California Coastal Commission Hearing

January 9, 2014

South Imperial Beach, TRNERR

California Coastal Commission
DRAFT SEA-LEVEL RISE POLICY GUIDANCE
Motivation for SLR Policy Guidance
Best Available Science on SLR

- National Research Council Report: SLR Projections for California

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* with year 2000 as a baseline

- Most locations can use these projections without modification
- Humboldt Bay & Eel River Sea Level Rise
  - SLR is at faster rate than region North of Cape Mendocino
  - Modify projections to account for local vertical land motion
Tools and Resources

- Cal-Adapt
- NOAA Sea Level Rise Viewer
Tools and Resources

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- NOAA Sea Level Rise Viewer
- Humboldt Bay Sea Level Rise Vulnerability Assessment
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- SCC Southern CA SLR Map Tool (in development)
Tools and Resources

- Humboldt Bay Shoreline Inventory, Mapping, and SLR Vulnerability Assessment
- Ocean Beach Master Plan
- City of Santa Cruz Climate Change Vulnerability Assessment
- Monterey Bay SLR Vulnerability Study
- Developing Climate Adaptation Strategies for SLO County
- Santa Barbara SLR Vulnerability Study
- Adapt LA
- San Diego SLR Adaptation Strategy
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Monterey Bay SLR Vulnerability Study

Developing Climate Adaptation Strategies for SLO County

Santa Barbara SLR Vulnerability Study

Adapt LA

San Diego SLR Adaptation Strategy

LCP Sea Level Rise Grant Program administered by OPC (awarded)
- City of Eureka
- City of Morro Bay
- LA Region
- Marin
- Sonoma County
- Monterey County
- City of Half Moon Bay
Tools and Resources

LCP Sea Level Rise Grant Program
administered by OPC (awarded)
- City of Eureka
- City of Morro Bay
- LA Region
- Marin
- Sonoma County
- Monterey County
- City of Half Moon Bay

CCC LCP Grants (awarded)
- County of Humboldt
- City of Arcata
- County of Marin
- City of HMB
- City of Pacific Grove
- City of Goleta
- City of Santa Barbara
- City of LA
- City of Hermosa Beach
- City of San Clemente
- City of Solana Beach

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OPC Grants (recommended)
- County of Humboldt
- City of Arcata
- County of Marin
- City of HMB
- City of Pacific Grove
- City of Goleta
- City of Santa Barbara
- City of LA
- City of Hermosa Beach
- City of San Clemente
- City of Solana Beach

Climate Ready Grants (recommended)
- City of Arcata
- City of Hermosa Beach
- County of Santa Barbara
- City of Imperial Beach
- 17 other grants were awarded that fund other climate-related efforts not specifically related to sea level rise
- City of Solana Beach

Santa Barbara SLR Vulnerability Study
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How is California addressing sea-level rise?

- Statewide efforts
  - 2009 California Adaptation Strategy
  - Draft Safeguarding California Plan (update to 2009)
  - General Plan Guidelines (update in progress)
  - OES State Hazard Mitigation Plan (update in progress)
  - OPC: 2013 State SLR Guidance, grant program
  - 2012 Adaptation Planning Guide

- California Coastal Commission efforts
  - Local Coastal Programs & Coastal Development Permits
  - Strategic Plan
  - Draft SLR Policy Guidance
# About the Draft Document

<table>
<thead>
<tr>
<th>IT IS</th>
<th>IT IS NOT</th>
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</thead>
<tbody>
<tr>
<td>Draft</td>
<td>Final</td>
</tr>
<tr>
<td>Draft Guidance for addressing Sea-Level Rise in conformance with the Coastal Act</td>
<td>New regulations</td>
</tr>
<tr>
<td>Complement to other Commission materials</td>
<td>Replacement for other Commission materials</td>
</tr>
<tr>
<td>Multi-purpose guidance in which users may focus on particular chapters</td>
<td>Meant to be read cover to cover</td>
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<tr>
<td>A list of sea-level rise adaptation options to choose from</td>
<td>A checklist of adaptation measures where all items have to be accomplished</td>
</tr>
<tr>
<td>A living document</td>
<td>Static</td>
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</table>
Contents of the Draft Document

Executive Summary

Main Report
Chapter 1: Introduction
Chapter 2: Guiding Principles
Chapter 3: Science
Chapter 4: Guidance for LCPs
Chapter 5: Guidance for CDPs
Chapter 6: Additional Research
Chapter 7: Next Steps
Chapter 8: Glossary

Appendices
Appendix A: Science
Appendix B: Coastal Engineering
Appendix C: Adaptation Options
Appendix D: LCP Resources
Appendix E: Other Agencies’ Programs
Appendix F: Coastal Act Policies
Addressing SLR in LCPs

1. Determine range of sea-level rise projections relevant to LCP planning area/segment

2. Identify potential sea-level rise impacts in LCP planning area/segment

3. Assess risks to coastal resources and development in planning area (i.e. identify problem areas)

4. Identify adaptation measures and LCP policy options

5. Develop or update LCP and certify with California Coastal Commission

6. Monitor and revise as needed
LCP Step 1: Determine SLR Projections

Expected outcomes:

Range of locally relevant sea-level rise projections for the time periods of concern

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LCP Step 2: Identify SLR Impacts

Expected outcomes:

Current and future SLR hazards and impacts mapped and/or described
LCP Step 3: Assess risks to Coastal Resources

Coastal Resources to Consider:

- Public access, beaches, recreation areas
- California Coastal Trail
- Wetlands, ESHA, other habitats
- Agricultural areas
- Cultural sites
- Coastal-dependent uses
- Critical infrastructure
- Coastal Highway 1
- Existing and new development

Expected outcomes:

Risks and expected consequences of SLR impacts to coastal resources and broader community; maps of resources and/or land uses at risk.
LCP Step 4: Identify LCP Adaptation Measures

Expected outcomes:
Identification of necessary updates, list of applicable adaptation measures applicable, new implementation policies/ordinances

Tomales Bay Wetland Restoration | CA King Tides Initiative | Jan 2012 | Sarah Allen
LCP Steps 5 & 6: Finalize LCP

Step 5 expected outcomes:
Certified/updated LCP with policies and land use designations that address sea-level rise and the related hazards

Step 6 expected outcomes:
Plan to monitor the LCP planning area for SLR and other impacts; revisions when conditions change or science is updated

Figure ES-1 (pg. ii): The nine steps in adaptation planning development. Grey denotes vulnerability assessment, blue denotes adaptation strategy development.
Addressing SLR in CDPs

1. Establish the projected sea-level rise range for the proposed project
2. Determine how sea-level rise impacts may constrain the project site
3. Determine how the project may impact coastal resources over time, considering SLR
4. Identify project design alternatives to both avoid resource impacts and minimize risks to the project
5. Finalize project design and submit permit application
CDP Step 1: Determine SLR Projections

**Expected Outcomes:**
- Proposed project life
- Scenarios of SLR for use in project analysis

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Levees along Wintersberg Channel, Huntington Beach | Lesley Ewing
CDP Step 2: Identify SLR Impacts & Constraints

Hazard Analysis Types:

- Geologic Stability
- Erosion
- Waves and wave runup
- Flooding and inundation

Expected Outcomes:

- Maps of site-specific hazards
- Areas that can safely support development

Highway 1 near Pescadero, San Mateo County | Lesley Ewing
CDP Step 3: Assess Impacts to Coastal Resources

Coastal Resources to Consider:

- Public access, beaches, recreation areas
- California Coastal Trail
- Wetlands, ESHA, other habitats
- Agricultural areas
- Cultural sites
- Coastal-dependent uses
- Critical infrastructure
- Coastal Highway 1
- Existing and new development

Expected Outcomes:

SLR risks to coastal resources; map overlaying development and resource constraints
CDP Step 4: Identify Project Alternatives

Expected Outcomes:

- Project modifications and reexamination of impacts
- 1+ project alternatives
- Possible adaptation options

Surfers Point Managed Retreat Project, Ventura, CA
CDP Step 5: Finalize Application

Expected Outcomes:

- Analysis of sea-level rise concerns for inclusion in a CDP application
- Combine with other application items for a complete submittal

Pacifica State Beach, Linda Mar Area, Pacifica, CA
## Relationship to CCC Policies & Practices

<table>
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<th>Answer</th>
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<td>Will there be <strong>incentives</strong> to encourage updates?</td>
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<td>How does this guidance relate to <strong>substantial issue reviews</strong> of appeals?</td>
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<td>Will there be any change to <strong>shore protection device</strong> policies?</td>
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<td>Does the guidance discuss the challenges for <strong>vulnerable populations</strong>?</td>
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Public Comments to Date:

Legal Context and Policy Framework

What is the general legal framework and case history for adaptation?

How does this fit in with other agency efforts? What about other states?

How can data for the Mean High Tide line be improved for planning purposes?

How does guidance relate to building codes and height restrictions?
Adaptation Strategies

- Provide examples of adaptation strategies currently in use
- Explain the role of beach nourishment in short versus long term strategies
- Provide more emphasis on the benefits of intact habitats and living shorelines
- Consider recommending public acquisition of natural habitats
- Explain how adaptation options affect re-development efforts
How to Treat Specific Community Assets

Does the document explain how to address SLR impacts to specific assets?

- Highway 1
- Bike Paths
- Railroads
- Lifeguard Towers
- MBARI
- Moss Landing
Additional Needs

- Mechanism for regional coordination of adaptation approaches
- Strategies for flexible, long-term adaptation
- System for monitoring impacts of SLR and effectiveness of adaptation options
- Additional research on legal and economic challenges
- Guidance on broader climate change vulnerabilities
Outreach

To date:

- 120-day comment period
- 3 webinars
- 14 in-person meetings
- District office meetings
- 350+ people

Next Steps:

- Trainings and symposia
- Grant support for local governments
- Reaching out to targeted interest groups
# Tentative Timeline

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<td>Oct</td>
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<td>Draft SLR Guidance Released</td>
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Coastal Commission  
1/09/2014
Thank You

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hpapendick@coastal.ca.gov
(415) 904-5294

Lesley Ewing
lewing@coastal.ca.gov
(415) 904-5291

Submit comments to:
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SLR Working Group
45 Fremont St
Suite 2000
San Francisco, CA 94105

To access the document go to:
www.coastal.ca.gov/climate/SLRguidance