



www.cityofpaloalto.org/sealevelrise

PALO ALTO HORIZONTAL LEVEE PILOT PROJECT



Graphic does not reflect planning efforts such as the Baylands Comprehensive Conservation Plan, or the Sea Level Rise Adaptation Plan.





PROJECT DRIVERS

- Current flood control levees are not engineered to meet FEMA accreditation standards
- Flood control levee improvement projects:
 - Strategy to Advance Flood protection, Ecosystems and Recreation along San Francisco Bay (SAFER Bay) Project
 - San Francisquito Creek JPA
 - South San Francisco Bay Shoreline Project
 - Valley Water, US Army Corps of Engineers
- Transition zones between terrestrial & tidal habitats constrained by steep artificial faces of traditional levees
 - Restoration priority for resource agencies
 - Collaboration with San Francisco Estuary Partnership



TRADITIONAL VS. HORIZONTAL LEVEES

• Green infrastructure alternative to traditional greyscape solutions (i.e., rip rap)



Current San Mateo Levee

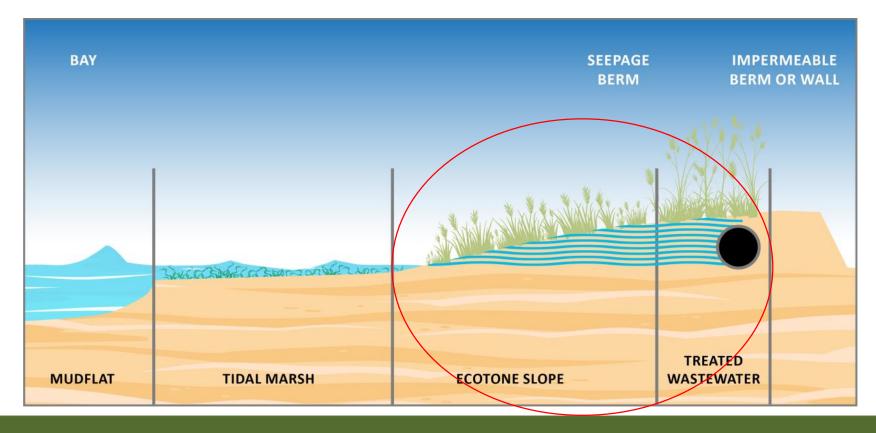


Oro Loma Horizontal Levee Research Site



WHAT IS A HORIZONTAL LEVEE?

• A gently sloping, vegetated berm or ecotone slope that is on the water-side of a flood control levee





HORIZONTAL LEVEE BENEFITS

Habitat Enhancement

- Transitional habitat terrestrial & tidal marsh
- High-tide refugia
- Recreates historic freshwater seeps

Sea Level Rise Adaptation

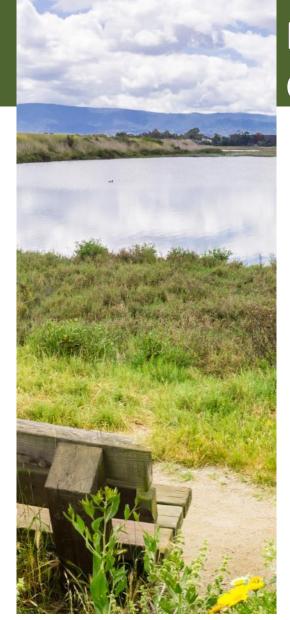
- Wave attenuation
- Sediment accretion and accumulation
- Marsh habitat migration

Wastewater Polishing Treatment

- Nutrients
- Contaminants of Emerging Concern







PALO ALTO HORIZONTAL LEVEE PILOT PROJECT - GOALS

- Collect information on permitting and implementation of small-scale (pilot) horizontal levee within the Palo Alto Baylands
 - Extends that learned from Oro Loma Horizontal Levee Research Site by connecting directly to the Bay and experiencing tidal action
- Integrate information into design elements of larger, flood control levee improvement projects
 - SAFER Bay
 - South San Francisco Bay Shoreline Study Phase II



PALO ALTO HORIZONTAL LEVEE PILOT PROJECT – CONCEPTUAL DESIGN





PALO ALTO HORIZONTAL LEVEE PILOT PROJECT – PROGRESS TO DATE

Conceptual Design Report - 2018

 Horizontal levees technically feasible & appropriate for Palo Alto Baylands

Preliminary Design Report - 2019

- 30% project definition
- Discovered fatal flaw for proposed pilot location
 - FAA approval

Preliminary Design Report Revision

In progress for new location



Yellow = originally proposed location

Red = new location



NEXT STEPS

- Continue collaboration with San Francisco Estuary Partnership
- Revise Preliminary Design Report: December 2020
- Progress Design to 60% Project Definition & CEQA: 2021
 - Community Workshops
 - Intersection of public access and habitat enhancement
 - Engaging disadvantaged communities and youth
- Permitting & Final Design: ~2022
- Construction: ~2023





THANK YOUS!

FUNDERS





PROJECT TEAM









CONTACT US



FOR MORE INFORMATION OR TO SIGN UP FOR EMAIL UPDATES, GO TO:

WWW.CITYOFPALOALTO.ORG/SEALEVELRISE

SAMANTHA ENGELAGE

Senior Engineer
Samantha.Engelage@CityofPaloAlto.org

