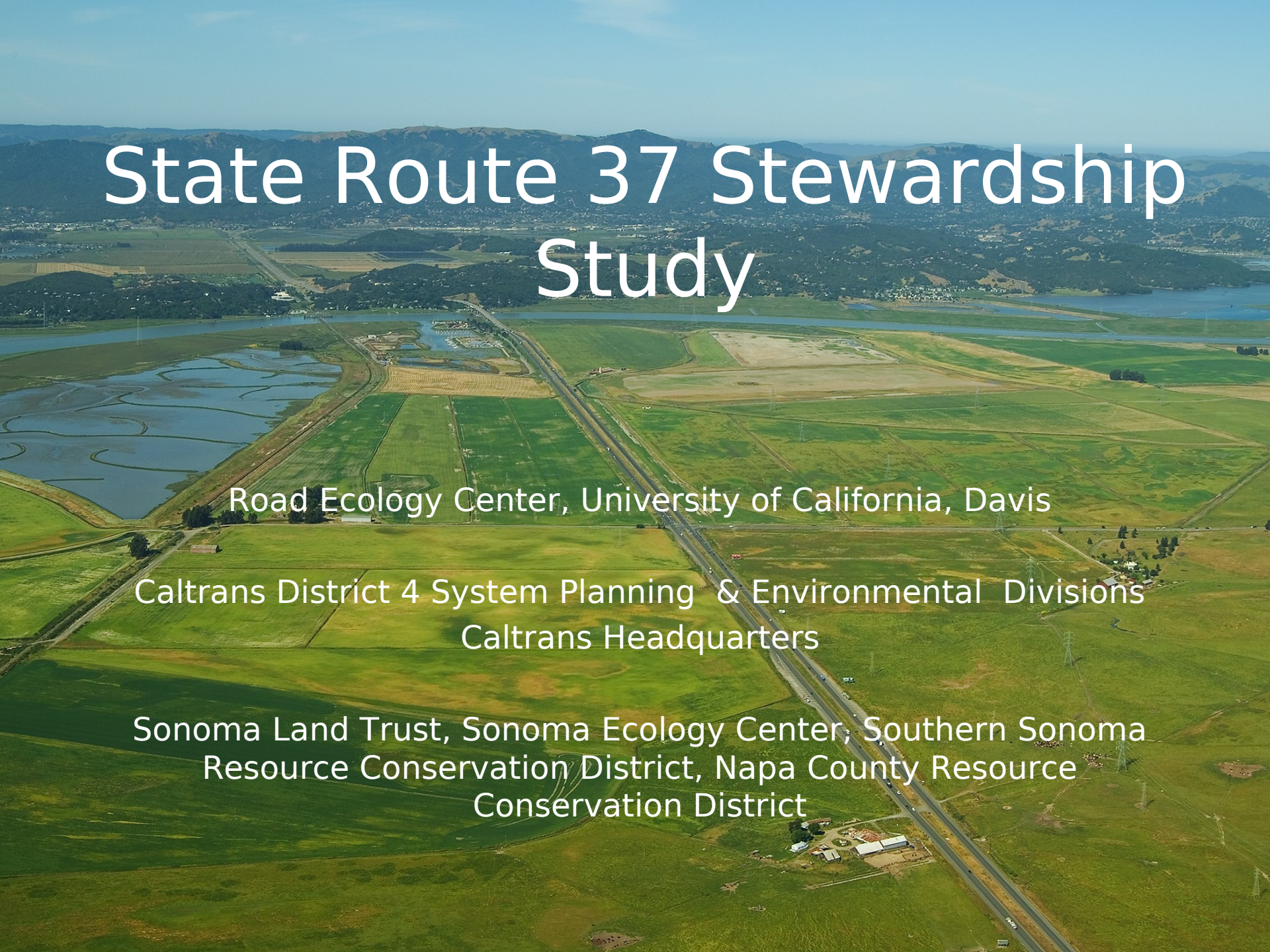


State Route 37 Stewardship Study



Road Ecology Center, University of California, Davis

Caltrans District 4 System Planning & Environmental Divisions
Caltrans Headquarters

Sonoma Land Trust, Sonoma Ecology Center, Southern Sonoma
Resource Conservation District, Napa County Resource
Conservation District

COLLABORATIVE STAFFING:


CALTRANS

District 4: Erik Alm, Joseph Aguilar & Rob Bregoff
(System Planning) plus Jeffrey Jensen and others from
Biological,
Joseph Peterson Engineering Services – Hydrology,
Others from Storm-water, Maintenance, Safety
& Katie Benouar, Director's Office

UC DAVIS

Fraser Shilling, Mary Madison, Helene Le Maitre, David
Waetjen, Abby Monroe

SONOMA ECOLOGY CENTER, Caitlin Cornwall
SOUTHERN SONOMA COUNTY RCD, Leandra Swent
SONOMA LAND TRUST, Wendy Eliot
NAPA COUNTY RCD, John St...

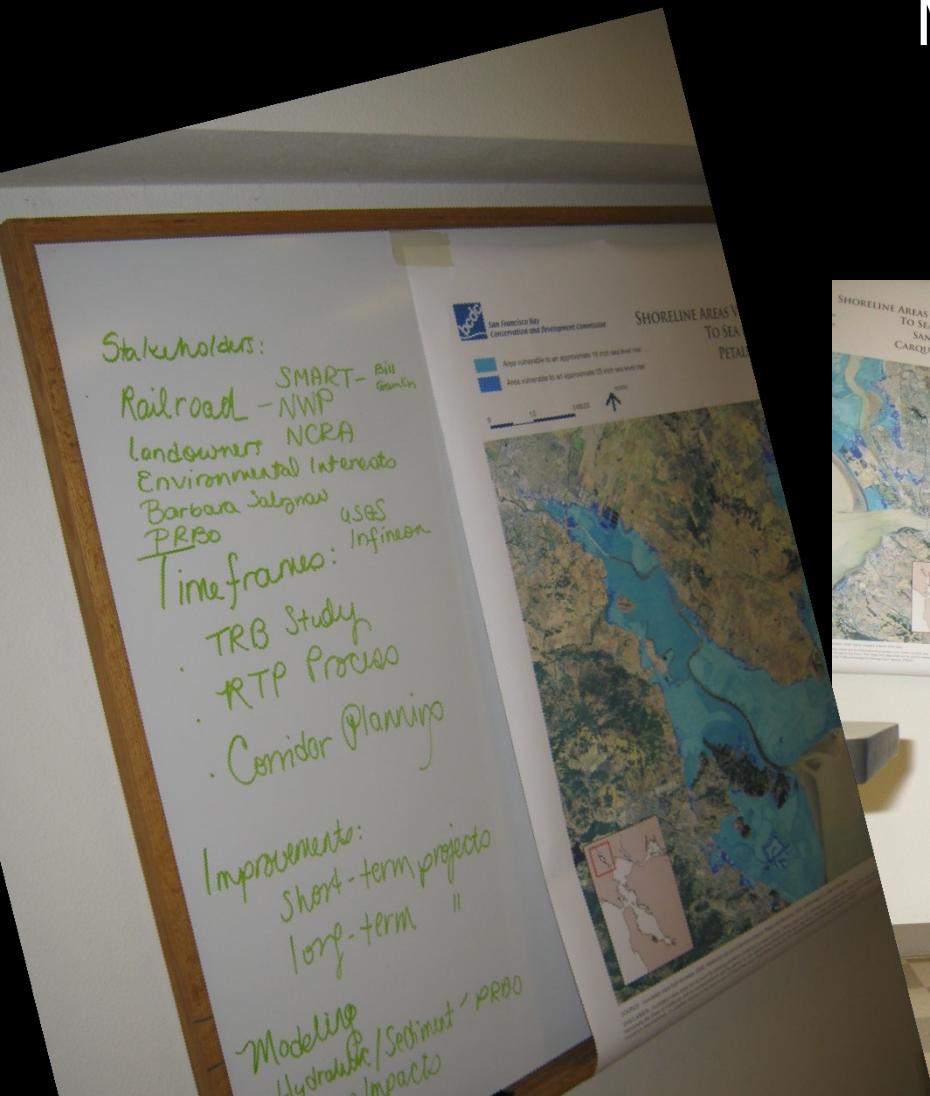
An aerial photograph showing a multi-lane highway (Highway 37) running diagonally from the bottom right towards the top left. The highway is flanked by vast green agricultural fields and wetlands. In the background, there are rolling hills and mountains under a clear blue sky. The text "Update on Ecological and Transportation Framework for Highway 37 Corridor" is overlaid in large white font at the top.

Update on Ecological and Transportation Framework for Highway 37 Corridor

Stakeholder Meeting 3, July 19, 2011

PROCESS:

Monthly stakeholder meetings
Meet at various places along
corridor
Web site and data sharing
Impacts assessment and
valuation



TRB Study: Outcomes/Deliverables

- **Test Products of Transportation Research Board projects:**

Integration of conservation, highway planning, and environmental permitting using an outcome-based ecosystem approach &

Development of an ecological assessment process and credits system for enhancements to highway capacity

- **Preliminary environmental framework and assessment**
- **Valuation of ecological impacts (crediting system)**
- **Foundation for agreements between transportation agencies and permitting agencies**

SHRP 2 Products

Core Site:

<http://www.transportationforcommunities.com>

Library:

<http://www.transportationforcommunities.com/shrpc01/library>

TRB Stewardship Process Steps

1. Collaborative partnerships
Planning region, partners, stakeholders, MOU building
2. Characterize natural conditions
Spatial data, endangered species, data sharing, conservation prioritization
3. Regional ecosystem framework
Combined conservation and transportation planning
4. Quantify land-use and transportation impacts
Cumulative effects assessment, location and extent of impacts
5. Establish ecological-stewardship actions
Select stewardship actions that have the least impact and avoid need for impact-compensatory mitigation as much as possible
6. Develop crediting strategy
Valuation of affected ecosystem attributes and services, develop system for comparison of transportation and ecological benefits
7. Develop permitting strategy
Adaptive management approach to permit and performance measurement
8. Implement agreements, conservation, transportation
Describe implementation of package consistent with stewardship principles
9. Update regional ecosystem framework

Process Step 1

1. Collaborative partnerships

Planning region, partners, stakeholders, MOU building

Bi-monthly stakeholder meetings

Big get-together in Fall to collaborate on different future scenarios

Winter discussion of regional, state, and federal
permitting/regulatory issues with scenarios

Information-sharing via website: <http://hwy37.ucdavis.edu>

Process Step 2

2. Characterize natural conditions

Spatial data, endangered species, data sharing,
conservation prioritization

Defining study needs

Collecting metadata (descriptions of data)

Process Step 3

3. Regional ecosystem framework

Combined conservation and transportation planning

Developing the “State Route 37 Corridor Context”

Process Step 6

6. Develop crediting strategy

Valuation of affected ecosystem attributes and services, develop system for comparison of transportation and ecological benefits

Developed system

Collecting data for impacts of system for scenario comparison

Next Steps

Collecting locations of data for impacts assessment and valuation

Making draft models and maps of impacts

Developing calculation strategies for valuation

Developing information-sharing web site

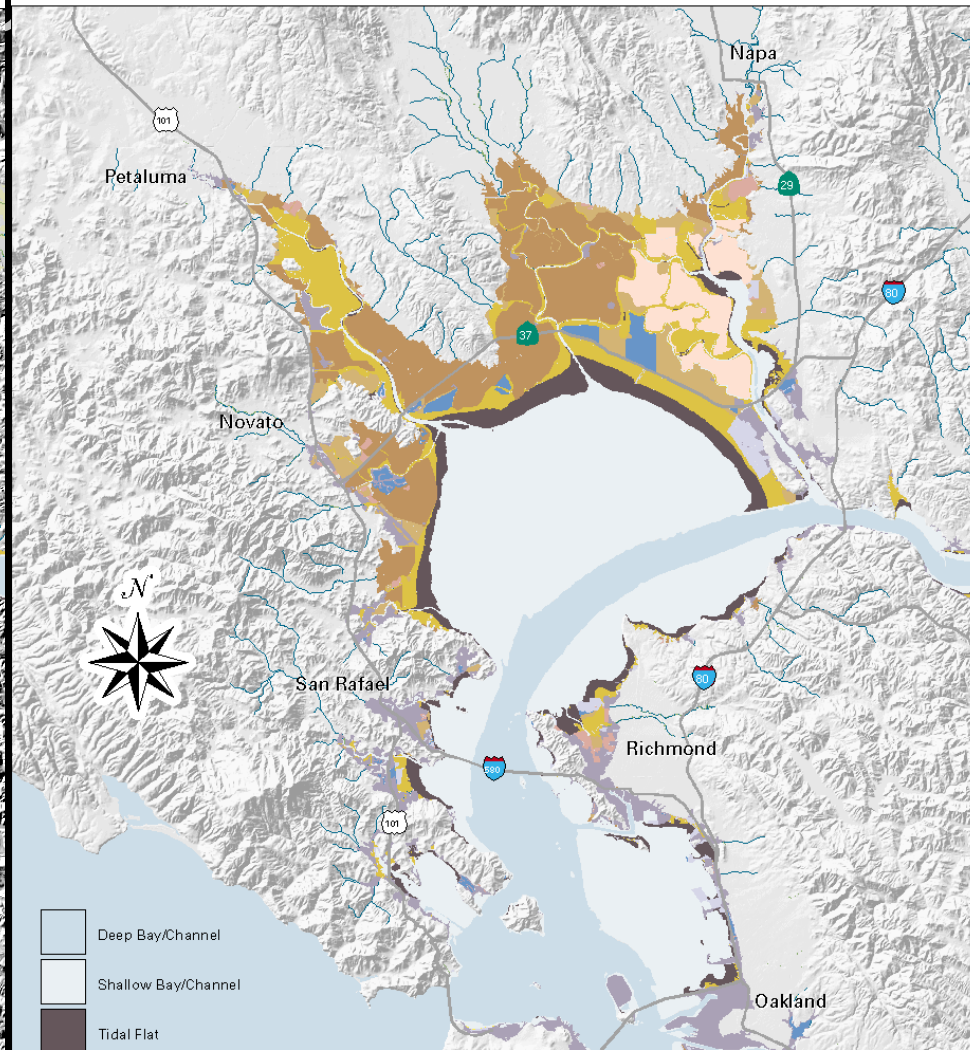
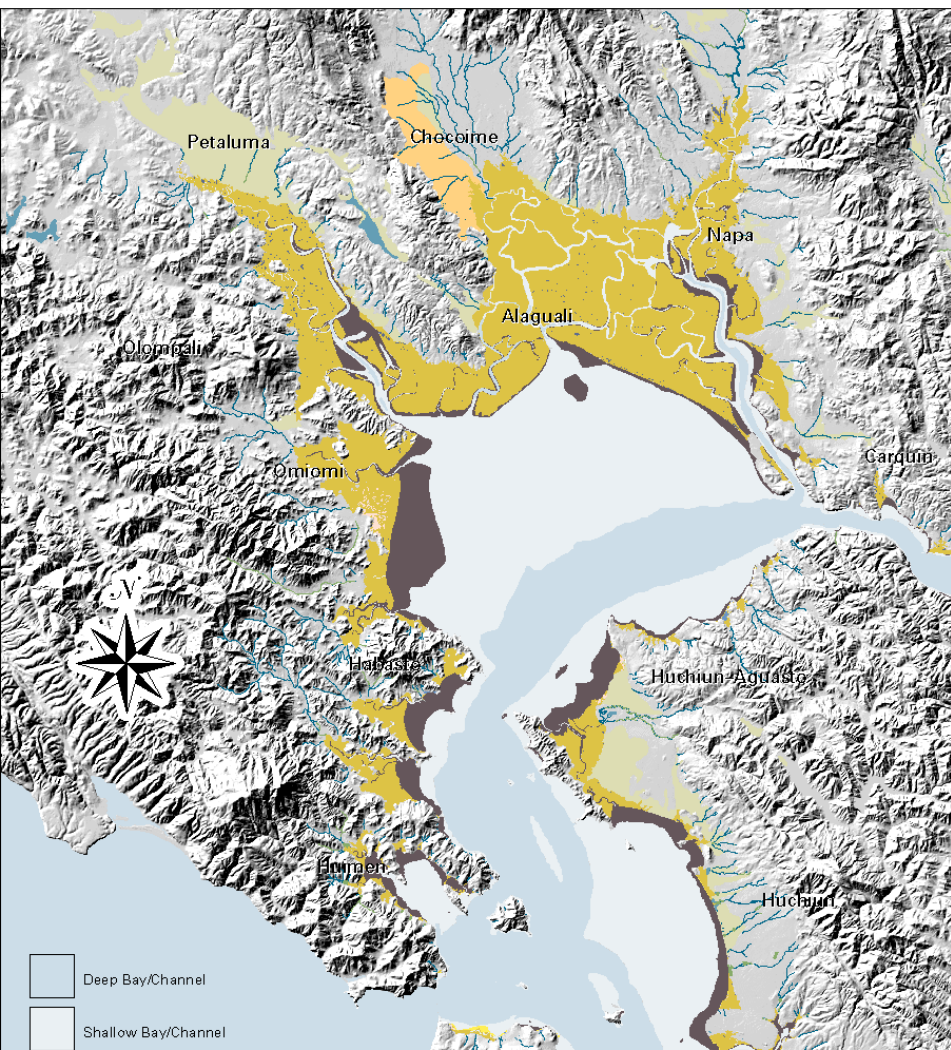
STATE ROUTE 37 CORRIDOR CONTEXT - ENVIRONMENT/LAND-USE

Restoring Marshlands

Adjacent Agricultural Lands

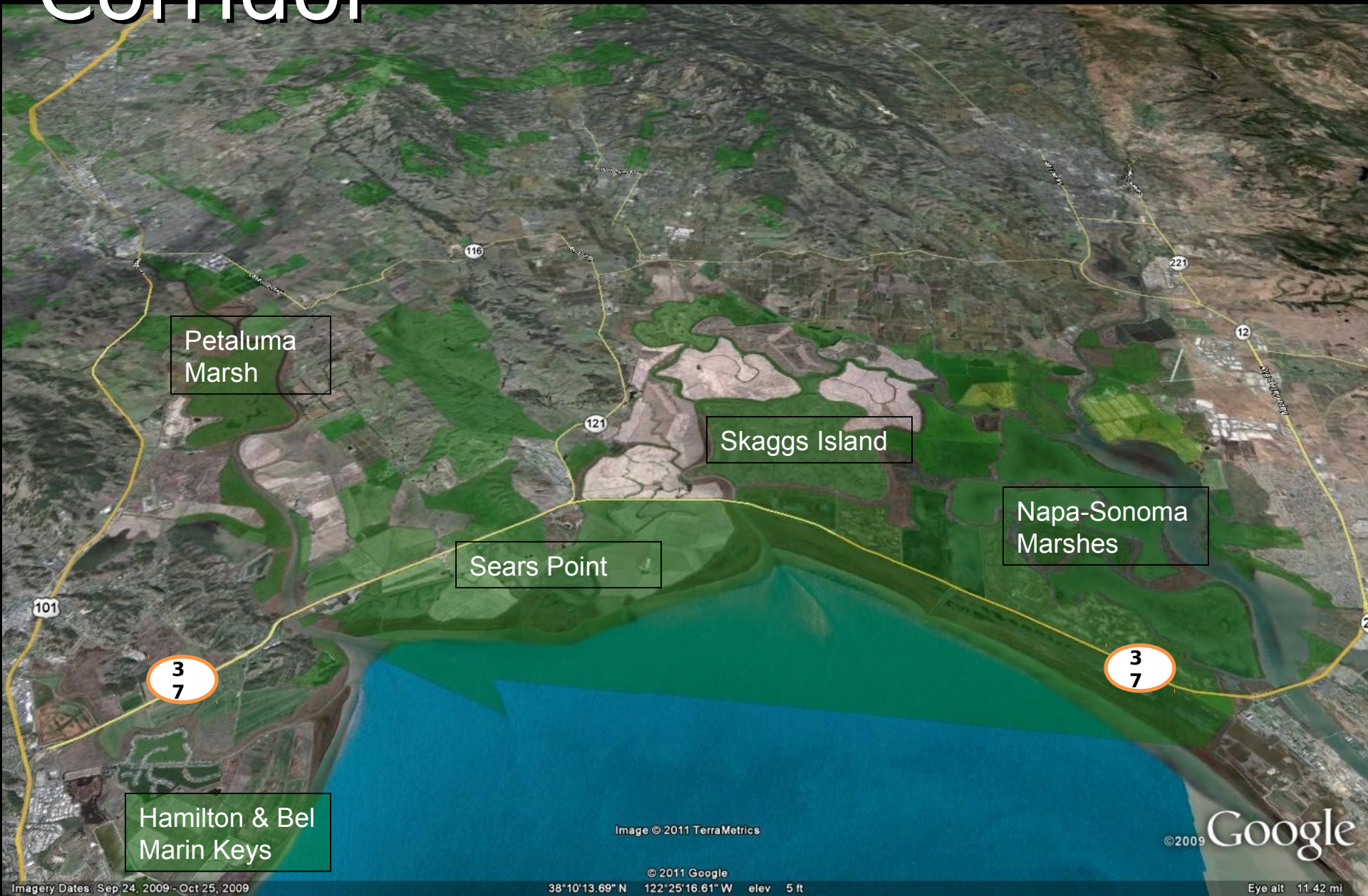
Climate Change

San Pablo Bay: Past and Present

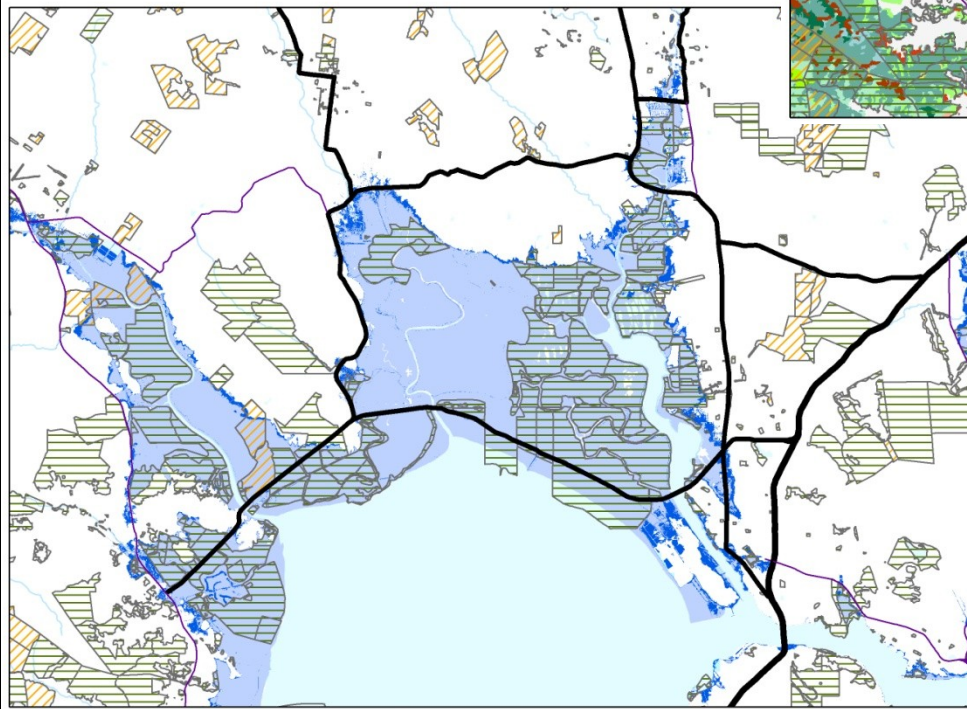
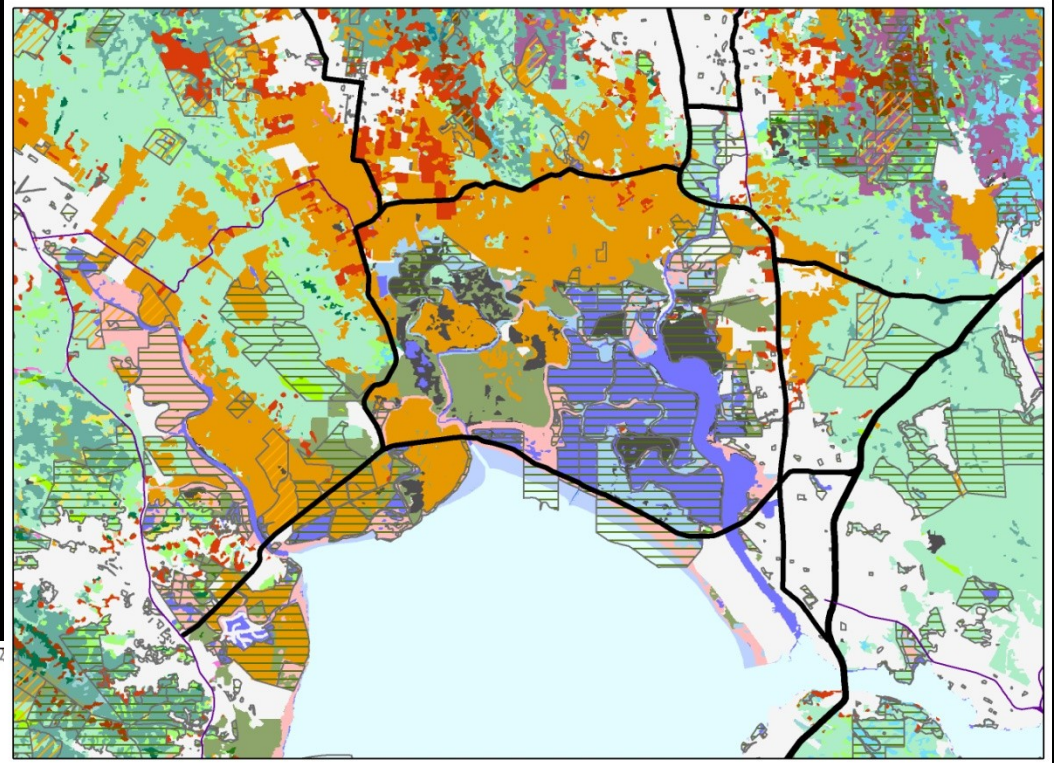


Over 85% of the Bay's and 82 % of the North Bay's historic tidal wetlands have been lost.

Protected Lands along the 37 Corridor



Corridor Vegetation and Protected Areas



Sea Level Rise and Protected Areas

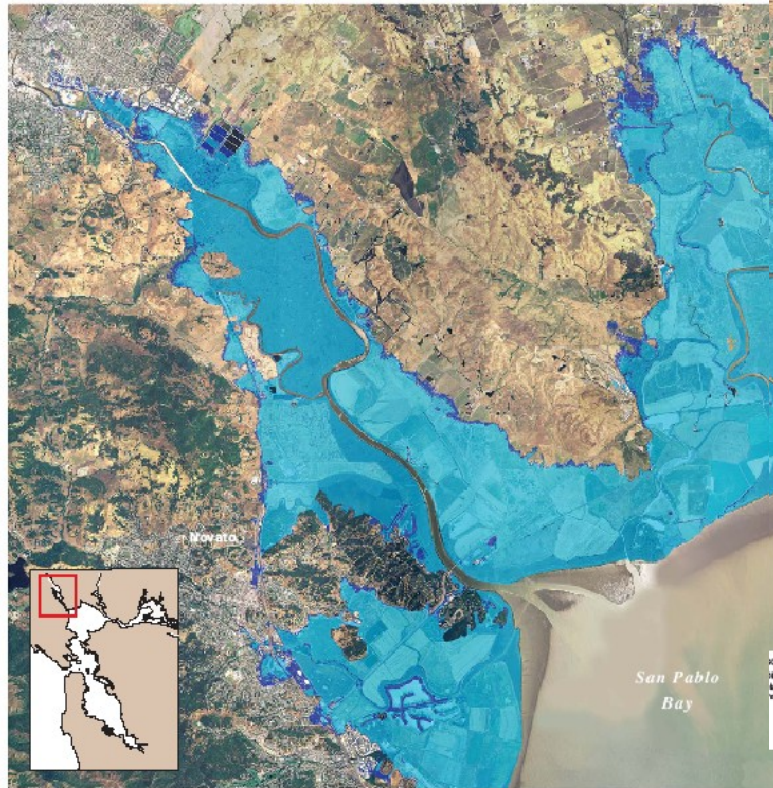
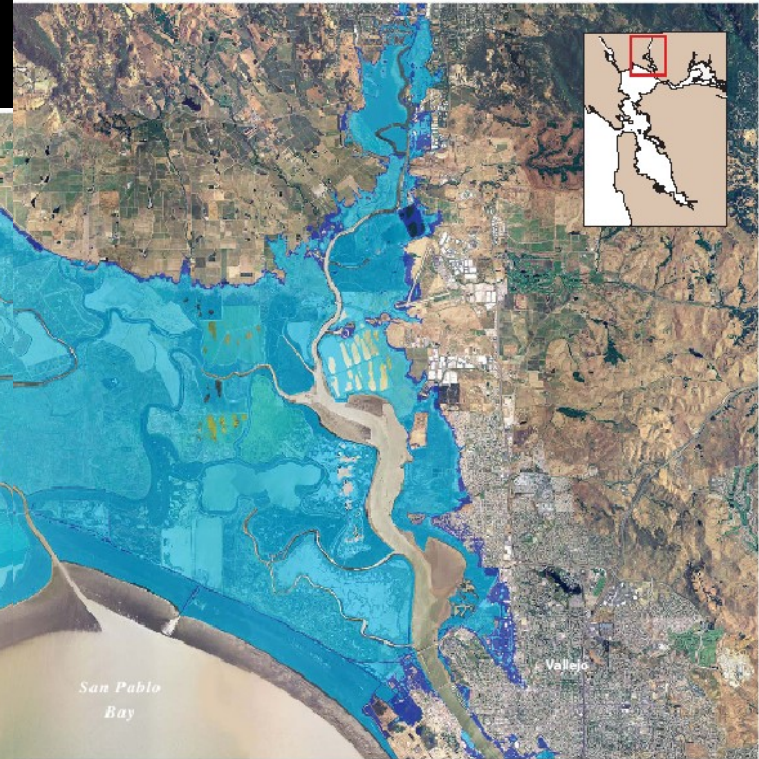


San Francisco Bay
Conservation and Development Commission

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, 2008. Additional salt pond elevation data by Siegel and Bachand, 2002. Aerial imagery is NAD 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 defend 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 estimate 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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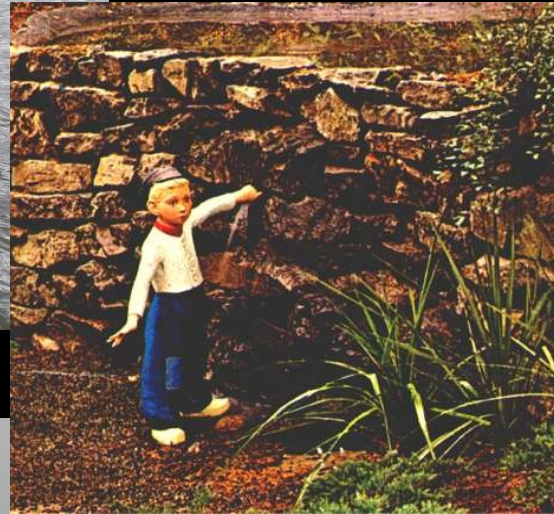
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The Intergovernmental Panel on Climate Change predicts a 20-inch rise in sea level over the next half-century

Eroding levee
along San
Pablo Bay



Erosion at Tolay
Lagoon

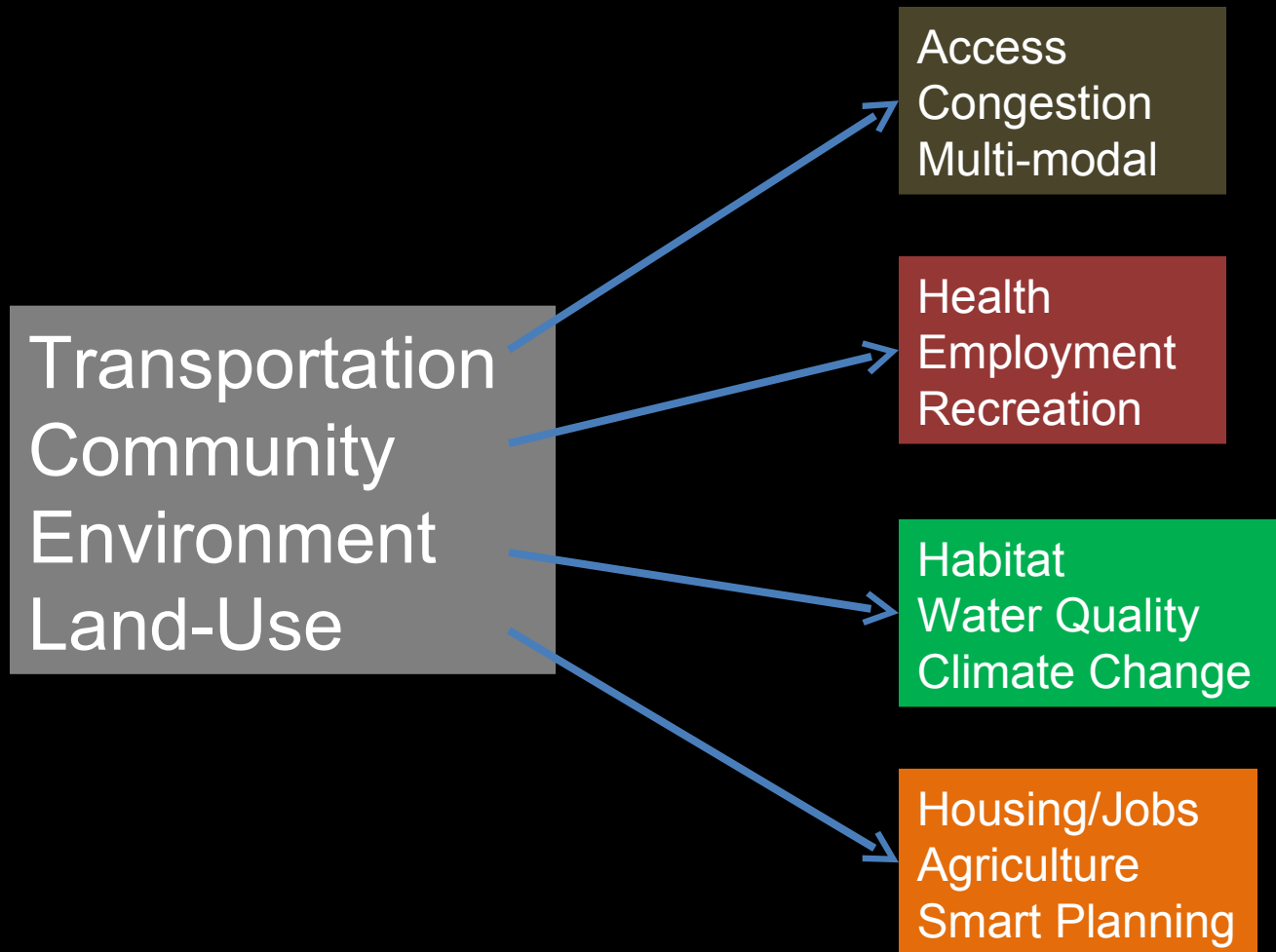


Highway 37 at Tolay
Lagoon



Levee breach during
January storms

Building the Corridor Context



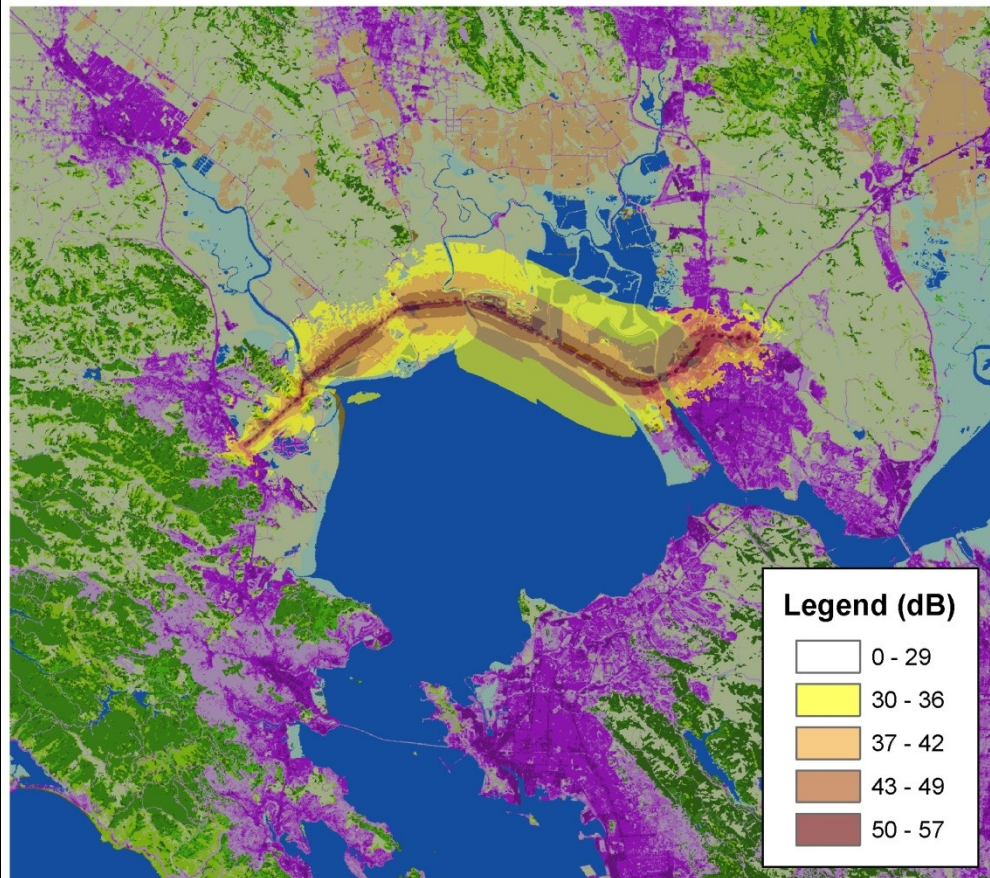
Building the Corridor Context

Habitat
Water Quality
Climate Change

Traffic
Noise

Highway 37: Spread Sound Model

Summer, Light Wind



Legend (NLCD Codes)

Open Water	Barren Land	Grassland / Herbaceous
Developed: Open Space	Deciduous Forest	Pasture / Hay
Developed: Low Intensity	Evergreen Forest	Cultivated Crops
Developed: Medium Intensity	Mixed Forest	Woody Wetlands
Developed: High Intensity	Scrub / Shrub	Emergent Herbaceous Wetland

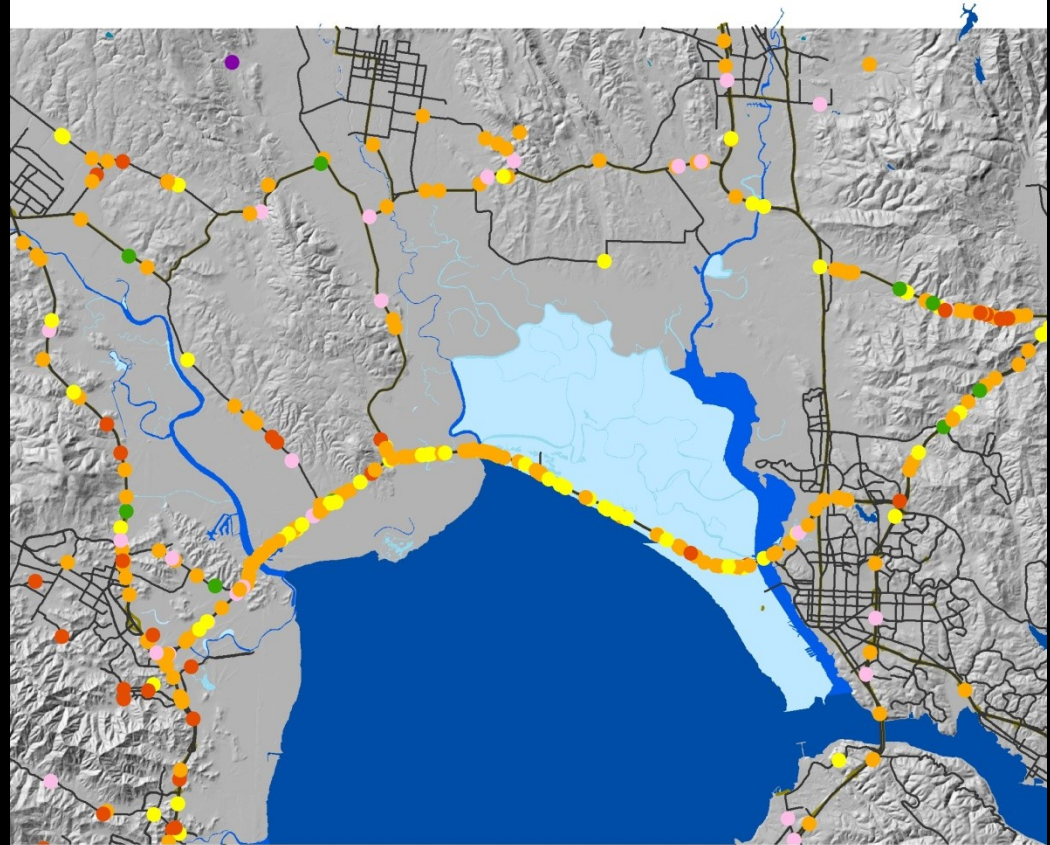
Building the Corridor Context

Habitat
Water Quality
Climate Change

Roadkill

Highway 37: Roadkill Occurrences

California Roadkill Observation System (CROS)



Legend

- Amphibian
- Bird
- Mammal (Large)
- Mammal (Medium)
- Mammal (Small)
- Reptile

Legend (Hydrology)

- Marsh
- Lake / Bay
- River
- Reservoir
- Slough / Misc



Fraser Shilling

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<http://roadecology.ucdavis.edu>

<http://hwy37.ucdavis.edu>