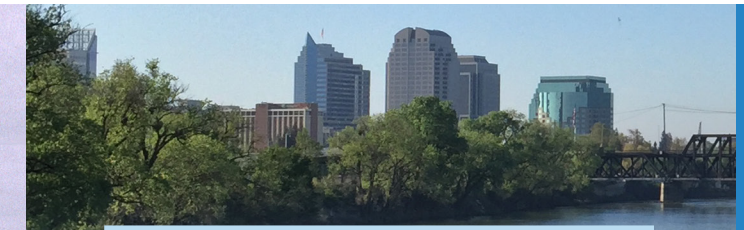
"Taking steps to minimize impacts from flooding is one of the best ways to prepare for sea-level rise."

Photo courtesy of CA Dept. of Water Resources



CA STATE LANDS COMMISSION

The **State Lands Commission** protects California's navigable waterways and submerged lands for public use and enjoyment, such as commerce, navigation, fishing, recreation, public access, conservation, and much more. The Commissioners are the State Controller, the Lieutenant Governor, and the State Director of Finance. As a result of global climate change, California's sovereign lands and shores are at risk from rising seas, more frequent and intense storm events, and prolonged drought. The Commission is dedicated to managing public trust lands, resources, and assets under its jurisdiction. A new program is in place, following goals in the 2016-2020 Strategic Plan, to incorporate sea-level rise and climate change considerations into all the Commission's activities and decision making. It is critically important to plan and prepare for impacts to safeguard the public and ensure the State's coastal regions, including its public trust lands and resources, are protected and preserved for current and future generations. Commission staff are available to assist lessees in assessing vulnerabilities to existing structures from sea-level rise. To learn more, please visit: http://www.slc.ca.gov/Programs/Sea_Level_Rise.html

UNDERSTANDING SEA-LEVEL RISE IN CALIFORNIA

Sea-level rise is not just a problem of the future; it already affects bay and coastal communities

Impacts of Climate Change

More Powerful Storm Surges

Warmer atmospheric and ocean temperatures alter storm and rain patterns and increase their intensity and frequency. Storm surges are expected to be stronger and last longer.

Permanent Inundation

Sea-level rise will flood areas that are currently dry or only occasionally flooded by tides. This poses risks to people and infrastructure, and could result in the permanent loss of trails, beaches, vistas, and other shoreline recreation areas.

Frequent and Intense Floods

In addition to the "incremental" increase in total water levels caused by sea-level rise, large wave surges and heavy rains, especially during storm events, can lead to more frequent flooding in low-lying areas for longer periods of time. These storm surges can also threaten public health and safety by spreading more pollutants from contaminated sites such as landfills and waste water treatment plants located in flood-prone areas.

Shoreline Erosion and Overtopping

Higher water levels combined with warmer water temperatures will increase tidal and wave forces where they meet the shoreline, accelerating cliff, bluff, and shoreline erosion, and overtopping levees and other types of shoreline protection structures.

Photo courtesy of KQED

Photo courtesy of coastalcare.org

Climate Change, Sea-Level Rise, and Related Impacts

Climate change is the primary cause of rising sea levels. Sea-level rise will intensify occasional natural hazards, such as floods and storms, and turn them into regular events.

What is Sea-Level Rise?

Global sea-level rise is driven by two primary factors, thermal expansion of ocean waters and the addition of freshwater to the ocean from melting ice sheets and glaciers. Sea-level rise will impact coastal communities, especially low-lying coastal areas, infrastructure, and ecosystems. Potential impacts on coastal and bay communities include:

- Damage and/or loss of buildings, roads, and critical infrastructure
- Increased and prolonged flooding
- Loss of beaches, wetlands, trails, shoreline habitat and recreational opportunities
- Damage to levees, berms, revetments, docks, piers, wharves and other coastal structures
- Threats to public health and safety

Photo courtesy of Dale Kolke/CA Dept. of Water Resources

Why Should I Care About Sea-Level Rise?

California is particularly vulnerable to sea-level rise because 80% of the population lives within 30 miles of the Pacific Ocean. In addition to the coast, sea-level rise will affect many of our State's rivers and streams that are "tidally-influenced," or connected enough to the ocean to experience some daily rise and fall due to tides, such as California's Bay-Delta region.

What Can I Do?

Understanding potential risks to infrastructure, natural habitats, homes, and businesses encourages communities to identify vulnerabilities and prepare for these anticipated threats. Adaptation planning is the process of preparing our communities to respond to the impacts of sea-level rise, reduce the risks we face, and make ourselves safer. Impacts from sea-level rise are site-specific; therefore understanding the local setting is critical. In some cases, the best way to prepare for impacts from sea-level rise and extreme weather is to modify existing structures or construct new structures to avoid the impacts of potential hazards.