

## **DEVELOPING A REGIONAL STRATEGY FOR CLIMATE CHANGE AND SEA LEVEL RISE**

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The greatest challenge coastal managers now face is how to develop effective strategies for addressing global climate change. To reduce the greenhouse gas emissions that are causing global warming, in 2006 the State of California enacted the California Global Warming Solutions Act. In 2008, another sweeping law was enacted in California to curb sprawl and reduce driving. While aggressive GHG reduction strategies are essential, California is also formulating strategies for adapting to the impacts of climate change that will be inevitable. The San Francisco Bay Conservation and Development Commission (BCDC)—a California state coastal management agency—has been a pioneer in this adaptation planning effort.

San Francisco Bay is the largest estuary on the west coast of the American continents. When the California gold rush began in 1849, the Bay covered 787 square miles. But because most of the Bay was shallow, vast areas were reclaimed. By the middle of the 20<sup>th</sup> century 239 square miles of low-lying filled land surrounded the Bay.

One of the most publicized impacts of global warming is a predicted acceleration of sea level rise. This acceleration would increase the historic rate of sea level rise, which between 1900 and 2000 raised the level of the Bay waters by seven inches. As a result, water levels in San Francisco Bay could rise an additional one meter or more by the end of this century inundating low-lying shoreline property and over \$100 billion worth of public and private development.

As part of a comprehensive regional approach for addressing climate change, BCDC is formulating a strategy for adapting to sea level rise. BCDC envisions a strategy that relies on ecosystem-based adaptive management principles to ensure that future development, shoreline retreat, flood protection and habitat enhancement strategies are coordinated to achieve a vibrant, healthy estuarine ecosystem co-existing with sustainable communities along the shoreline.

The first step in preparing this strategy is determining which shoreline areas are vulnerable to sea level rise and storm surge. The next areas being identified are flood-prone areas where it may be more cost-effective to remove existing development than to protect low economic value structures. To provide an opportunity to build on past habitat enhancement investments and allow for the migration of tidal wetlands, the strategy will also identify areas where existing development can be pulled back from the shoreline and planned development can be foregone. Finally, the strategy will provide a regional flood protection strategy and development standards to ensure that any new shoreline construction is resilient over a range of sea level rise scenarios. This new strategy for the

Bay will be prepared by a partnership of government agencies working in collaboration with businesses, the academic community, community organizations and the general public.

The experience from the San Francisco Bay region provides ideas that can be used in other coastal settings worldwide.

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