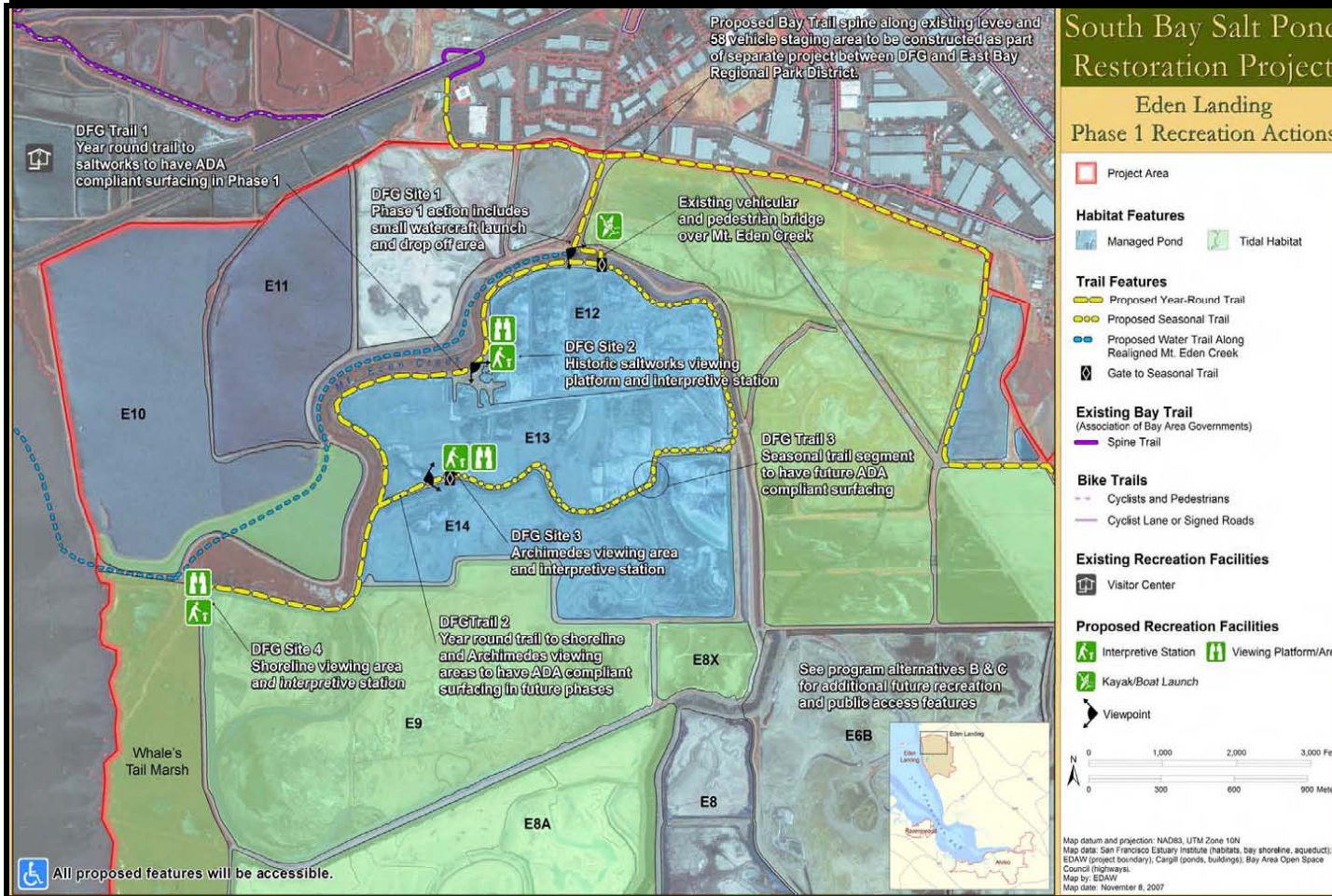
Status: Final design underway,
30% plans expected in March
2011



PHASE ONE: EDEN LANDING



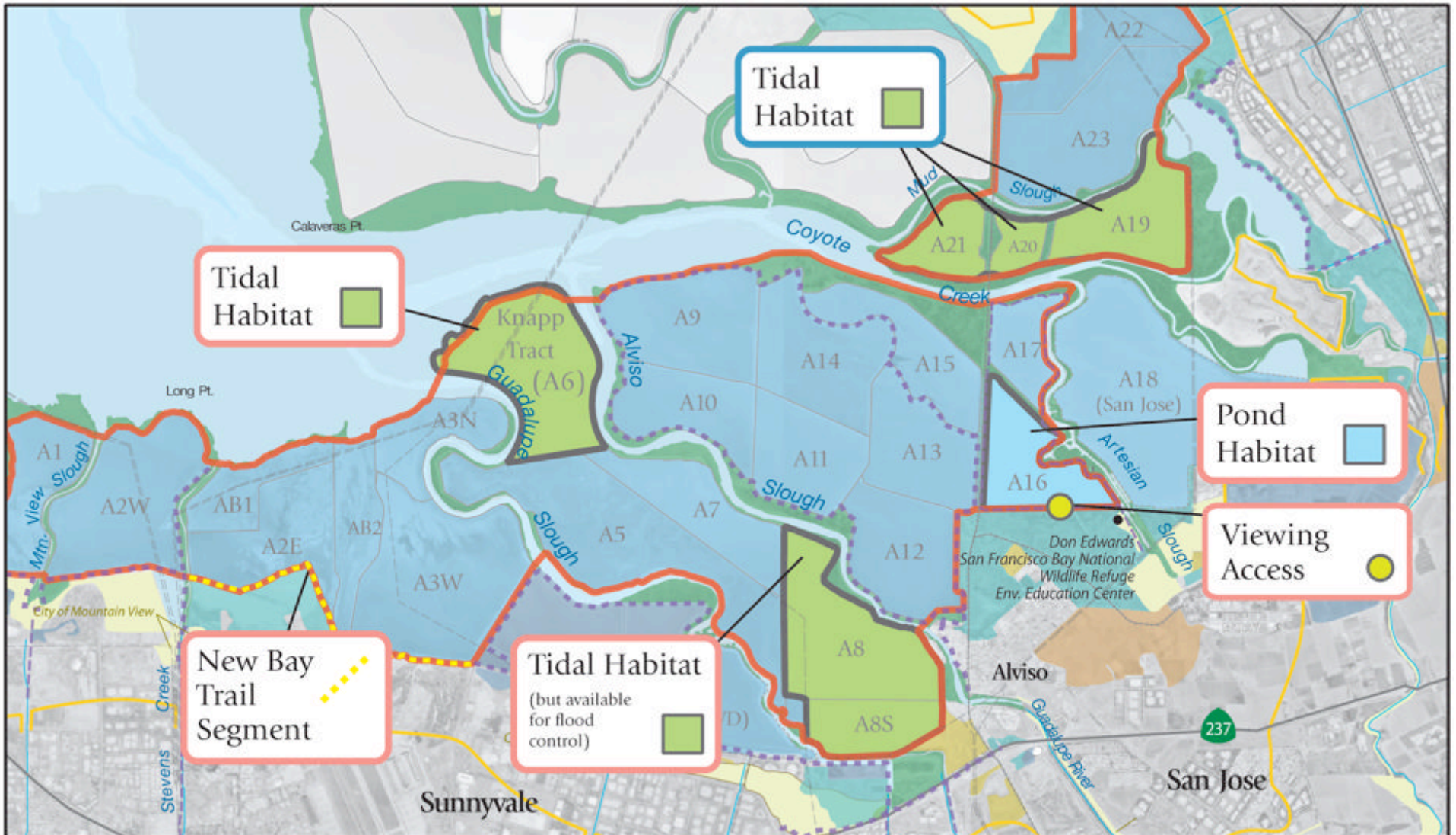
Proposed:
3.8 mile trail
Viewing platforms
Kayak launch



Status:
Final designs complete

**Tracking Our Progress at
Alviso:
Phase 1 Actions**

PHASE ONE: ALVISO



Initial Restoration Actions

South Bay Salt Pond Restoration Project—Alviso Area

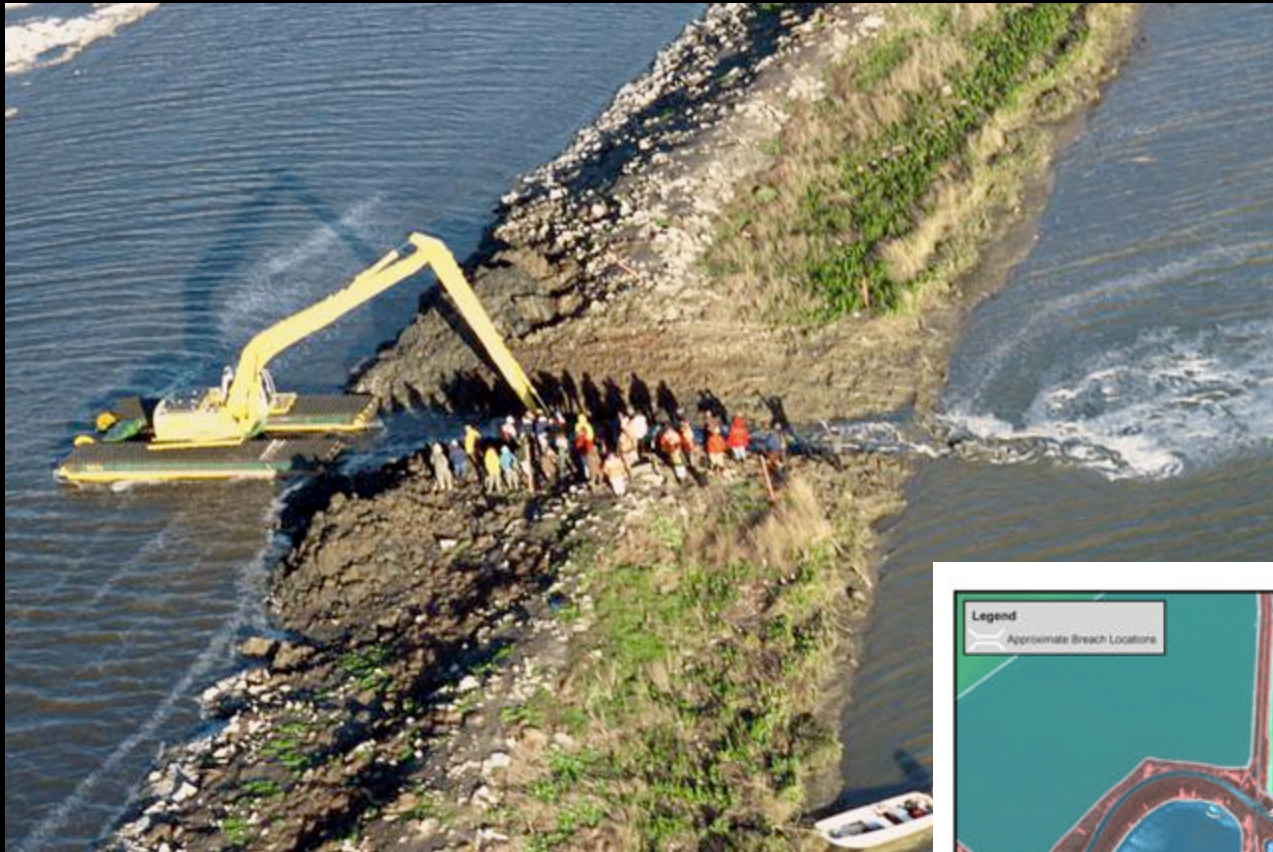


2006 - 07



Proposed Phase 1

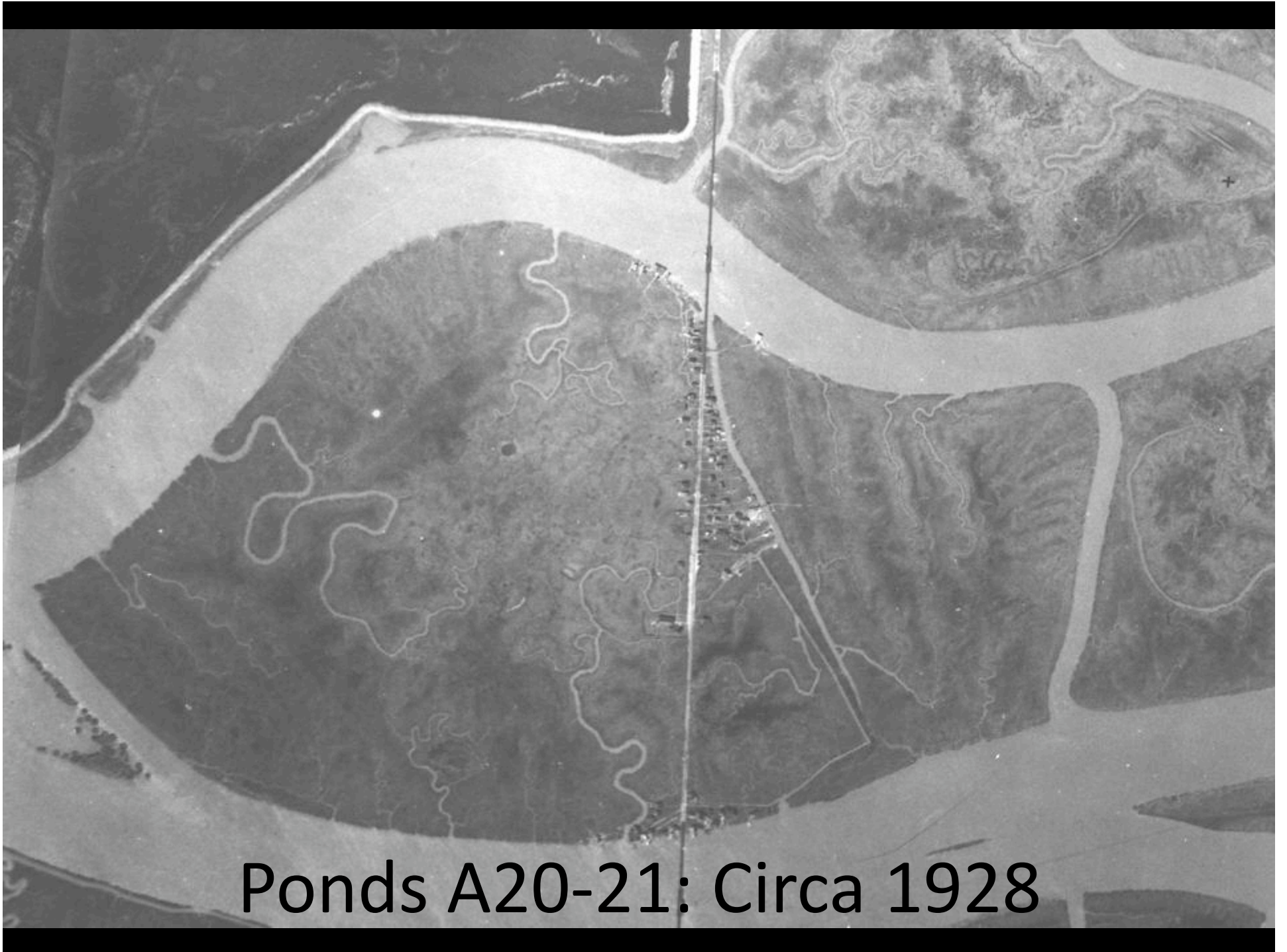
Ponds A19, 20, 21 (the Island Ponds)



Proposed: Tidal marsh restoration

Status: Restored





Ponds A20-21: Circa 1928



Ponds A20-21: 2004



Ponds A20-21: 2007



April 2007



September 2009
Salt Pond A21

Pre-restoration conditions



Post-restoration conditions



Habitat evolution after restoration



April 2008



September 2009

C. Benton

Salt Pond A21

Wildlife returning...

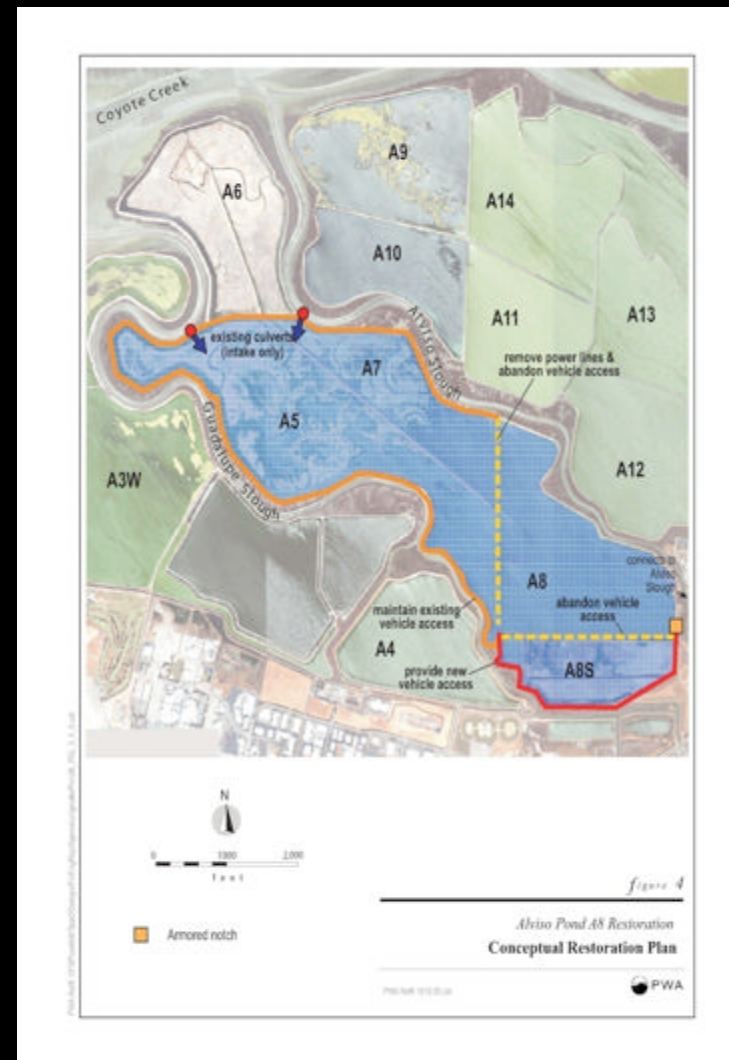


PHASE ONE: ALVISO

Ponds A8, A5, A7

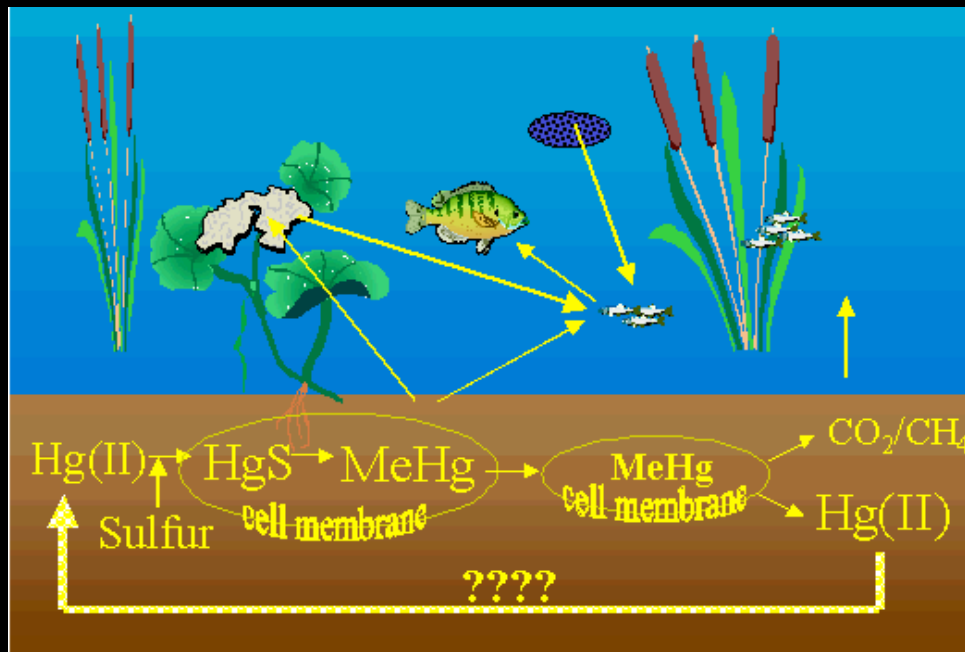


Proposed: shallow tidal habitat with new marsh (1400 acres)



Applied Study to address Key Uncertainty:

Will increased tidal marsh = increased mercury methylation?



Groundbreaking January 2010



Photo Credit: Chris Benton

Before Construction



During...



And After



Status: Gates to be opened in Spring 2011

PHASE ONE: ALVISO

Pond A6

Proposed:
Tidal Marsh (330 acres)



Pond A6

Applied Studies:

- gull displacement
- sedimentation

Status:

To be breached in
October 2010



PHASE ONE: ALVISO



Proposed: 2.4 Mile Moffett Bay Trail Segment

Status: Trail Opened on Monday September 20, 2010



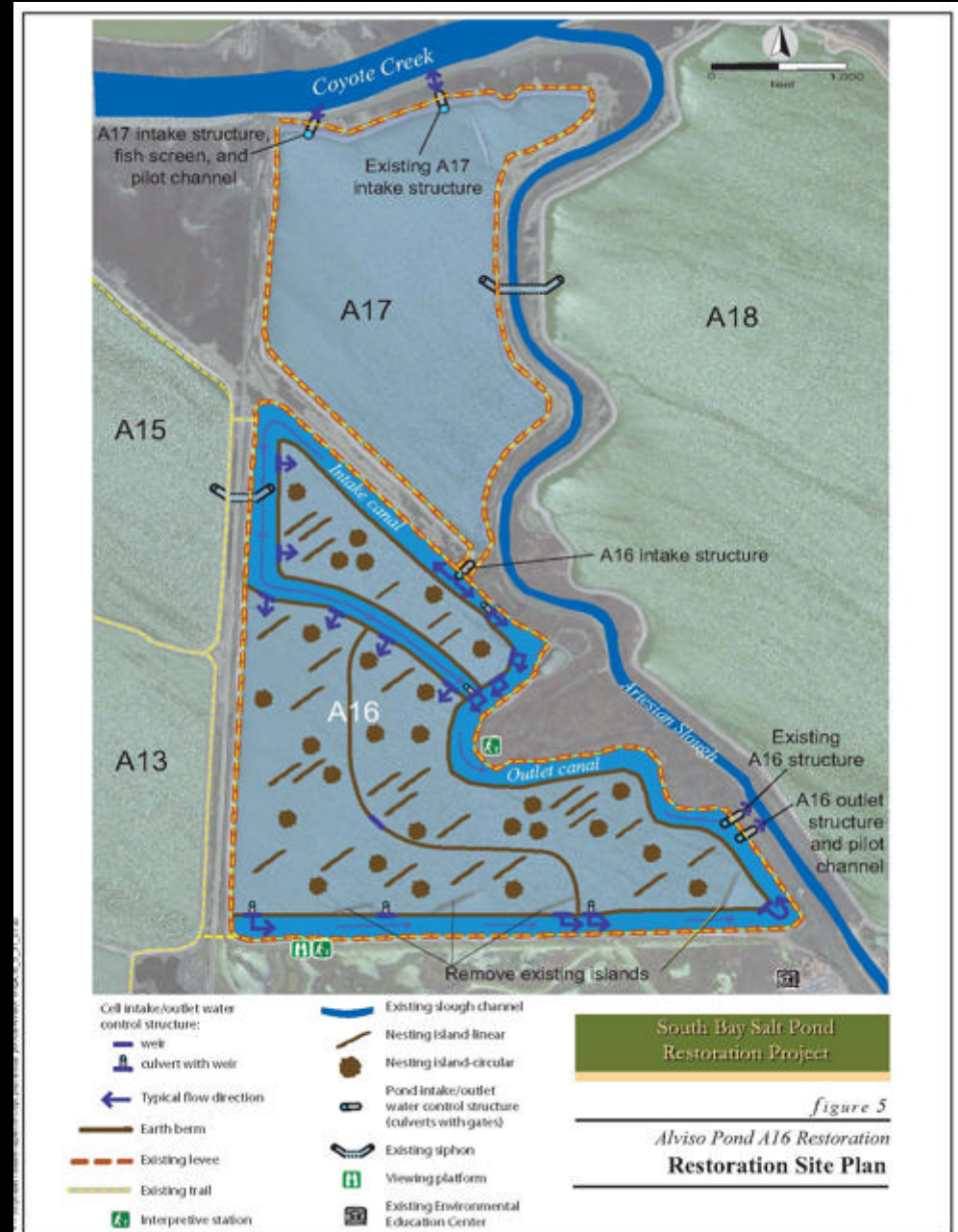
PHASE ONE: ALVISO

Pond A16



Proposed: Reconfigured Ponds with nesting islands (243 acres)

Status: Design modifications underway, 60% plans by February 2011



PHASE ONE: ALVISO

Pond A16

Public Access: Interpretive Signs

Set of three panels that discuss “What’s in the Water?” and how the Restoration has helped wildlife.


Planned as part of larger Environmental Education Center public access improvements.

Changing for WILDLIFE



**Northern Shoveler
Cuchara Norte**

During the last century, most of the South Bay salt marshes were diked and flooded to create evaporation ponds. For generations, humans used these man-made ponds to harvest salt from Bay water. Today, we are using them for wildlife. The South Bay Salt Pond Restoration Project is the largest tidal wetlands restoration project on the West Coast. Over the next 50 years, the Project will convert 15,100 acres of former salt ponds into a rich mosaic of wetlands habitats that will include managed ponds like A16.



The commercial salt industry has been an important part of the Bay economy since the 1850's.

La industria de la sal comercial ha sido una parte importante de la economía de la bahía desde la década de 1850's.



Wetlands restoration is action for wildlife.

Restauración de humedales en la acción para la vida silvestre.

In 2006, we took the first step in changing Pond A16 for wildlife. New water gates allow Bay water to flow in and out of the pond with the tides and the salinity has returned to Bay levels. With less salt in the water, wildlife use of the pond has doubled.

Durante el siglo pasado, la mayoría de las marismas del sur de la Bahía fueron diked e inundó para crear estanques de evaporación. Durante generaciones, los seres humanos utilizan estos estanques artificiales a la sal de la cosecha de agua de la Bahía. Hoy, el sur de la bahía de Salt Estanque Proyecto de Restauración es el mayor proyecto de restauración de los humedales de mareas en la costa oeste. Durante los próximos 50 años, se convertirá 15,100 hectáreas de estanques de sal antiguos en un rico mosaico de hábitats de humedales.

En 2006, se dio el primer paso en el restablecimiento de Estanque A16 para la vida silvestre. Compuertas de Nueva permitir que el agua fluya en la bahía y fuera del estanque, con las mareas y la salinidad que ha vuelto a niveles normales de la Bahía. Con menos sal en el agua, el uso de vida silvestre de la laguna se ha duplicado.



You Are Here
Esta Aquí



Salt ponds are man-made ponds used to harvest salt through solar evaporation of Bay water. Today many are being managed for wildlife habitat and are called managed ponds.

Estanques de sal son estanques artificiales utilizados para la cosecha de sal por evaporación solar de agua de la Bahía. Hoy en día muchos se están gestionando para el hábitat de la fauna silvestre y se llaman estanques administrado.

WHAT'S in the WATER ?

Look beneath the water's surface and you will see a world teeming with life. Leopard sharks swim through the pond's deeper channels. Clams work the muddy bottom while small fish and shrimp glide through the water. Everyone is searching for their next meal. Every so often a beak breaks through the water to grab a fish - evidence of the bird life above the water.

Mirar debajo de la superficie del agua y podrás ver un mundo unido con la vida. Leopard tiburones nadan a través de canales más profundos de la laguna. Almejas a la labor del fondo fangoso mientras que los peces y camarones se deslizan por el agua. Todo el mundo está buscando su próxima comida. De vez en cuando se rompe un pico en el agua para agarrar un pez - la prueba de la vida de las aves sobre el agua.

- ① Olive Shrimp Armonía
- ② Green Clam Jaja De Almejas
- ③ Retriolated Water Boatman Barquero Agua Retricolado
- ④ Leopard Shark Tiburón Leopardo
- ⑤ Scaevy Egret Cigarrero De Mave Garza
- ⑥ Topsmilk Arriba Olla
- ⑦ Blacktail Bay Stoney Blacktail Camarones Bahía
- ⑧ Threespine Stickleback Espinazo
- ⑨ Ruddy Duck Maltrasa Canela
- ⑩ Pacific Staghorn Snaillet Pacífico Escarabajo Cuerno De Cerro



In Spanish and English with strong visuals for younger audiences.

Extreme LIVING

You'll need a microscope to see the most abundant life in the ponds. Billions and billions of bacteria and algae thrive in these waters and are an important food source for birds, fish, clams and many other species. Halophiles (salt loving organisms) are a special group of microorganisms that take over when salt levels increase. When present in great enough numbers, they change the salt ponds and natural salt pans of the South Bay into a rainbow of colors. Look for evidence of this microscopic life as you travel through the Alviso ponds and marshes.

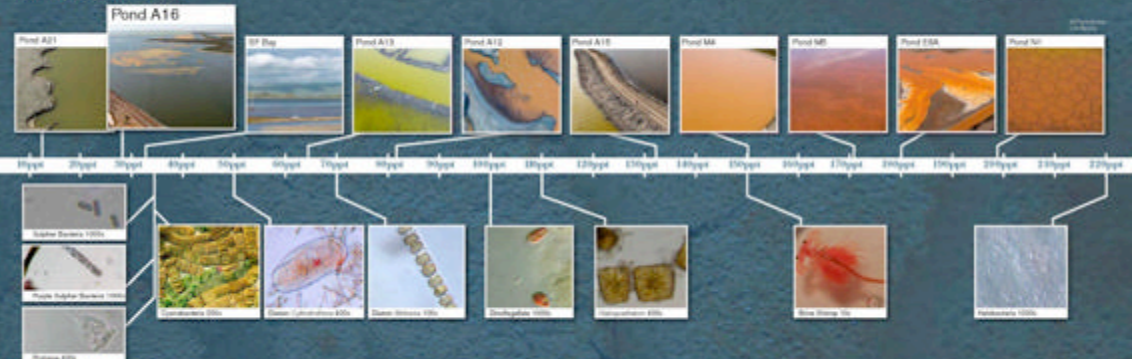
Se necesita un microscopio para ver la vida más abundante en el estanque. Miles de millones y miles de millones de bacterias y algas prosperan en estas aguas y son una fuente importante de alimento para aves, peces, almejas y muchas otras especies. Halófilos (amantes de la sal organismos) son un grupo especial de microorganismos que hacerse cargo de aumentar los niveles de cuando la sal. Cuando están presentes en número lo bastante grande, cambian las salmas y las cacerolas de sal natural de la Bahía Sur en un arco iris de colores. Puedes buscar pruebas de esta vida microscópica a medida que viajan a través de los estanques y pantanos Alviso.

How many are there?
One drop of water can have 27 billion (27,000,000,000) bacteria.

¿Cuántos hay?
Una gota de agua puede tener 27 mil millones de bacterias.



Ponds by Salinity Estanques por la salinidad



Bacteria by Salinity Las bacterias por la salinidad

ppt = parts per thousand (grams of salt per liter of water)
ppt = partes por mil (gramos de sal por litro de agua)

Phase 2 Planning for Alviso

San Francisco Bay Shoreline Study

Alviso Santa Clara Working Group

September 23, 2010

- Background & Purpose of Study
- Current Status
- Schedule
- Budget / Funding
- Issues

San Francisco Bay Shoreline Study

Background / Purpose

- Federally Authorized Study
- 2003 – Salt Pond Restoration Project.
Study Re-authorization
- 2004 – Reconnaissance Phase Completed
- Purpose – Flood Control, Ecosystem Restoration, Recreation

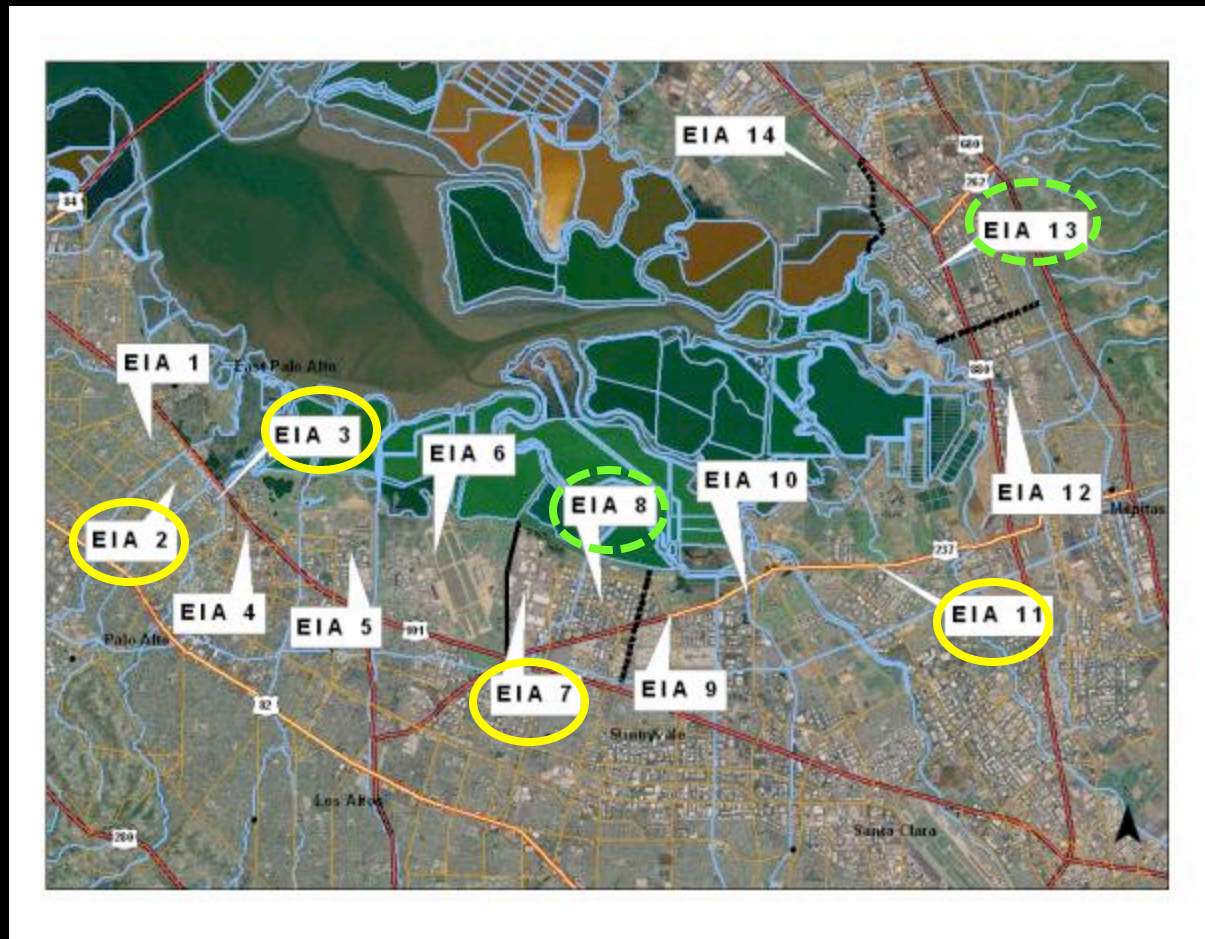
San Francisco Bay Shoreline Study



Current Status

- Feasibility Scoping Mtg held on 9/18/10
- Existing conditions, potential flood damages, future flood risks
- Highest Potential Flood Damages predicted in Four Economic Impact Areas, including Guadalupe Creek to Coyote Creek (Alviso).

Flood Risk Assessment

- Expected annual damages (EADs) were estimated for 14 economic impact areas (EIAs)



-  EIAs with highest EADs
-  EIAs with high EADs under NRC Curve III

Flood Risk Assessment

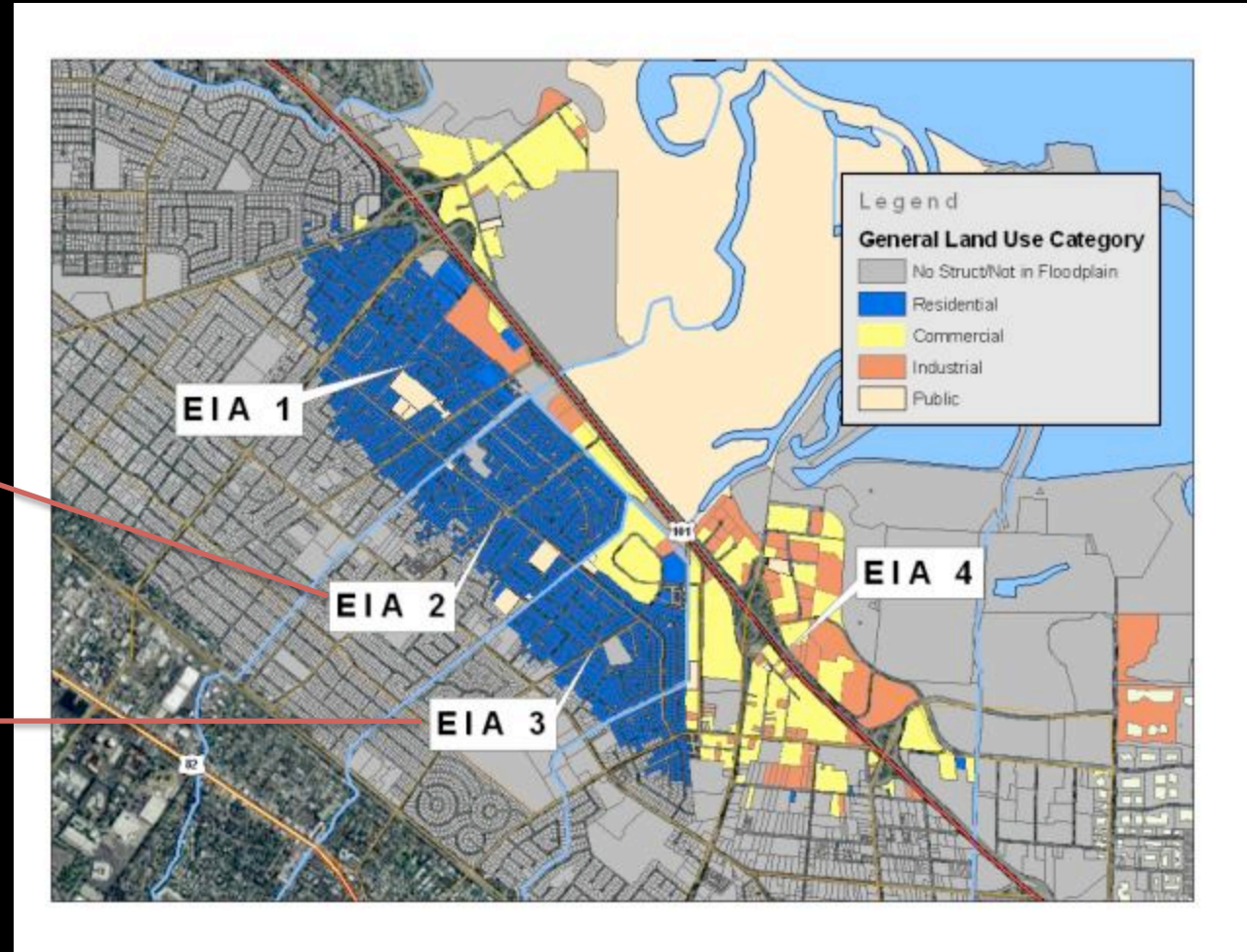
- Highest damages are predicted in four EIAs:

Equivalent Annual Damages (Millions)			
Area	Curve H	Curve I	Curve III
EIA 2 - Matadero Creek to Barron Creek	\$1.8	\$2.5	\$17.4
EIA 3 - Barron Creek to Adobe Creek	\$1.2	\$1.7	\$17.0
EIA 7 - Stevens Creek to Sunnyvale West Creek - Non NASA	\$13.4	\$15.9	\$24.5
EIA 11 - Guadalupe Creek to Coyote Creek	\$1.2	\$2.5	\$19.0

- EIAs 8 and 13 accrue substantial commercial and industrial damages under NRC Curve III (\$22.1 M and \$17.6 M respectively).

Flood Risk Assessment – EIAs 2 and 3

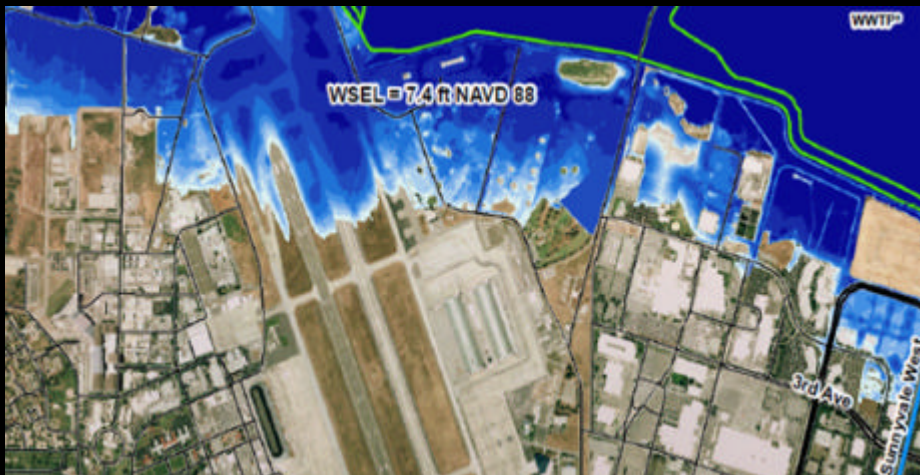
- City of Palo Alto
- Mostly residential structures



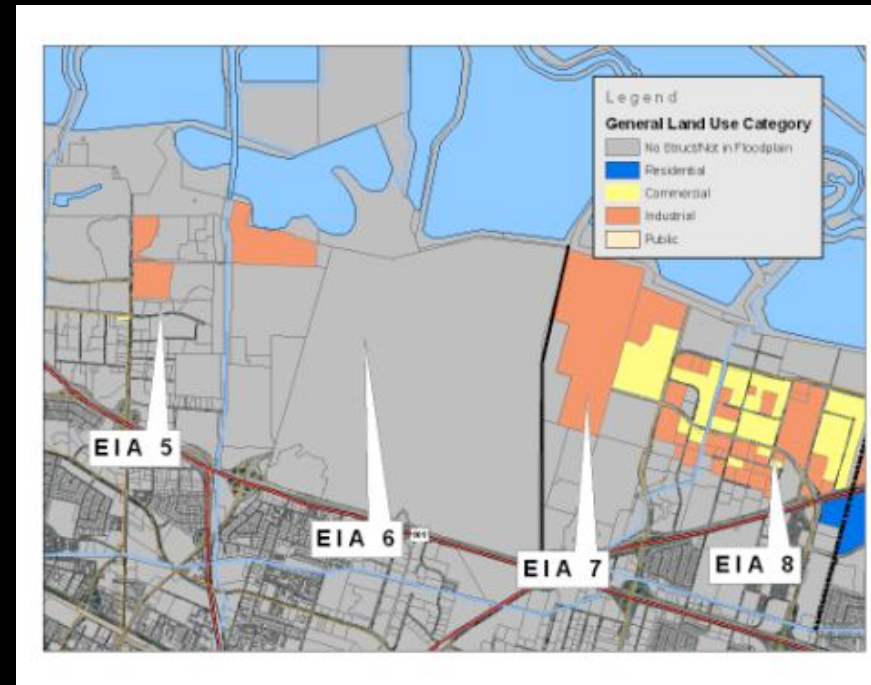
* Figures above show first significant damage

Flood Risk Assessment – EIA 7

- Commercial and industrial structures
 - Lockheed Martin
 - Yahoo
- Outboard levee in poor condition
- Low elevation inboard levee



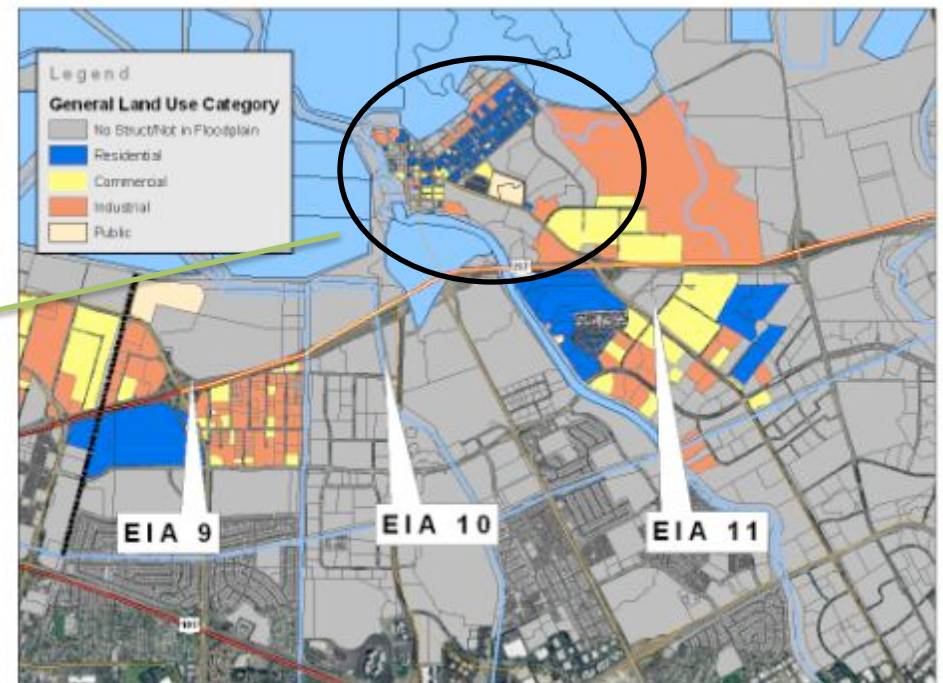
EIA 7



* Figure above shows first significant damage

Flood Risk Assessment – EIA 11

- Residential, industrial, and commercial structures
 - Community of Alviso
 - San Jose/Santa Clara Water Pollution Control



* Figure above shows first significant damage

San Francisco Bay Shoreline Study

Schedule

- 9/10 - Feasibility Scoping Mtg
 - 10/10 – Initiate “With Project” Analysis
 - 10/13 – Alternatives Review Conference
 - 3/14 – Alternatives Formulation Briefing
 - 8/14 – Draft Feasibility Report
 - 1/15 – Draft Feasibility Report
 - 6/16 – Chief’s Report (Submission to Congress)
-

San Francisco Bay Shoreline Study

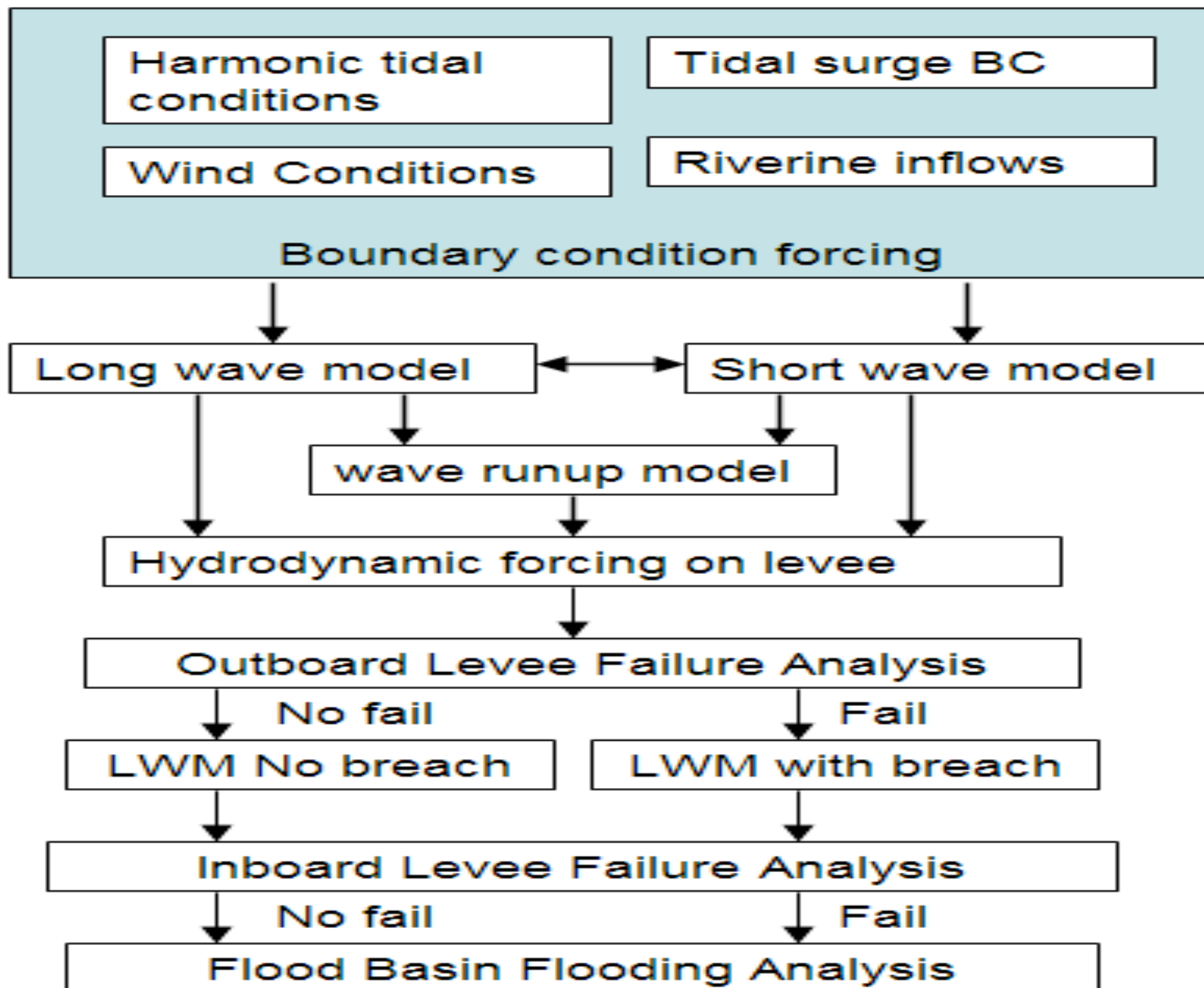
Funding /Costs

- Study Costs as of 7/31 - \$12,954,461
- Future Study Costs Uncertainties

San Francisco Bay Shoreline Study

Project Issues

- Cost Over-runs
 - Schedule Slips
 - Geotechnical (Levees)
 - Flood Damage Models
 - Fluvial / Tidal Flooding
 - Climate Change / Sea Level Rise
 - Options for Moving Forward
-



**San Jose Santa Clara Water
Pollution Control Plant Planning
Update**

Next Steps

Upcoming Meetings

- Stakeholder Forum
Thursday, October 28, 2010, 1- 4 pm
Menlo Park Library



South Bay Salt Pond Restoration Project

Restoring the Wild Heart of the South Bay

John Bourgeois

California Coastal Conservancy
jbourgeois@scc.ca.gov or 408/314-8859

Eric Mruz

Don Edwards San Francisco Bay National Wildlife Refuge
Eric_Mruz@fws.gov or 510/792-0222

Brenda Buxton

California Coastal Conservancy
bbuxton@scc.ca.gov or 510/286-0753

Beth Dyer

Santa Clara Valley Water District
bdyer@valleywater.org or 408/265-2600

www.southbayrestoration.org