



# Critical Infrastructure at Risk

## Sea Level Rise Planning Guidance for California's Coastal Zone

Underpinning and supporting widespread enjoyment of the California coast is a system communities could not function without - infrastructure. Coastal and inland governments, businesses, and residents rely on interconnected infrastructure systems for daily work and life.

However, sea level rise (SLR) presents unprecedented challenges that threaten infrastructure and must be met with proactive adaptation.

The goal of this Guidance is to promote resilient coastal infrastructure and protection of coastal resources by providing local governments, asset managers, and other stakeholders with recommendations to inform sea level rise adaptation decisions.

### Sea level rise threatens California's infrastructure.

Consistent with the [SLR Principles for Aligned State Action](#), this Guidance contributes to a statewide effort to address sea level rise and ensure coastal resilience, now and in the future.

Sea level rise can threaten coastal infrastructure via:

- Flooding of highways, roadways, and railways
- Flooding of stormwater and wastewater management systems
- Rising groundwater and saltwater intrusion
- Erosion of shoreline and corrosion of buried infrastructure

### At risk of damage:

Under 1.4m (4.6 ft) of SLR by 2100 (Heberger et al. 2009)

**3,500** miles of road and highways

wastewater treatment plants **28**

**280** miles of railways

billion in property replacement **\$100**

### Covered in this Guidance:

#### Water Infrastructure



- Stormwater
- Wastewater
- Water Supply

#### Transportation Infrastructure



- Highways
- Local Roads
- Railways

### Critical infrastructure requires unique planning.

Critical infrastructure supports lifeline functions and serves the public. Adaptation planning for critical infrastructure is different because components are often a part of an **interconnected system**, **expensive** to build and maintain, have **long lifespans**, and require **lengthy planning and permitting** processes.

This Guidance is advisory and should be treated as a set of policy recommendations and examples that can be adapted to specific jurisdictional and infrastructural contexts.

## Key Recommendations for Adaptation Planning presented in this Guidance



### Coordinated Planning

Support cross-jurisdictional coordination, by engaging with regional climate collaboratives and Joint Powers Authorities; using the Local Coastal Program (LCP) and Public Works Plans (PWP) as tools for coordinated planning; and pursuing funding to support regional coordination.

Address environmental justice at all stages of planning, which includes considering the equitable distribution of benefits and burdens of the project and alternatives, avoiding disproportionate adverse impacts, and prioritizing meaningful involvement and outreach with environmental justice communities.

### Environmental Justice



### Phased Adaptation

Encourage local governments and asset managers to consider phasing adaptation strategies to reduce upfront costs and allow for the planning time needed for development of longer-term adaptation strategies.

Evaluate the costs and benefits of adaptation strategies over the entire life cycle of the infrastructure, assessing both market and non-market values, and pursuing additional federal and state funding for infrastructure adaptation.

### Cost and Funding



### Nature-Based Adaptation Strategies

Encourage local governments and asset managers to prioritize nature-based adaptation strategies in sea level rise adaptation planning efforts and encourage state agencies to work together to strengthen opportunities for using nature-based adaptation strategies.

## Model LCP Policies for Transportation and Water Infrastructure

LCPs should include sea level rise planning strategies that protect public access and other coastal resources while avoiding and minimizing hazards, consistent with the Coastal Act. The model policies provided in the document should be used as a tool to assist local governments in developing their own LCP policies that support sea level rise adaptation in their jurisdictions.

This guidance is currently undergoing public review. Public input will be incorporated into the final draft that goes before the Coastal Commission for possible adoption. To learn more about the Coastal Commission's Sea Level Rise Planning Guidance for California's Coastal Zone, to access the full draft Guidance document, and to learn how to participate in public review, please visit [www.coastal.ca.gov](http://www.coastal.ca.gov).

