

CALIFORNIA COASTAL COMMISSION LOCAL GOVERNMENT WORKING GROUP: ADVANCING SEA LEVEL RISE ADAPTATION PLANNING

City of Pacifica



Photo Credit: Kelsey Ducklow

California
Adaptation Forum

Planning for Rising Seas and Storms: Episode 4 - A New Hope

7/28/23

Carey Batha

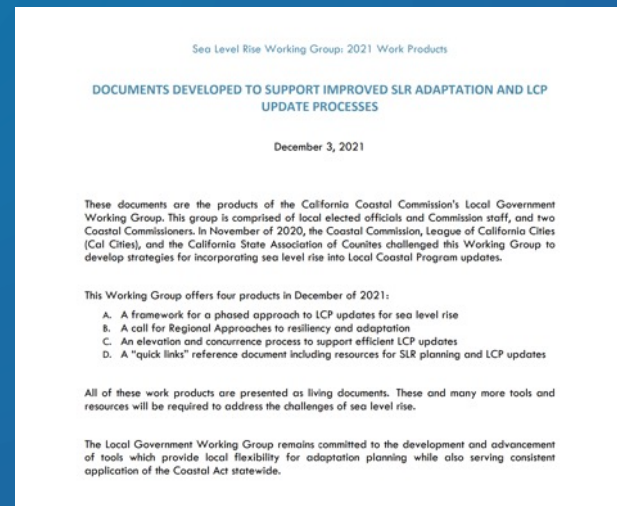


CALIFORNIA
COASTAL
COMMISSION



OUTLINE

- Quick background on the Coastal Act and CCC's work on SLR
- SLR science and projections
- CCC LCP Grant Program
- LGWG and its work to date
 - 2020 Joint Statement
 - 2021 framework for phasing LCP updates, and baseline LCP policies on sea level rise
 - Conceptualizing “neighborhood scale adaptation”





CALIFORNIA COASTAL ACT



- Sets up a partnership between CCC and local governments to develop and implement Local Coastal Programs
 - Prioritize certain land uses along the California coast
 - Protect access/recreation, habitats, scenic/cultural resources
 - Ensure new development is safe
 - Limit armoring



LENSES THROUGH WHICH TO VIEW SEA LEVEL RISE IN THE COASTAL ACT CONTEXT

Section 30007.5: [When] **Conflicts may occur between one or more policies [of the CA]... such conflicts be resolved in a manner which on balance is the most protective of significant coastal resources.** In this context, the Legislature declares that broader policies which, for example, serve to concentrate development in close proximity to urban and employment centers may be more protective, overall, than specific wildlife habitat and other similar resource policies. ...

Public Trust Doctrine

Section 30013 Environmental Justice: incorporates the anti discrimination language of the California legal code into the Coastal Act.

Section 30270: The **commission shall take into account the effects of sea level rise** in coastal resources planning and management policies and activities in order to identify, assess, and, to the extent feasible, avoid and mitigate the adverse effects of sea level rise.

Environmental
justice policy

Sea Level Rise
Policy Guidance

Property
law



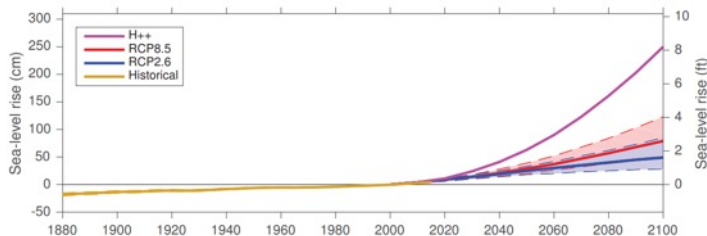
SEA LEVEL RISE SCIENCE: CCC SLR POLICY GUIDANCE

- Guiding principles grounded in the Coastal Act
- Best available science, including projections of SLR
- Steps for adaptation planning in CDP and LCP contexts
- Adaptation strategies

Figure 3: Projections of: (a) Global mean sea level, and; (b) Relative sea level in San Francisco, California.

Sea-level rise projections for RCP 8.5 and RCP 2.6 are calculated using the methodology of Kopp et al., 2014. The shaded areas bounded by the dashed lines denote the 5th and 95th percentiles. The H++ scenario corresponds to the Extreme scenario of Sweet et al. (2017) and represents a world consistent with rapid Antarctic ice sheet mass loss. Note that the behavior of the Antarctic ice sheet early in this century is governed by different processes than those which would drive rapid mass loss; although the world is not presently following the H++ scenario, this does not exclude the possibility of getting onto this path later in the century. The historical global mean sea level curve in (a) is from Hay et al. (2015).

(a) Global mean sea level



California Coastal Commission Sea Level Rise Policy Guidance
Final Adopted Science Update | November 7, 2018

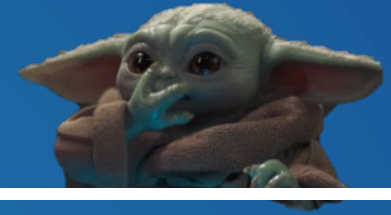
Table 1. Sea Level Rise Projections for the San Francisco Tide Gauge³ (OPC 2018)

	Probabilistic Projections (in feet) (based on Kopp et al. 2014)		H++ Scenario (Sweet et al. 2017)
	Low Risk Aversion	Medium-High Risk Aversion	Extreme Risk Aversion
	Upper limit of "likely range" (~17% probability SLR exceeds...)	1-in-200 chance (0.5% probability SLR exceeds...)	Single scenario (no associated probability)
2030	0.5	0.8	1.0
2040	0.8	1.3	1.8
2050	1.1	1.9	2.7
2060	1.5	2.6	3.9
2070	1.9	3.5	5.2
2080	2.4	4.5	6.6
2090	2.9	5.6	8.3
2100	3.4	6.9	10.2
2110*	3.5	7.3	11.9
2120	4.1	8.6	14.2
2130	4.6	10.0	16.6
2140	5.2	11.4	19.1
2150	5.8	13.0	21.9

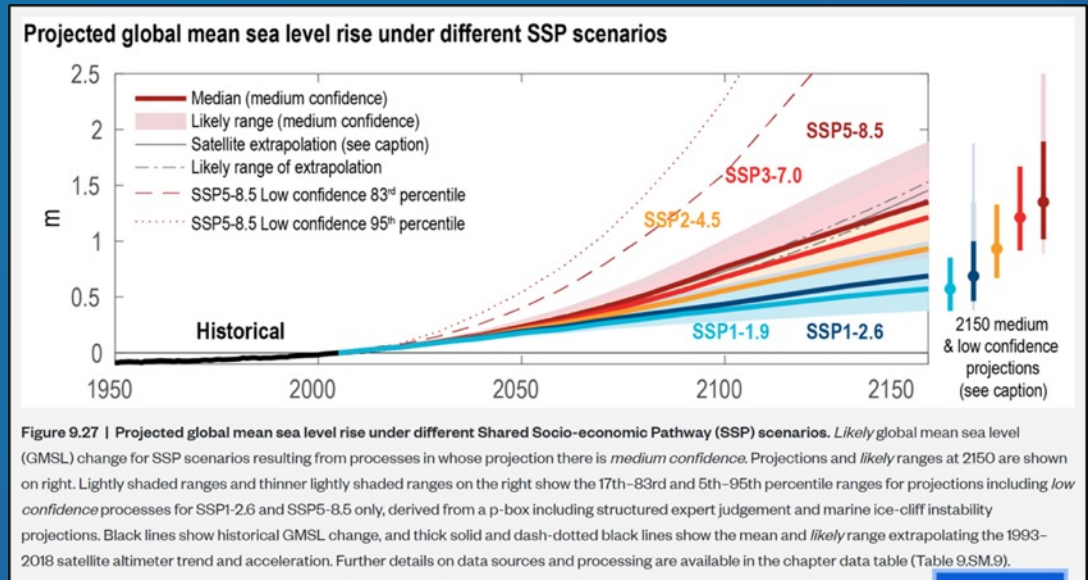
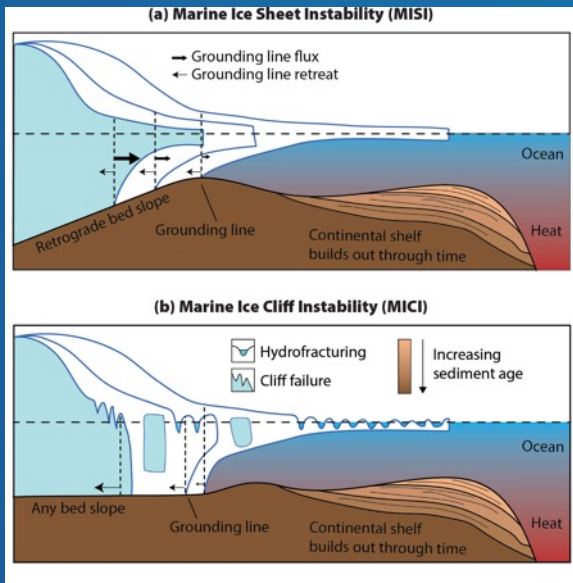
*Most of the available climate model experiments do not extend beyond 2100. The resulting reduction in model availability causes a small dip in projections between 2100 and 2110, as well as a shift in uncertainty estimates (see Kopp et al., 2014). Use of 2110 projections should be done with caution and acknowledgement of increased uncertainty around these projections.



SEA LEVEL RISE SCIENCE: UPDATES ARE COMING SOON



- Good news: Antarctica research shows a few decades of delay in possible mechanisms of extreme melt, making the range between now and 2050 lower and narrower & delaying the potential worst case
- Ocean Protection Council is updating the State SLR Guidance, and CCC staff will then prepare an update to the CCC SLR Policy Guidance
- Overall planning challenges remain the same





LCP GRANT PROGRAM

Humboldt Co.
Trinidad
Arcata
Fort Bragg

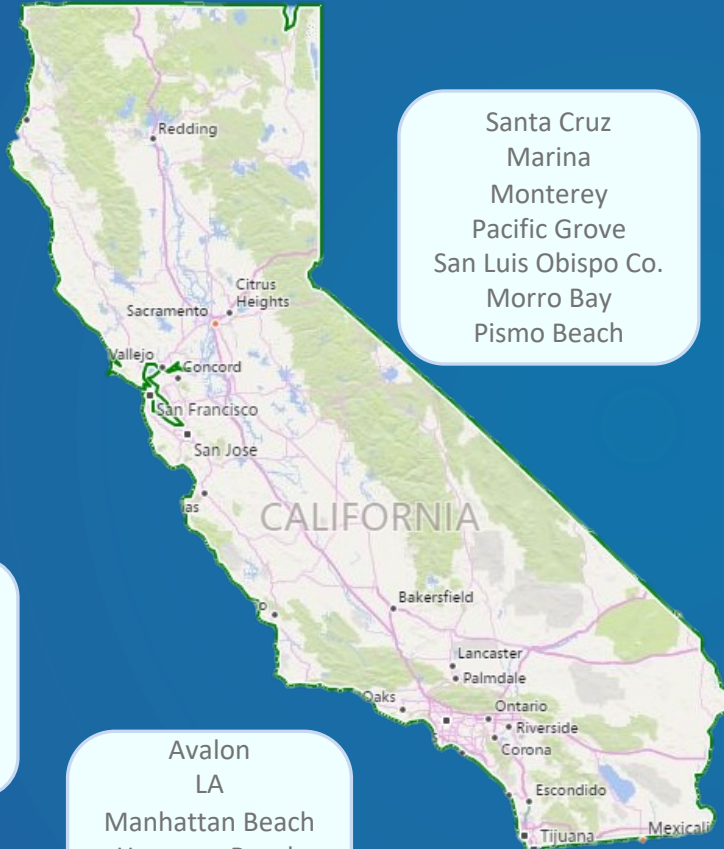
Sonoma Co.
Marin Co.
San Francisco
Pacifica
Half Moon Bay

Santa Barbara Co.
Goleta
City of SB
Carpinteria
Ventura Co.
Oxnard

Avalon
LA
Manhattan Beach
Hermosa Beach
Seal Beach
Huntington Beach
Newport Beach
Dana Point
San Clemente

Santa Cruz
Marina
Monterey
Pacific Grove
San Luis Obispo Co.
Morro Bay
Pismo Beach

San Diego Co.
City of SD
Oceanside
Carlsbad
Solana Beach
Del Mar
Imperial Beach

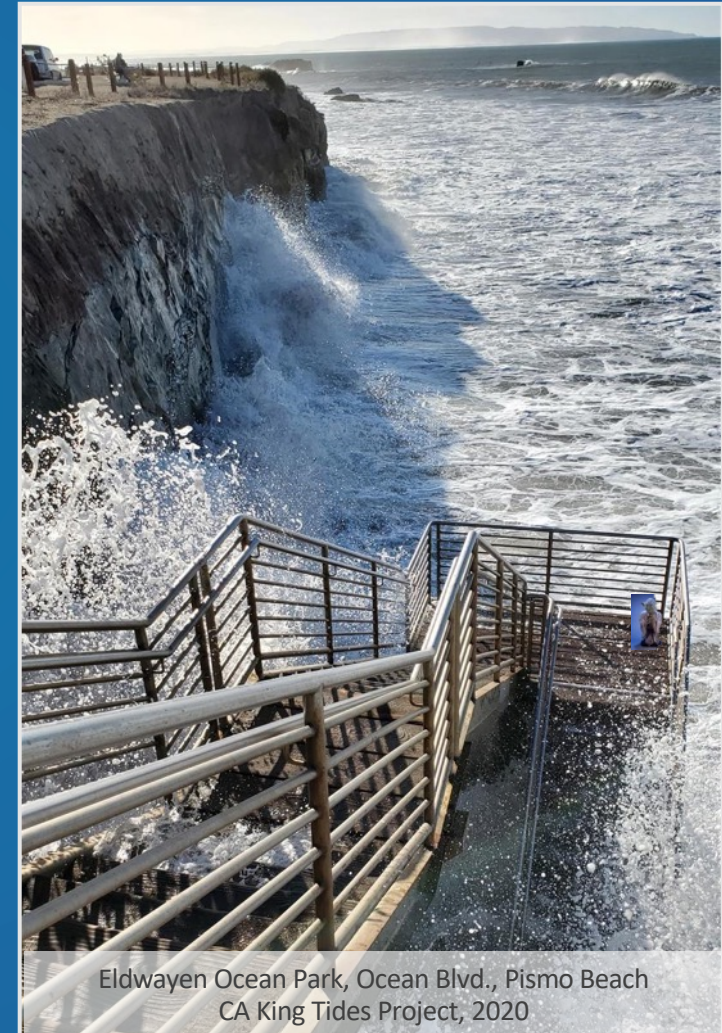


- ~\$17.8M to date
- LCP updates with a focus on climate change, SLR, and coastal resiliency planning
- \$31 million in most recent funding, ~\$13M remaining



LCP GRANT PROGRAM

- Eligible grantees: local governments
 - Can pass through funding
- Projects must relate to coastal resiliency and SLR and get to submittal of an LCPA
- Common project types include:
 - Technical, economic, or policy analyses
 - Development of regional, neighborhood, site, or asset adaptation plans
 - Public outreach and engagement
 - Environmental justice
 - Certification of new or updated LCPs



Eldwayen Ocean Park, Ocean Blvd., Pismo Beach
CA King Tides Project, 2020



LOCAL GOVERNMENT WORKING GROUP



Goal: understand and overcome challenges, and develop solutions to better address sea level rise planning

- Formed in 2019, building off previous workshops
- Currently composed of reps from
 - ❖ CA State Association of Counties (CSAC)
 - ❖ League of CA Cities (Cal Cities)
 - ❖ Coastal Commission subcommittee (Commissioners Harmon and Wilson)



LOCAL GOVERNMENT WORKING GROUP: 2020 JOINT STATEMENT ON ADAPTATION PLANNING

Challenges:

1. SLR is exacerbating hazards and they vary statewide
2. Disadvantaged communities are impacted disproportionately
3. Adaptation options all have their tradeoffs,
4. Decisions we make now may set us on certain paths

Principles:

- Reflect local context
- Equitable public participation
- Best available science
- Phased adaptation w/ thresholds
- Disclose SLR hazards
- Create and refine planning tools
- Culture around CCC/local gov coordination
- Model with public infrastructure

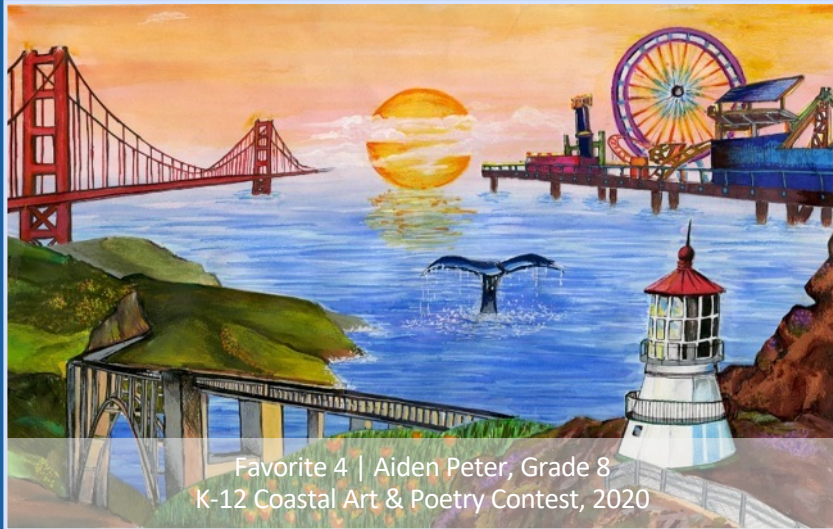
Opportunities:

1. Phasing LCP updates
2. Maintain statewide consistency while flexibly addressing unique local issues
3. Evaluating coastal resource impacts now and in the future in light of sea level rise, and identifying viable mitigation sites to offset those impacts

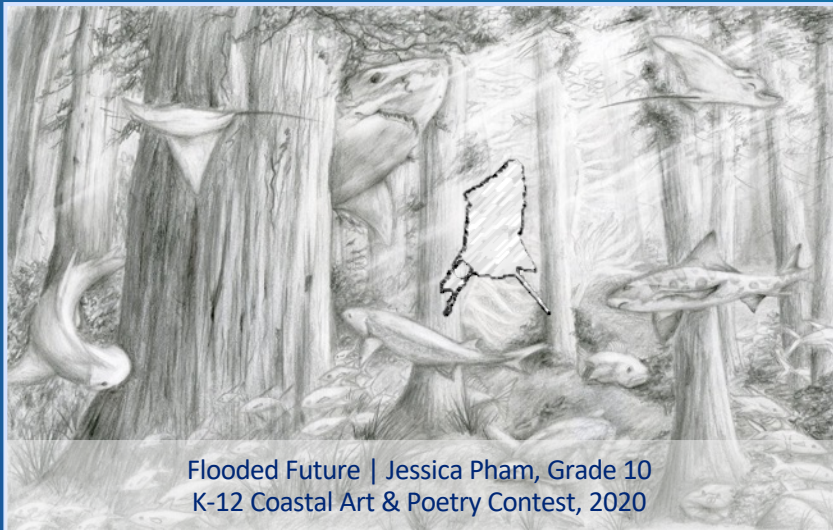


LOCAL GOVERNMENT WORKING GROUP:

PHASED APPROACH TO LCP UPDATES



Favorite 4 | Aiden Peter, Grade 8
K-12 Coastal Art & Poetry Contest, 2020



Flooded Future | Jessica Pham, Grade 10
K-12 Coastal Art & Poetry Contest, 2020

- Help address planning under scientific uncertainty
- Maintain local flexibility while ensuring statewide consistency and protection of coastal resources
- Phasing applies to both the LCP update *process*, and the *substance* of the actual policies



LOCAL GOVERNMENT WORKING GROUP:
BASELINE SLR POLICIES

First round LCP update that incorporates foundational sea level rise hazard planning concepts and sets the stage for future updates

**Best Available
Science**

**Vulnerability Assessment
& Adaptation Plan
Development and Updates**

**Risk Disclosure and
Assumption of Risk**

**Planning Horizons
& Phased Updates**



LOCAL GOVERNMENT WORKING GROUP:

ELEVATION AND CONCURRENCE PROCESS

Strategies for
Avoiding and
Addressing
Conflict and Delays

Elevation and
Concurrence
Process

Figure 1. Suggested milestones for coordination between jurisdictions and the Commission for all LCP updates.

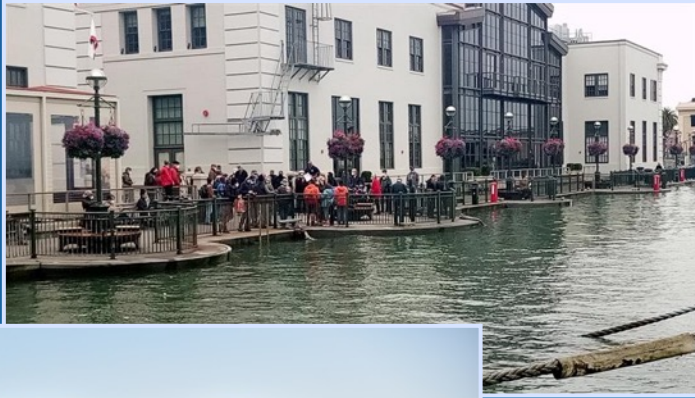


*Coordination/ elevation can be initiated at any point should an LCP update process encounter unexpected challenges.



LOCAL GOVERNMENT WORKING GROUP:

NEIGHBORHOOD-SCALE ADAPTATION



Concept: Identifying and developing adaptation strategies that are specific to defined areas or assets with shared characteristics (e.g., a neighborhood, beach area, site, or asset), and developing LCP policies to support and implement that approach



- Adaptation strategies to respond to different vulnerabilities, coastal dynamics, land uses
 - Managed retreat
 - Armoring
 - Nature-based, hybrid...
- Ensure competing resource needs are balanced overall
- Phase strategies over time to respond to changing conditions

NEXT UP

- Panel Q&A
- Breakout discussion:

What do YOU see as challenges, opportunities, and strategies for SLR adaptation planning?