Planning for Sea Level Rise in California

The Commission's Sea Level Rise Policy Guidance helps California communities understand future risks from sea level rise and make informed planning decisions. See the full guidance here.

Sea Level Rise is Already Impacting California Communities

Higher water levels increase erosion that threatens coastal bluffs and roads such as West Cliff Drive in Santa Cruz (CA King Tides Project).

Greenhouse gas emissions are warming the planet, causing both seawater to expand and ice sheets and glaciers to melt, and raising sea levels around the world. Along California's coast, sea level has already risen about 8 inches.

Up to 6.6 feet
of potential sea level rise by 2100

As sea levels rise along California's 1,270 miles of coastline, flooding, erosion, and storm impacts will become more frequent and severe. This threatens coastal homes, critical infrastructure, and public access to sandy beaches.

Proactive Planning for Sea Level Rise Has Many Benefits

Planning early helps communities:

- Reduce future costs
- Balance protection of development with protection of coastal resources
- Maintain public beach access and recreation
- Support tribal and environmental justice communities
- Improve long-term resilience

Flooding threatens sandy beaches and homes in Del Mar (CA King Tides Project).

Guiding Principles for Addressing Sea Level Rise in the Coastal Zone

- **Use Best Available Science**
- **Minimize Coastal Hazard Risks**
- **Protect Public Access**
- **Engage Communities**
- **Advance Environmental Justice**

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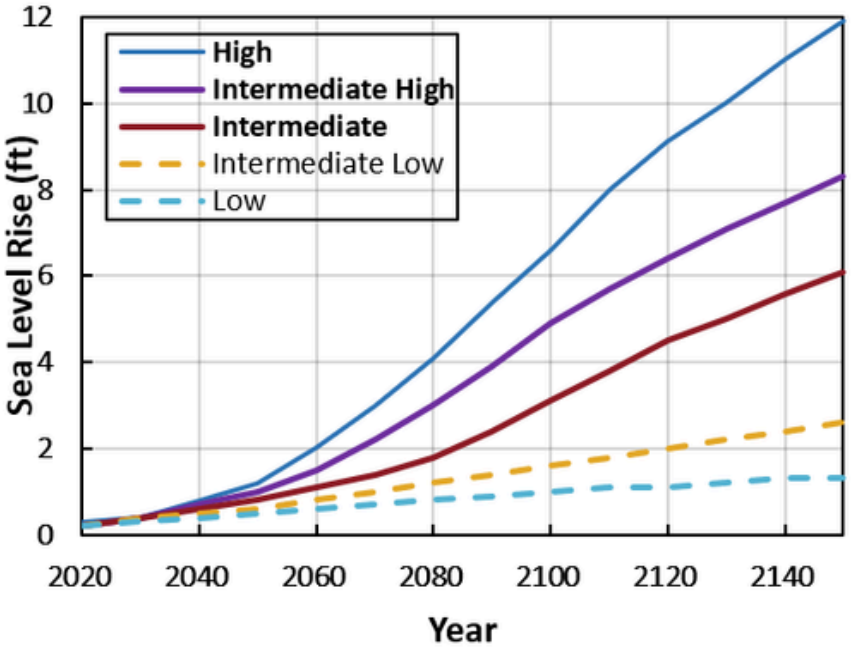
Best Available Science on Sea Level Rise

The Coastal Commission considers the Ocean Protection Council's Sea Level Rise Guidance to be the best available science.

The following scenarios should be used in planning decisions based on development type and risk tolerance:

- **Intermediate:** low risk aversion
- **Intermediate-High:** medium-high risk aversion
- **High:** extreme risk aversion

See Appendix F for local variations based on 14 tide gauges across the state.



Sea Level Scenarios from 2020 to 2150, in feet, with a baseline of 2000.

Addressing Sea Level Rise in Coastal Development Permits (CDPs)

New development generally requires a CDP. Projects along the shoreline typically must examine sea level rise impacts as part of CDP review.

1. **Initiate CDP application, gather proposed project information, and engage with environmental justice communities.**
2. **Establish the projected sea level rise range for the proposed project.**
3. **Determine how sea level rise impacts may constrain the project site.**
4. **Determine how the project may impact coastal resources, including as they relate to environmental justice communities over time with sea level rise.**
5. **Identify project alternatives to both avoid resource and related environmental justice impacts and minimize risks to the project.**
6. **Finalize project design and submit permit application.**

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Communities Can Choose Different Adaptation Strategies

No single strategy works everywhere. Communities often use a combination of approaches based on local conditions, community priorities, and coastal resources.

Protect

Reduce the impacts of flooding and erosion by keeping water away from people, built resources, and coastal resources.

Ex. Dune restoration and sand replenishment, seawalls and revetments

Accommodate

Modify existing and new development so it can better withstand flooding and other coastal hazards.

Ex. Elevate buildings, floodproof structures, improve drainage

Retreat

Reduce long-term risk by removing or realigning development away from areas that will become increasingly vulnerable to sea level rise.

Ex. Limit new development, relocate structures, restore natural shoreline

Addressing Sea Level Rise in Local Coastal Programs (LCPs)

The Sea Level Rise Policy Guidance offers a flexible planning framework local governments can adapt to local conditions and priorities to address sea level rise in LCPs. It also includes recommendations for meeting state sea level rise planning requirements (SB 272).

1. **Start Planning**
   Define goals and scope, engage environmental justice communities.
2. **Understand Future Sea Levels**
   Choose a range of locally relevant sea level rise scenarios based on best available science.
3. **Identify Places at Risk**
   Identify areas with current and projected sea level rise impacts.
4. **Assess Degree of Risk**
   Rate the exposure, sensitivity, and adaptive capacity of coastal resources, development, and environmental justice communities.
5. **Determine Equitable Adaptation**
   Identify preferred adaptation strategies, phased pathways, and implementable projects.
6. **Update LCP Policies**
   Work with CCC staff to develop and certify new or updated LCP policies.
7. **Implement LCP, Monitor and Revise as Needed**
   Establish indicators for measuring progress, track indicators, update as needed.