

# Green Infrastructure for Flood Protection

Green Infrastructure refers to new methods to construct flood protection and sustain the shoreline, including the combination of “green and grey” strategies. These innovative shoreline protection solutions include wetlands and beaches, wave attenuating organic material berms, living and horizontal levees, oyster reefs and other approaches that can be designed to adapt to changing Bay conditions and offer additional benefits such as habitat, public access, and improved water quality.



## What is Green Infrastructure?

Fill to construct and sustain flood protection strategies that work with natural processes such as barrier beaches, wetland restoration, horizontal levees, tidal creeks, among others. These flood protection approaches are often referred to as green infrastructure, nature-based, innovative, and nonstructural strategies.

### Policy Issues

- Green infrastructure projects may require more significant amounts of fill and repeated applications.
- Placing fill on wetlands as a flood protection strategy may result in impacts and/or conversion of one type of habitat to another (e.g. tidal marsh to mudflat)—contrary to the Commission's current policies on fill and resource conservation.
- Public access requirements increases costs for applicants and are difficult to design and implement.
- BCDC requires mitigation to offset impacts associated with fill, making it more challenging to implement such projects.
- Compared with grey shoreline solutions (e.g. a levee or seawall), a more complex permitting process is required for green infrastructure projects.

### Potential Solutions

- Review the Commission's Regulations related to shoreline protection to ensure that existing requirements are not favoring large amounts of fill for structural shoreline protection projects.
- Explore amending the Commission's Regulations or the Special Area Plan process to streamline projects with certain type and scope of green infrastructure projects aimed towards resilience and adaptation to rising sea levels.
- In updates to the San Francisco Bay Plan, consider modifying fill restrictions, mitigation, and public access requirements for projects that propose innovative shoreline protection projects, such as green infrastructure.

### Pros / Cons

- Multi-benefit flood protection and potential decrease in hardening of the shoreline around the Bay. However, there may be a decrease in surface area and water volume.
- Potential long-term viability of wetlands despite short-term loss of marsh and wildlife.
- Improved permitting process may promote green infrastructure projects.

### 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?

