# Integrating watershed resiliency and transportation planning in the San Pablo Baylands

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North Bay Watershed Association
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sfei.org/projects/sonoma-creek-baylands-strategy

Photo: Caltrans/John Huseby

Photo: Sonoma Land Trust

Photo: Sonoma Land Trust

# FUNDERS AND PARTNERS

US Fish and Wildlife Service

California Department of Fish and Wildlife

**sfei.org/projects/sonoma-creek-baylands-strategy**

# REGIONAL CONTEXT


Map: Caltrans


Map: SFEI

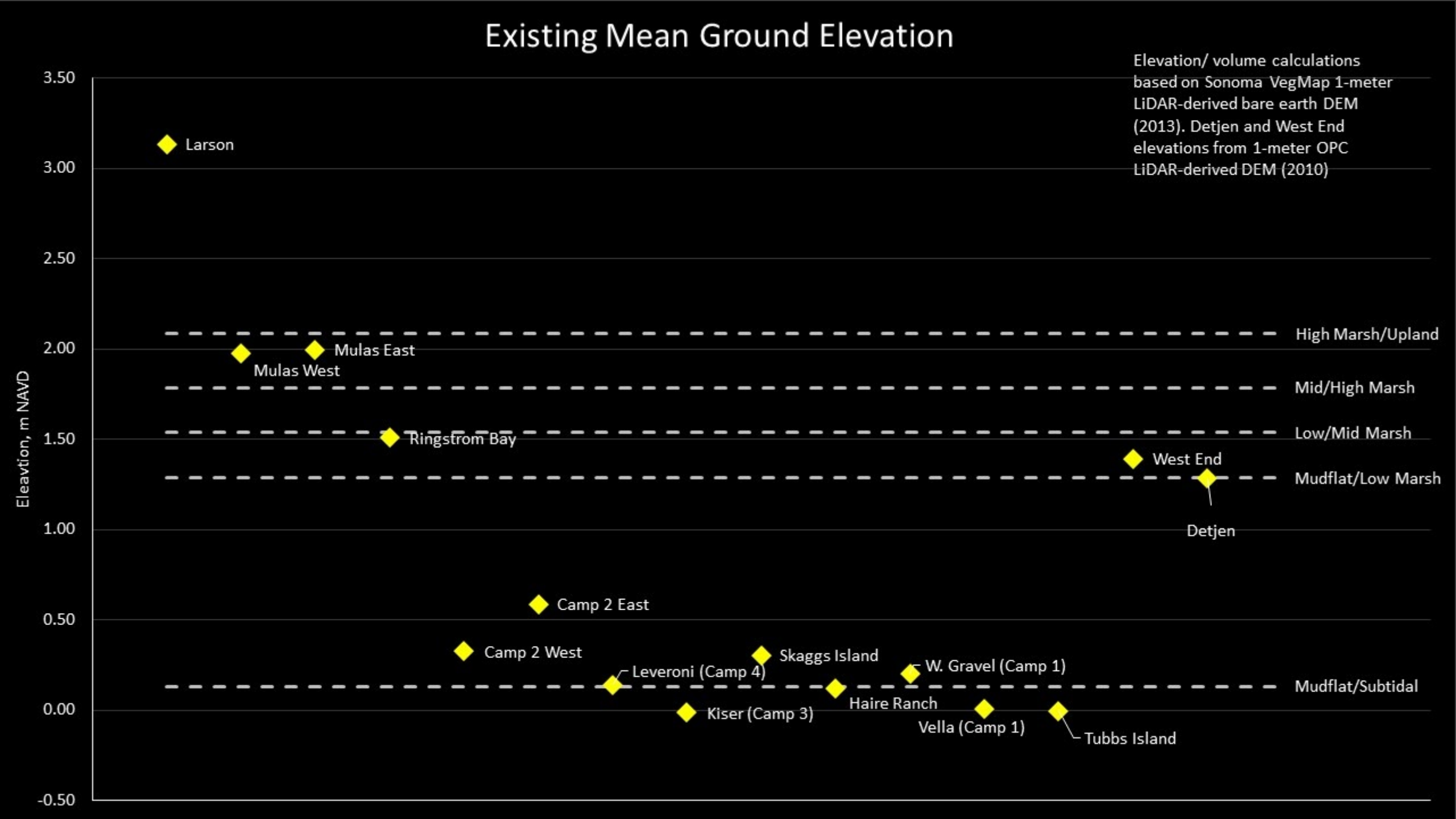
# LANDSCAPE CONTEXT

*Photo: Sonoma Land Trust*

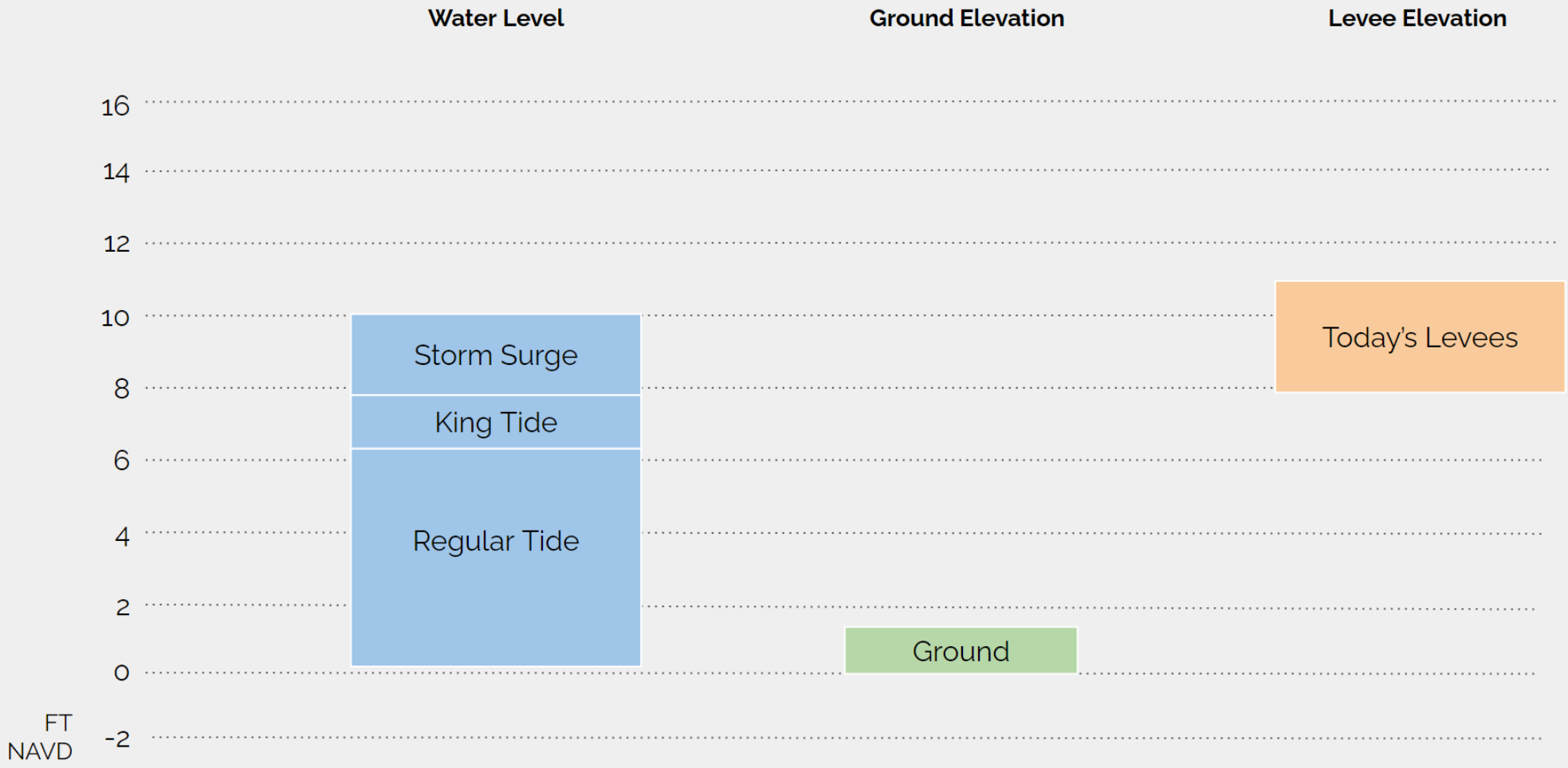
# EXISTING CONDITIONS

*Photo: Sonoma Land Trust*

# Existing Mean Ground Elevation



# STATE ROUTE 37

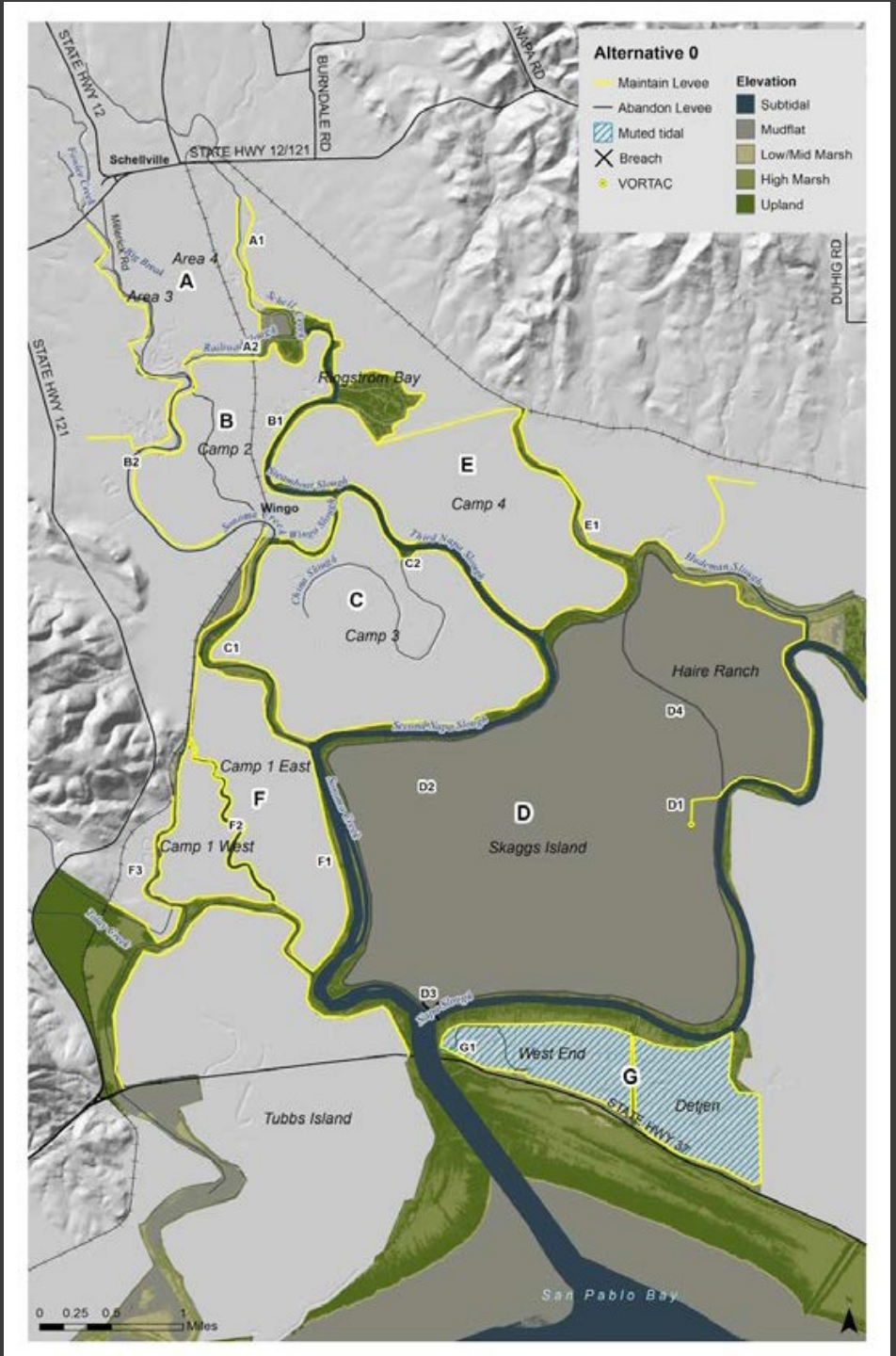


# PURPOSE AND GOALS

- Restorations: Support acquisition and restoration design
- Infrastructure: Recommendations for protection
- Goals:
  - Habitat: Mixes of subtidal, tidal, freshwater, transitional and upland habitats
  - Planning Horizon: 100 years (2100) assuming sea level rise up to 6.9ft
  - Urgency: Implement early more likely to succeed
  - Cost: Consider whole-life
  - Access: Provide guiding principles

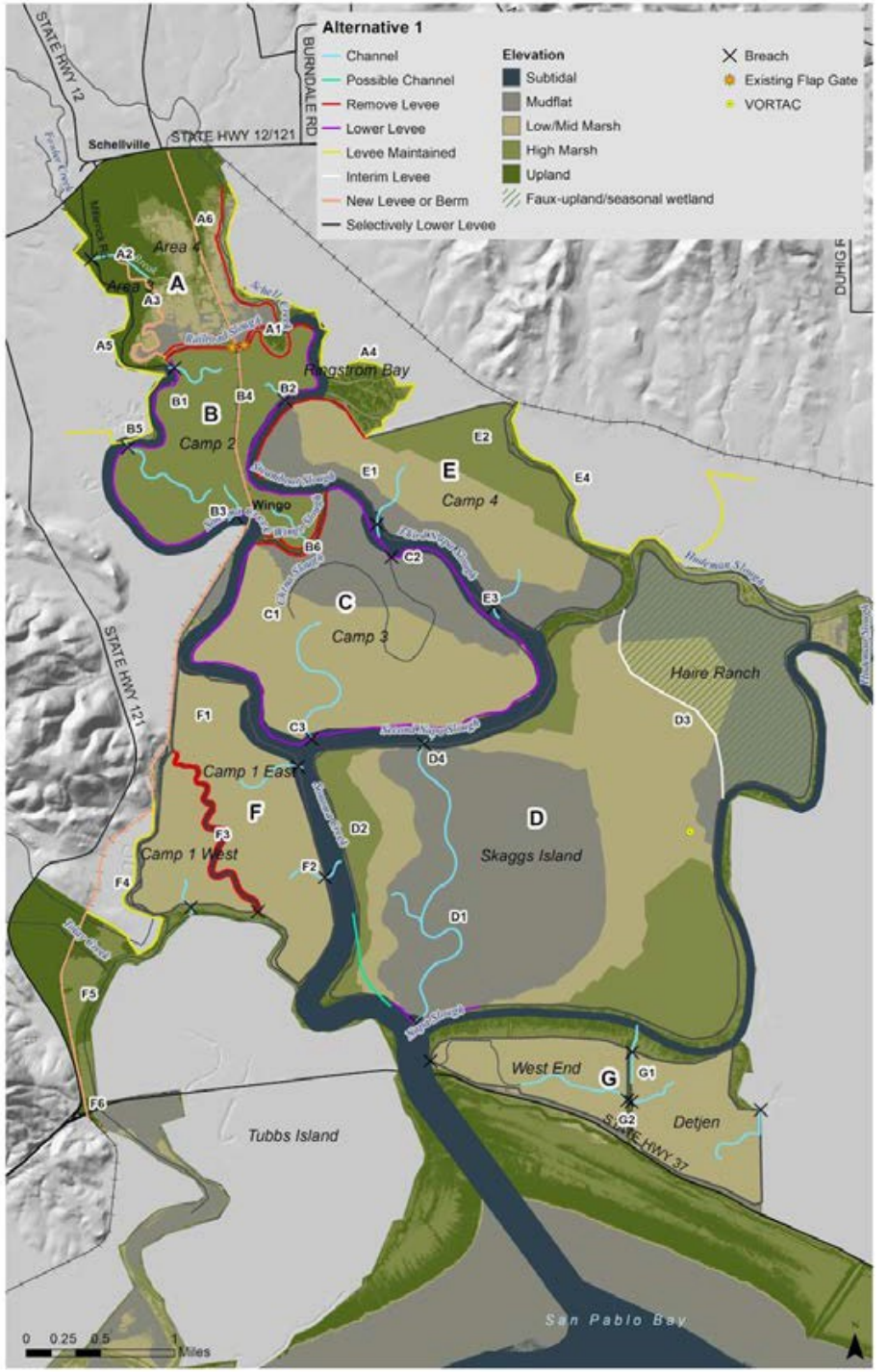
# NO-ACTION

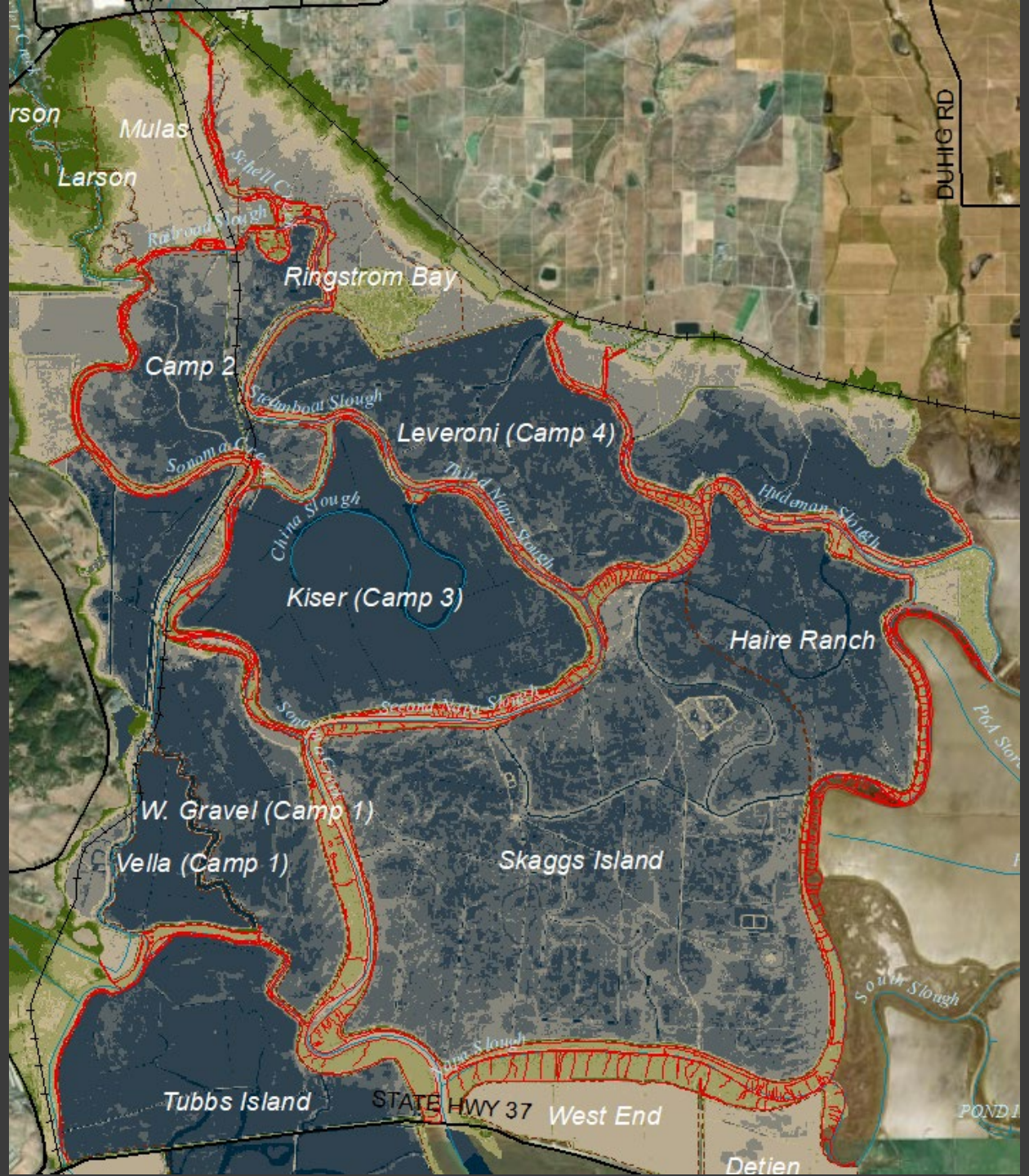
1. Existing historical channels have silted up and contain about 1,273 acres of marsh.
2. Potential for up to 10,000 acres of tidal restoration.
3. Channels sized to serve remaining marsh.

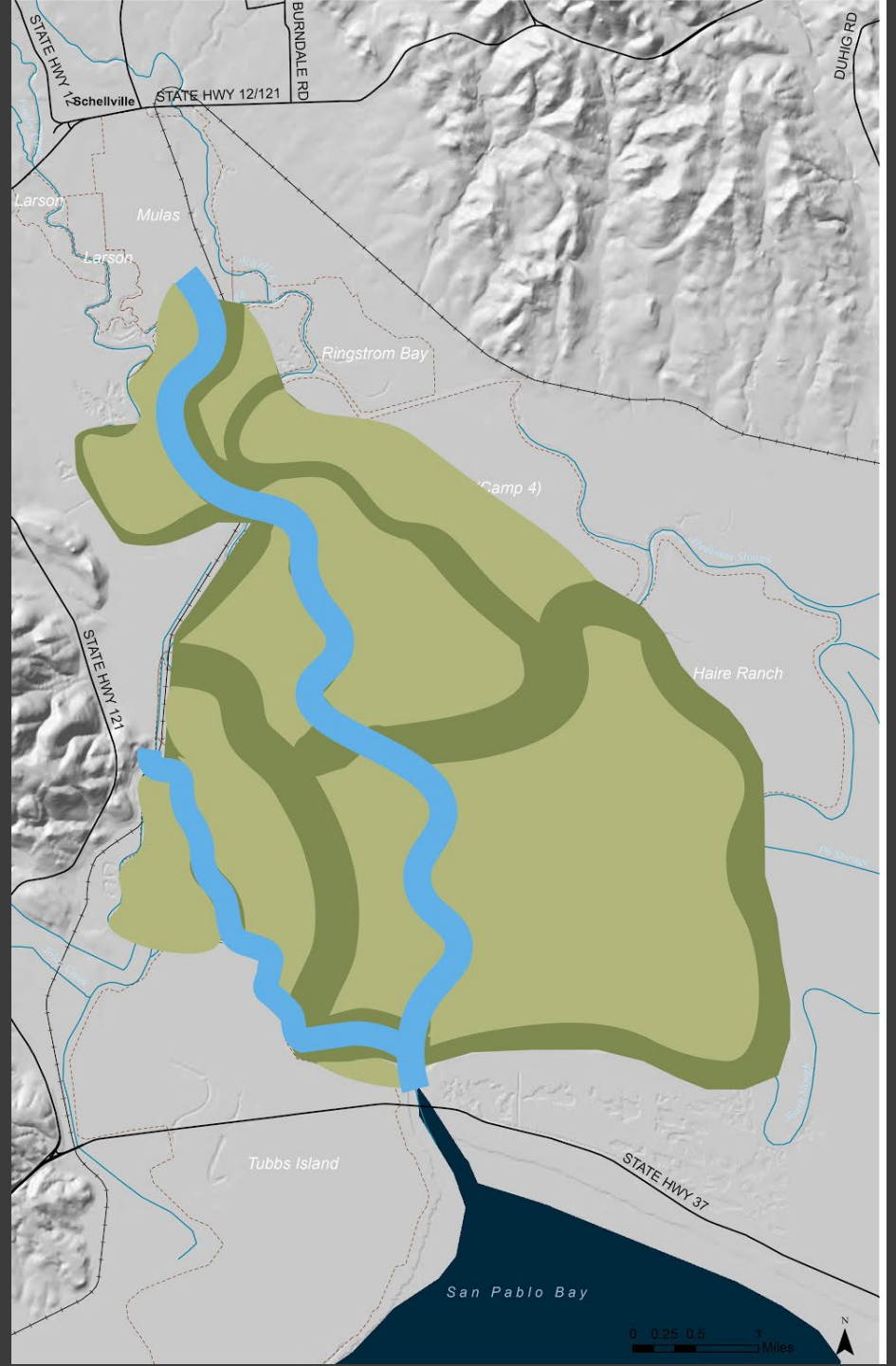


# 1 MAXIMUM TIDAL

1. Restore maximum area of marsh and mudflat.
2. Connect upland to marsh where possible.
3. Remove levees to alleviate flooding.
4. Use historical channels to convey tidal prism.
5. Protect the railroad

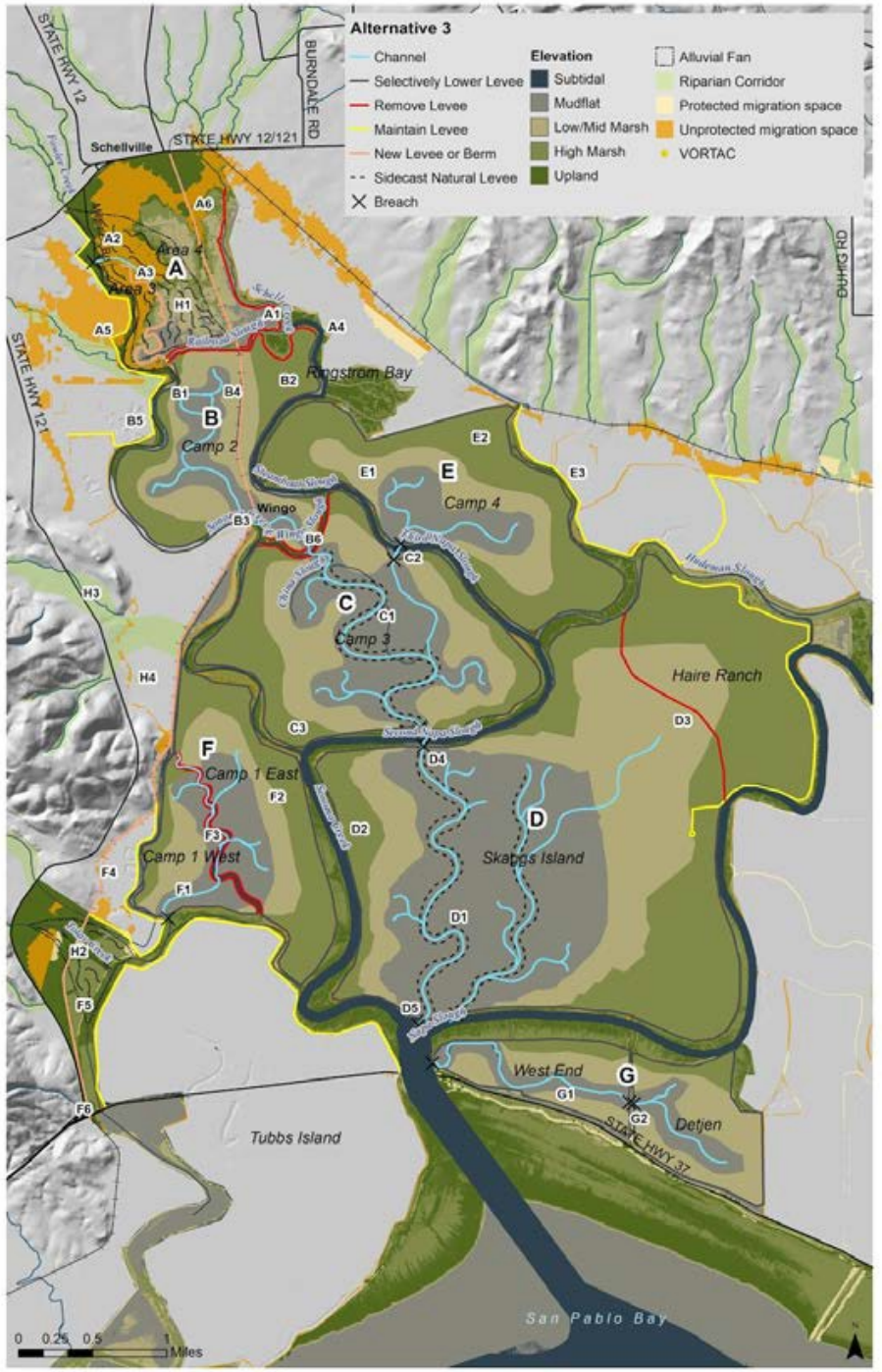


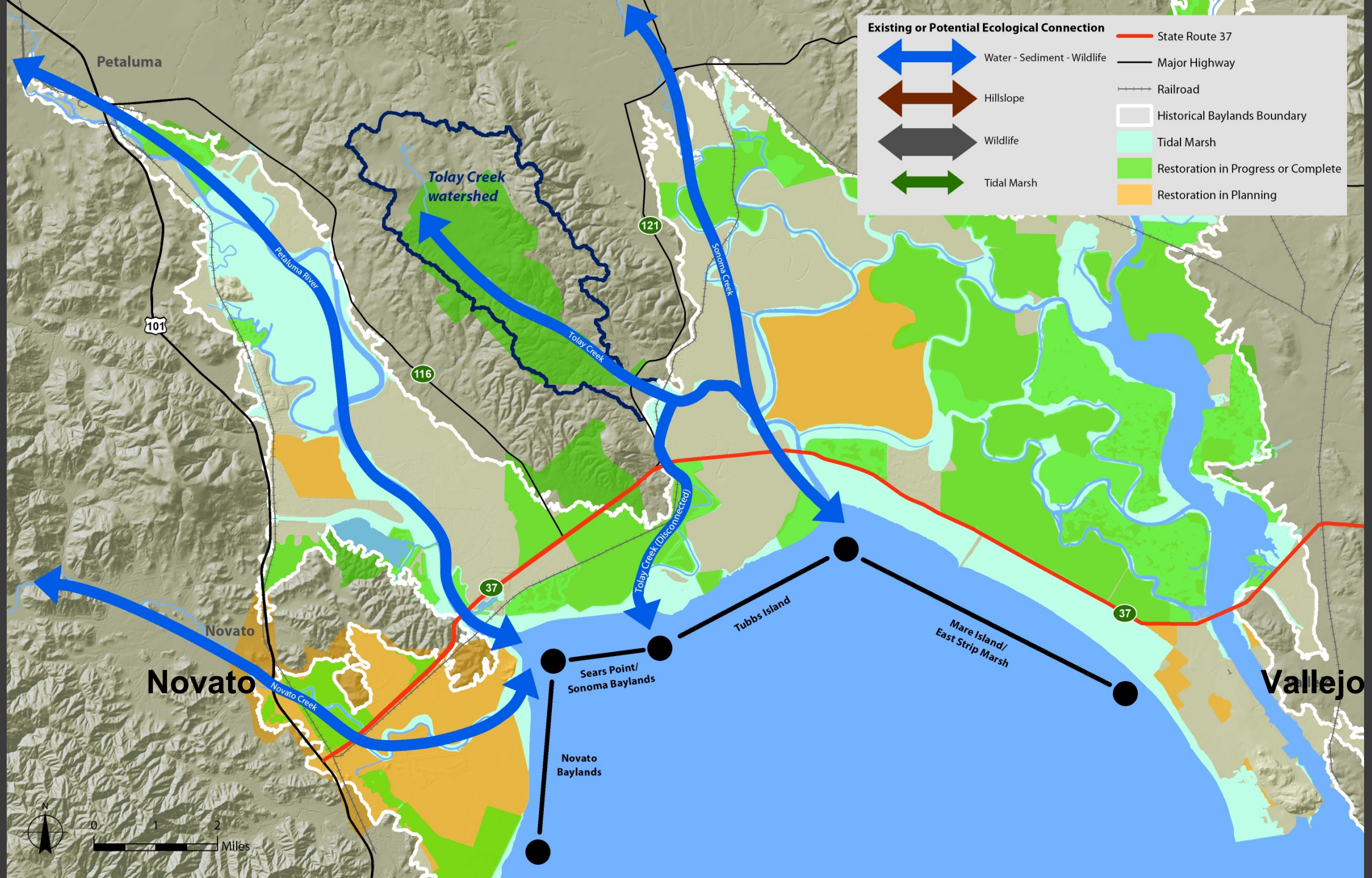

Mulas
Larson
Ringstrom Bay
Camp 2
Leveroni (Camp 4)
Kiser (Camp 3)
Haire Ranch
W. Gravel (Camp 1)
Vella (Camp 1)
Skaggs Island
Tubbs Island
STATE HWY 37
West End
DUHIG RD
Steamboat Slough
China Slough
Third Napa Slough
Second Napa Slough
Sonoma Creek
South Slough


STATE HWY 12/121
Schellville
BURNDALE RD
DUHIG RD
STATE HWY 121
Larson
Mulas
Ringstrom Bay
Haire Ranch
Tubbs Island
STATE HWY 37
San Pablo Bay
0 0.25 0.5 1
Miles
N

# 3 ENHANCED TIDAL

1. Use existing marsh in channels as nucleus of new marshes.
2. Cut new channels across diked baylands.
3. Remove levees to alleviate flooding.
4. Route more tidal prism through Tolay Creek.
5. Place fill next to existing channel marshes.
6. Focus on alluvial fans




Existing or Potential Ecological Connection
Water - Sediment - Wildlife
Hillslope
Wildlife
Tidal Marsh
State Route 37
Major Highway
Railroad
Historical Baylands Boundary
Tidal Marsh
Restoration in Progress or Complete
Restoration in Planning
Petaluma
Tolay Creek watershed
Petaluma River
Tolay Creek
Sonoma Creek
Tolay Creek (Disconnected)
Novato
Novato Creek
Sears Point/ Sonoma Baylands
Tubbs Island
Mare Island/ East Strip Marsh
Novato Baylands
Vallejo
101
116
121
37
37
N
0
1
2
Miles

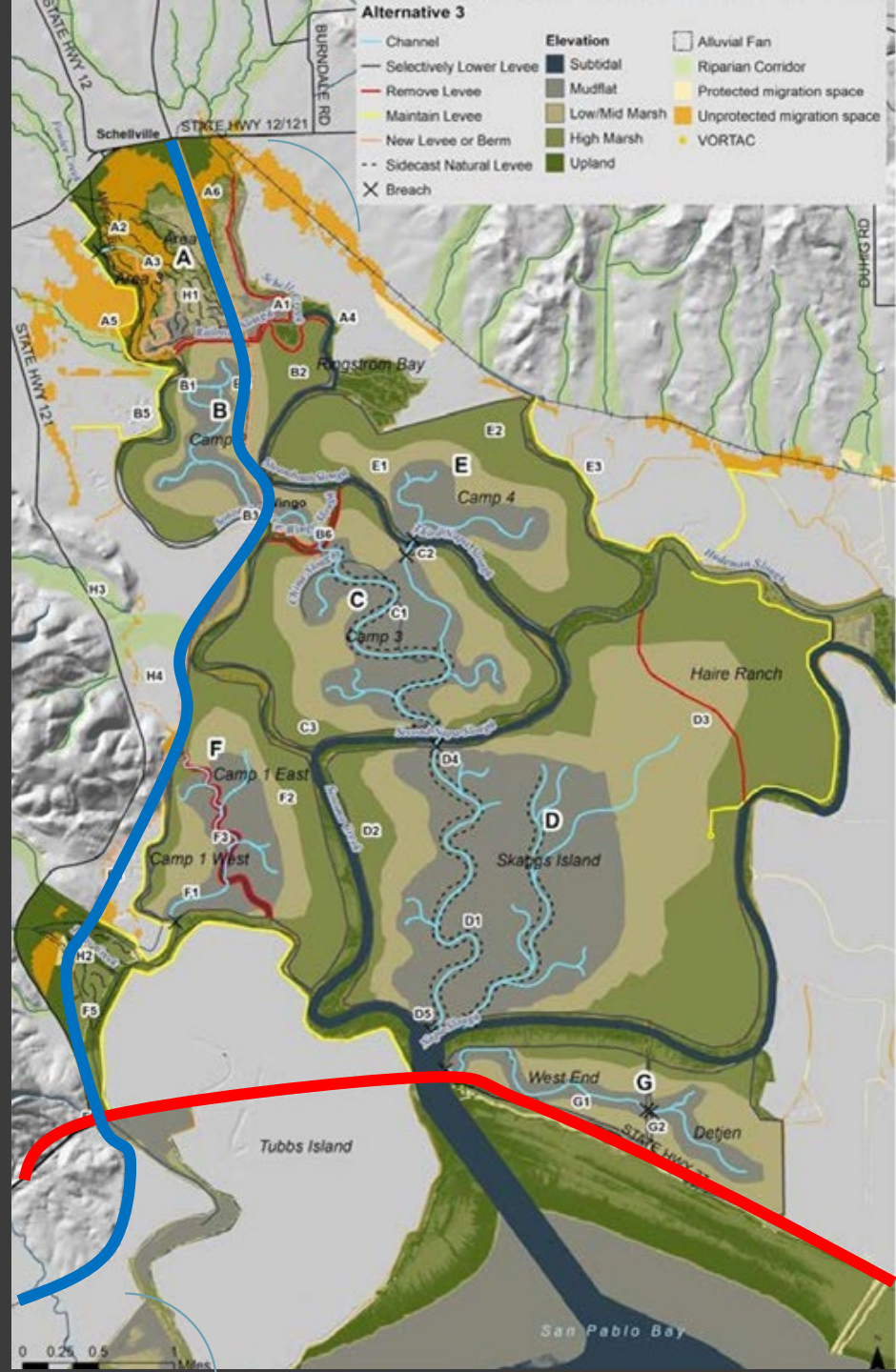
Map: SFEI

# SONOMA CREEK BRIDGE

*Photo: Sonoma Land Trust*

# “INTEGRATE, NOT MITIGATE”

1. Present bridge crossings and embankments disrupt hydrologic and habitat connectivity.
2. Habitat restoration can help manage extreme flows.
3. Road and rail need to be raised to accommodate sea-level rise and modified to increase connectivity.
4. Bridges need to be lengthened to accommodate future flows.
5. Road and rail co-location and alternative alignments should be considered.



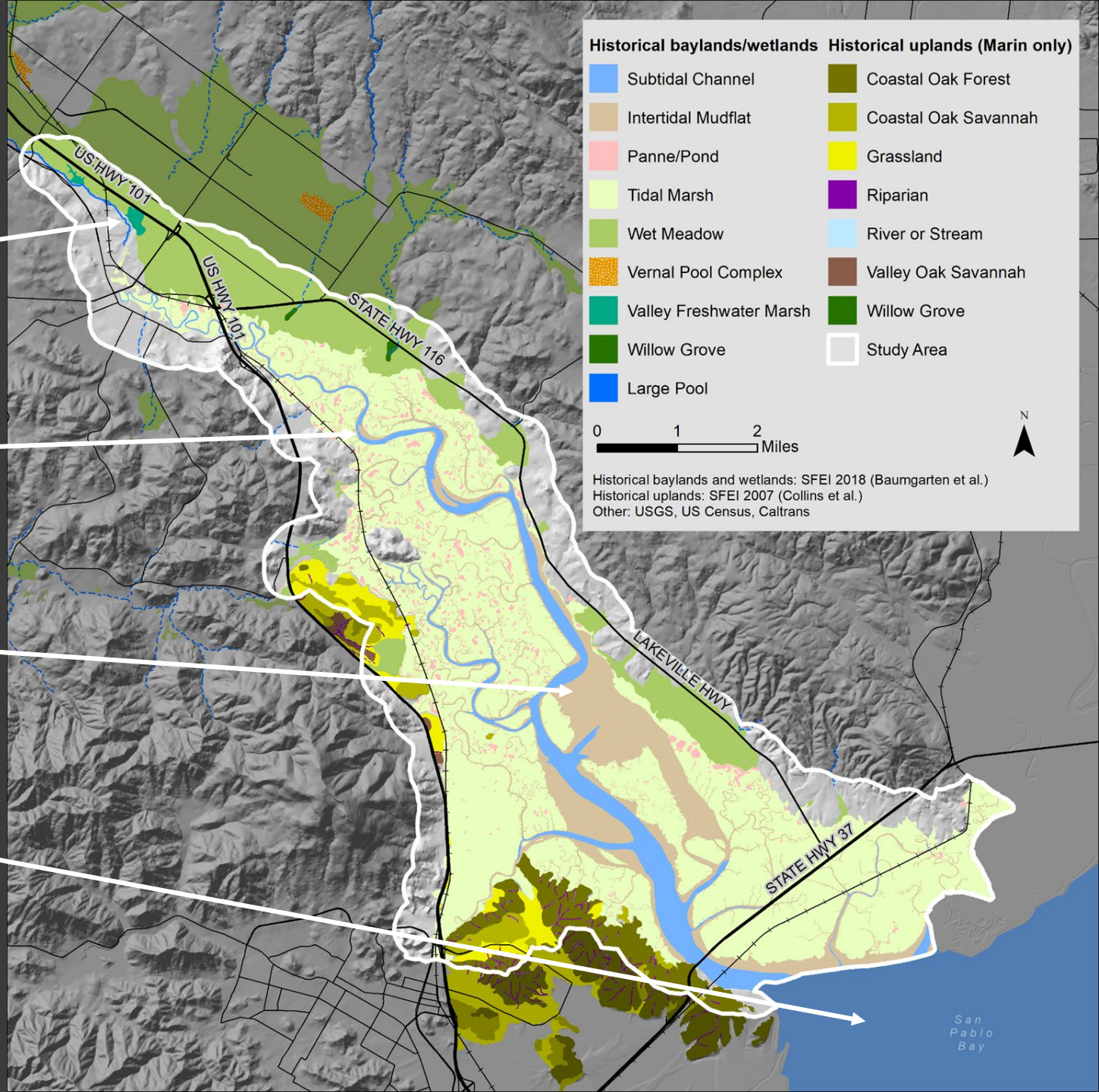
# HABITATS IN 1800

City of Petaluma

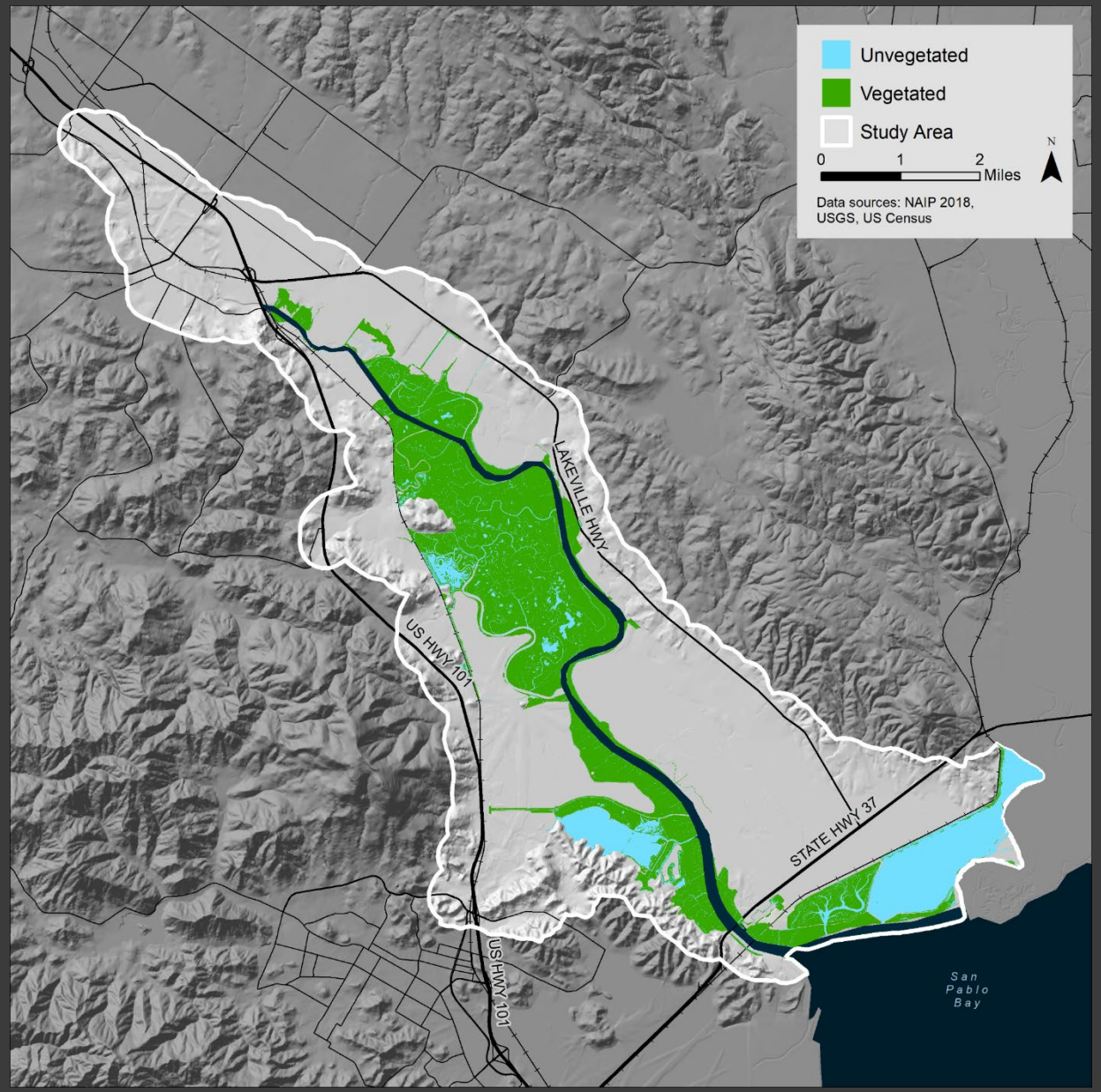
Petaluma River

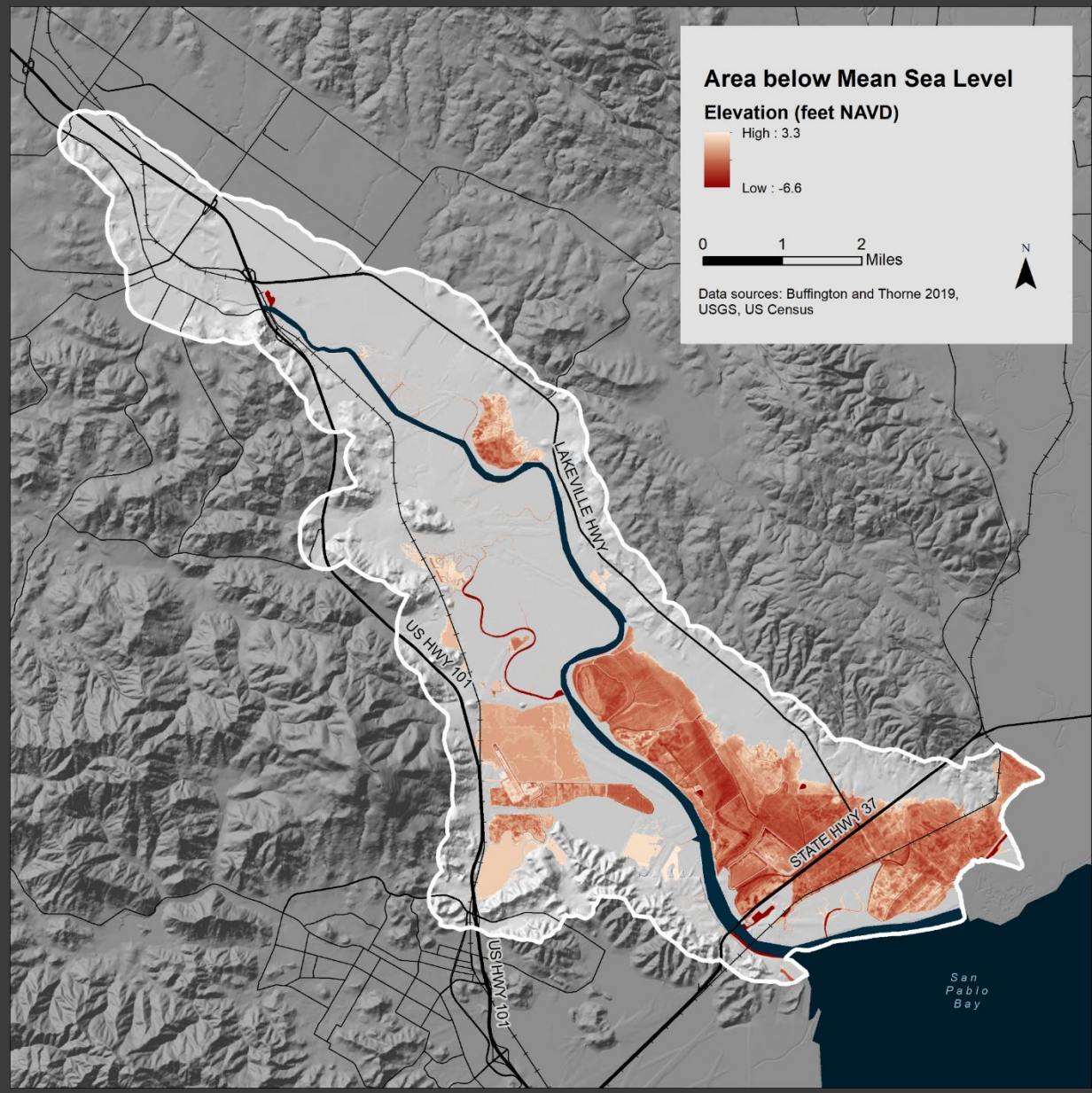
False Bay

San Pablo Bay

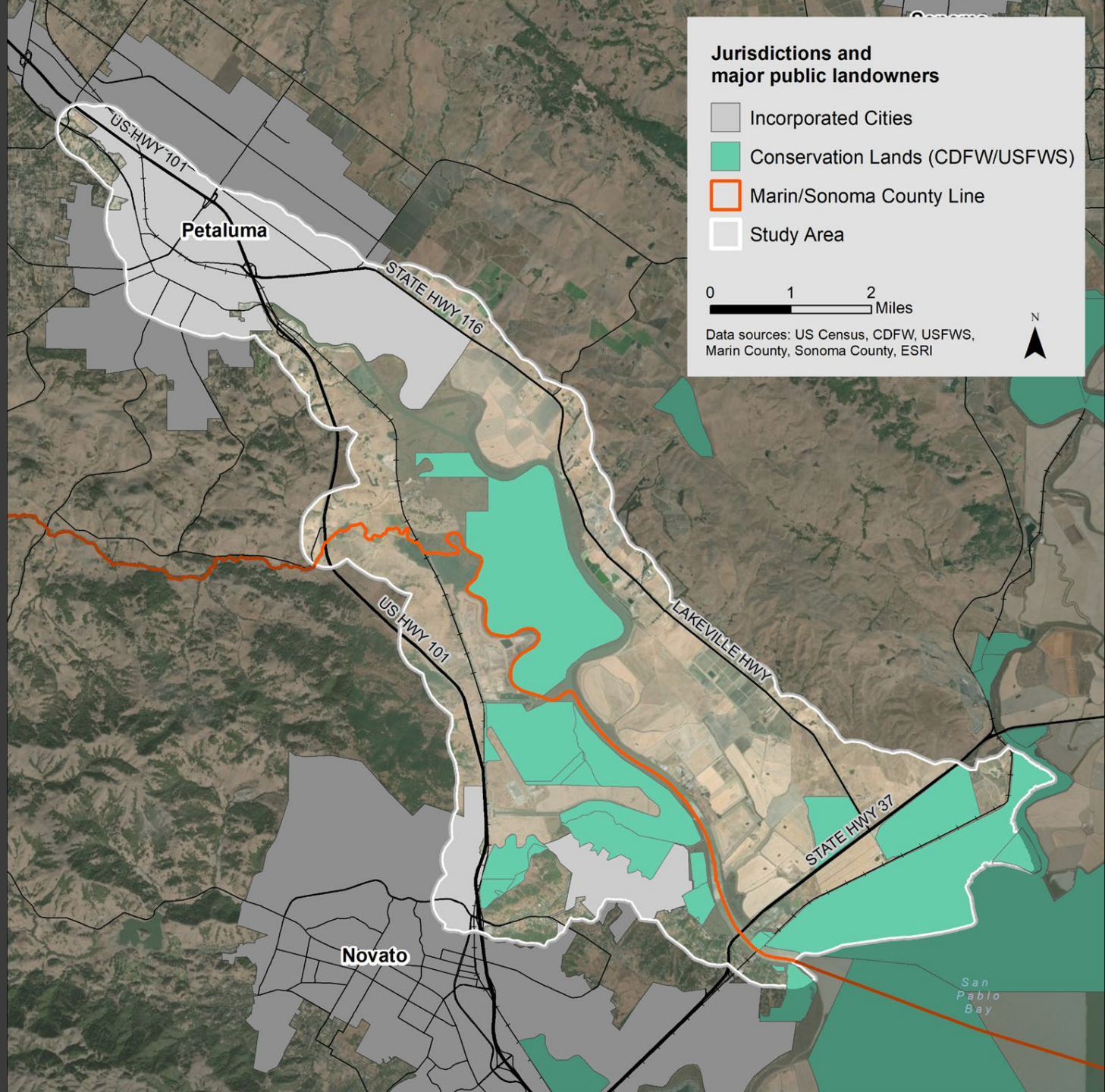


# TIDAL MARSH AND DIKED BAYLANDS



# CONSERVATION LANDS



# SR 37 HWY 101- SR 121: RANGE OF ALIGNMENTS

**Alternative 1: On-SR 37**

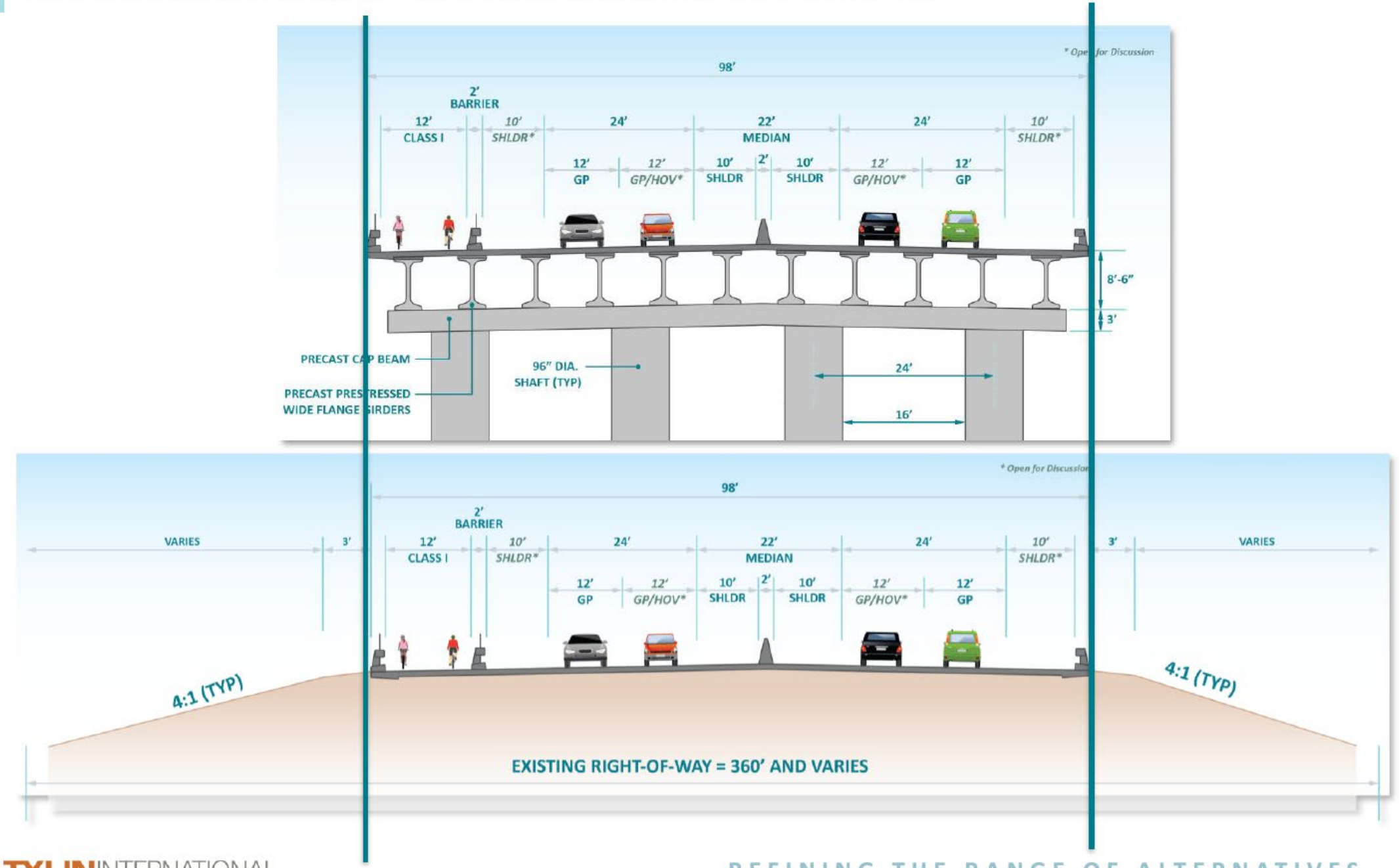
**Alternative 2: Railroad**

**Alternative 3: Over Bay**

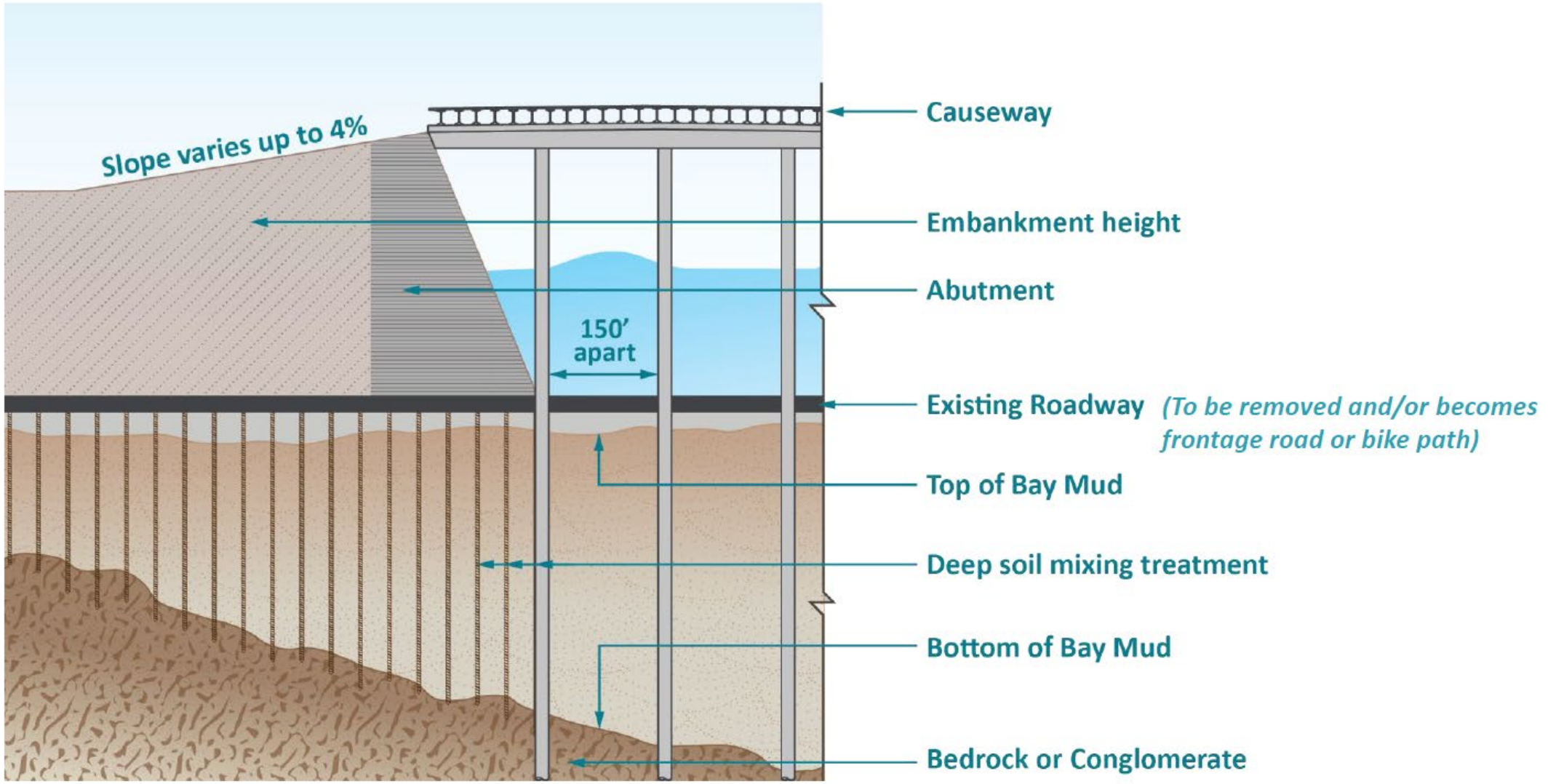
**Alternative 4A: North – Bahia/ Atherton**

**Alternative 4B: Burdell Island**

# FOOTPRINT: CAUSEWAY AND EMBANKMENT DIFFERENCES



# OTHER HEIGHT CONSIDERATIONS: LONGITUDINAL VIEW OF TRANSITION AREAS



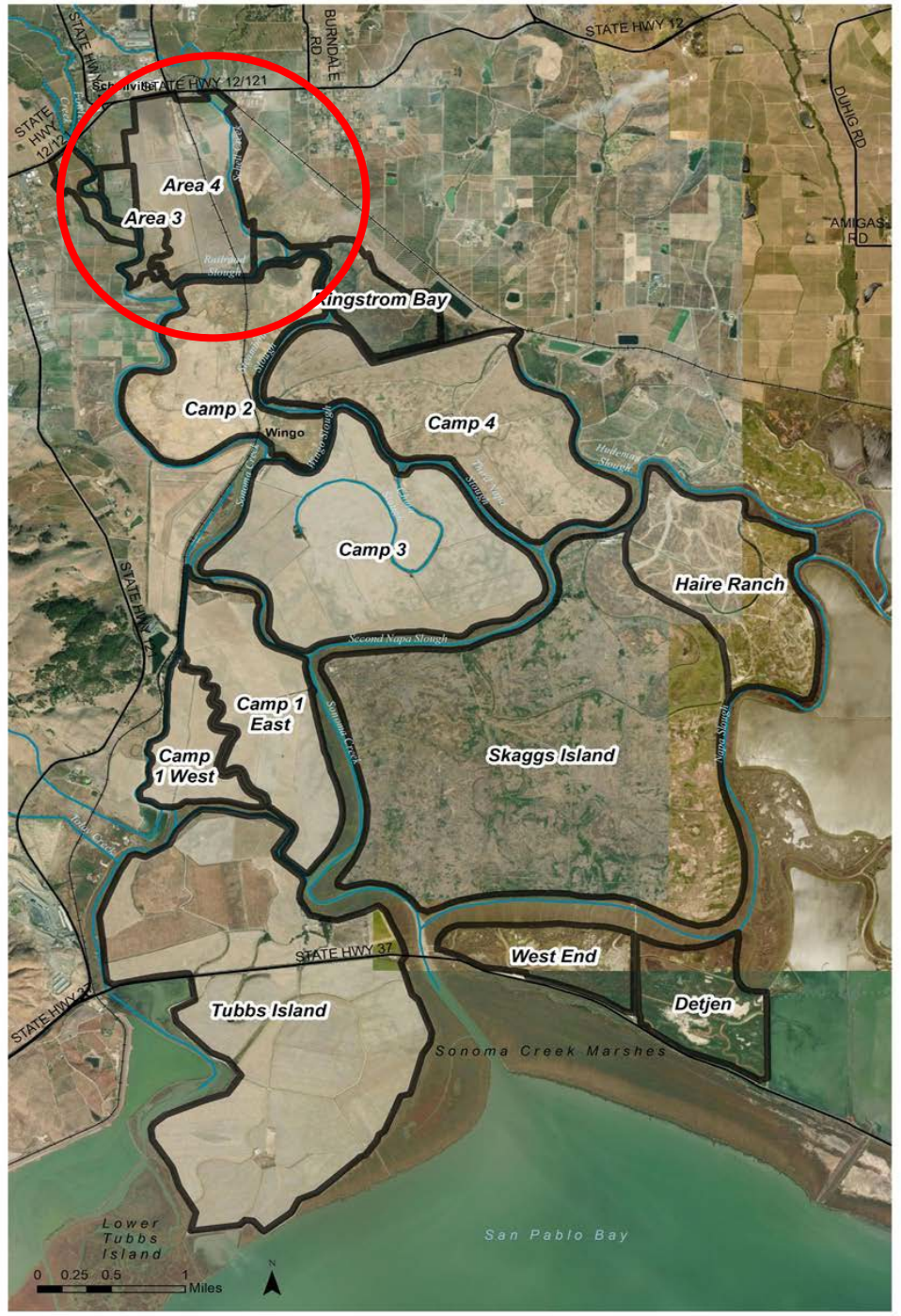
# PROJECT OVERVIEW

## Goals

1. Develop a preferred alternative to significantly reduce the frequency and duration of State Route 121/12 flooding.
2. Restore and expand critical Sonoma Creek Baylands habitat.
3. Increase community and habitat resilience to sea-level rise and future flood events.
4. Protect SR121/12 as alternate route to SR37.

## Actions

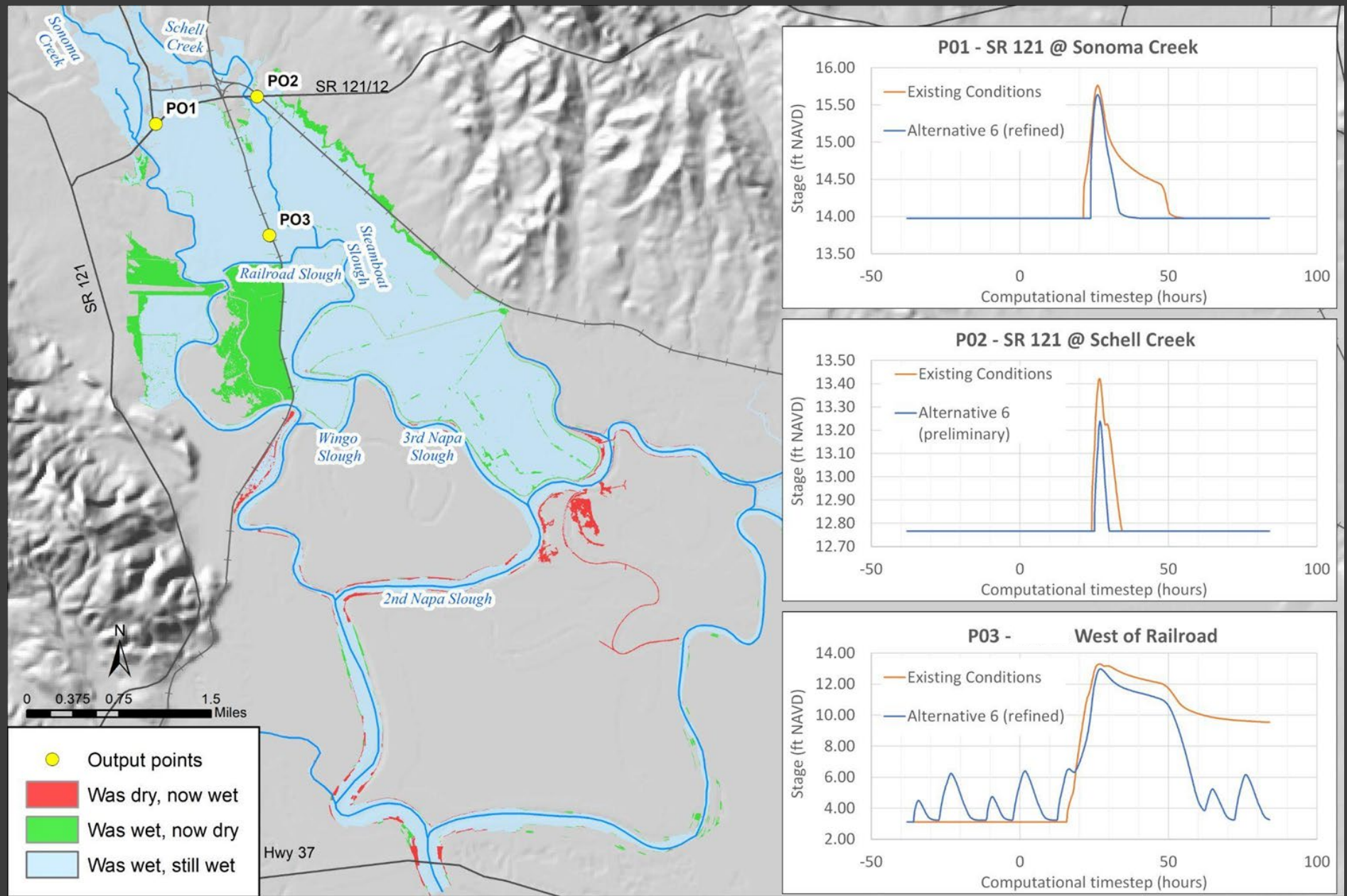
1. Acquire ~300 acres of property.
2. Alter berms/levees to improve floodwater storage and release to San Pablo Bay.



# PROBLEM STATEMENT

- Diking of the Sonoma Creek marshes blocks natural dispersal of floodwater.
- Portions of Schellville are regularly flooded during relatively small winter storm events. Last time was 2019.
- Flood events often result in road closure of State Route 121/12. Caltrans has permanent detour signs to uncover when needed
- Sea-level rise and will reduce the ability to drain floodwaters. Intensified storms will result in more severe upstream flooding.

# REDUCTION IN FLOODING – 100YR EVENT, 10YR TIDE



# Thank you

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Photo: ESA

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