

**CALIFORNIA COASTAL COMMISSION**

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**FAQ****The California Coastal Commission and Sea Level Rise**

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**What is the California Coastal Commission doing about sea level rise?**

Sea level rise is a statewide challenge that is going to require a coordinated and well-resourced response. The Commission coordinates extensively with partners at the federal, state, regional, and local level. In particular, staff works closely with local governments on sea level rise vulnerability assessments, adaptation plans, and Local Coastal Program (LCP) updates; as well as with permit applicants whose development could potentially be subject to the impacts of sea level rise.

In 2015, the Commission published statewide Sea Level Rise Guidance (updated in 2018) that includes the best available science and recommendations to help communities plan for sea level rise. At the request of coastal cities and counties that wanted sample language for their long-range planning documents, the Commission is currently working on a companion document called the Residential Adaptation Guidance. The agency is developing similar planning guidance for critical infrastructure.

The Commission has established an LCP Grant Program to provide funding to local governments to help them assess their sea level rise vulnerabilities, identify adaptation options, and update and certify their LCPs to address sea level rise. So far the agency has awarded more than \$7 million to 40 jurisdictions.

**What are some examples of sea level rise impacts in California?**

Sea level rise has and will continue to result in beach and bluff erosion and flooding of coastal areas. Some of the most dramatic examples of sea level rise impacts to development have been in northern California, where bluff erosion in response to sea level rise and storms resulted in a two story apartment building at 330 Esplanade Ave. in Pacifica teetering on the edge of a bluff. The complex was evacuated and eventually demolished.

In Sonoma County, several homes at Gleason's Beach have been red tagged or have fallen onto the beach. Federal, state and city agencies have spent a decade working to move that section of Pacific Coast Highway inland.

One way to see a preview of what sea level rise will look like is to go to your local beach during a King Tide, which is an extremely high tide that occurs several times a year on a full moon and causes ocean levels to rise up to 18 inches higher than normal tides. Within our younger generation's lifetime, today's King Tides will become the new normal for a low tide. The

California King Tides Project helps people visualize future sea level by observing the highest high tides of today. Citizen scientists are creating a record of the changes to our coast from sea level rise at <https://www.coastal.ca.gov/kingtides/>

### **Why is it important to prepare?**

The problem is statewide but many solutions will need to be local. There is no one-size-fits all approach and not every strategy is going to work everywhere. What works on the sandy beaches of San Diego is not going to work in the cliffs outside Crescent City.

Commission staff are also Californians, and it's because we care about the future of our state that we want to start planning now because preparations will take time. Many studies show that proactively preparing for sea level rise is far more cost effective than waiting until the impacts of sea level rise get worse. Also, if we fail to prepare, we may lose resources that are integral to California's identity and coastal economy. One study by USGS showed that if we don't take action, two-thirds of beaches in southern California could be lost to sea level rise by the end of this century.

### **How is the Commission helping municipalities prepare for sea level rise and will they be punished if they don't?**

The Commission is not penalizing communities if they don't address sea level rise. In fact, the Commission has awarded more than \$7 million in grants to local governments to help communities assess their vulnerability to sea level rise and prepare for long term adaptation. The Commission's grant criteria include consideration of environmental justice and opportunities for underserved communities to engage in the planning process. The Commission has also adopted written guidance to help local governments, and Commission staff work closely with grantees as they tackle these issues.

### **Will the Commission need to approve each plan?**

Yes. In order for LCP updates to become effective, they must be officially certified by the Coastal Commission. That's why our staff works closely with local governments to ensure they address the issues necessary to inform an LCP update. Many local governments are in the process of updating their LCPs to address sea level rise. These often include sea level rise vulnerability assessments and/or adaptation plans to understand what sea level rise might mean for their community and coastline.

### **Is Del Mar the first community in California to formalize its plan for sea-level rise adaptation?**

No, many jurisdictions statewide have developed plans to adapt to sea level rise. Some certified LCPs have already incorporated sea level rise adaptation measures. Others have recently brought forward complex components of LCP amendments to the Commission for certification. These include the City of San Francisco (2018), the City of Pacific Grove (2019), the City of Santa Barbara (2019), and the City of San Clemente (2018). And many communities have developed sea level rise vulnerability assessments and/or adaptation plans and have started developing LCP updates to carry out their adaptation approach.

### **What other communities are also preparing plans?**

See “Status of Grantees” box at: <https://www.coastal.ca.gov/lcp/grants/>

This box summarizes the local governments that are preparing plans with support from Coastal Commission grant funding. Other work is going on statewide to plan for sea level rise, including work initiated by local governments, regional groups, or individual entities, as well as work required by legislation (e.g., see Assembly Bill 691).

### **What are the various residential adaptation strategies?**

These are some of the broad categories of adaptation strategies and can be carried out through numerous other actions that help build a barrier against rising seas, ensure development can withstand periodic flooding, or eventually move development out of harm’s way and allowing natural habitats like beaches and wetlands to migrate inland.

**NOURISHMENT** – Beach nourishment can build up beaches using sand dredged from harbors and marinas.

**NATURAL INFRASTRUCTURE** – Enhancing dunes and wetlands can provide buffers from floods and wave action.

**ACCOMMODATION** - Modify existing developments or design new developments to decrease hazard risks and thus increase the resiliency of development to the impacts of sea level rise (e.g., elevate or flood-proof structures so they can withstand periodic flooding)

**SITING and DESIGN** – New development can be sited and designed so that it is safe from anticipated impacts from sea level rise over its lifetime. For blufftop areas this typically means being set back from the bluff edge far enough to account for long-term erosion. In low-lying areas near beaches, wetlands, and estuaries, this could mean both setbacks and elevating structures to minimize risks associated with flooding from sea level rise and storm events.

**MANAGED RETREAT** – Moving structures away from hazardous coastal areas. This can happen over the short term in areas with particularly high, near-term vulnerabilities, but more often managed retreat will be something that would occur farther in the future. Even when this is the case, it is important to plan ahead to understand when impacts are likely to occur because the cost of inaction is higher than proactive adaptation planning.

**SHORELINE ARMORING** – In limited circumstances, shoreline armoring may be an appropriate adaptation tool to protect communities, infrastructure and public access facilities but this comes at a steep cost – the loss of public sandy beaches, dunes, wetlands and other coastal resources. In the long term, seawalls may only be a temporary fix given the anticipated exponential rise in sea levels.

**BREAKWATERS & ARTIFICIAL REEFS** – Carefully engineered breakwaters and artificial reefs can help preserve sand supply and lesson erosion effects of waves

### **Why is it important to save public beaches?**

Beaches are part of who we are as Californians, so much so that beach access is a constitutional right for all Californians regardless of zip code. The coast is one of the few places inland residents can go to escape the heat without spending a lot of money. This is an issue of environmental justice. Moreover, our more than \$44 billion a year coastal economy depends on maintaining those beaches and protecting the coast from being swallowed up by sea level rise. The California Coastal Act requires the Coastal Commission to maximize public access to the shoreline and protect recreational areas along the coast. In other words, the law requires the Commission to consider how its regulatory actions will affect the public's beaches, especially considering what we know about sea level rise.

### **Why is there so much focus on managed retreat?**

Managed retreat is a term that has garnered a lot of attention because it involves options for removing development from locations that are often highly desirable. In most places throughout California, managed retreat will not be necessary for many decades. Often there are other adaptation measures that we can utilize to protect coastal resources and development in the near and medium term.

However, over the long term, flooding and erosion will become so extreme in many coastal locations that there will be no other feasible adaptation option except relocation or removal of development. It is important to start considering the possibility that retreat may be necessary in certain cases and prepare for phased adaptation measures that can be implemented as certain triggers are reached. Phased adaptation is critical to ensuring our State, regional and local governments are prepared for future sea level rise. These measures will help avoid large scale damage to development, coastal resources, public beaches and ultimately our economy and way of life.