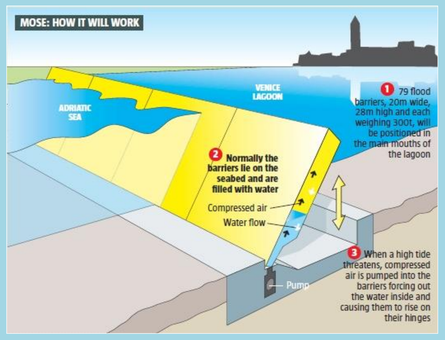
San Francisco Bay Conservation and Development Commission

Fill as Protection from Flooding

Flood Protection Infrastructure

Levee

Tide Gate



Surge Barrier

Seawall

As sea level rises, the Commission will see more projects proposing to place fill for gray infrastructure. Gray shoreline solutions, or hard, armored, and structural, are terms that refer to traditional shoreline and flood protection strategies such as tidal barriers, levees, surge barriers, and revetments, among others. Shoreline managers are examining how to best adapt their infrastructure to the challenges of rising sea level.

Incidental flood protection

Shoreline asset managers (roads and highways, rail lines, parks, etc.) are finding that the infrastructure they manage also serves as critical flood protection for inland areas. As a result, when making their assets adaptable to rising sea level they must consider the flood risk to surrounding areas.

Issues

- BCDC's current laws and policies may facilitate the hardening of the shoreline, as gray infrastructure projects typically require less fill than green infrastructure.
- Development in the shoreline is contingent upon maximum feasible public access. The Commission has limited authority to require resilience and adaptation to rising sea level when there is no Bay fill associated with the project.
- Project-by-project approach to shoreline protection makes Bay-wide shoreline resiliency difficult to achieve.
- Current policies require sufficiently-wide rights-of-way for coastal flood protection structures on the inland side to allow for future increases in the structure's height and width to minimize fill in the Bay. However, there are many areas that lack the space to achieve this requirement.
- The Bay Plan requires that before any proposal for a tidal barrier can be approved, the Commission will be required to replan all of the affected shoreline and water area.
- Impeding water and sediment flow from rivers impacts wildlife, nutrient cycling and oxygen levels in the Bay.

Potential Solutions

- Consider McAteer-Petris and Bay Plan amendments to ensure the Commission can address rising sea level adaptation more broadly within the shoreline band.
- Continue shoreline resiliency planning efforts on a regional scale.
- Conduct a legal analysis of thresholds that may be included in shoreline protection permits to trigger adaptation actions as the project reaches benchmarks.
- Require risk assessments and adaptive management plans to address potential flooding and erosion impacts on adjoining properties and include actions to reduce those impacts.
- Consider policies and guidance that addresses flood protection infrastructure, specifically related to retreat where feasible, connectivity with adjacent areas, assessment of all flooding sources, and phased adaptation.
- Consider developing policies that more directly address tidal and riparian barrier impacts on the physical and biological aspects of the Bay.

Pros/Cons

- Expanding BCDC's shoreline band authority would enable the agency to require resilient or adaptable shoreline projects, but would require more projects receive permits.
- Regional approaches to shoreline adaptation would achieve broader, more effective outcomes, but will require more resources and coordination.
- Adapting to Rising Tides Program is underway as are efforts by counties and partners around the region. However, there are areas where planning has not yet begun.

Discussion Questions

1. Is there anything about how this issue is framed that concerns you?
2. Considering this topic only, what do you envision would be a positive outcome for the region?
3. Would you identify this issue as your top priority to address in the short-term?