Coastal Guidance: setting the stage for action

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Overview – Guiding Questions

1. What is the latest understanding of your topic/location?
2. How has the environment fared over the last 5 years?
3. What are the pressing needs and new pressure points to cause change?
4. What are the policy changes needed and/or adaptation in response to climate change?
Over the coming years and decades, sea level will rise.
Trends over the past 5 years

**SEAWALLS**
Decreased footprint, improved visual impact; but more are being built that are being removed

**BEACHES**
Seasonal changes; many beaches show longer term erosional trend that will increase with rising seas
In July 2017, the CA Coastal Commission and CEMEX reached agreement to shut down the last active beach sand mine in the US.

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2015/16 El Niño caused some largest measured shoreline retreat. Greater frequency of large storms in possible in future

Pismo Beach, Photo Credit Cassidy Teufel

RESTORATION PROJECTS

Nourishment projects, wetland restoration, lagoon enhancement, thin layer sediments. Soon to come -- living shoreline.

Carlsbad, Photo Credit Gabe Buhr

Seal Beach, Photo CA Coastal Records
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Coming Soon: vegetated dune at Cardiff; undertaken as a living shoreline project to protect PCH from flooding.
### Points for Change

**California Coastal Commission**

**Sea Level Rise Policy Guidance**

Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs and Coastal Development Permits

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**Table: Sea Level Rise Projections**

<table>
<thead>
<tr>
<th>Time Period *</th>
<th>North of Cape Mendocino</th>
<th>South of Cape Mendocino</th>
</tr>
</thead>
<tbody>
<tr>
<td>by 2030</td>
<td>-2 – 9 in (-4 – +23 cm)</td>
<td>2 – 12 in (4 – 30 cm)</td>
</tr>
<tr>
<td>by 2050</td>
<td>-1 – 19 in (-3 – +48 cm)</td>
<td>5 – 24 in (12 – 61 cm)</td>
</tr>
<tr>
<td>by 2100</td>
<td>4 – 56 in (10 – 143 cm)</td>
<td>17 – 66 in (42 – 167 cm)</td>
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* with year 2000 as a baseline

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**Sea-Level Rise for the Coasts of California, Oregon, and Washington**

Past, Present, and Future
More Recent Points for Change

All available on the Commission’s Web Site
Adaptation Needed for Climate Change

- Continue with the good things we are doing now
  - Prudent land use planning to avoid hazards
  - Hazard avoidance & Hazard Setbacks
  - Conservation easements
  - Protection efforts
- Repurpose things that we are doing now
  - Habitat Restoration
  - Thin-layer augmentation
    - Oyster Reefs, sea grasses & Kelp
    - Living Shorelines
    - Beach and Dune Nourishment
    - Offshore Reef Enhancement
- Rely upon new or totally new things
  - Levitating home pods
  - Roadless transportation
  - Local, non-fossil fuel energy generation
Conclusions

There will be time to deal with climate change...... But there will not be a better time. There will only be worse times.”

David Remnick, No More Magical Thinking, New Yorker, 19Nov2012.