### Sea Level Rise and Shoreline Adaptation: Lessons from the Bay Area

### C. Herron



#### California AEP Conference

Saturday May 20, 2017: 8:45 AM

**ESA Including Sea Level Rise in CEQA Documents** 

#### When and Where to Include Sea Level Rise in a CEQA Document:

- Hydrology and Water Quality
- > For Purposes of Disclosure
- Project Description
- Discussion of consistency with General Plan or other Plans
- Discussion of consistency with Regulatory and Permitting Process
- When Project + Sea Level Rise = Impact



# ESAIncluding Sea Level Rise in CEQA Documents:✓ When it Needs to be Included in the Project Description

#### Incorporate design features

- Raise elevation of building pads, or finished floor elevations
- Raise elevation of site
- Raise perimeter trails or roads
- Increase width of setbacks from shoreline
- Construct barriers
- Stormwater infrastructure



Redwood City Inner Harbor Specific Plan Area (Source: MIG, 2015)

## ESAIncluding Sea Level Rise in CEQA Documents:✓ Consistency with General Plan or Other Local Plan

- ➤ General Plan
- Climate Adaptation Plan
- Hazard Mitigation Plan
- ➢ Other plans

#### **CEQA Guidelines Appendix G**

#### X. LAND USE AND PLANNING. Would the project....

....b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?



ESAIncluding Sea Level Rise in CEQA Documents:✓ Consistency with Regulatory and Permitting Process

BCDC Regulations and Permitting: San Francisco Bay Plan Policies

Two examples:

**Climate Change Policy 2:** For large shoreline projects, prepare risk assessment (RA) that identifies flooding and risks

#### **Climate Change Policy 3:**

Within vulnerable areas, design projects to be resilient to a midcentury SLR. Develop adaptive management plan if project will remain in place longer than midcentury.



# ESA Including Sea Level Rise in CEQA Documents: ✓ Project + Sea Level Rise = Impact

#### Changes to Site, such as:

- Breaching existing levee
- Modifications to shoreline
- Offshore modifications (for ex., removal of breakwaters)

#### Potential Impacts:

- Increased wave run-up leading to other impacts
- Accelerated erosion
- Insufficient infrastructure (stormwater)
- Increased flooding/flood risk
- Increased risk of exposure to soil or water contaminants



Lower Sonoma Creek Marsh Profile

#### **ESA** Practitioner Tips: Self-Educate

#### Review Ballona case, CBIA case

- See how some jurisdictions are taking it on example language, from the Central SOMA Draft EIR (San Francisco):
  - "In California Building Industry Association v. Bay Area Air Quality Management District, 62 Cal.4th 369 (2015), the California Supreme Court held that CEQA does not generally require lead agencies to consider how existing environmental conditions might impact a project's users or residents, except where the project would significantly exacerbate an existing environmental condition. Accordingly, the significance criteria above related to exposure of sensitive receptors to substantial pollutant concentrations is relevant only to the extent that the project significantly exacerbates air quality conditions. The impact is considered significant if the Plan, or implementation of individual development projects pursuant to the Plan including proposed street network changes and open space improvements, would significantly exacerbate existing or future air quality conditions."

### **Practitioner Tips: Select, Support SLR Scenario**

- Use clear language
- Mid-century (2050) vs. End of Century (2100)?
  - Consider lifetime of project, structures
- For Bay Area projects: BCDC follows OPC 2013 guidance
  - By 2050: 4.5" to 24" SLR (mean 16")
  - By 2100: 16" to 66" SLR (mean 36")
  - Also review General Plan, other plans
- > For projects not within BCDC jurisdiction...?
  - Redwood City example (SLC jurisdiction, OPC)
  - Lead agency discretion (subject to the rule of reason, substantial evidence) —
  - Coastal Commission guidance
  - Consider/consult other responsible agencies
- Provide substantial evidence



Millerick Road and Highway 121, 2005 New Year's Eve Flood, Lower Sonoma Creek

#### **ESA Practitioner Tips: Communicate Clearly**

#### ➤Use clear language

- Clearly describe context
- Understand that this can be a difficult concept to communicate

#### Common comments and concerns:

- Extent of anticipated sea level rise
- Nature of sea level rise (flooding vs. inundation)
- Concern regarding reliance on floodwalls
- Costs of sea level rise being kicked down the road (not a CEQA concern)
- Effect of sea level rise related to exposure to toxics



Ocean Beach Public Process (from Ocean Beach Master Plan, SPUR)

## ESAPractitioner Tips: Structure Design Features and<br/>Mitigation Measures With Care

#### Approach:

- 1. Construct buildings and vital transportation infrastructure at elevations not exceeded by floodwaters, even if shoreline protection does not function
- 2. Address more near-term impacts with project design + room for adaptation
  - Shoreline protection
  - Storm drainage system/infrastructure
- 3. Address longer-term impacts with adaptation strategies
  - Adaptive Management Plan
    - Accommodate
    - Protect (engineered and/or natural)
    - Retreat
  - Monitoring triggers
  - Decision-making process
  - Financial/funding mechanism
- 4. Understand Implementation Over Time Will Evolve

Be Specific...And Plan for Uncertainty. **ESA** Practitioner Tips: Resources

- "<u>State of California Sea Level Rise Guidance Document</u>" issued in March 2013 by the Ocean Protection Council.
  - Provides estimates of sea level rise for 2050, 2100
- "<u>Rising Seas in California</u>" issued in April 2017 by the Ocean Protection Council
  - An update on 2013 report; under review by BCDC
- Adapting to Rising Tides project (BCDC)
  - Data, maps, tools, methodologies
  - Access to data map layers
  - Technical assistance (Help Desk)
- BCDC Climate Change Policies
- Christy Herron, <u>cherron@esaassoc.com</u>, 415-962-8407

### ESA Practitioner Tips: Understand Essential Regulatory Processes (BCDC)



#### Adapting to Rising Tides

Contra Costa County Sea Level Rise Vulnerability Assessment

Final Report • February 2016





