PROGRESS FROM ASSESSMENT TO ACTION

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SCOE- SCOD Joint Meeting - Des Moines, Iowa July 2017
California State Activities

Caltrans Activities

Project Example
Governor Brown Signs Executive Order B-30-15

“State agencies shall take climate change into account in their planning and investment decisions, and employ full life-cycle cost accounting to evaluate and compare infrastructure investments and alternatives”
GHG Reduction

**Senate Bill 32** (2016) California Global Warming Solutions Act of 2006:
- Adds mid term GHG reduction target of 40% below 2020 level by 2030.

Adaptation

**Assembly Bill 2800** (2016)
- Climate Safe Infrastructure Working Group

**Senate Bill 1** (2017) - Transportation Funding with performance measures to ensure climate change considerations are included in infrastructure investments.

**Update to Sea Level Rise Science/Projections**
- Update to Statewide Sea Level Rise guidance

**Safeguarding California** - Update 2017 with Implementation Action Plans
### Table 3. Probability that sea-level rise at Crescent City will meet or exceed a particular height (feet) in a given year under: (a) RCP 8.5, and (b) RCP 2.6.

 Estimates are based on Kopp et al., 2014. All heights are with respect to a 1991-2009 baseline; values refer to a 19-year average centered on the specified year. Grey shaded areas have less than a 0.1% probability of occurrence.

#### (c) La Jolla

<table>
<thead>
<tr>
<th>Year / Percentile</th>
<th>Median (mm/yr)</th>
<th>Likely Range</th>
<th>1-in-20 Chance (%)</th>
<th>1-in-200 Chance (%)</th>
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</thead>
<tbody>
<tr>
<td>2010-2030</td>
<td>5.1</td>
<td>4.1 - 6.2</td>
<td>7.1</td>
<td>9.1</td>
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<tr>
<td>2050-2050 (RCP 2.6)</td>
<td>5.4</td>
<td>3.6 - 7.6</td>
<td>9.7</td>
<td>16</td>
</tr>
<tr>
<td>2050-2050 (RCP 4.5)</td>
<td>6.2</td>
<td>4.5 - 8.3</td>
<td>10.2</td>
<td>15</td>
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<tr>
<td>2050-2050 (RCP 8.5)</td>
<td>7.2</td>
<td>5.1 - 9.6</td>
<td>12</td>
<td>18</td>
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<tr>
<td>2050-2050 (H++)</td>
<td>26</td>
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<td></td>
<td></td>
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<tr>
<td>2080-2100 (RCP 2.6)</td>
<td>5.3</td>
<td>2.4 - 9.2</td>
<td>14</td>
<td>28</td>
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<tr>
<td>2080-2100 (RCP 4.5)</td>
<td>6.7</td>
<td>3.3 - 11</td>
<td>16</td>
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<td>6.5 - 17</td>
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<td>2080-2100 (H++)</td>
<td>54</td>
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CALTRANS ACTIVITIES

• Statewide Vulnerability Assessments
• Strategic Management Plan
• Asset Management / SHOPP tool
• Transportation Planning Scoping Information Sheet
  • (Early Project Nomination)
• Project Initiation Documents (PID)
• Highway Design Manual Updates
  • Incorporating concepts from FHWA Highway Engineering Circulars (HEC 17, HEC 25)
• Environmental Analysis/ Document: California Environmental Quality Act (CEQA)
CASE STUDY: RESILIENT TRANSPORTATION
CALTRANS SEA LEVEL RISE ADAPTATION EFFORTS
STATE ROUTE 37

Early planning with stakeholders

Incorporating findings in Transportation Concept Report

Developing /analyzing design solutions
· Planning Study

Looked at several different Adaptive Structure Designs

Provided cost estimates for potential designs

Included context discussion of accommodating tides, transit and access
TABLE 1: SR 37 CORRIDOR CONCEPT AND STRATEGIES TO ACHIEVE CONCEPT

<table>
<thead>
<tr>
<th>SEG</th>
<th>DESCRIPTION</th>
<th>EXISTING FACILITY</th>
<th>20-25 YEAR FACILITY CONCEPT</th>
<th>LONG-TERM CONCEPT AND STRATEGIES</th>
</tr>
</thead>
</table>
| A   | US 101 (NOVATO) IN MARIN COUNTY TO SR 121 (SEARS POINT) IN SONOMA COUNTY | 4E* | 4E* | • MAINTAIN FACILITY  
• ELEVATE ROADWAY TO PROTECT FACILITY FROM SEA LEVEL RISE AND FLOODING  
• BUILD FACILITY TO MAXIMIZE BENEFITS TO MARSHLAND RESTORATION  
• PROVIDE CONTINUOUS BIKE FACILITIES  
• MULTI-MODAL SERVICES  
• ADD MARSHLANDS ACCESS POINTS  
• PROTECT ROADWAY FROM PROJECTED RISING SEAS LEVELS AND FLOODING (STUDY WIDENING OPTIONS: MIXED/LOW/TRANSIST/HOT)  
• BUILD FACILITY TO MAXIMIZE BENEFITS TO MARSHLAND RESTORATION  
• CONTINUOUS BIKE FACILITIES AND CONNECTIONS (SUPPORT DEVELOPMENT OF THE BAY TRAIL)  
• MULTI-MODAL ACCOMMODATION  
• ITS INFRASTRUCTURE  
• FERRY SERVICE VALLEJO TO LARKSPUR |
| B   | SR 121 (SEARS POINT) IN SONOMA COUNTY TO MARE ISLAND (VALLEJO) IN SOLANO COUNTY | 2C* | 4C OR E* | • ELEVATE ROADWAY TO PROTECT FACILITY FROM FLOODING AND WIDEN TO 4 Lanes (STUDY WIDENING OPTIONS: MIXED/FLOW/TRANSIST/HOT)  
• BUILD FACILITY TO MAXIMIZE BENEFITS TO MARSHLAND RESTORATION  
• PROVIDE CONTINUOUS BIKE FACILITIES  
• MULTI-MODAL SERVICES  
• IMPROVED ACCESS TO WETLANDS |
| C   | MARE ISLAND TO I-80 INTERCHANGE IN SOLANO COUNTY | 4F* | 4F* | • MAINTAIN FACILITY  
• IMPROVE BIKE FACILITIES AND CONNECTIONS |
COORDINATE WITH PARTNER AGENCIES AND STAKEHOLDERS

- Federal Highway Administration
- The National Cooperative Highway Research Board
- California Transportation Agency
- California Natural Resources Agency
- California Coastal Commission
- California Energy Commission
- The Nature Conservancy
- Metropolitan Planning Organizations
- Regional Transportation Planning Agencies
- Cities
- Counties
- Residents
- Agricultural landowners
- Research Institutions (California and Internationally)
- Homeowners
• Highway 37 Stewardship Study: http://hwy37.ucdavis.edu/project/highway-37-stewardship-study
• Cal-Adapt Sea Level Rise Viewer: http://cal-adapt.org/sealevel/
Thank you

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