

CCC DRAFT SEA-LEVEL RISE POLICY GUIDANCE

Jackson Ranch Rd flooded by King Tide, Arcata, 12-13-12,
Photo by Humboldt BayKeeper

12/4/2013

Public Informational Webinar



CALIFORNIA
COASTAL
COMMISSION

About the document

2

IT IS

Guidance for addressing Sea-Level Rise in conformance with the Coastal Act

Complement to other Commission materials

Multi-purpose guidance in which users may focus on particular chapters

A list of sea-level rise adaptation options to choose from

A living document

IT IS NOT

New regulations

Replacement for other Commission materials

Meant to be read cover to cover

A checklist of adaptation measures where all items have to be accomplished

Static



Goals of the Document: Why do we care?

3



Pasture near Liscom Slough, Arcata CA |
CA King Tides Initiative | Dec. 2012



Pismo Beach, CA | CA King Tides Initiative |
Dec. 2011 | Cassidy Teufel



South Marsh Footbridge,
Elkhorn CA | CA King Tides
Initiative Dec. 2012

Sunset Beach, CA | CA King Tides Initiative | Dec. 2012 |
Mario Fernandez



Oceanside, CA | CA King Tides Initiative | May 2009 | Dan
Jarvis

Goals of the Document

4

- Address sea-level rise in California
- Coastal Act: Minimize hazards and impacts to coastal resources due to sea-level rise
- Fulfill Strategic Plan item 3.1.1



Surf scene, San Diego | Nathan Rupert

Guiding Principles

5

- ▣ 17 principles intended to guide sea-level rise adaptation efforts at the Coastal Commission
- ▣ Principles derive directly from the Coastal Act
- ▣ Organized into 4 sections:
 - Use science to guide decisions
 - Minimize coastal hazards
 - Protect access, recreation, sensitive coastal resources
 - Maximize agency coordination and public participation



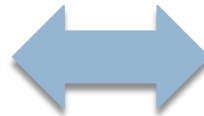
Scales of Information

6

Big Picture Executive Summary

Main Report

Chapter 1: Introduction
Chapter 2: 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

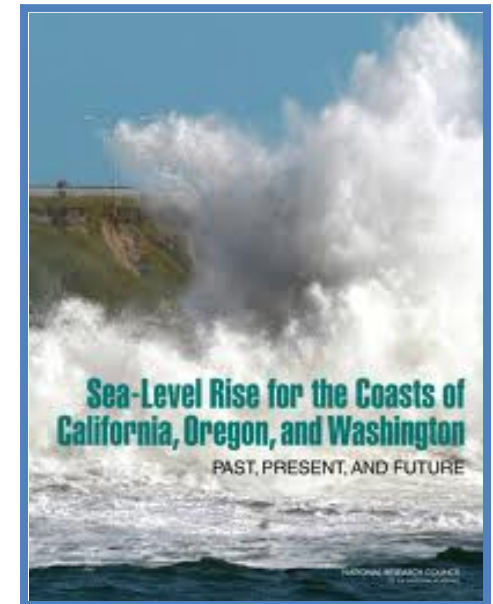


Best Available Science on SLR

7

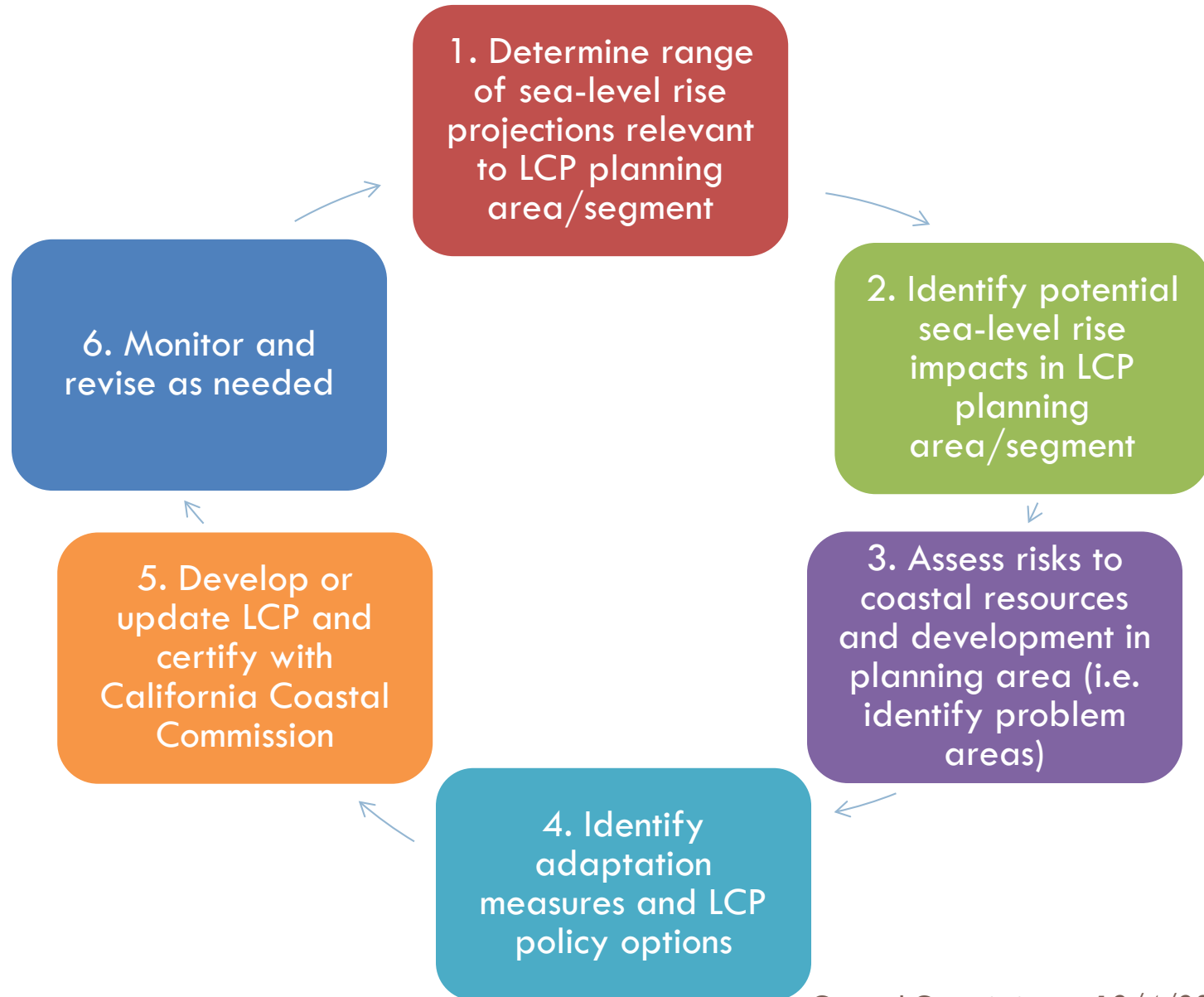
□ National Research Council Report SLR Projections for California

Time Period	South of Cape Mendocino	North of Cape Mendocino
2000-2030	4 – 30 cm (1.5 – 12 inches)	-4 – +23 cm (-1.5 – 9 inches)
2000-2050	12 – 61 cm (5 – 24 inches)	-3 – + 48 cm (-1.2 – 19 inches)
2000-2100	42 – 167 cm (17 – 66 inches)	10 – 143 cm (3.6 – 56 inches)

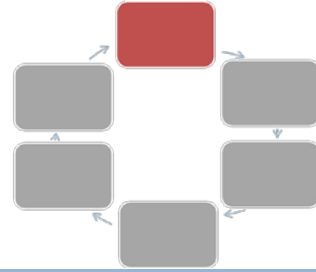


- Most locations can use these projections without modification
- Humboldt Bay & Eel River Sea Level Rise
 - SLR is at faster rate than region North of Cape Mendocino
 - Modify projections to account for local vertical land motion

Steps for Addressing SLR in LCPs



LCP Step 1: Determine SLR Projections



9

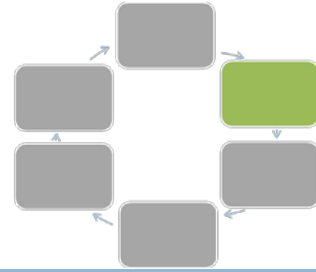
Time Period	South of Cape Mendocino	North of Cape Mendocino
2000- 2030	4 – 30 cm (1.5 – 12 inches)	-4 – +23 cm (-1.5 – 9 inches)
2000- 2050	12 – 61 cm (5 – 24 inches)	-3 – + 48 cm (-1.2 – 19 inches)
2000- 2100	42 – 167 cm (17 – 66 inches)	10 – 143 cm (3.6 – 56 inches)

Expected outcomes:

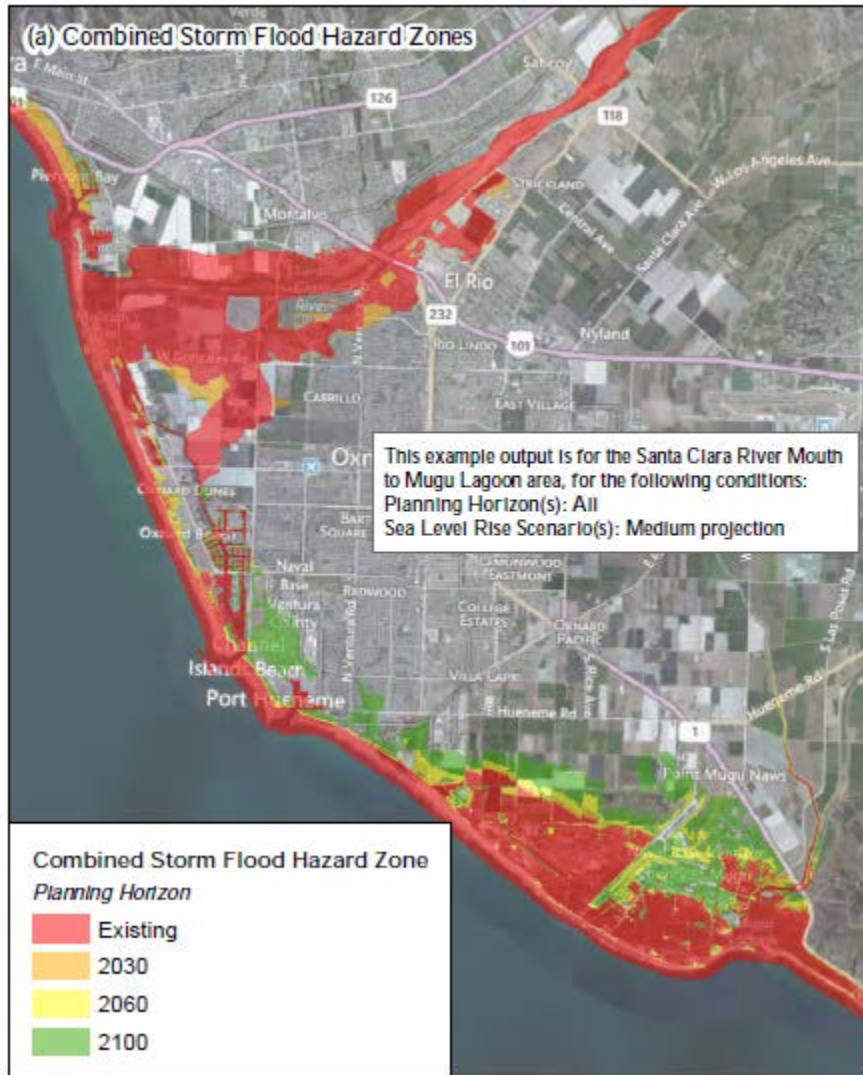
Range of locally relevant sea-level rise projections for the time periods of concern



LCP Step 2: Identify SLR Impacts



10



Expected outcomes:

Current and future SLR hazards and impacts mapped and/or described

figure 6

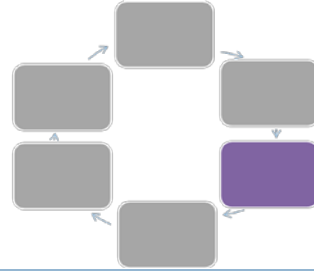
Ventura County Climate Change Vulnerability Study

Example of Combined Storm Flood Hazard Zones

ESA PWA Ref# D211452.00



LCP Step 3: Assess risks to Coastal Resources



11

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.





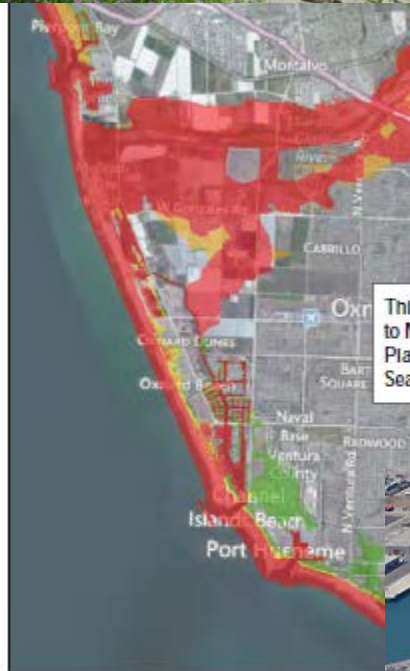
McGrath State Beach | www.caopensapce.org



Oxnard Beach State Park



Oxnard Shores Mobile Home Park | California Coastal Records Project



Combined Storm Flood Hazard Z
Planning Horizon

- Existing
- 2030
- 2060
- 2100



Visitor-serving resources, Oxnard



Port of Hueneme | portofhueneme.org

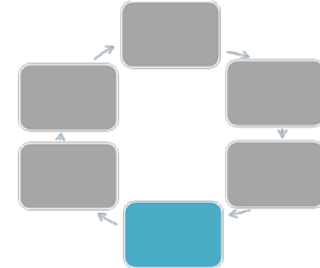


Reliant Ormand Beach Generating Station | California Coastal Records Project



Ormand Beach Wetlands | Sierra Club

LCP Step 4: Identify LCP Adaptation Measures



13

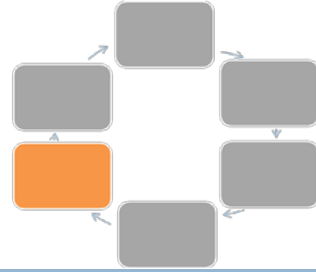


Expected outcomes:

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 Step 5: Develop/Update LCP



14



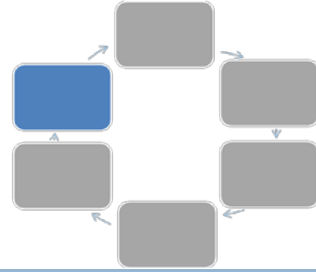
Image by California Coastal Commission

Expected outcomes:

certified/updated LCP with policies and land use designations that address sea-level rise and the related hazards



LCP Step 6: Monitor & Revise



15



El Segundo Electric Power Plant located at sea level |
Flickr user California Pete

Expected outcomes:

plan to monitor the LCP planning area for SLR and other impacts; revisions when conditions change or science is updated

Steps for 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 Analysis of Sea-Level Rise

17

General Situations for considering sea-level rise:

- On or near a floodplain, beach, wetland, lagoon or estuary
- Exposed to wave impacts or wave runup
- Protected by levees, dikes, bulkheads, seawalls, etc.
- On an eroding coastal bluff
- Reliant on shallow water well for water supply



Coastal dunes, Humboldt Bay |
Lesley Ewing

CDP Step 1: Determine SLR Projections

18

Expected Outcomes:

- proposed project life
- Scenarios of SLR for use in project analysis

Time Period	South of Cape Mendocino	North of Cape Mendocino
2000- 2030	4 – 30 cm (1.5 – 12 inches)	-4 – +23 cm (-1.5 – 9 inches)
2000- 2050	12 – 61 cm (5 – 24 inches)	-3 – + 48 cm (-1.2 – 19 inches)
2000- 2100	42 – 167 cm (17 – 66 inches)	10 – 143 cm (3.6 – 56 inches)



Huntington Beach, Levees along Wintersberg Channel | Lesley Ewing

CDP Step 2: Identify SLR Impacts & Constraints

19

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 One near Pescadero, San Mateo County |
Lesley Ewing

CDP Step 3: Assess Impacts to Coastal Resources

20

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



Ocean Beach, San Francisco | Lesley Ewing

Expected Outcomes:

SLR risks to coastal resources;
map overlaying development and
resource constraints



CALIFORNIA
COASTAL
COMMISSION

CDP Step 4: Identify Project Alternatives

21



Surfers Point Managed Retreat Project, Ventura, CA

Expected Outcomes:

- project modifications and reexamination of impacts
- one or more project alternatives
- possible adaptation options

CDP Step 5: Finalize Application

22

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



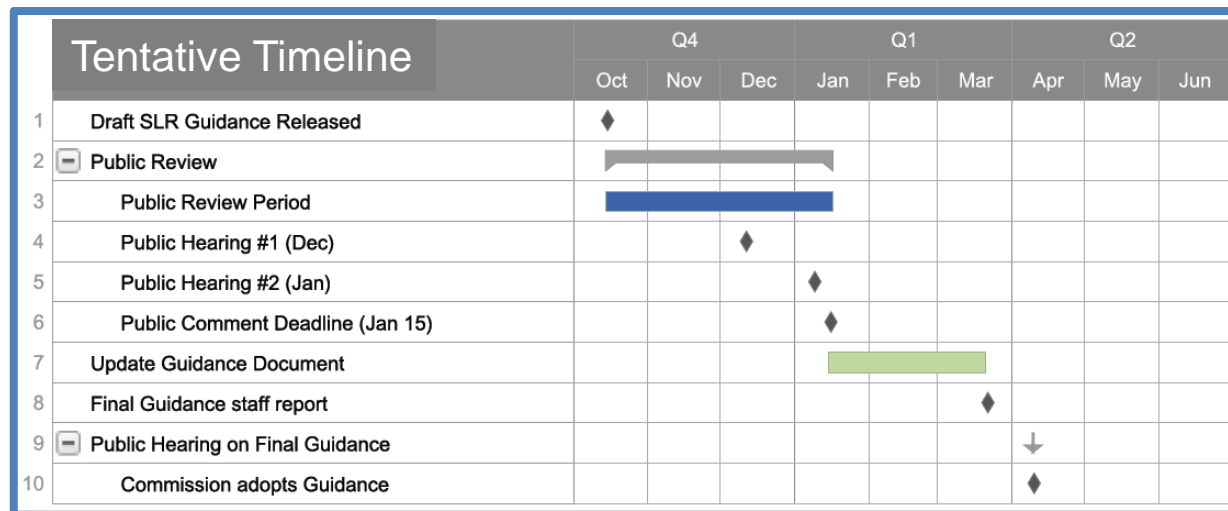
Public Review

23

- ❑ Draft is a work in progress
- ❑ Comments due Jan 15
- ❑ Two public hearings
- ❑ Submit comments orally or in writing

Draft Guidance available
on CCC website:

<http://www.coastal.ca.gov/climate/SLRguidance.html>



Questions to guide review

24

- Does the guidance have the appropriate level of detail? Is it easy to sort through to find information?
- Is it relevant to your region?
- Is it applicable to your LCP process? the CDP process?
- Does it clearly explain adaptation options?



Humboldt Bay | CA King Tides Initiative | Dec 2012 | Humboldt Baykeeper, Nancy Spruance

Thank You

25

Contact Information:

Hilary Papendick

hpapendick@coastal.ca.gov

415-904-5294

Submit comments to:

SLRGuidancedocument@coastal.ca.gov

SLR Working Group

45 Fremont St

San Francisco, CA 94105

