



South Bay Salt Pond Restoration Project

Restoring the Wild Heart of the South Bay



April 2008



September 2009



May 2010



October 2010

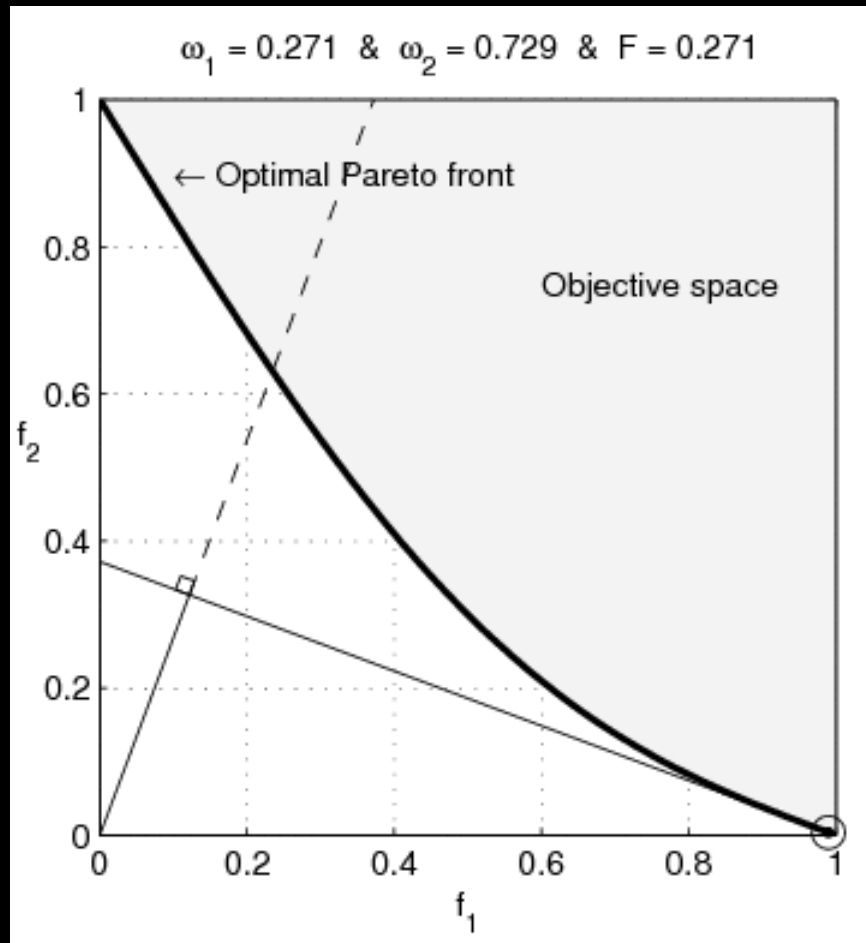
SALT POND A21 SOUTH BAY SALT POND RESTORATION PROJECT

Kite aerial photographs of a small channel in the northeast corner following the 2006 breach to tidal flow. Field of view is ~ 120 feet. . C. Benton

State of the Estuary Conference
~~March 12~~ May 28, 2024; Oakland, CA
Dave Halsing, Executive Project Manager

Multi-Objective Projects

If everyone wants them...



Guillaume Jaquenot

...Why are they so hard?

$$\min_{x \in X} (f_1(x), f_2(x), \dots, f_k(x))$$

$$f : X \rightarrow \mathbb{R}^k$$
$$x \mapsto \begin{pmatrix} f_1(x) \\ \vdots \\ f_k(x) \end{pmatrix}$$

$$z^{nadir} = \begin{pmatrix} \sup_{x^* \in X^*} f_1(x^*) \\ \vdots \\ \sup_{x^* \in X^*} f_k(x^*) \end{pmatrix}$$

And also:

Should we do them?



South Bay Salt Pond Restoration Project

Restoring the Wild Heart of the South Bay



**Habitat
Restoration**



**Flood Risk
Management**

**Public Access
& Recreation**

Judy Irving, Pelican Media

South Bay Salt Pond Restoration Project

Legend

2002 Salt Pond Acquisition Area

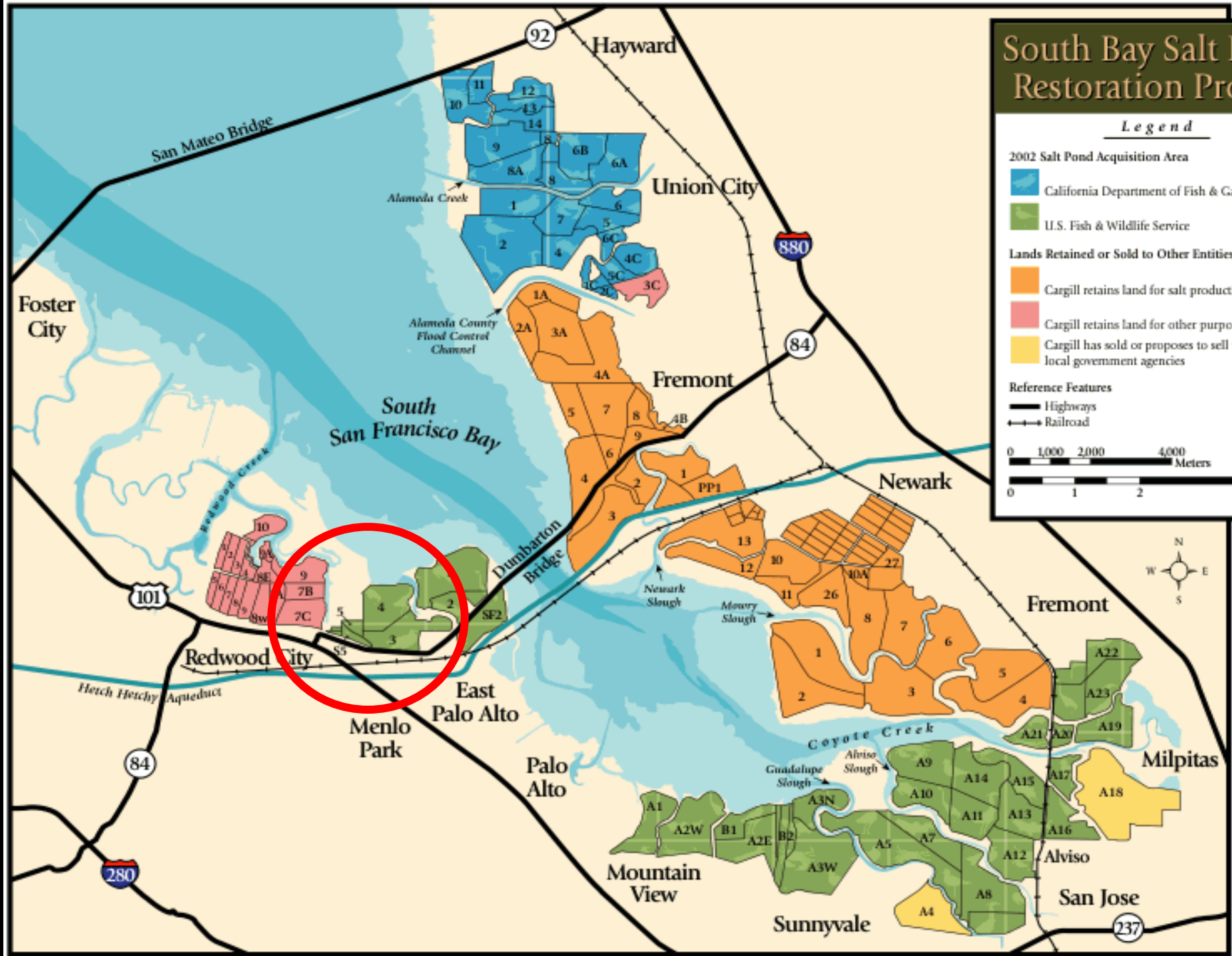
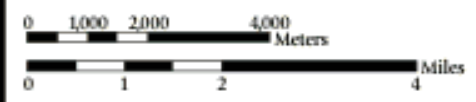
- California Department of Fish & Game
- U.S. Fish & Wildlife Service

Lands Retained or Sold to Other Entities

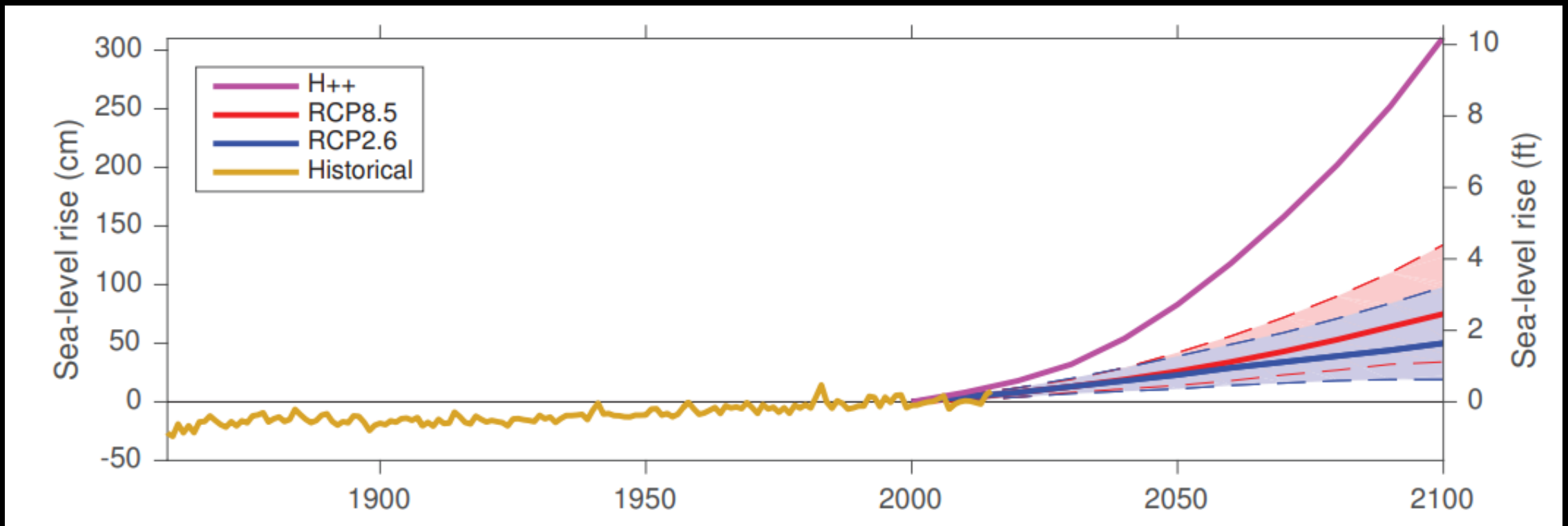
- Cargill retains land for salt production
- Cargill retains land for other purposes
- Cargill has sold or proposes to sell to local government agencies

Reference Features

- Highways
- Railroad



Sea-Level Rise



\$\$\$Sea-Level Rise

- **Funding for adaptation right now**

(But not always...)

- **Marshes are adaptive**
- **Adding ecotones helps even more**
- **Combo can be “self-mitigating”**
- **Public access → way to engage**

Good News?

Multi-objective projects:

- **Money**
- **Public support**
- **Positive press coverage**
- **Real benefits to people & environment**

And yet...

Implementation Is Hard



The more things you try to do...

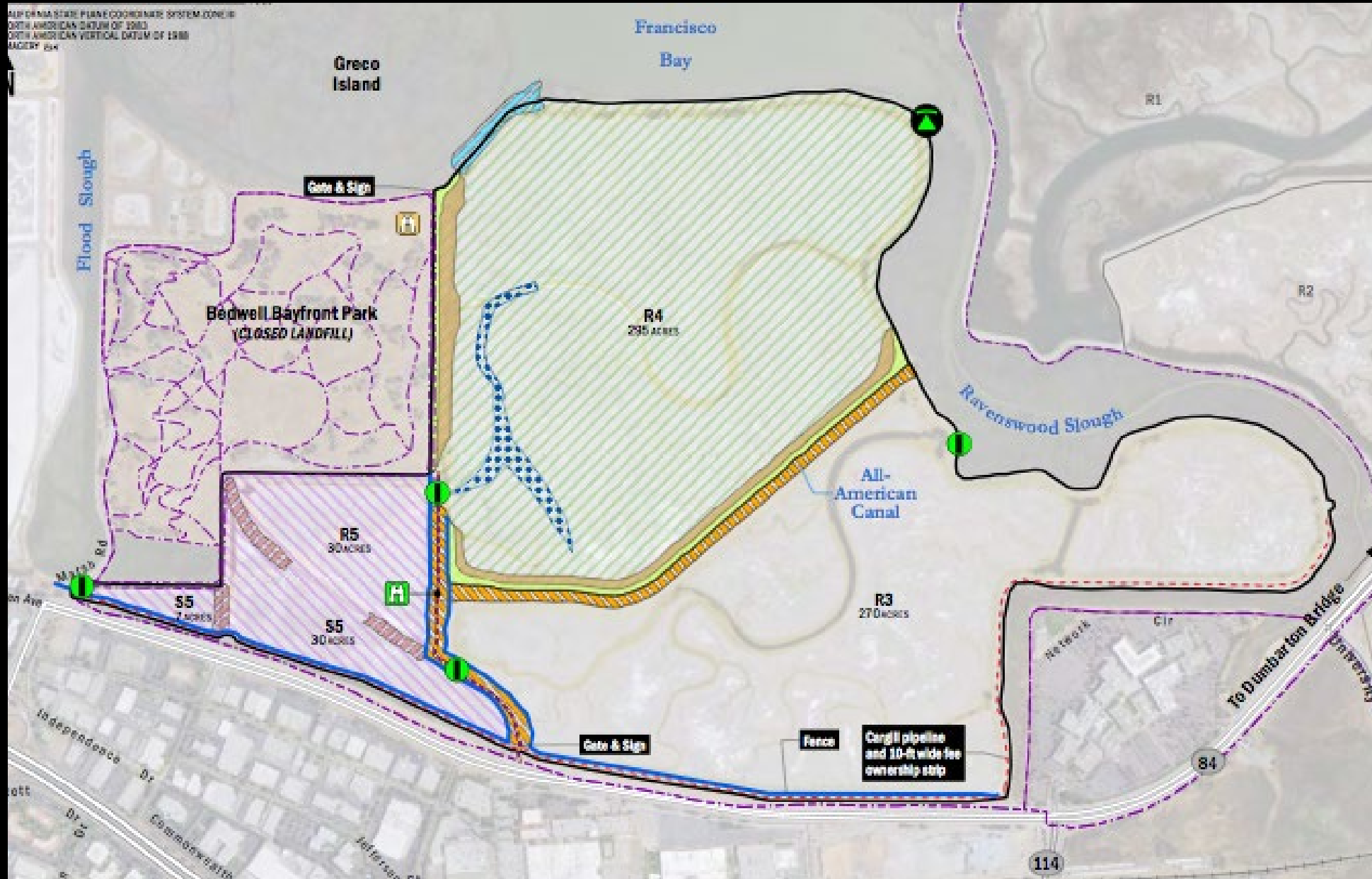
...the harder it gets.

Balance Is a Challenge

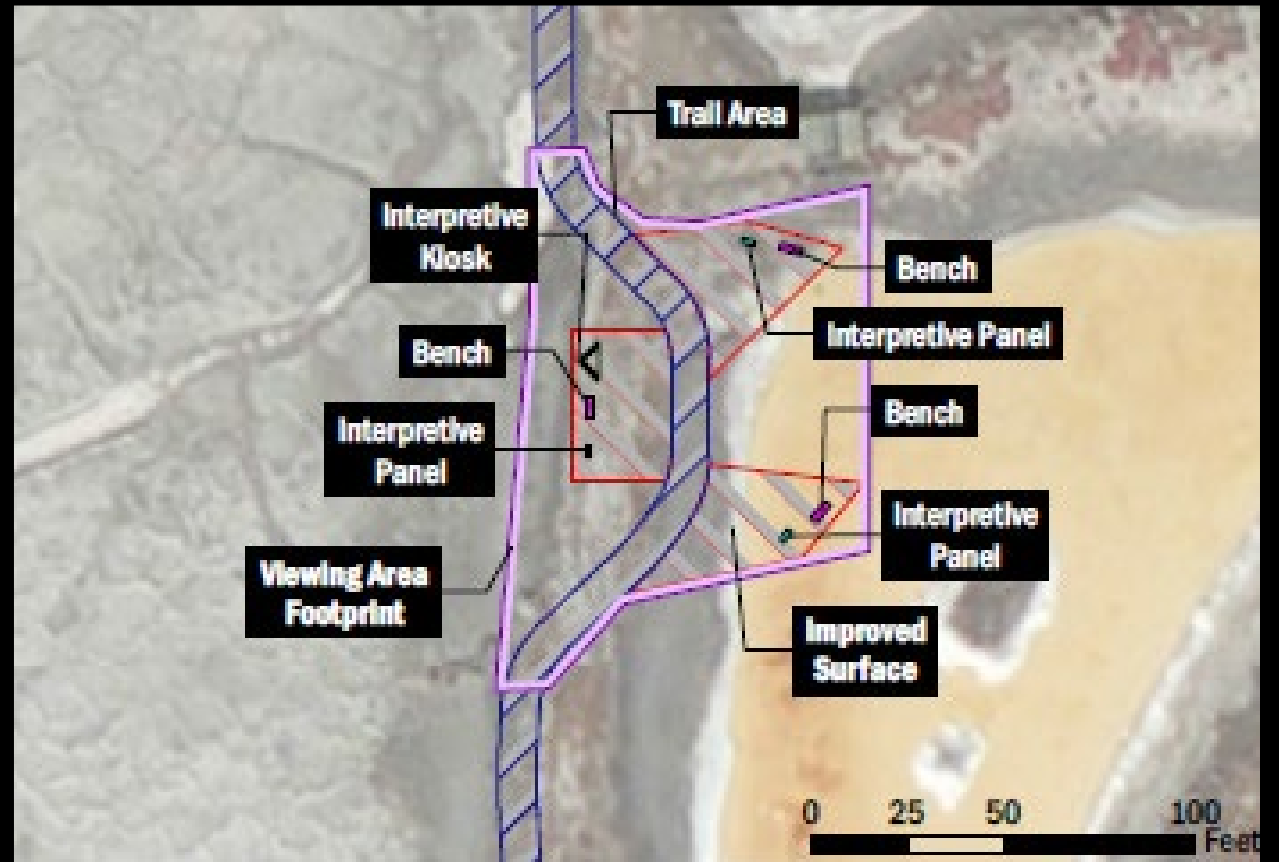
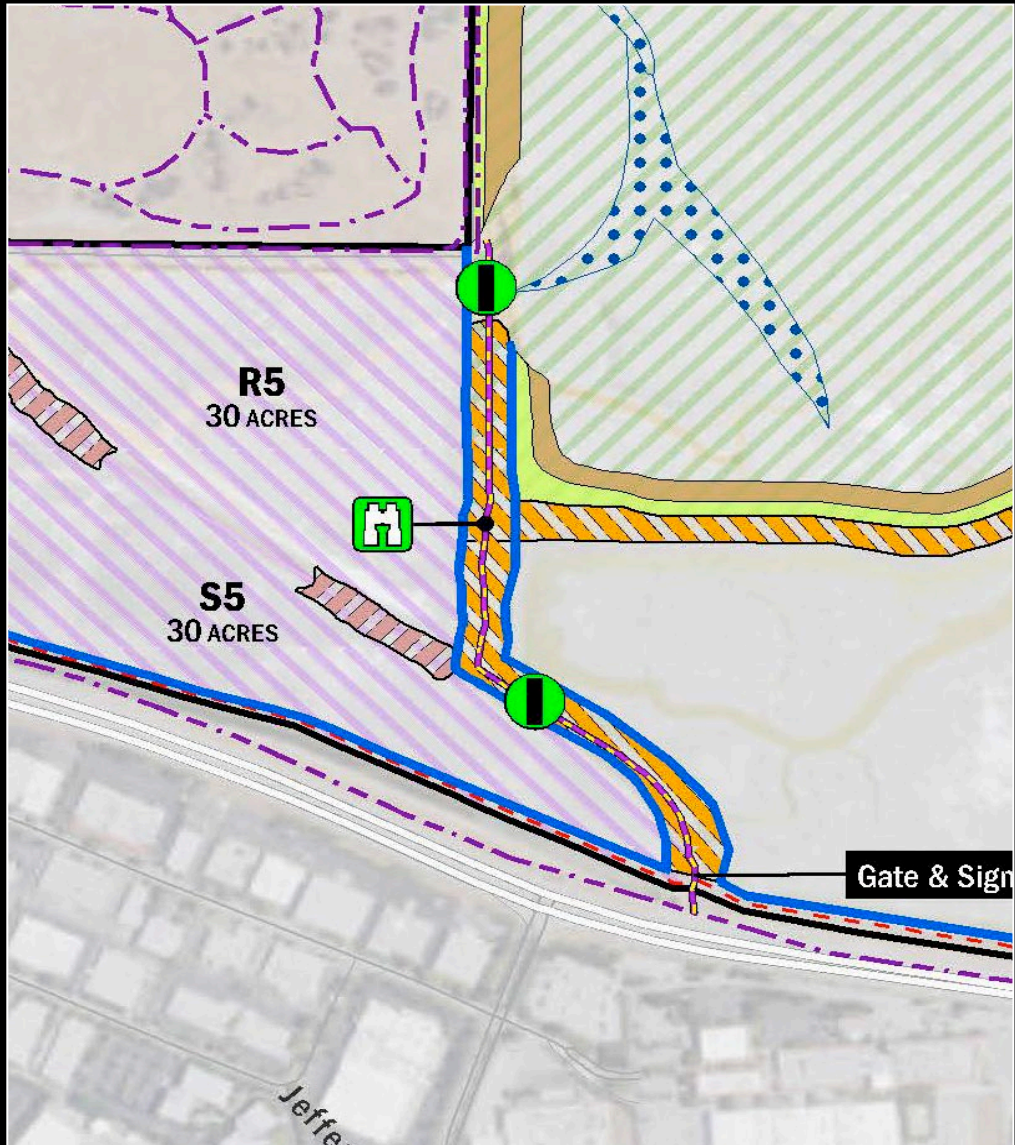
- Different habitats
- Adding recreation
- Work in urban areas
- Engage communities
- Clean fill
- Env. permitting
- **Cost vs speed**
 - SLR is real
 - Grant timelines



Multiple Habitat Types

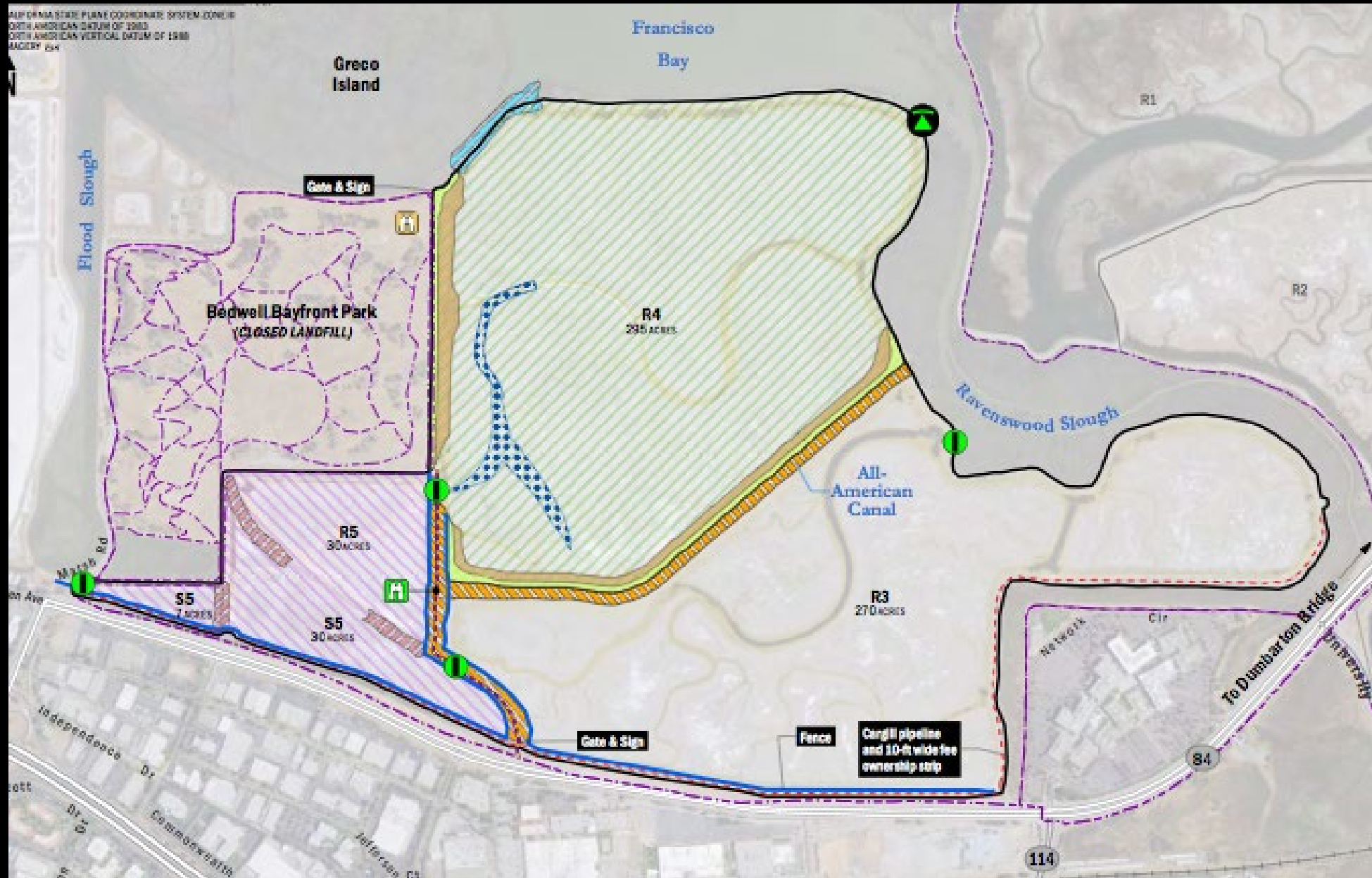


Public Access

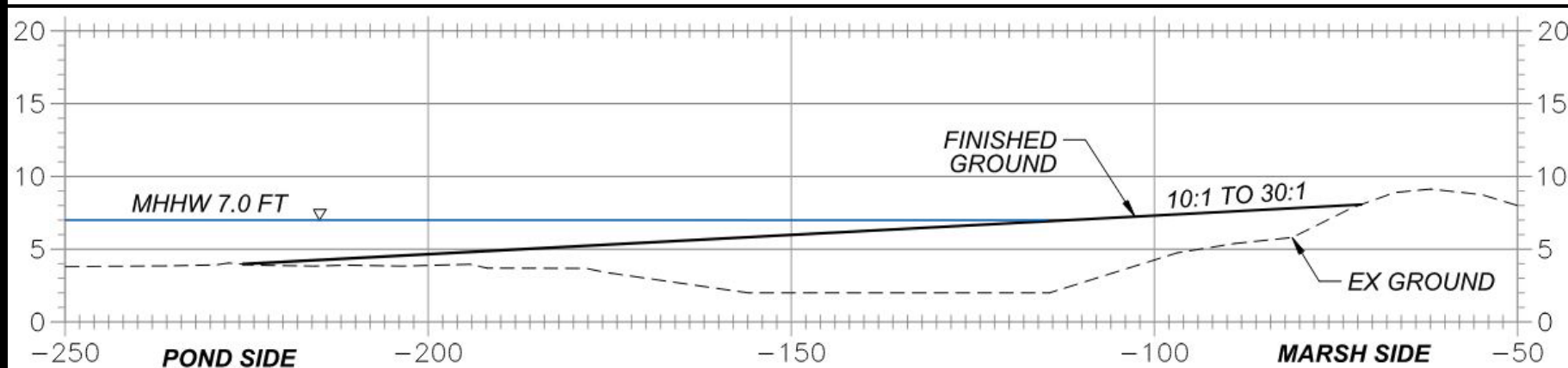
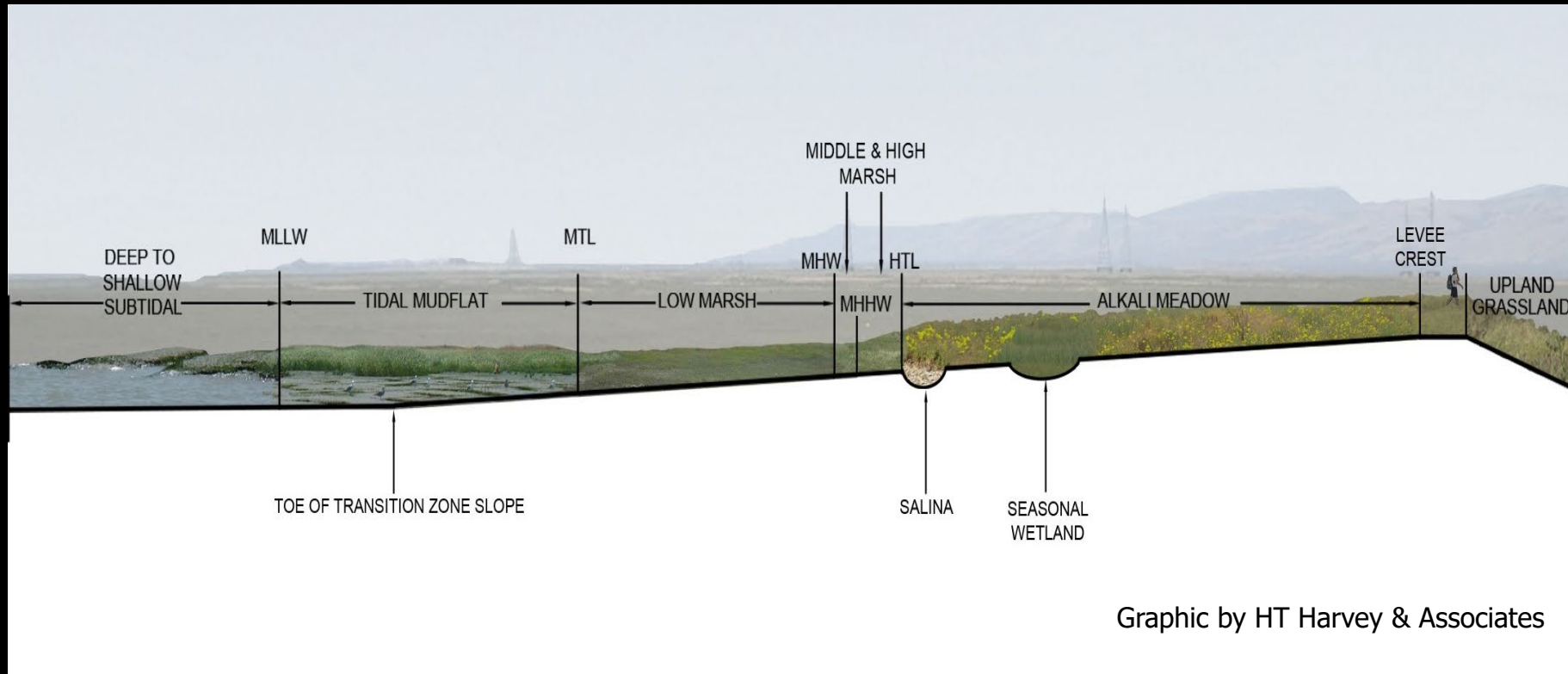


What you do
Where you do it
How much of it

Managing Tides Requires Dirt



Habitat Transition Zones



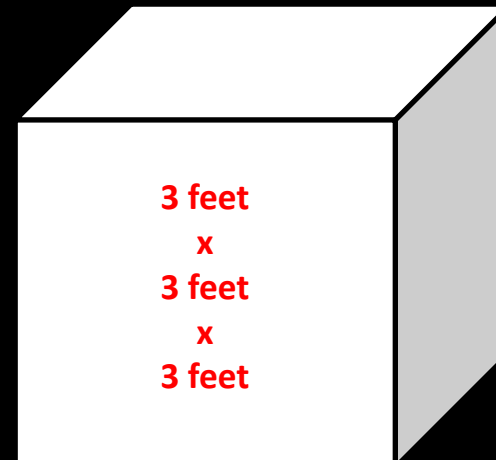
Design drawing by
URS/AECOM



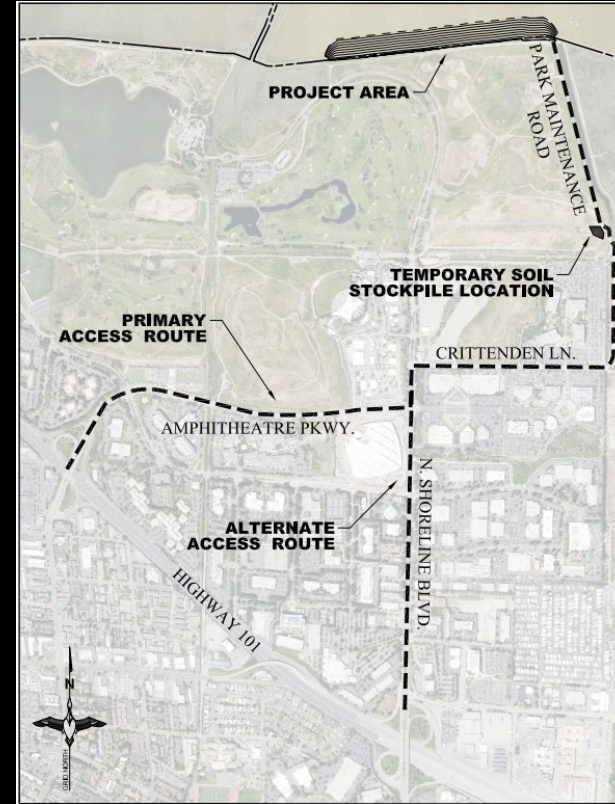
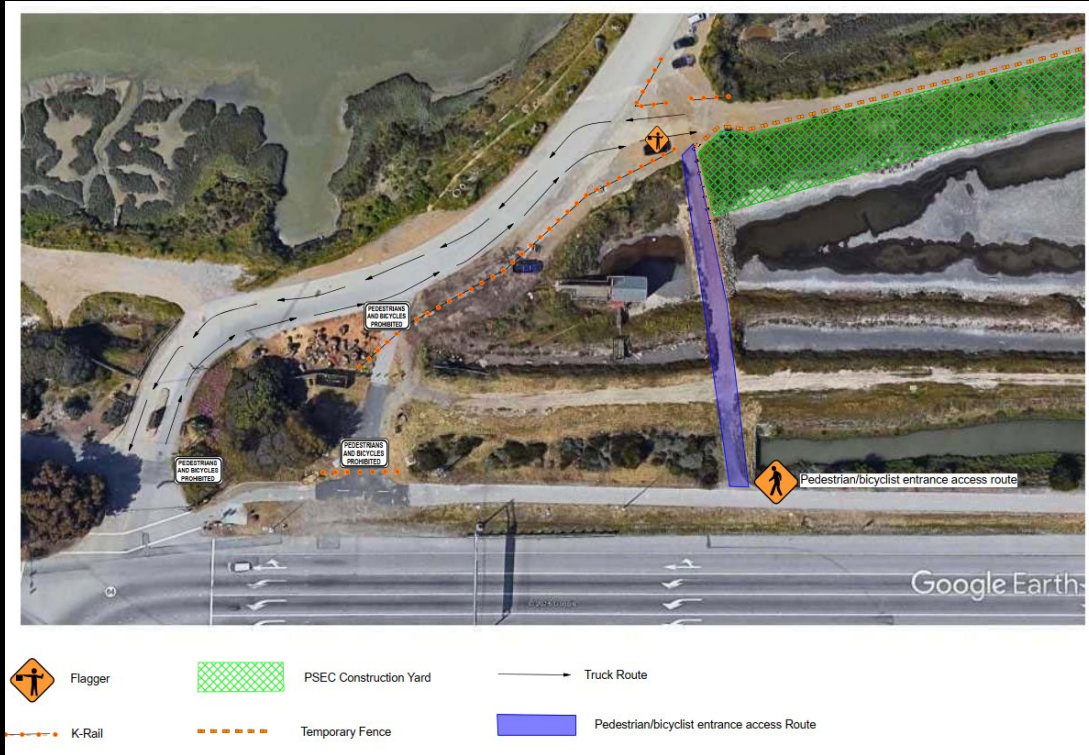
Clean Dirt Is Hard To Find



**200-500
thousand
cubic yards
per
restoration
site**

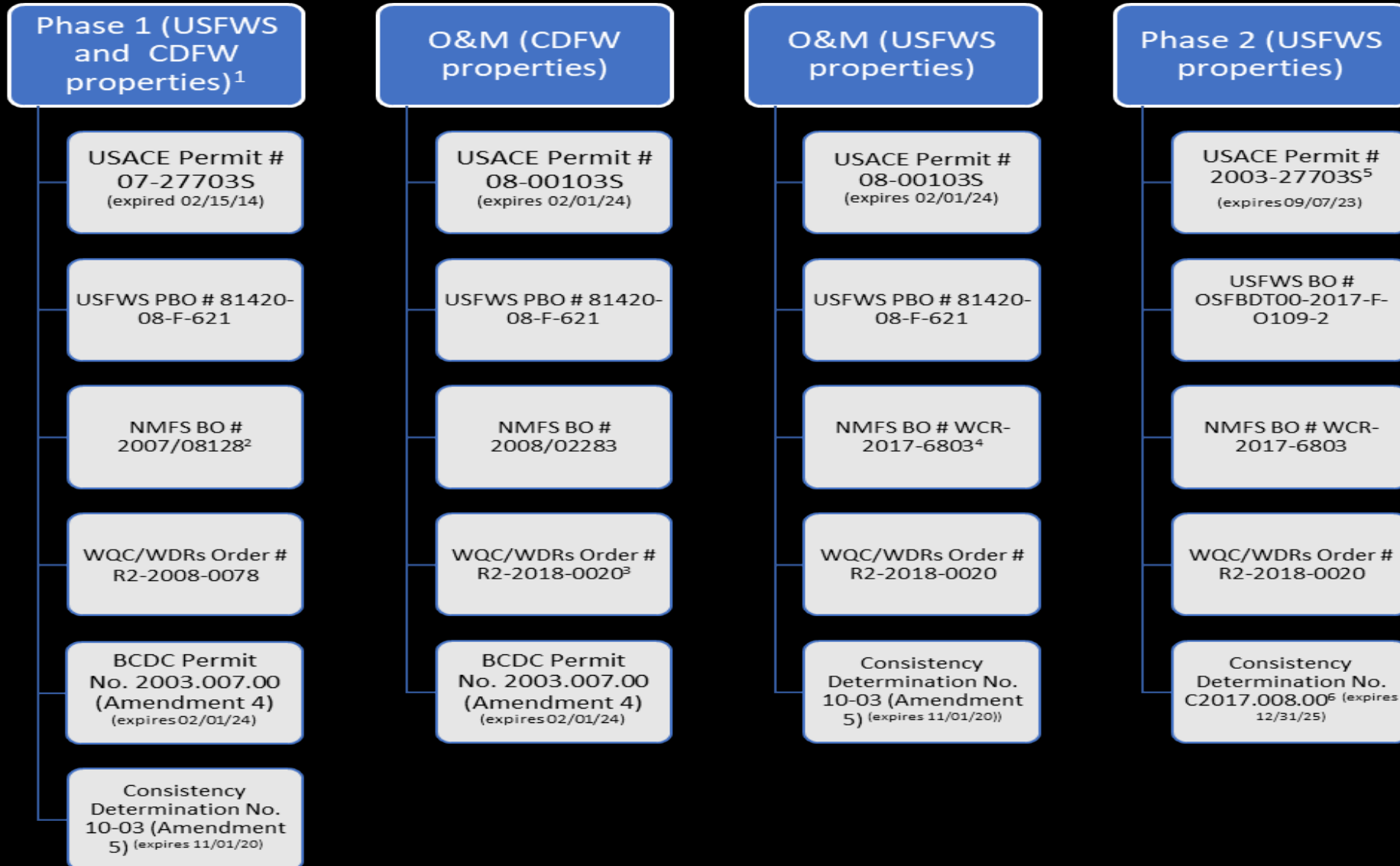


Neighbors Everywhere



**Easements & local permits =
Time-consuming, difficult**

Permitting



Permitting Tensions

- Agencies have different goals
- Protect wildlife ↔ Add trails
- Fish habitat connectivity ↔ Flood risk
- Raise levees, build ecotone ↔ Avoid fill
- Minimize fill ↔ Maximize SLR resilience
- Find lots of sediment ↔ Keep it clean & safe
- Marsh species needs ↔ Pond wildlife needs

None of these is wrong!

Engagement Equity

- **EJ communities tend to be on shorelines**
- **Most affected by construction**
- **Most in need of SLR adaptation, public access, environmental improvements**
- **Engagement & involvement helps**
- **May not totally solve**

Successes

Region

- **Support for beneficial reuse**
- **Regional planning (Bay Adapt, BayCAN)**
- **Collaborative science (RMP, NMS, WRMP)**
- **Permitting by BRRIT**
- **Bay Plan/Basin Plan Amendments**

Successes

Our Project – Implementing Phase 2

- Expanded list of material providers**
- Studies of material reuse system**
- 20-year history of public participation**
- Increasing and adding Tribal engagement**

What's Still Needed

- **Focus on implementation**
- **Strategies & Visions = helpful, not sufficient**
- **Flexibility from local govts & neighbors**
- **Legal assistance with easements**
- **More tolerance (+ better outreach)**
- **Engage public in more than signage content**

What's Still Needed

- **Regulatory policy changes**
 - **Short-term risk vs long-term benefit**
 - **Construction vs outcomes**
 - **Material cleanliness vs not building the feature**
 - **Reduce overlapping & conflicting regulations**

“Perfect can't be the enemy of the good”

The Big Questions

Should we keep trying to address complications with multi-objective projects?

Or instead do smaller, simpler projects faster and in greater numbers?

A Positive Note



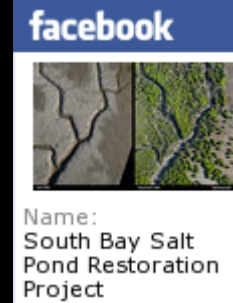
A Positive Note





Thank You!

www.southbayrestoration.org
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