

Caltrans Climate Change Adaptation

Climate Change Branch
Division of Transportation Planning
Department of Transportation (Caltrans)



California's Diverse Landscape

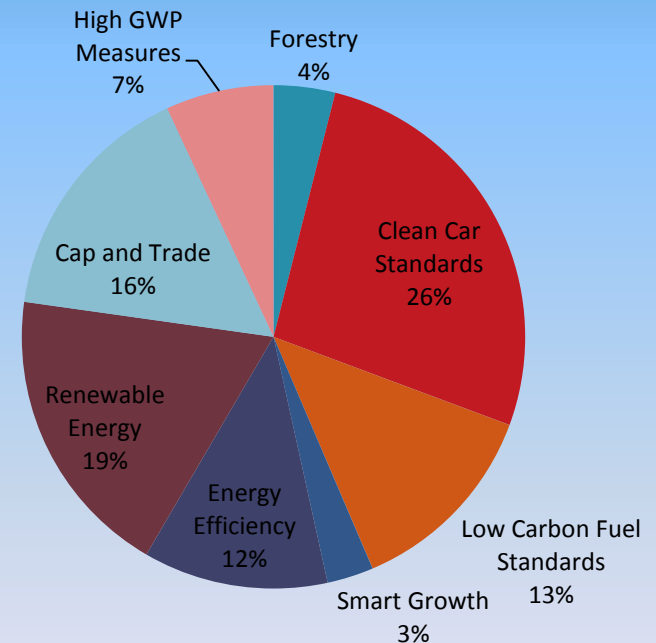
- North to South, California extends nearly 800 miles
- Local climates are very diverse, from temperate rainforests in the North to arid deserts in the South
- Within 80 miles of one another lie the highest and lowest points in the lower 48 states – Mount Whitney at 14,495 ft. and Death Valley at 282 ft. below sea level



California Climate Change Legislation

- Assembly Bill 32 (AB32) – The Global Warming Solutions Act of 2006
 - Requires reductions of GHG emissions to 1990 levels by 2020
- Senate Bill 375 (SB375)
 - Enhances California's ability to reach our AB 32 goals by promoting good land use and transportation planning with the goal of more sustainable communities

AB 32 Emission Reduction Strategies
(Measure, Percent of Total) Source: CARB

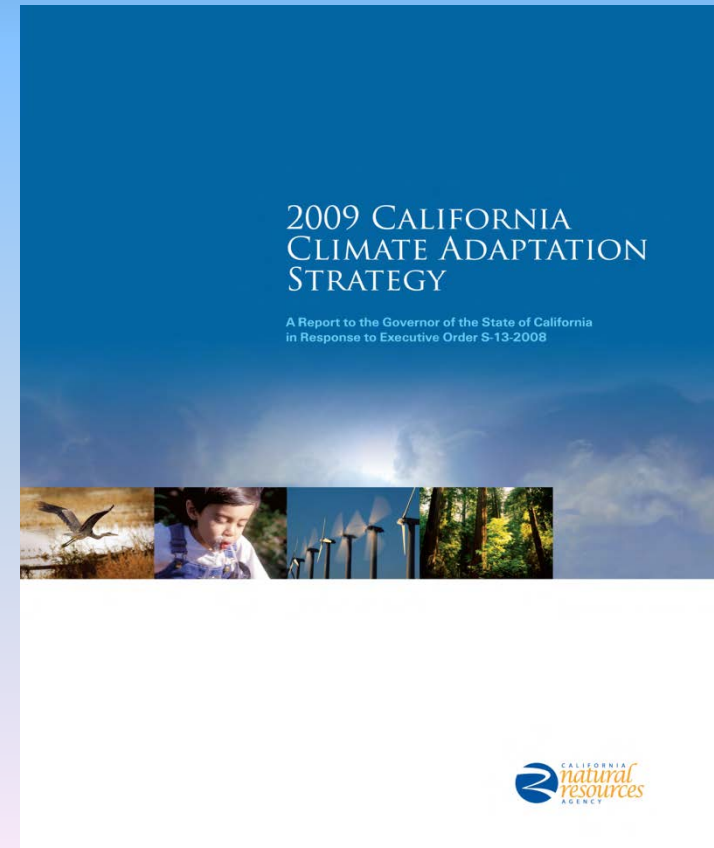


California Regional Planning Partners



California's Executive Order to Address Sea Level Rise

- Executive Order S-13-08 (EO S-13-08) Identify and prepare for expected sea level rise impacts
 - Requires a sea level rise assessment be prepared by the National Academies of Sciences – currently underway, estimated completion date June 2012.
 - Also required the development of adaptation strategies document



Sea Level Rise



California has coastal routes along the entire coast of the state



California state route 1 beach buildup



San Francisco Airport 1 meter SLR

Sea Level Rise Guidance

CALIFORNIA DEPARTMENT OF TRANSPORTATION

Guidance on Incorporating Sea Level Rise

For use in the planning and development of
Project Initiation Documents

Prepared by the Climate Change Workgroup, and the HQ Divisions of Transportation Planning,
Design, and Environmental Analysis

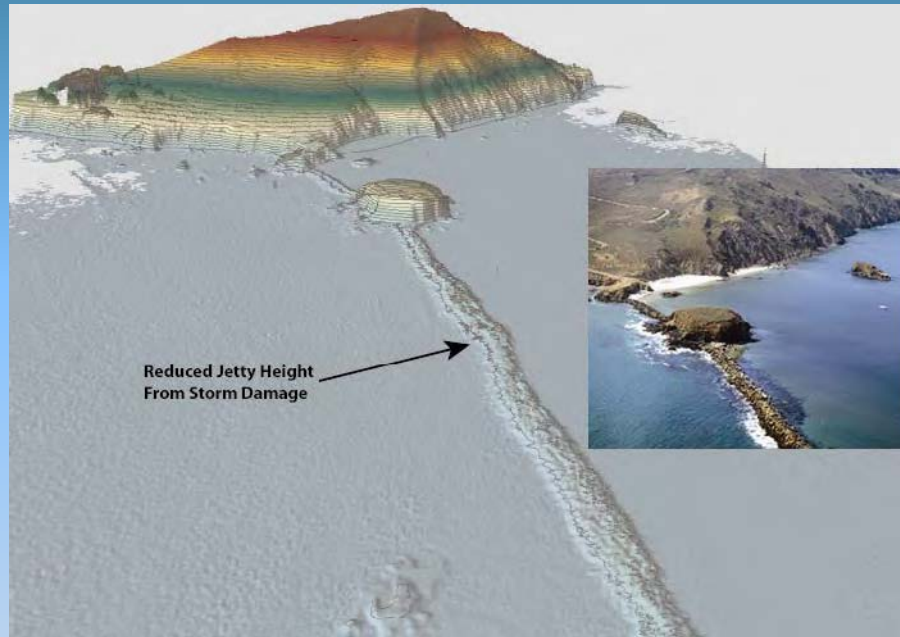
March 28, 2011

This guidance is for use by Caltrans Planning staff and Project Development Teams to determine whether and how to incorporate sea level rise concerns into the programming and design of Department projects. Because of the evolving nature of climate change science and modeling, this guidance is subject to revision as additional information becomes available.

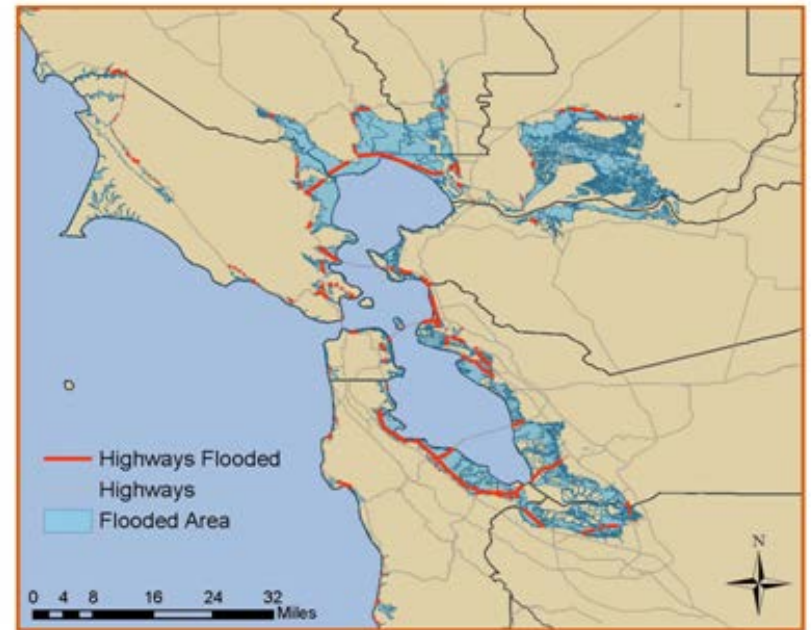


Year		Average of Models	Range of Models
2030		7 in (18 cm)	5-8 in (13-21 cm)
2050		14 in (36 cm)	10-17 in (26-43 cm)
2070	Low	23 in (59 cm)	17-27 in (43-70 cm)
	Medium	24 in (62 cm)	18-29 in (46-74 cm)
	High	27 in (69 cm)	20-32 in (51-81 cm)
2100	Low	40 in (101 cm)	31-50 in (78-128 cm)
	Medium	47 in (121 cm)	37-60 in (95-152 cm)
	High	55 in (140 cm)	43-69 in (110-176 cm)

Climate Change Adaptation Hot Spot Map



Using high-resolution elevation data, we are mapping the coast of California, highlighting infrastructure vulnerable to sea level rise impacts



Changing Precipitation Patterns – Flooding and Landslides



Interstate 505 flood



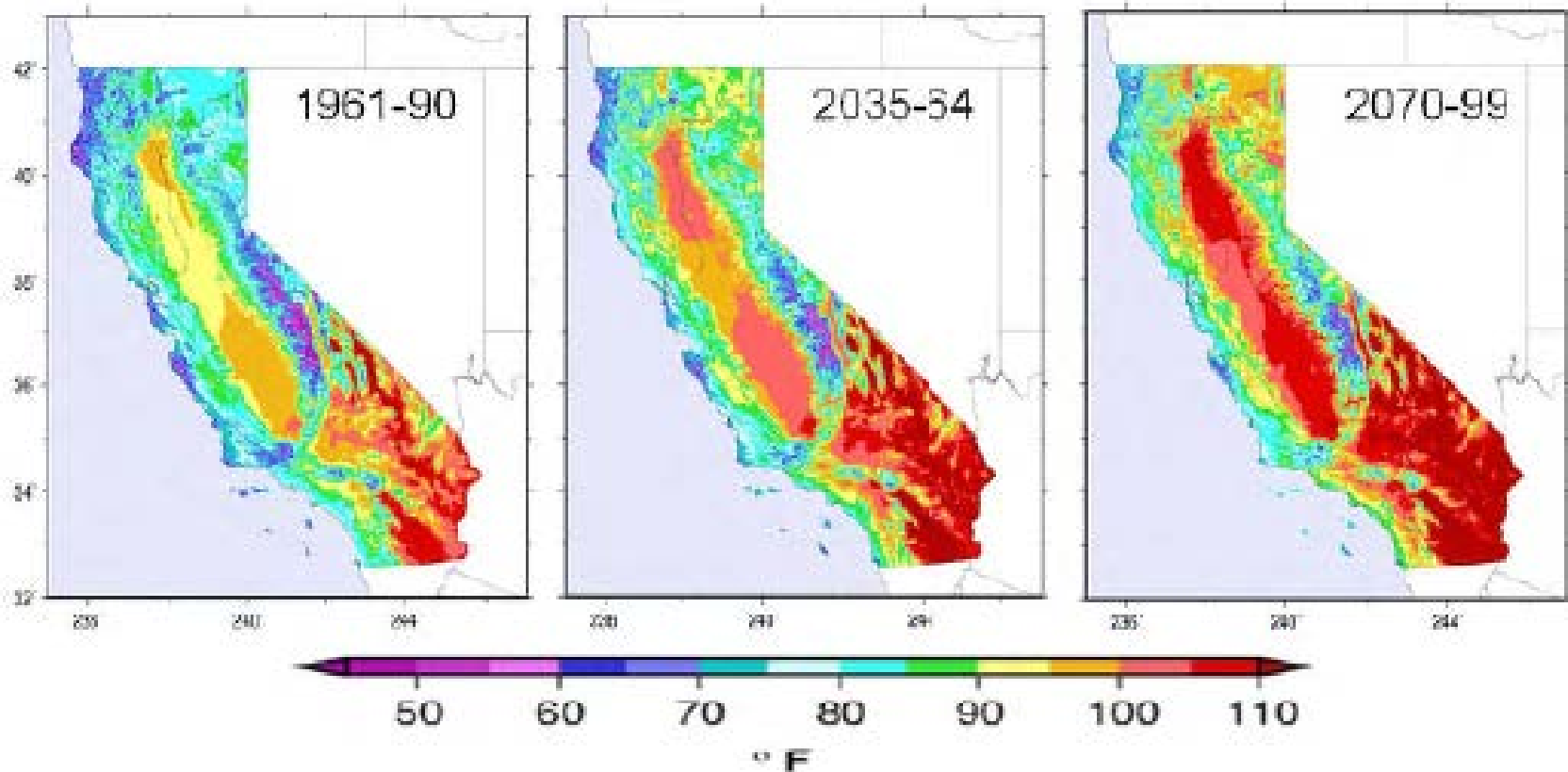
State Route 162



State Route 1

Projected Temperature Increases

Figure 1. California Historical & Projected July Temperature Increase 1961-2099



Source: Dan Cayan et al. 2009.

Addressing Climate Change Adaptation in Long Range Transportation Plans



Photo by D. Revell – 2/23/08



Caltrans activities and efforts to prepare for climate change



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