STATE ROUTE 37
RESILIENT CORRIDOR PROGRAM

Integrating transportation, ecology, and sea level rise adaptation into a more resilient SR 37

August 1, 2019

Image: San Pablo Bay National Wildlife Refuge, USFWS

MT NVTA NAPA VALLEY TRANSPORTATION AUTHORITY scta SONOMA COUNTY TRANSPORTATION AUTHORITY STA Solano Transportation Authority ...working for you! TAM Transportation Authority of Marin Caltrans

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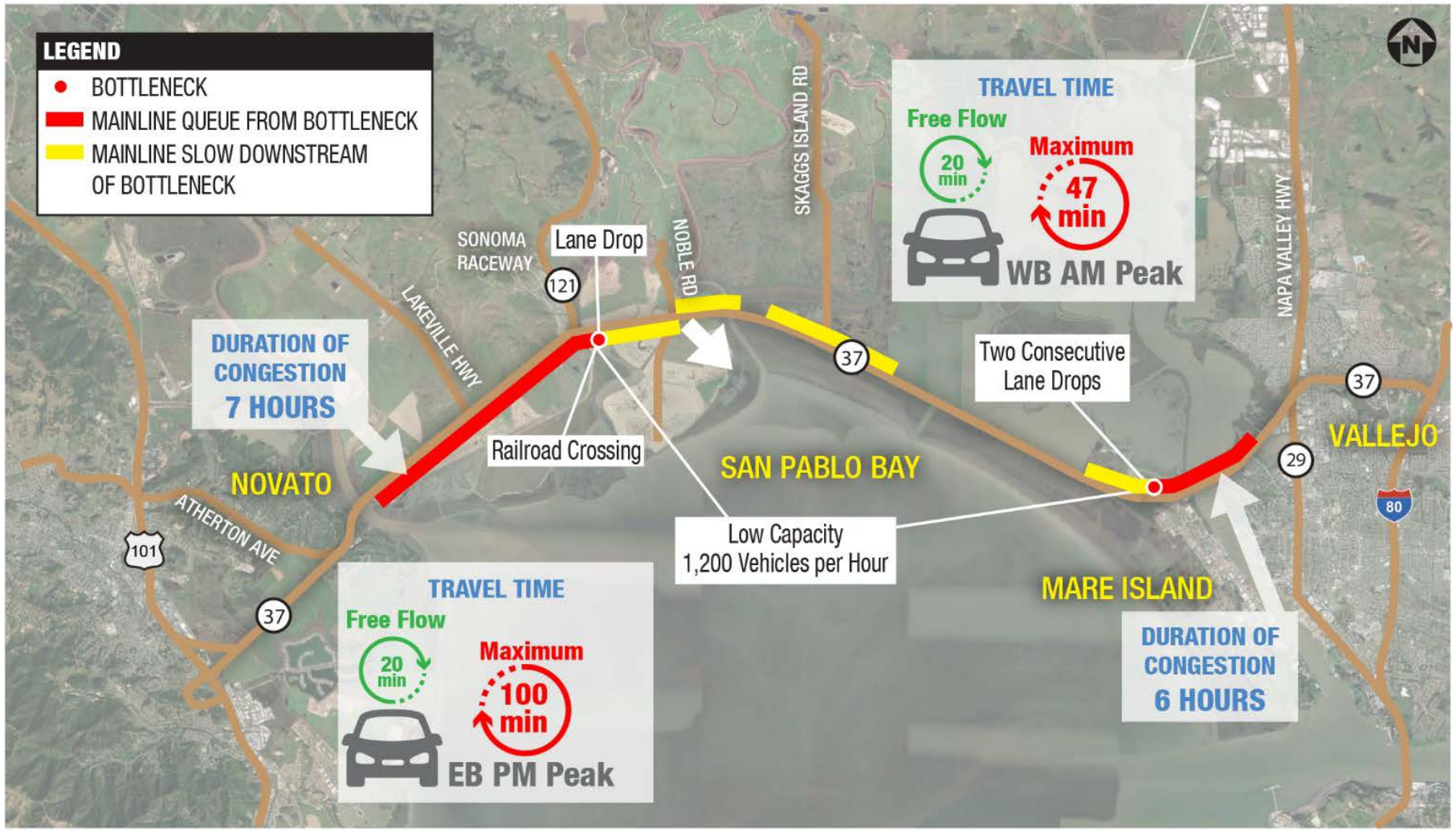
100 MINUTES TO TRAVEL HOME TO SOLANO CO. EVERY DAY



Source: Kimley-Horn, 2017

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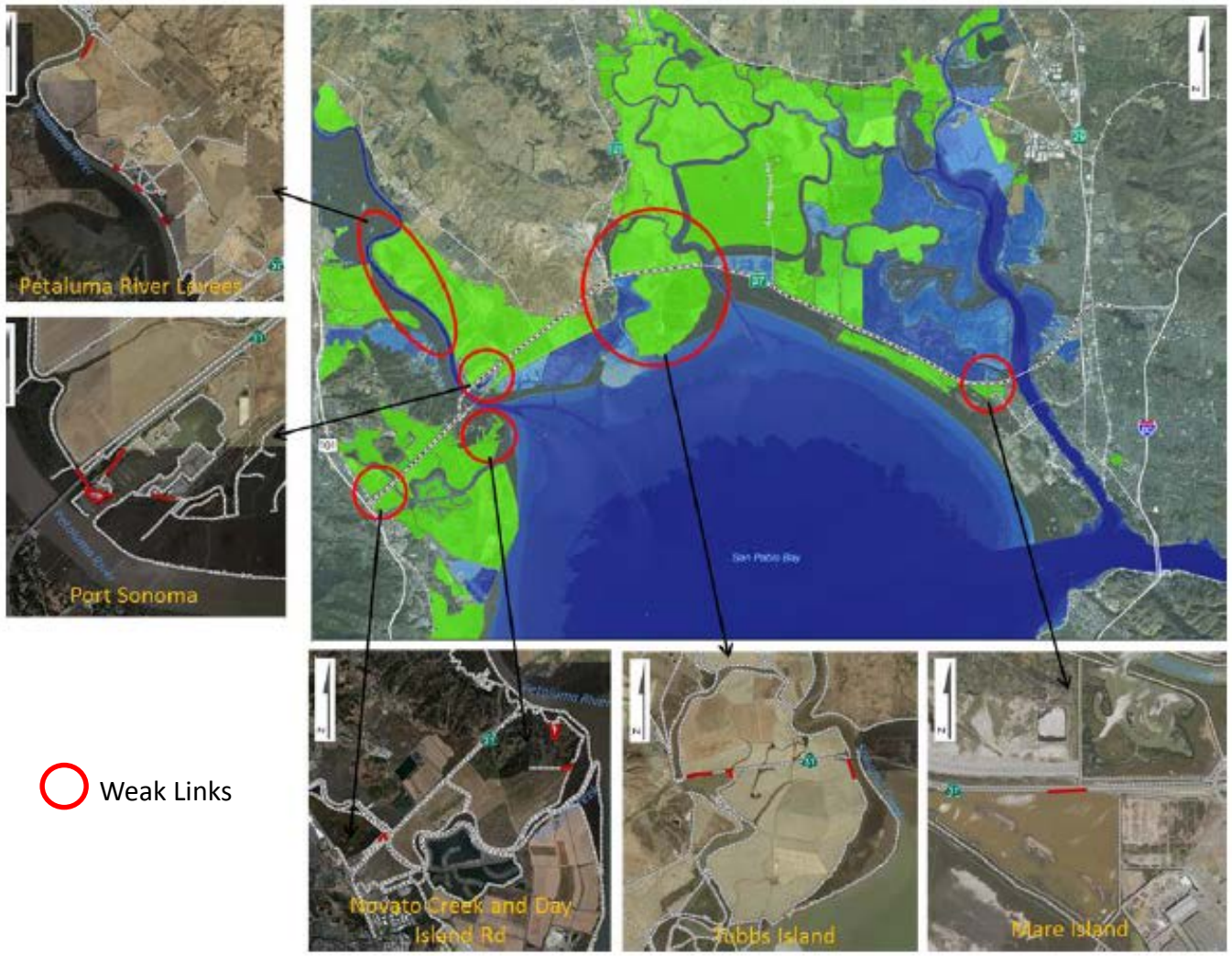
6 KNOWN WEAK LINKS, SOME FLOODED IN 2017 AND 2019 STORMS



Source: AECOM, 2017

Spring 2017 Floods

Spring 2019 Floods

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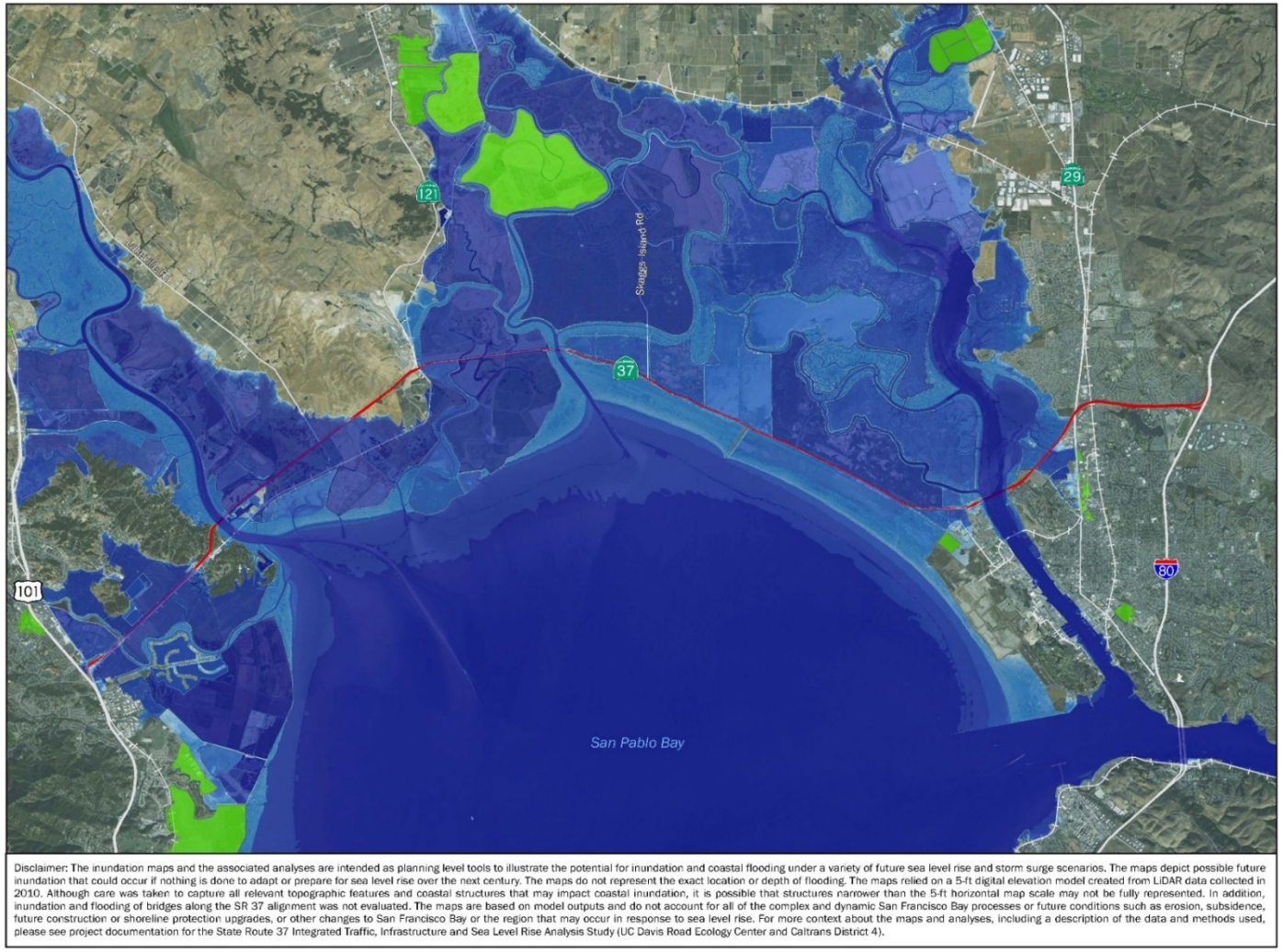
30 YEARS FROM TODAY SEA LEVEL RISE WILL INUNDATE SR 37



California State Route 37
Inundation Mapping

MHHW + 36" SEA LEVEL RISE

12" SLR + 5-yr Storm Surge
6" SLR + 10-yr Storm Surge
0" SLR + 25-yr Storm Surge

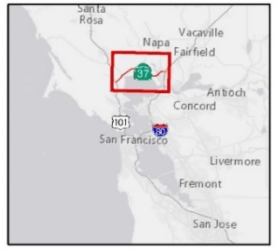
Inundation

Depth in Feet
0 - 0.5
0.5 - 1
1 - 1.5
1.5 - 2
2 - 2.5
2.5 - 3
3 - 5
5 - 7
7 - 10
10 +

Lowlying Areas > 1 Acre

0 1 2 Miles
0 5,000 10,000 Feet

AECOM



Disclaimer: The inundation maps and the associated analyses are intended as planning level tools to illustrate the potential for inundation and coastal flooding under a variety of future sea level rise and storm surge scenarios. The maps depict possible future inundation that could occur if nothing is done to adapt or prepare for sea level rise over the next century. The maps do not represent the exact location or depth of flooding. The maps relied on a 5-ft digital elevation model created from LiDAR data collected in 2010. Although care was taken to capture all relevant topographic features and coastal structures that may impact coastal inundation, it is possible that structures narrower than the 5-ft horizontal map scale may not be fully represented. In addition, inundation and flooding of bridges along the SR 37 alignment was not evaluated. The maps are based on model outputs and do not account for all of the complex and dynamic San Francisco Bay processes or future conditions such as erosion, subsidence, future construction or shoreline protection upgrades, or other changes to San Francisco Bay or the region that may occur in response to sea level rise. For more context about the maps and analyses, including a description of the data and methods used, please see project documentation for the State Route 37 Integrated Traffic, Infrastructure and Sea Level Rise Analysis Study (UC Davis Road Ecology Center and Caltrans District 4).

2000

2050

2100

2100+

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Source: UC Davis, AECOM, 2015

9 SPECIAL-STATUS SPECIES, PACIFIC FLYWAY AND MANY ACRES OF WETLANDS AND BAYLANDS

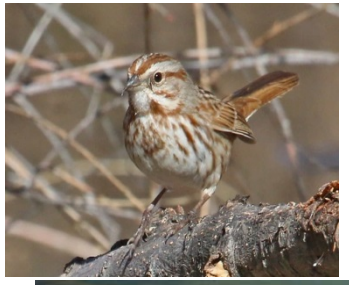

Image Sources: Various 2018

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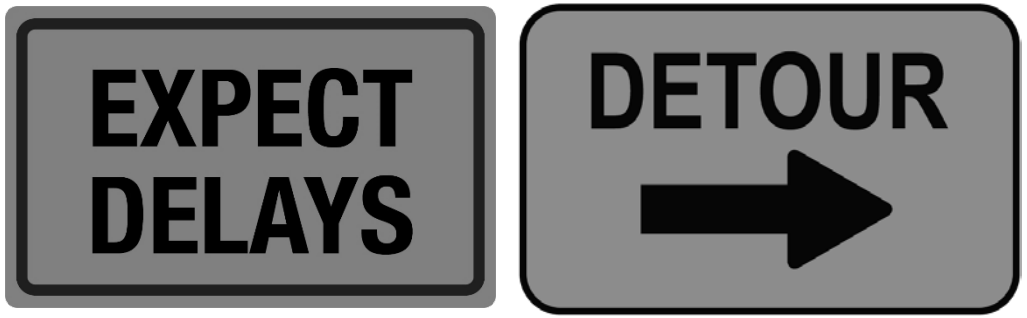
BREAK THE PROJECT DELIVERY PARADIGM



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PUBLIC OUTREACH

What We Heard

Project Kick-Off	Key Issues	Travel Patterns & Key Issues	Design Alternatives
Open Houses	Online Surveys	Focus Groups	Focus Groups
Sept – Oct 2017	Dec 2017 – Jan 2018	Jan – Feb 2018	May – Jun 2018

ENVIRONMENTAL STAKEHOLDER OUTREACH SERIES

WHAT WE'VE DONE

- Coastal Conservancy
- Sonoma Land Trust
- SF Estuary Institute
- SF Bay Joint Venture
- Ducks Unlimited
- Point Blue
- Marin Audubon Society
- Solano Land Trust
- California Department of Fish and Wildlife
- U.S. Fish and Wildlife Service
- The Nature Conservancy
- BCDC
- SF Bay Regional Board
- Army Corps of Engineers
- National Marine Fisheries Service
- U.S. EPA
- State Lands Commission
- Vallejo Sanitation & Flood Control District
- Solano County Resource Management
- UC Davis

ONE VISION, ONE PROGRAM

- Sea Level Rise
- Ecological Restoration & Conservation
- Multimodal Corridor
- Access to Baylands
- Equity

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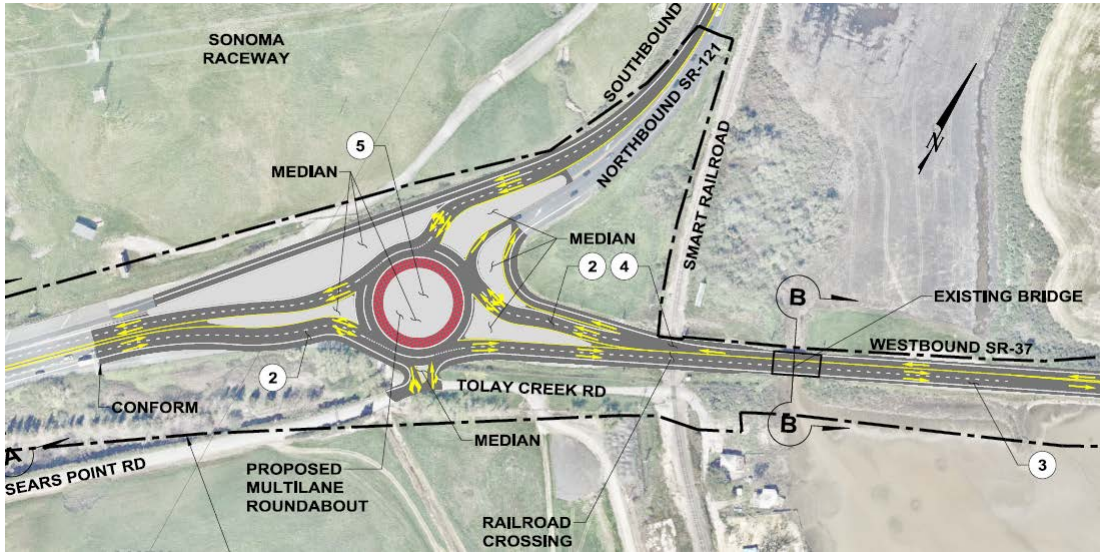
RESILIENT CORRIDOR PROGRAM

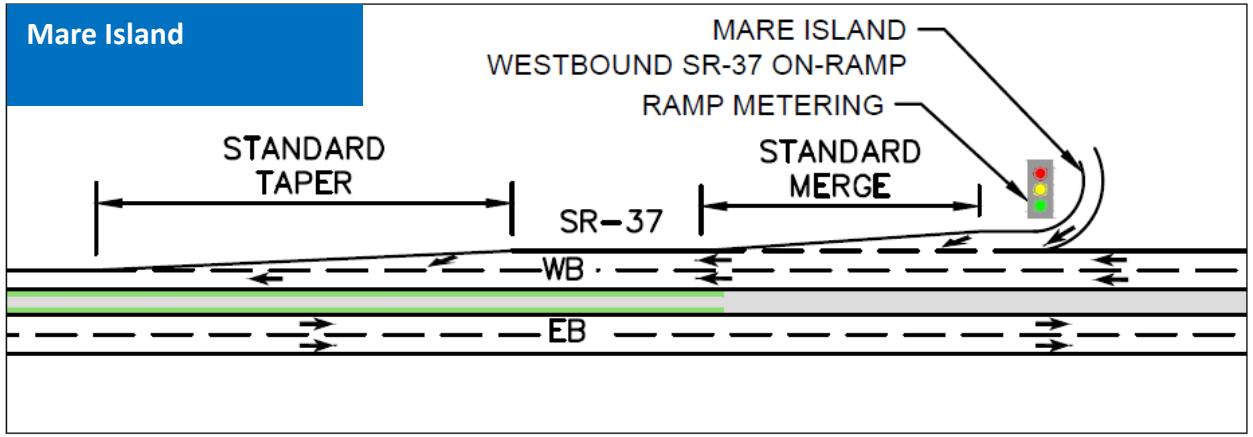
$5B+ CORRIDOR PROGRAM OVER 25 YEARS

HIGHWAY	TRANSIT	Environment	Bike/Ped & Public Access	Equity
Adapt SR 37 from I-80 to US 101 to Sea Level Rise	Microtransit service	Advanced mitigation and enhancements	Shared use path	Means-based transit fare
Relieve congestion between Mare Island I/C and SR 121, including near-term operational improvements at SR 121 and Mare Island interchange	Regional express bus service between Vallejo and Novato, including support strategies (commuter parking, etc.)	Land acquisition for corridor restoration	Public access improvements to open space preserves, public viewing areas, trailhead, etc.	Means-based tolls
Interchange Improvements: Lakeville Highway, SR 121, Mare Island, Atherton, & Fairgrounds	SMART rail service (TBD by others)	Targeted, smaller scale ecological enhancements		
Grade separation with SMART rail crossing east of SR 121		Larger landscape-scale restoration		

SR 37 OPERATIONAL EFFICIENCY IMPROVEMENTS (NEAR-TERM, DELIVER IN 3-5 YEARS)



SR 121 Intersection Improvements and Eastbound Lane Drop Extension



Mare Island Interchange Westbound Lane Drop Extension and Ramp Metering

SEGMENT A INTERIM/FLOOD PROTECTION PROJECT

Example Strategy A: Roadway & Bank Protection

Floodwall and Sheet Pile Wall

Sheet Pile Wall and Concrete Apron

Example Strategy B: Drainage Improvement

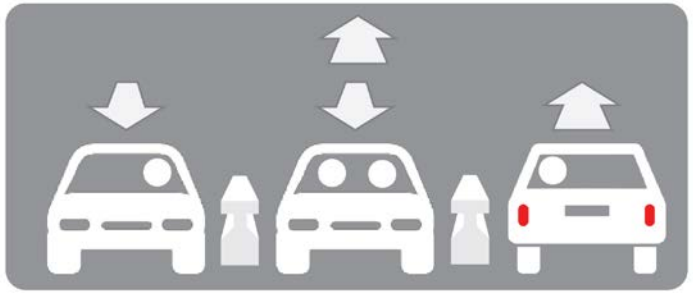
Controls for Slide Gate on Pipe through Levee

Outlet Pipes from Pump Station to Pond

SEGMENT B INTERIM/CONGESTION RELIEF PROJECT: SR 121 TO MARE ISLAND (DELIVER IN 7 YEARS)

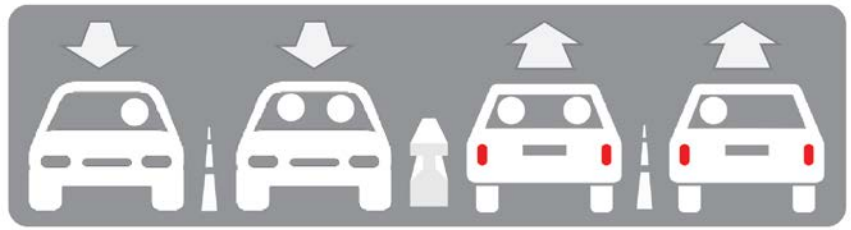
Existing 2-Lane Segment B

Option 1: 3-Lane Contra-Flow with Moveable Median Barriers



Golden Gate Bridge Example

Option 2: 4-Lane Highway (requires mitigation for bike access)



Richmond-San Rafael Bridge Example

Cost Range: $100M to $150M

SEGMENT C RECENT AND ON-GOING EFFORTS (FAIRGROUNDS DRIVE)

FOUR DISTINCT BUT COORDINATED EFFORTS

1. **SolanoExpress Bus Stops ($1.5M)**
   - Opened on July 1, 2019
   - Coordinates with opening of SolanoExpress RedLine

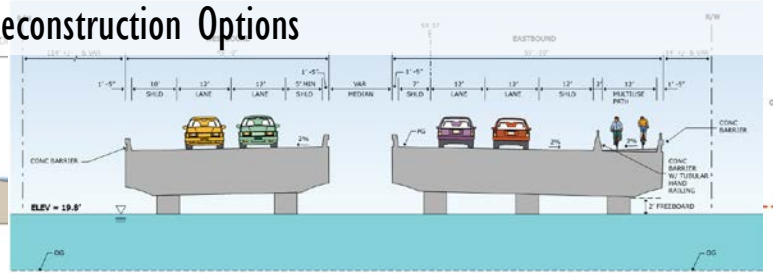
2. **Pedestrian Safety Improvements ($750k)**
   - Currently In Design, CON in early 2020

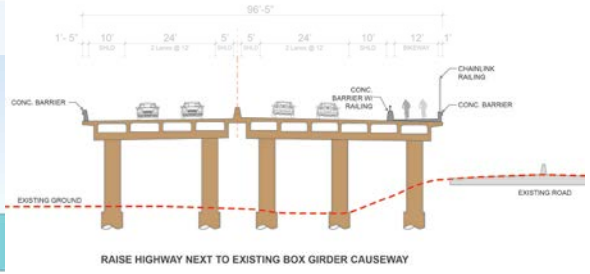
3. **Interchange Expansion ($24.5M)**
   - Currently In Design, CON in 2021

4. **Fairgrounds Dr Parking Demand Study**
   - Part of Countywide study
   - Complete by December 2019
   - Park & Ride Lot planned for future development

SR 37 CORRIDOR SEA LEVEL RISE ADAPTATION PROJECT (ULTIMATE LONG-TERM, DELIVER IN 15-20 YEARS)

Reconstruction Options





THE ULTIMATE SR 37 PROJECT WILL BE DESIGNED TO ACCOMMODATE YEAR 2100 SEA LEVEL RISE SCENARIO PLUS A 100-YEAR STORM SURGE EVENT

MHHW + 66” SLR

MHHW + 36” SLR

Existing MHHW

Design elevation also needs to accommodate for a 100-Year storm in addition to the projected sea level rise.

Note: Schematic not drawn to scale.
MHHW: Mean Higher High Water

SEGMENT A ULTIMATE SLR ADAPTATION PROJECT

Alt. 1: Elevated Structure Design

Alt. 2: Hybrid Design

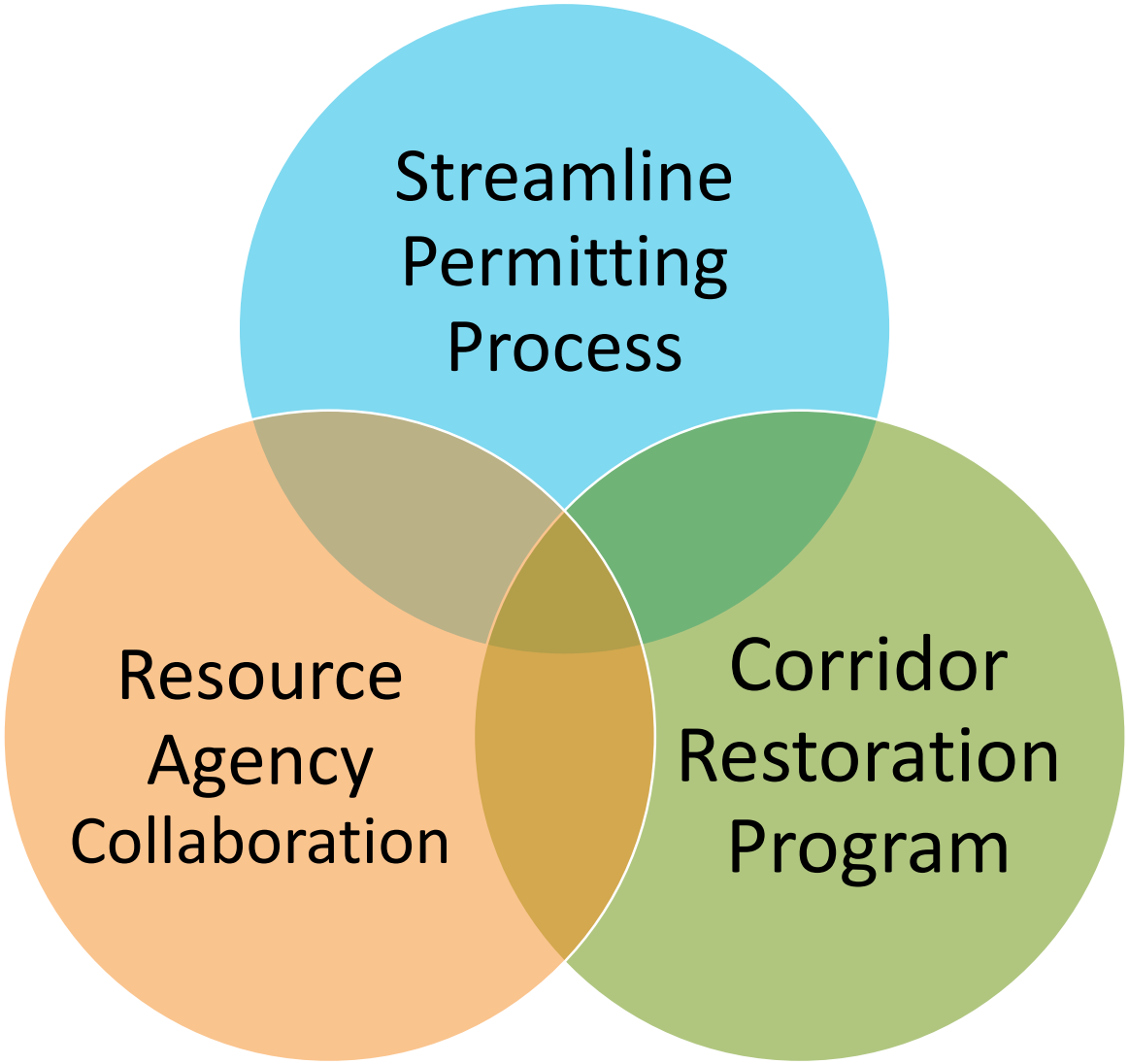
- Caltrans approved a Project Initiation Report (PIR) for Segment A1 that addresses recurring flooding and sea level rise (May 2019)
- TAM's conceptual plans on Segment A (A1 & A2) focuses on causeway designs to address flooding and sea level rise (2018)
- Marin County Public Works and TAM are investigating options to protect SR 37 with SB 1 Adaptation planning funds (underway since 2018)
- MTC, SCTA and TAM will conduct environmental stakeholder and public outreach on design options for Segment A with SB-1 Adaptation planning funds (coming soon)

Source: HNTB, 2018

SEGMENT B ULTIMATE SLR ADAPTATION PROJECT – ALTERNATIVES ASSESSMENT SUMMARY

Alternatives	1. Current Alignment Hybrid Existing	2. Current Alignment Causeway	3. Northern Alignment	4. Southern Alignment1 (Shoreline)	5. Southern Alignment 2 (San Pablo Bay)
Key Takeaways	• Lowest travel times for Segment B, no increase in daily VMT • Less right of way (ROW) acquisition • Similar GHG emissions compared to existing • Hybrid results in greater biological resources and hydrology impacts • Minimizes impacts to existing land uses • Favored by focus groups		• Longest travel times, increase in daily VMT • Highest ROW acquisition • Avoids coastal areas, but transects more habitats • Potential impacts to cultural resources • Potential to induce growth • Decreases public access • Disliked by focus groups	• Impacts similar to Hybrid Existing and Causeway Existing • Impacts primarily offshore habitats • Decreases public access • Disliked by focus groups	• Lowest travel times for entire corridor • Results in induced demand • High right of way acquisition • Impacts offshore habitats • Potential land use conflicts • Decreases public access • Mixed results from focus groups
ROW Acquisition (acres)	163	113	428	147	264
Total Cost (2018$)	$2.4B	$2.9B	$3.3B	$2.9B	$3.3B

INTEGRATE, DON'T MITIGATE

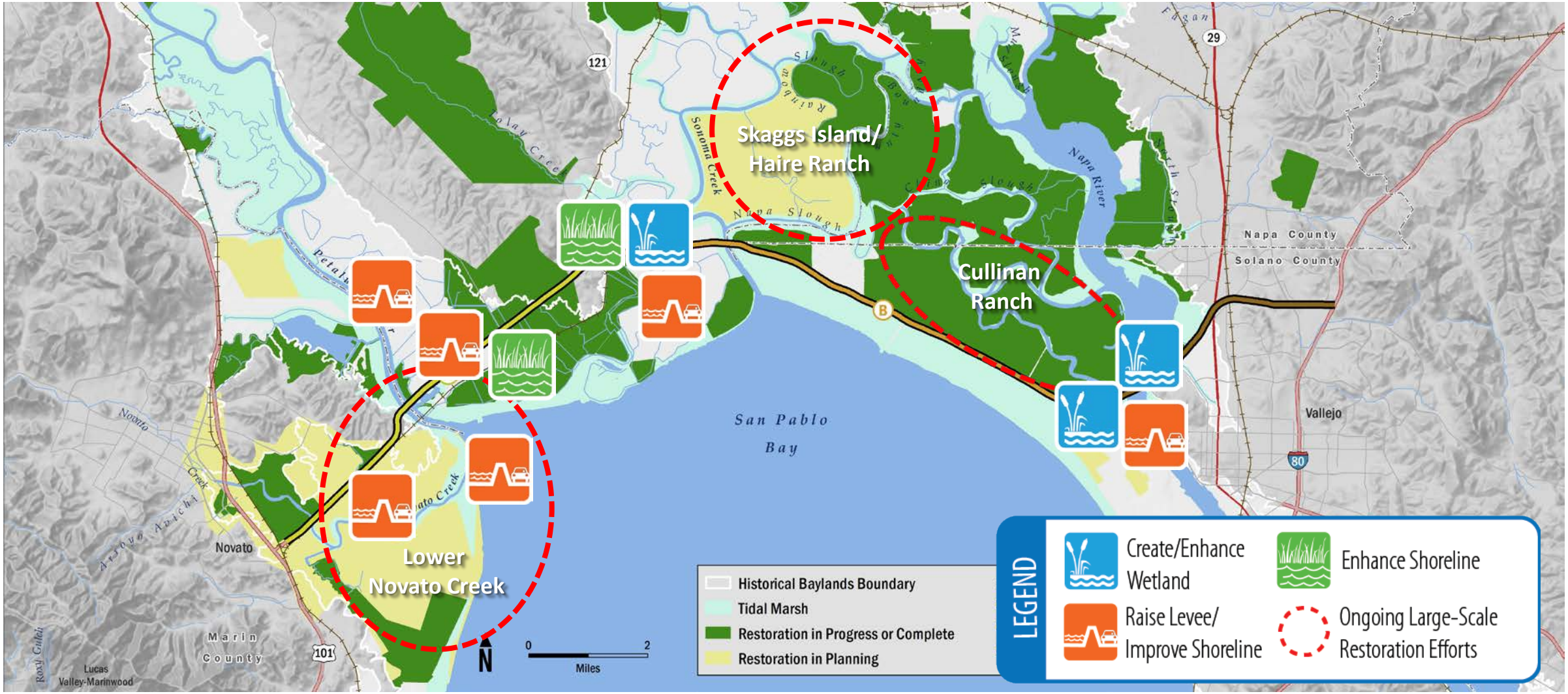


Bay Restoration Regulatory Integration Team (BRRIT)

Assembly Bill 1282 Transportation Permitting Task Force

Regional Advanced Mitigation Program (RAMP)

COLLABORATE WITH RESOURCE AGENCIES AND CONSERVATION ORGANIZATIONS TO FULLY IMPLEMENT LANDSCAPE-SCALE RESTORATION EFFORTS ALONG SR 37 CORRIDOR



ADDITIONAL TARGETED, SMALLER SCALE ECOLOGICAL ENHANCEMENT OPPORTUNITIES

- There are a number of smaller scale, targeted ecological enhancement opportunities along the SR 37 corridor
- These enhancements could help mitigate near-term impacts and facilitate long-term ecological and hydrological goals

Enhance Shoreline

Pilot living shoreline projects along Tolay Creek

Enhance Wetlands

Improve drainage of strip marsh south of SR 37

Create Wetlands

Remove debris and regrade upland on Mare Island north of SR 37

Improve Access

Improve public access at Sears Point and Tolay Creek

Improve Connectivity

Improve tidal exchange upstream of Tolay Creek Bridge

SR 37 HAS $100 MILLION IN REGIONAL MEASURE 3

On November 8, 2018, the SR 37 Policy Committee Agreed to the SR 37 Funding Plan:

Sponsor	Amount	Description
STA	$15 M	Segment C – Fairgrounds Interchange
SCTA	$20 M	Interim/Congestion Relief Segment B
SCTA	$4 M	PA&ED for SR 37/SR 121 Intersection Improvements
TAM	$3 M	Segments A1 and A2 Levee Study
SCTA/TAM	$58 M	Segments A & B Ultimate Improvements

RESILIENT SR 37 PROGRAM – PHASED IMPLEMENTATION

CONCURRENT PROJECT DEVELOPMENT. DELIVER EARLY COMMUNITY BENEFITS.

- SR 37 Flood Protection Project (US 101 – Lakeville Hwy)
  - Early Ecological Enhancements
  - Reliability of people and goods movements
- SR 37 Congestion Relief Project (SR 121 – Mare Island)
  - Early Ecological Enhancements
  - Reimagine Transit With Emerging Technology

Environmental - Design - Construction

Early Benefits

Transition

- SR 37 Corridor SLR Adaptation Project (I-80 – US 101)
- Bike/Pedestrian/Public Access
- Reimagine Transit With Tomorrow's Technology

Environmental - Design - Construction

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Today

2025

2040

2050

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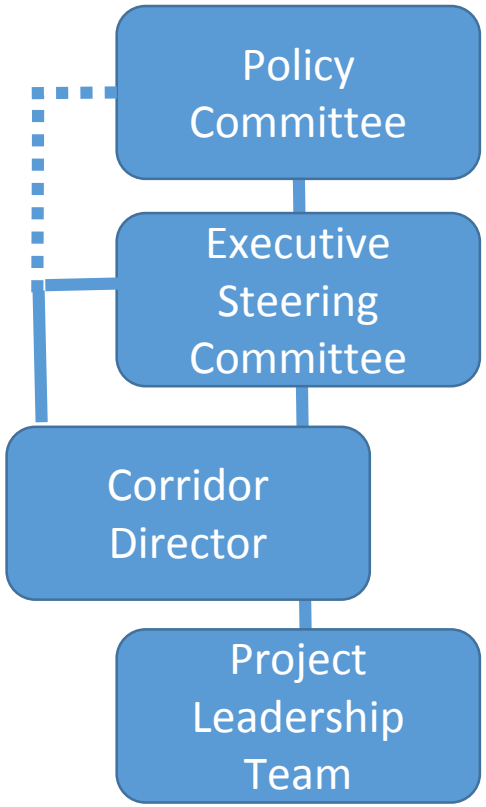
RESILIENT SR 37 PROGRAM MOU (FEBRUARY 2019)

Organization Chart

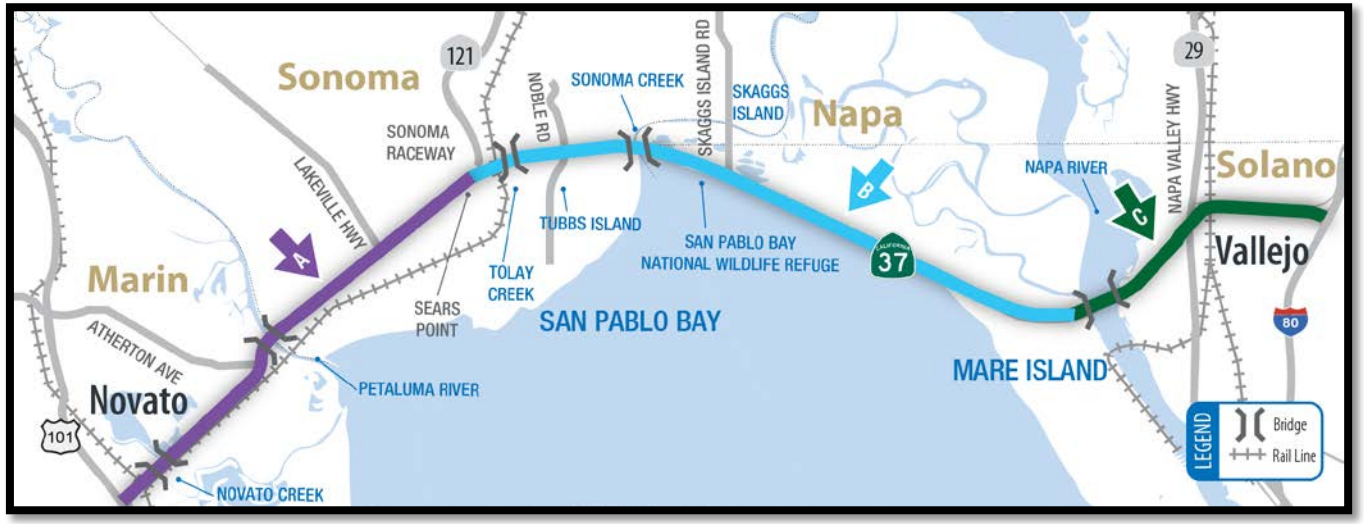


Assignments

- **Segment A (US 101 – SR 121)**
- **Segment B (Sears Point – SR 121)**
- **Segment C (Mare Island – I-80)**

Legislation

Seek legislation for the segment of SR 37 from Sears Point to Mare Island to become a State-owned bridge, joining the toll bridge financial enterprise administered by BATA



AB 1282 TASK FORCE: OPPORTUNITY FOR SR 37 RESILIENT CORRIDOR PROGRAM

to DEVELOP A COMPREHENSIVE CORRIDOR RESTORATION PROCESS to achieve common goal

Early Engagement in

- NEPA 404 (Purpose & Need)
- Scope, Design Concept, & Schedule
- Stakeholder Identification
- Restoration Opportunity

Streamlining of

- Permitting Schedule
  - Sequencing/ Phasing
  - Permitting Timelines
- Parallel Permitting Opportunities (State and Federal Processes)
- Dashboard/ Tracking Tool

Certainty in

- Availability of a dedicated staff with decision making authority
- Risk Identification & Assessment
- Mitigation & Restoration (Type, Ratios)
- Communication Ladder
- Conflict Resolution Process

Partnering Agreements (Charter, MOU)