

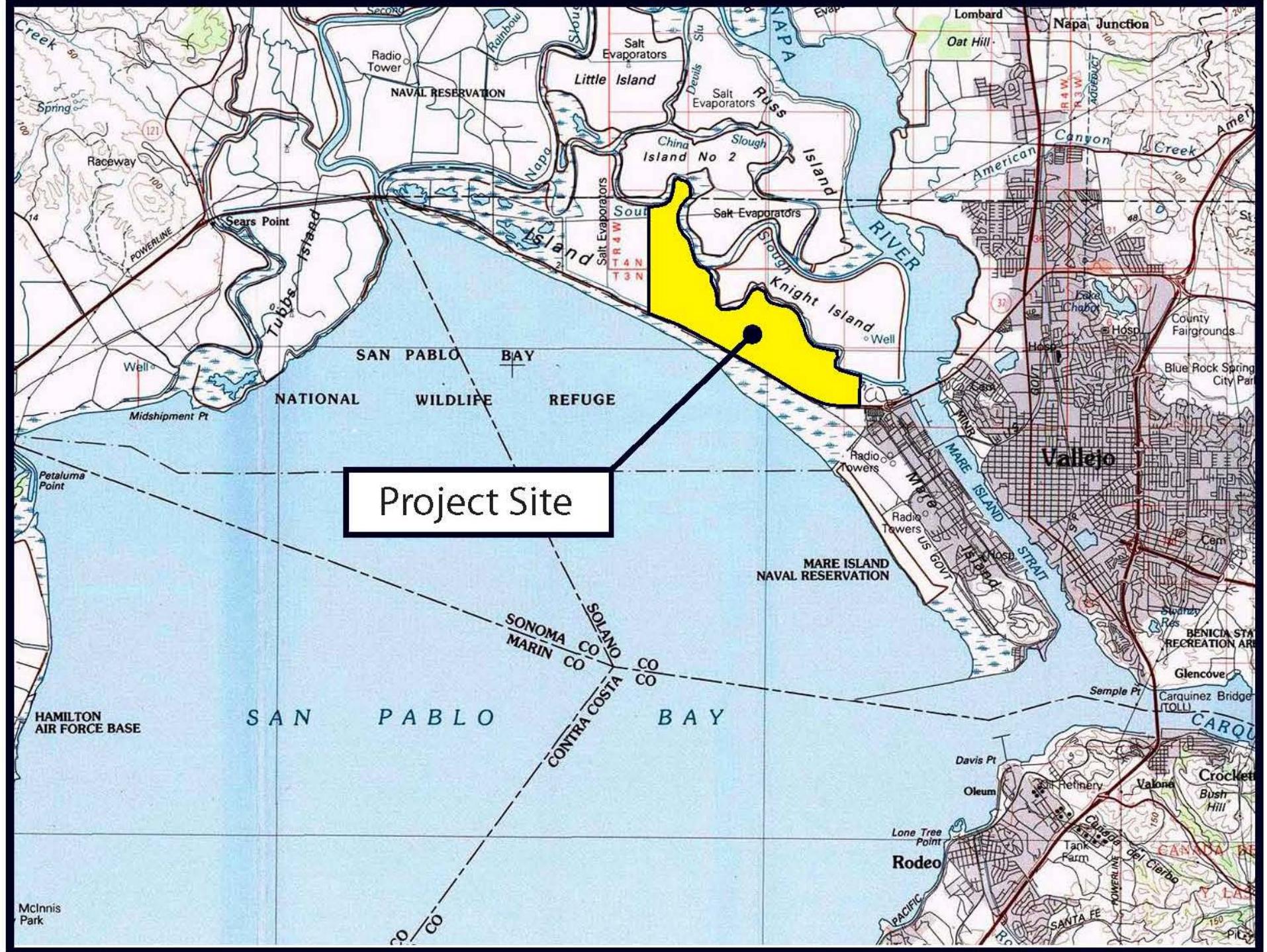
Cullinan Ranch Restoration Project



A scenic view of a wetland area. In the foreground, numerous Canada geese are swimming in a body of water. Some are on the water's surface, while others are partially submerged. In the background, there is a field of tall, golden-brown grass under a clear blue sky.

The Mission of Ducks Unlimited:

“Ducks Unlimited conserves, restores, and manages wetlands and associated habitats for North America's waterfowl. These habitats also benefit other wildlife and people.”



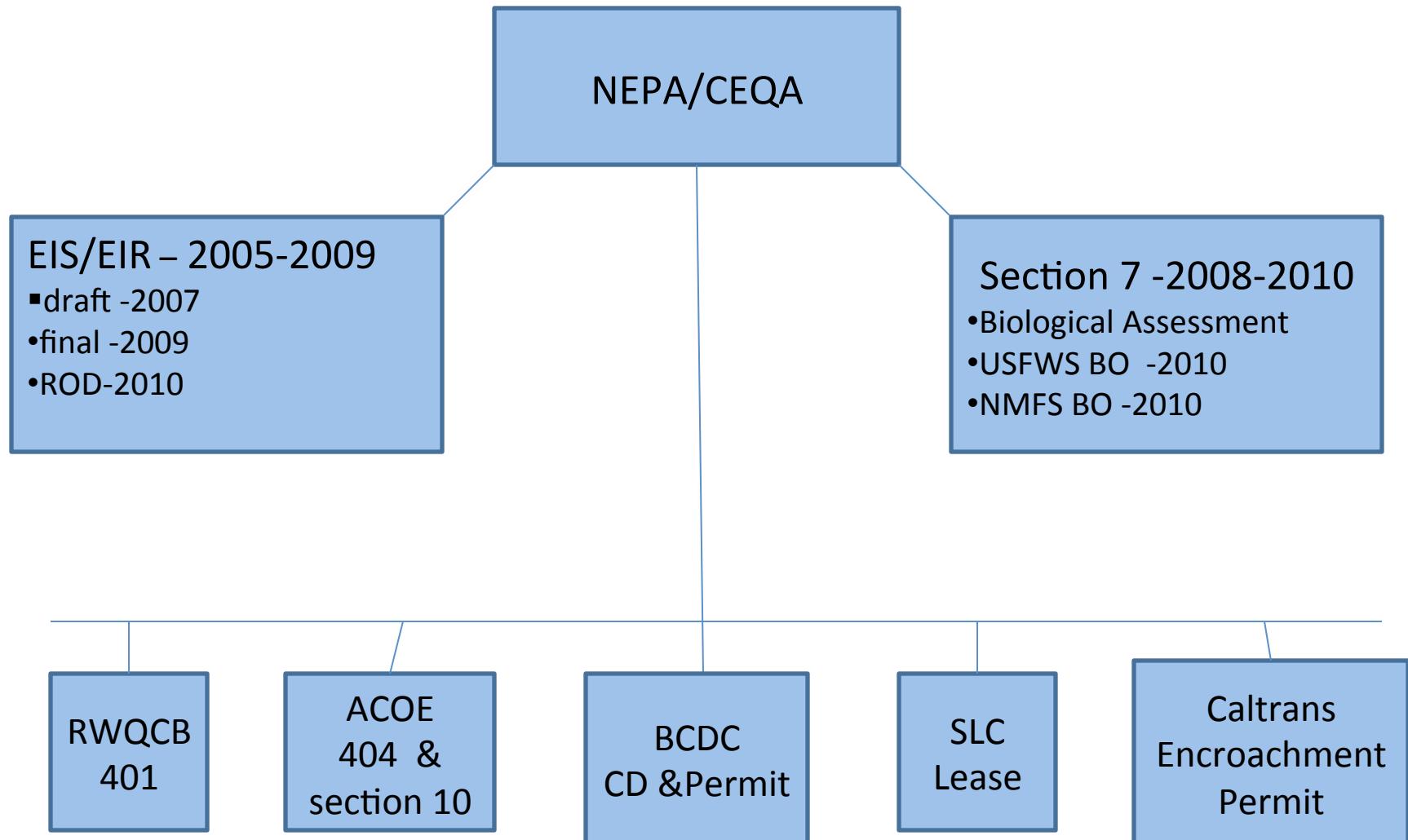
Project Timeline

- 1991 – acquisition by USFWS
 - 20 years of planning and design, environmental compliance, and fundraising
- 2011 – Phase I Construction
- 2012 – Phase II Construction
- 2014 – Phase III Construction
- 2015 - Phase IV Construction
- 2015-2019 – Dredge import and final breach

Project Objectives

- **To restore 1,500 acres of tidal wetlands at Cullinan Ranch to aid in recovery of listed species**
 - Short and long term wetland habitat creation,
- **To maintain SR 37 at its current level of protection from high tides and flooding,**
- **To provide wildlife-oriented public access compatible with the site**

Environmental Compliance





CULLINAN RANCH RESTORATION PROJECT

More than twenty years after acquisition, 1,200 acres of tidal wetlands at Cullinan Ranch will be restored to tidal influence. An additional 300 acres has been sectioned off in order to accelerate marsh development by importing dredge material.



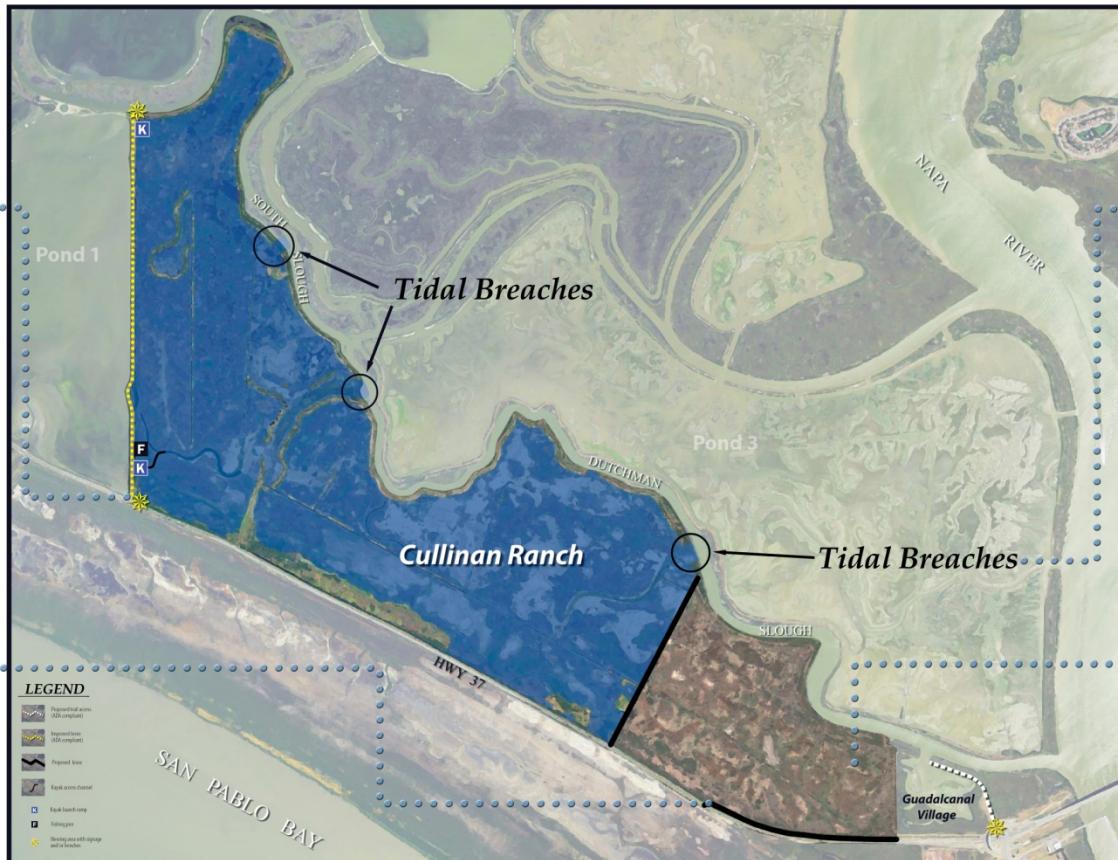
Public Access

- New deceleration/acceleration lanes
- Large interpretive panel kiosk
- State of the art kayak launch
- Fishing pier/observation platform
- 1.5 miles of ADA trails



Highway 37 Protection

- Setback levee to protect low portion of Hwy 37
- Flattened slopes for transitional habitat
- Rock riprap for embankment protection



Restore Tidal Hydrology

- Tidal breaches aligned with historic channels
- Lowered levees for increased connectivity and additional wetland habitats
- Islands & marsh mounds along levee for upland refugia during high tides



Beneficial Reuse

- Off-loading facility to accept dredged materials
- Create 300 acres of habitat for Salt Marsh Harvest Mouse



Phase 1 Construction 2011



Phase 2 Construction 2012



**Phase 2 Construction
Public access**







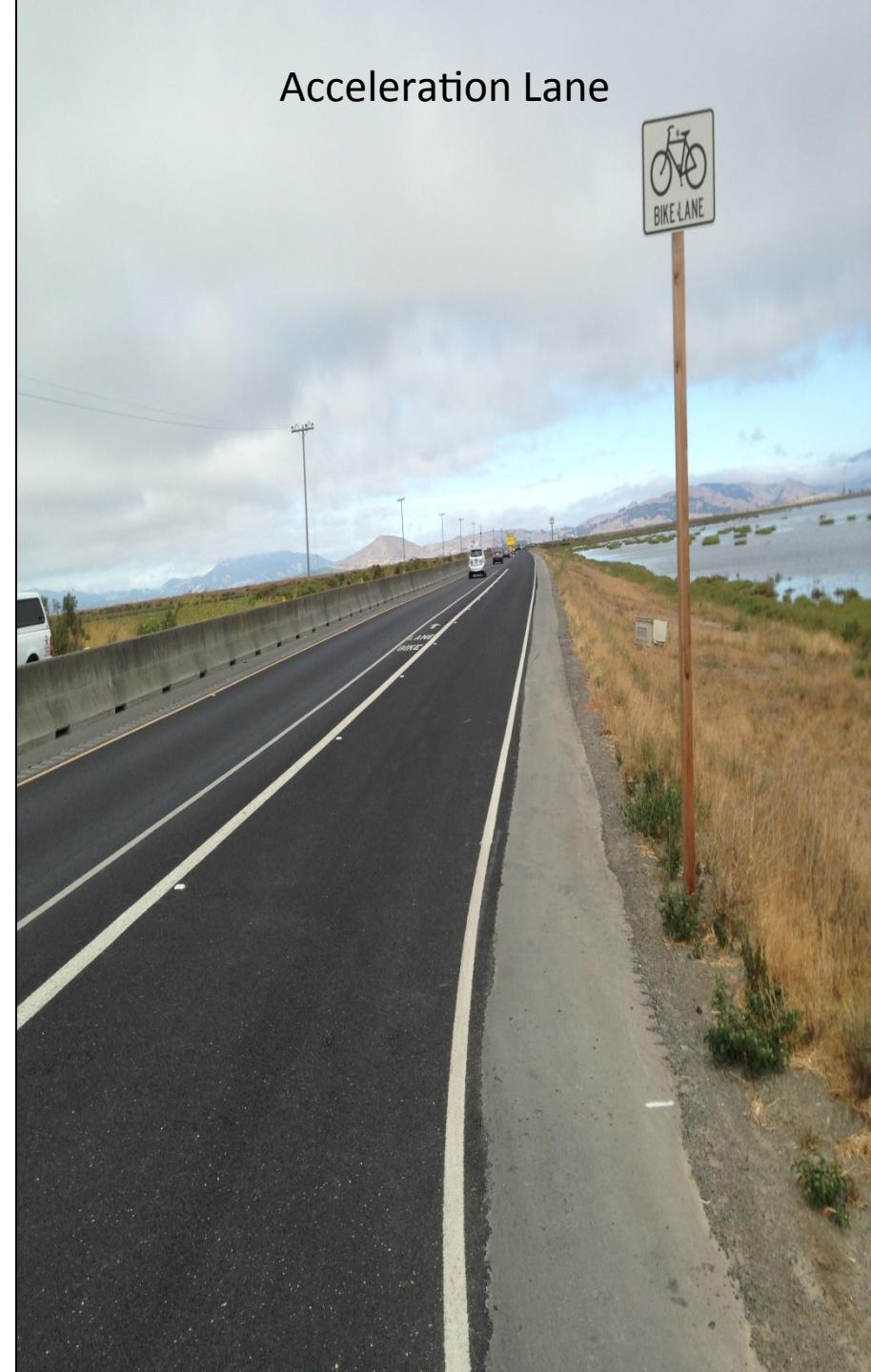
Phase 3 Construction 2014



Deceleration Lane



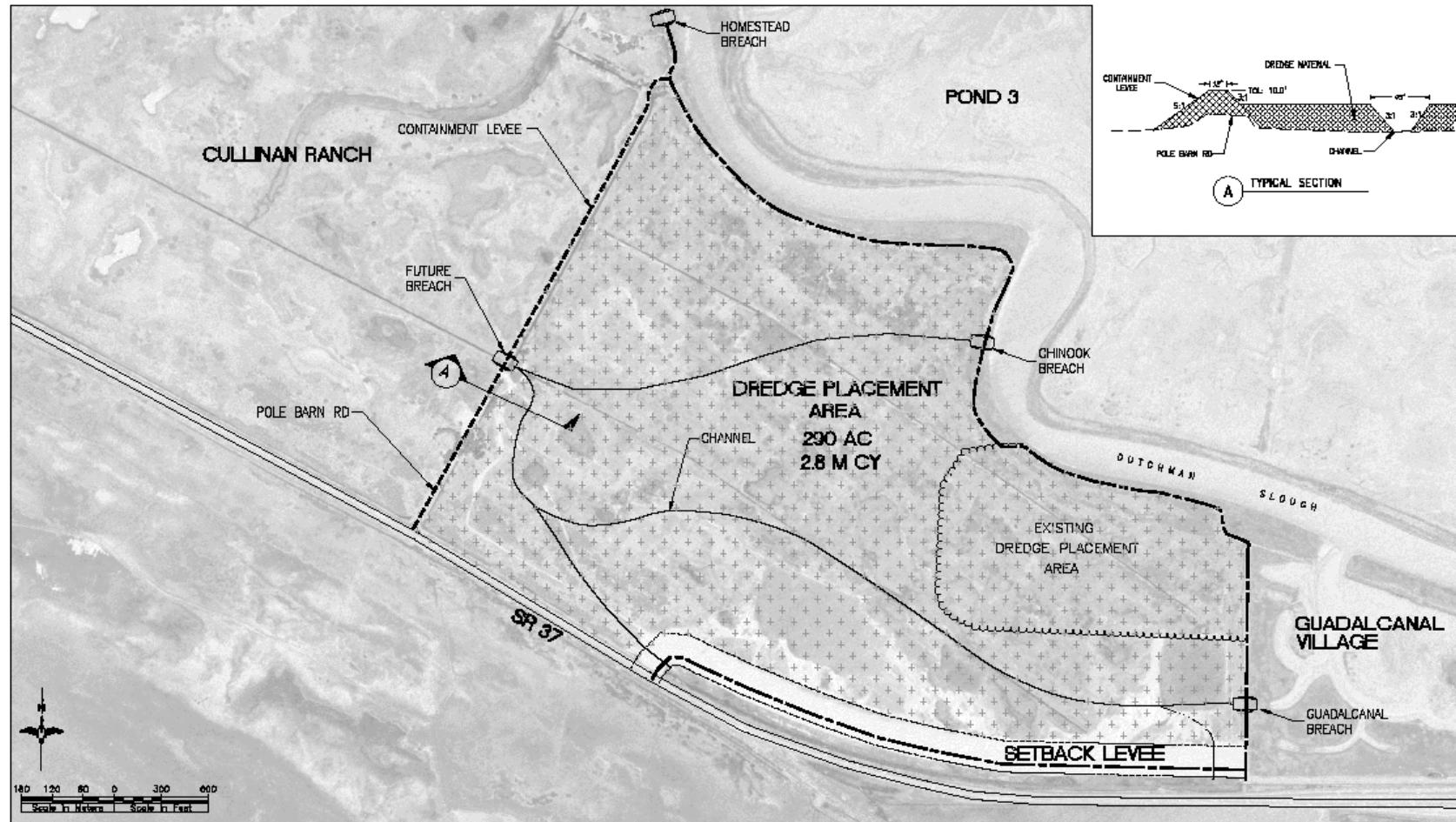
Acceleration Lane



Phase IV Construction 2015



Beneficial Reuse of Dredge Material



CULLINAN RANCH RESTORATION
DREDGE PLACEMENT
EXHIBIT

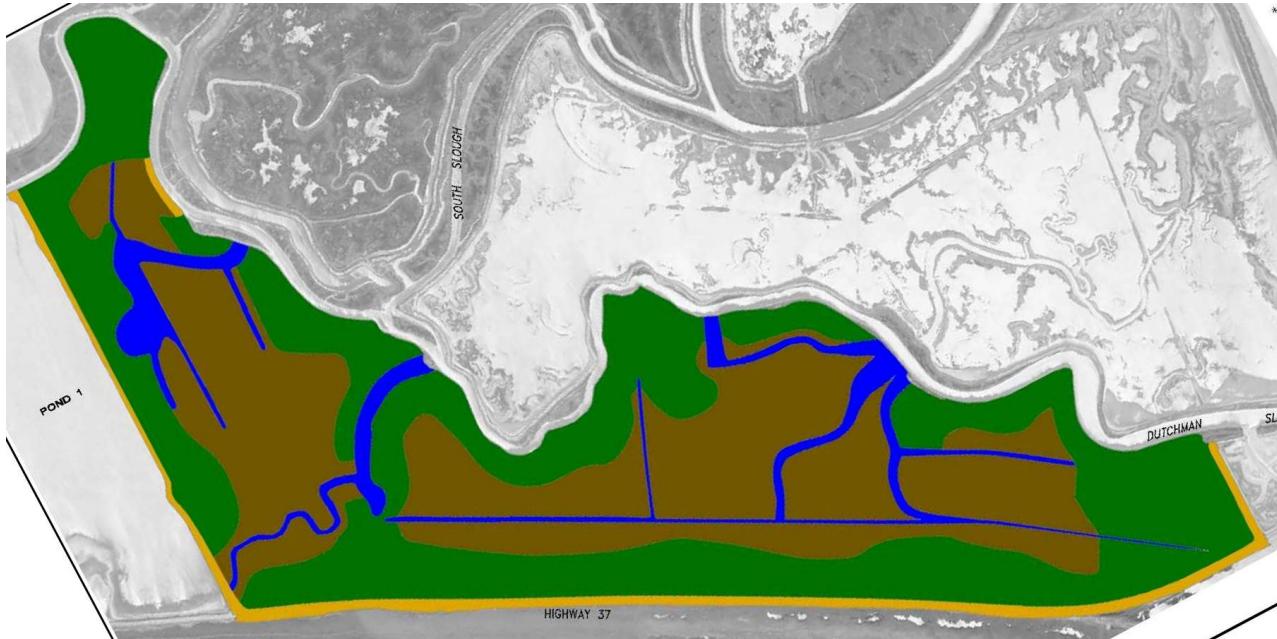
Exhibit 2

Project Monitoring

- Monitoring and Adaptive Management Plan
 - 15-year Monitoring Plan
 - Water Quality
 - Pre and Post Breach
 - Biota
 - Avian
 - Fish
 - Mammals
 - Vegetation
 - Geomorphic Evolution
 - Tidal Channel Evolution
 - Sedimentation
- Methyl Mercury Monitoring Plan

Anticipated Habitat Trajectory

Mid-term



Long-term



Project Partners

- Project Cost: ~\$15 Million
- Funding Partners: 10
 - WCB (2 grants)
 - USFWS (3 grant programs)
 - SCC
 - NOAA (2 grant programs)
 - EPA
 - NAWCC
 - NFWF
 - Phillips 66
 - DU
 - Point Blue

Pre-Restoration



Post Restoration



Questions?