Integrating transportation, ecology, and sea level rise adaptation into a more resilient SR 37
100 MINUTES TO TRAVEL HOME TO SOLANO CO. EVERY DAY

Source: Kimley-Horn, 2017
6 KNOWN WEAK LINKS, SOME FLOODED IN 2017 STORMS

Weak Links

Spring 2017 Floods

Source: AECOM, 2017
30 YEARS FROM TODAY SEA LEVEL RISE WILL INUNDATE SR 37

Source: UC Davis, AECOM, 2015
9 SPECIAL-STATUS SPECIES, PACIFIC FLYWAY AND MANY ACRES OF WETLANDS AND BAYLANDS

Image Sources: Various 2018
MODEL PROGRAM
SAN DIEGO’S I-5 NORTH COAST CORRIDOR PROGRAM

$6B over 40 Years
TransNet 1/2-cent sales tax + federal/state/local funds
PROGRAM PURPOSE

Deliver a Corridor Program that Results in Community Benefits for All

- **Sea Level Rise Adaptation**: Improve resiliency of transportation infrastructure to sea level rise and flooding
- **Transportation**: Improve traffic flow and peak travel times by relieving congestion and increasing person throughput
- **Equity**: Enhance the quality of life for residents and build stronger local and regional economy for all
- **Ecology**: Restore ecological and hydrologic flows to enhance productivity of wetlands and Baylands
- **Public Access**: Provide accommodation for multimodal use and facilitate public access to natural resources
<table>
<thead>
<tr>
<th>Highway</th>
<th>Transit</th>
<th>Environment</th>
<th>Bike/Ped &amp; Public Access</th>
<th>Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapt SR 37 from I-80 to US 101 to Sea Level Rise</td>
<td>Microtransit service</td>
<td>Advanced mitigation and enhancements</td>
<td>Shared use path</td>
<td>Means-based transit fare</td>
</tr>
<tr>
<td>Relieve congestion between Mare Island I/C and SR 121, including near-term operational improvements at SR 121 and Mare Island interchange</td>
<td>Regional express bus service between Vallejo and Novato, including support strategies (commuter parking, etc.)</td>
<td>Land acquisition for corridor restoration</td>
<td>Public access improvements to open space preserves, public viewing areas, trailhead, etc.</td>
<td>Means-based tolls</td>
</tr>
<tr>
<td>Interchange Improvements: Lakeville Highway, SR 121, Mare Island, Atherton, &amp; Fairgrounds</td>
<td>SMART rail service</td>
<td>Targeted, smaller scale ecological enhancements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade separation with SMART rail crossing east of SR 121</td>
<td></td>
<td>Larger landscape-scale restoration</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
UPFRONT MITIGATION: REGIONAL ADVANCE MITIGATION PLANNING (RAMP)

- Balances needs of transportation and conservation to maximize benefits
- Comprehensive planning framework to mitigating unavoidable biological resource impacts potentially caused by infrastructure projects
- Allows for natural resources to be protected/restored as compensatory mitigation before infrastructure projects are constructed
- Bay Area Regional Advance Mitigation Planning Program
  - MTC and SCC launched 2015 effort to scope and implement RAMP for the Bay Area (Plan Bay Area 2040)
  - Could be expanded to include SR 37 Resilient Corridor Program
- Stand-alone SR 37 Resilient Corridor RAMP and RCIS Program
CA DEPT. OF FISH & WILDLIFE’S (CDFW) RCIS PROGRAM – GETTING CREDIT FOR RAMP

• CDFW’s Regional Conservation Investment Strategy (RCIS) Program supports RAMP by facilitating development of mitigation credits:
  • contribute to regional conservation priorities
  • provide advance mitigation for entities that require compensatory mitigation

• Voluntary, non-regulatory regional planning process

• Establishes biological goals and objectives and describes conservation actions and habitat enhancements
  • Land acquisition & protection
  • Restoration of creeks & rivers
  • Habitat creation & restoration (including on public land
  • Wildlife crossings and fish passage barrier removal

Implementing RAMP & establishing an RCIS program for the SR 37 Resilient Corridor = huge benefits to transportation project cost, implementation, and conservation of marshlands!
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
SEGMENT B CONGESTION RELIEF PROJECT (INTERIM)

Managed Lane Options:
- Contraflow Lane
- Shoulder Running Lane

LEGEND
- 3 or 4-Lane
- HOV/Managed Lane
- ITS Improvements
- Intersection Improvements
- Extend Lane Drop
- Park and Ride
- Ramp Metering

CORRIDOR WIDE
- New Bus Service

Sonoma
- SONOMA RACEWAY
- MOUNTAIN VIEW RD
- SKAGGS ISLAND RD

Napa
- SONOMA CREEK
- SKAGGS ISLAND
- TUBBS ISLAND

Marin
- LAKEVILLE HWY
- ATHERTON AVE
- NOVATO CREEK

Novato
- SEARS POINT
- PETALUMA RIVER

San Pablo Bay
- TOLAY CREEK
- NATIONAL WILDLIFE REFUGE

Mare Island
- NAPA VALLEY HWY
- SOLANO VALLEY HWY

ResilientSR37
NEAR-TERM OPERATIONAL EFFICIENCY IMPROVEMENTS (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 B CONGESTION RELIEF PROJECT
OPTION A: 3-LANE CONTRA-FLOW WITH MMB

- Standard geometry
- Limited widening
- Widening of Bridges: Tolay Creek Bridge
SEGMENT B CONGESTION RELIEF PROJECT
OPTION B: SHOULDER RUNNING LANES

- Standard Lane width
- No Shoulders during Peak Period
- 12’ outside shoulder and No Inside Shoulder during Non-Peak Periods
- Widening of Tolay Creek Bridge
- Need mitigation for bicycles during Peak Periods
## Delivery of Segment B Congestion Relief Project

<table>
<thead>
<tr>
<th>Phase</th>
<th>Draft Estimated Completion Date</th>
<th>Draft Estimated Cost</th>
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</thead>
<tbody>
<tr>
<td>Project Approval &amp; Environmental Document (PA&amp;ED)</td>
<td>2022</td>
<td>$8M</td>
</tr>
<tr>
<td>Final Design (PS&amp;E)</td>
<td>2022</td>
<td>$12M</td>
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<tr>
<td>Right-of-Way (ROW)</td>
<td>N/A (Within Existing ROW)</td>
<td></td>
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<tr>
<td>Construction</td>
<td>Late 2025</td>
<td>$80M to $130M</td>
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</table>

**Total** 7 Years  $100M - $150M

Costs shown in 2018 $ for alternatives on existing alignment. Schedule assumes environmental phase to start in early 2019.
INVESTING ON SEGMENT B CONGESTION RELIEF PROJECT UPFRONT PROVIDES SIGNIFICANT BENEFITS — THERE IS NO “THROW-AWAY” COST

Reduce Congested Travel Times

- Eastbound PM: from 100 minutes to 24 minutes
- Westbound AM: from 47 minutes to 23 minutes

User Benefits from Delay Time Saved

- Existing Conditions (2017): $39 mil Annually
- Projected 2022 Conditions: $69 mil Annually
SR 37 Corridor Sea Level Rise Adaptation Project (Ultimate)
TAM is working on a funded Phase 1 study of Sea level Rise impacts on Segment A1. Phase 2 of that study will look at levee protection alternatives in Segments A1 and A2. This work will be used for possible interim improvements as well as in the ultimate project (A+B) CEQA/NEPA phase.
DESIGN ALTERNATIVES FOR SEGMENT B SLR ADAPTATION PROJECT

Alt 1: 4-Lane Highway:
Combination of Causeway and Embankment Adjacent to Existing Roadway

Alt 2: 4-Lane Causeway:
Adjacent to Existing Roadway

Alt 3: 4-Lane Highway near SMART (Northern Alignment)
Uses Land Along Future SMART Route

Alt 4 & 5: 4-Lane Causeway in the Bay (Southern Alignments 1 & 2)
Connecting Mare Island and US 101 or SR 37 (SR 37 maintained as is)

Source: MIG, 2018
### SEGMENT B SLR ADAPTATION PROJECT — ALTERNATIVES ASSESSMENT SUMMARY

|--------------|------------------------------------|-------------------------------|----------------------|------------------------------------|--------------------------------------|
| **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 |

<table>
<thead>
<tr>
<th>ROW Acquisition (acres)</th>
<th>163</th>
<th>113</th>
<th>428</th>
<th>147</th>
<th>264</th>
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<tbody>
<tr>
<td>Total Cost (2018$)</td>
<td>$2.4B</td>
<td>$2.9B</td>
<td>$3.3B</td>
<td>$2.9B</td>
<td>$3.3B</td>
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</table>
## Segment B SLR Adaptation Project — Alternatives Assessment Summary

<table>
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</thead>
<tbody>
<tr>
<td>Right of Way</td>
<td>![Orange]</td>
<td>![Red]</td>
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<td>GHGs</td>
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<tr>
<td>Land Use/Community</td>
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<td>![Red]</td>
<td>![Green]</td>
<td>![Green]</td>
</tr>
</tbody>
</table>

Draft results only, subject to further refinement.

**Legend:**

- **Net benefit or minimal impact**
- **Moderate but mitigatable / avoidable impact**
- **Moderate to significant impact**
- **Notable or significant impact**
MANY VISIONS OF MULTIMODAL PUBLIC ACCESS CONCEPTS

by RBD Team Common Ground
MEANS-BASED FARES AND TOLLS
EQUITABLE ACCESS FOR ALL.

MTC Regional Means-Based Transit Fare Pricing Study Objectives:

• Make transit more affordable
• More consistent regional standard for fare discount policies
• Solutions that are financially viable and administratively feasible
BREAK THE PROJECT DELIVERY PARADIGM

FORGE ATYPICAL PARTNERSHIPS. LEVERAGE FUNDING. ACCELERATE DELIVERY.

Environmental Conservation
Permits/Regulations
Transportation

Regional Measure 3
Coastal Conservancy
SAN FRANCISCO ESTUARY PARTNERSHIP
Sonoma Land Trust
Leonardo DiCaprio Foundation
BCDC
United States Environmental Protection Agency
YES on AA
Clean and Healthy Bay
LEGISLATION
BALANCE OF HIGHWAY, TRANSIT & ENVIRONMENT. PERMITTING. COMMITMENT. TOLLING.

SAN DIEGO

- SB 468 (Kehoe) ensures coastal resources are as important as transportation solutions
  - Assures transit/highway/environmental solutions are balanced
  - Coastal permitting framework
  - “In/Out Once” construction methodology for lagoons
  - Implements Checks and Balances

- AB 1282 (Mullin) Transportation Permitting Task Force
  - Facilitate and formalize collaboration among the parties
  - Ensure timely development of beneficial transportation improvements while also protecting the State’s environment and its natural, historic and cultural resources
  - Recognize priorities of livable communities, environmental justice, regional planning, resource conservation, and environmental protection

BAY AREA

- SB 468 (Kehoe)
- AB 1282 (Mullin)
- Implement Tolling on SR 37
  - BATA Toll Bridge
  - One-Way or Two-Way Tolling
SR 37 RESILIENT CORRIDOR PROGRAM — PHASED IMPLEMENTATION
Concurrent Project Development. Deliver Early Community Benefits.

- SR 37 Congestion Relief Project (SR 121 – Mare Island)
- Ecological Enhancements
- Bus Transit
  Environmental - Design - Construction

- SR 37 Corridor SLR Adaptation Project (I-80 – US 101)
- Bike/Pedestrian/Public Access
- Rail Transit (Funded and Delivered Independently by SMART)
  Environmental - Design - Construction

Today  2025  2040  2050
SR 37 RESILIENT CORRIDOR PROGRAM — RECOMMENDATIONS FOR ACTION

• Integrated Delivery Team
• Segment B Congestion Relief Project Environmental & Design
• Near-Term SHOPP Projects*
• Segment A Project Initiation Document*
• SR 37 Corridor SLR Adaptation Environmental*
• SHOPP Project Components

• Legislation
• Shoreline Evaluation & Implementation

• Segment B Congestion Relief Project Construction
• Secure Funding and Finance Plan for SR 37 Corridor SLR Adaptation Project

(*include shoreline alternatives where possible)