

CALIFORNIA'S EFFORTS AT DEVELOPING COMMUNITY LEVEL TOOLS FOR ADDRESSING FUTURE IMPACTS RELATED TO SEA LEVEL RISE

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INTRODUCTION

Sea level rise poses many daunting challenges that are economic, technical, ecological, social, scientific, cultural, governmental and legal. There have been enormous efforts to study historic sea level conditions, to analyze the main factors that have modified historic sea levels, to predict future sea levels at global, regional and local scales, to anticipate time periods for changes to flood frequency and erosion rates. While each of these efforts improves our understanding of possible future sea level rise the changes that might happen along the coast as a result, they also increase community uncertainty about what this will mean to their efforts to undertake long-term land use planning, to develop capital improvement plans for infrastructure and for future shore protection and recreational opportunities provided by existing beaches.

WHAT CALIFORNIA IS DOING

As more information becomes available, there seems to be more uncertainty about what to do with it. In California many local and regional tools and studies are now available to help with questions about rising sea level. In 2009, the Pacific Institute completed a study of the effects of 4.5 feet of sea level rise on flooding and shoreline erosion, with the flooding work covering the entire state and the erosion work covering the state, north of Santa Barbara. The National Oceanic and Atmospheric Administration has developed a sea level rise viewer that is available state-wide and recently the US Geological Survey has completed, or is in the process of completing, statewide flood and erosion modeling for a broad range of sea level rise amounts, using CoSMoS (Coastal Storm Modeling System). Several regional scale models have also been developed and the State has prepared four multi-sector assessments of climate change, including sea level rise, and is in the process of preparing a 5th Assessment. California has also established an Adaptation Clearinghouse for resources on climate adaptation and resiliency within the state.

Communities in California are using these tools, along with site-specific information to determine vulnerabilities to sea level rise and related hazards for use in land use plans, hazard mitigation plans and general plans.

In an attempt to help coastal communities and property owners navigate the many intricacies of sea level rise planning, the California Coastal Commission staff has prepared a number of guidance documents:

- CCC Sea Level Rise Policy Guidance: Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs and Coastal Development Permits, 2015, with a science update in 2018 (Both adopted unanimously; <https://www.coastal.ca.gov/climate/slrguidance.html>)
- CCC Statewide Sea Level Rise Vulnerability Synthesis, 2016 (https://documents.coastal.ca.gov/assets/climate/slr/vulnerability/FINAL_Statewide_Report.pdf)
- CCC Coastal Adaptation Planning Guidance: Residential Development: Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs, March 2018 Draft (in preparation following public review) (<https://www.coastal.ca.gov/climate/slr/vulnerability-adaptation/residential/>).

As noted, several of these guidance reports have been adopted by the Coastal Commission following extensive public outreach and communication to numerous stakeholder groups; other guidance reports are in preparation; and outreach and communication on all of these guidance documents continues.

Many communities divide their approaches to sea level rise planning into two efforts - the first to determine vulnerabilities to sea level rise and the second to develop approaches for adaptation. The available modeling tools assist mainly in the vulnerability portion of the analysis; fewer tools exist for adaptation due to the site-specific nature of many of the adaptation needs.

PRESENTATION

The proposed presentation will discuss the various guidance reports that have been prepared by the California Coastal Commission staff to assist local governments in identifying and planning for sea level rise vulnerabilities. The presentation will also address many of the options that California communities are considering for sea level rise adaptation.