



Sea Level Rise, Highway 37, and Tidal Marshes

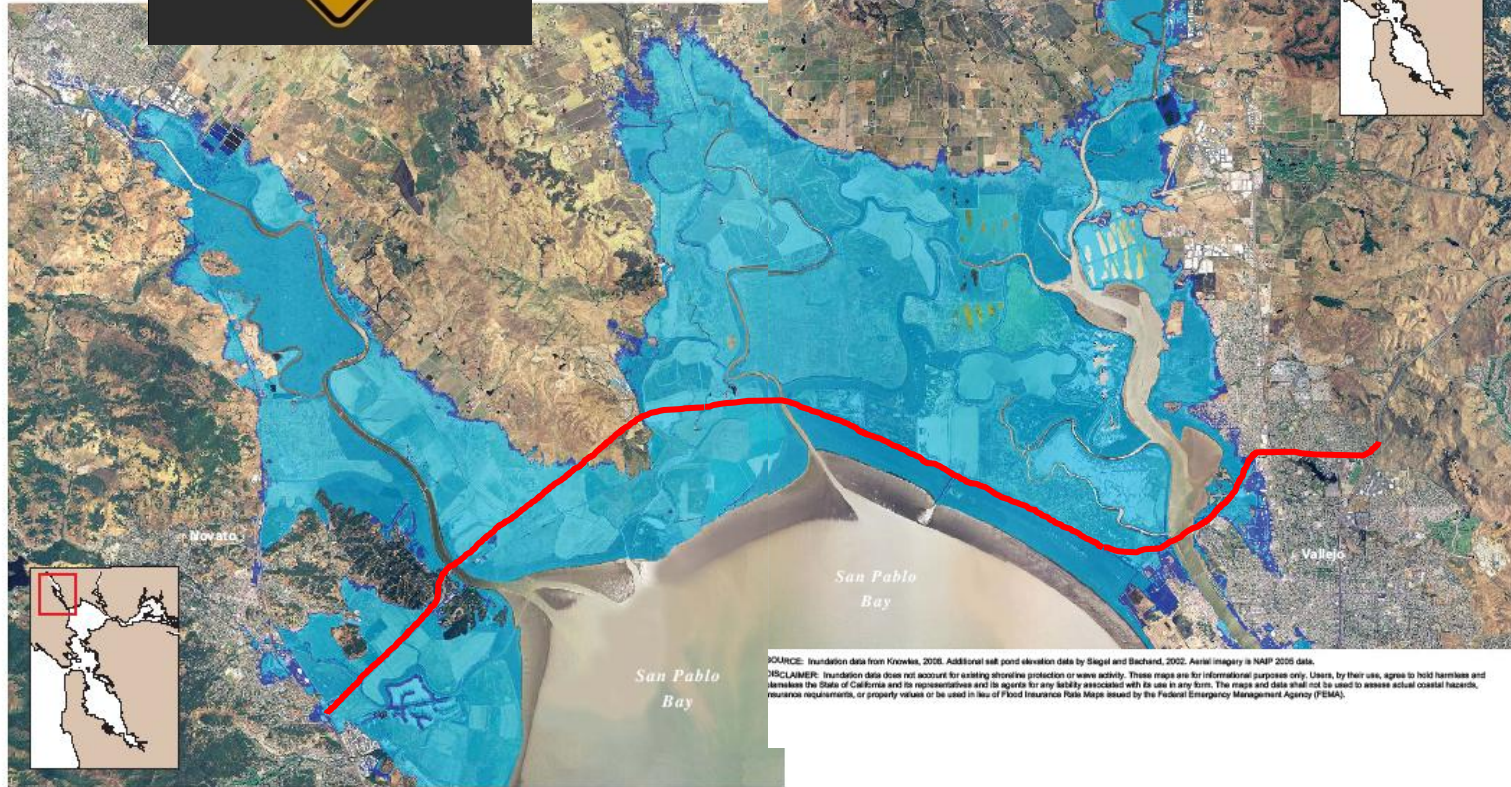


 San Francisco Bay
Conservation and Development Commission

SHORELINE AREAS VULNERABLE TO SEA LEVEL RISE: NAPA RIVER

-  Area vulnerable to an approximate 16 inch sea level rise
-  Area vulnerable to an approximate 55 inch sea level rise

0 1.5 3 MILES 



SOURCE: Inundation data from Knowles, 2006. Additional salt pond elevation data by Siegel and Bachand, 2002. Aerial imagery is NADP 2005 data.

DISCLAIMER: Inundation data does not account for existing shoreline protection or wave activity. These maps are for informational purposes only. Users, by their use, agree to hold harmless and indemnify the State of California and its representatives and its agents for any liability associated with its use in any form. The maps and data shall not be used to assess actual coastal hazards, insurance requirements, or property values or be used in lieu of Flood Insurance Rate Maps issued by the Federal Emergency Management Agency (FEMA).

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Map and image from BCDC

The Intergovernmental Panel on Climate Change predicts a 20-inch rise in sea level over the next half-century

Sea Level Rise

- About 90% of highway 37 would be directly affected by the 16-20 inch sea level rise (SLR) by 2050
- Effects include: regular flooding, loss of road prism, loss of arterial access, isolation of specific properties, environmental impacts from emergency remedial action....
- Currently, there is little freeboard at Tolay Creek during storms, so there is already a need for action

Tidal Marshes and SLR

Sea level rise could completely inundate all tidal marshes in the Bay Area sometime between 2050 and 2100

In order to adapt, marshes must have access to a regular, tidal sediment supply (tidal range >1.5 m and > 20 mg/L sediment)

The alternative for marshes without access to tides is to manually supply sediment

Highway 37, SLR, Marshes

The highway footprint currently prevents natural tidal action on the marshes. It is a hydraulic plug

Many of the marshes and islands are already below sea level

The highway has an unknown effect on future sediment supply for marshes and thus their survival

Information Needed

- What is the current and projected future hydraulic and hydrologic effect of the highway on marshes, channels and uplands?
- What is the current and projected effect of the highway on sediment supply to the current marshes and those under restoration?
- What would the effects of different corridor alternatives be on tidal marsh adaptation?