


# Advancing Nature-based Shoreline Solutions

Caitlin Sweeney, Director, SF Estuary Partnership  
Heidi Nutters, Senior Program Manager, SF Estuary Partnership





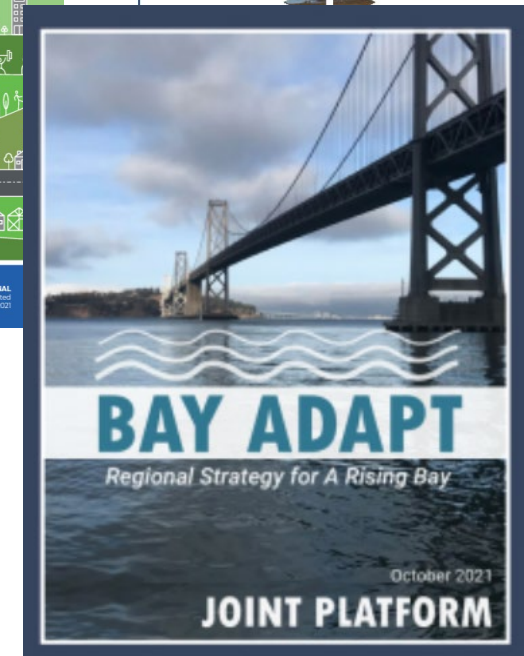
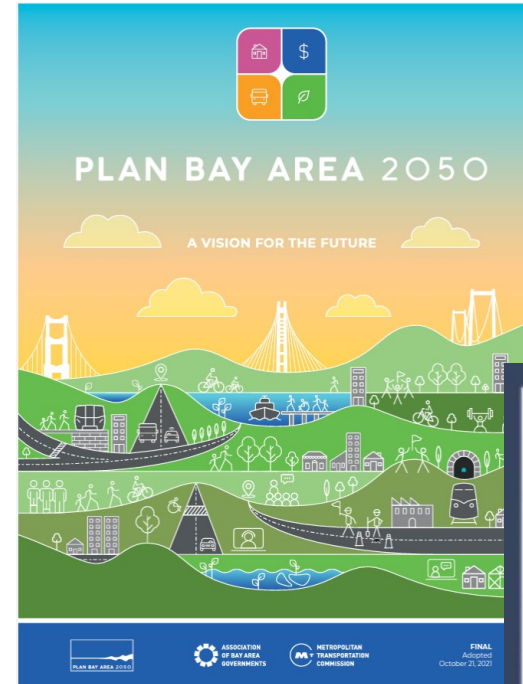
# What do we mean by nature-based solutions?

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*"Nature-based Solutions leverage nature and the power of healthy ecosystems to protect people, optimize infrastructure and safeguard a stable and biodiverse future"* - International Union for the Conservation of Nature and Natural Resources (IUCN)

# Why Nature-based Solutions?

- Increasing urgency to advance projects using innovative approaches that support multiple benefits – people, nature, communities
- Regional Guidance
  - Plan Bay Area 2050, Bay Adapt Joint Platform, Estuary Blueprint
- State and Federal Guidance
  - Executive Orders



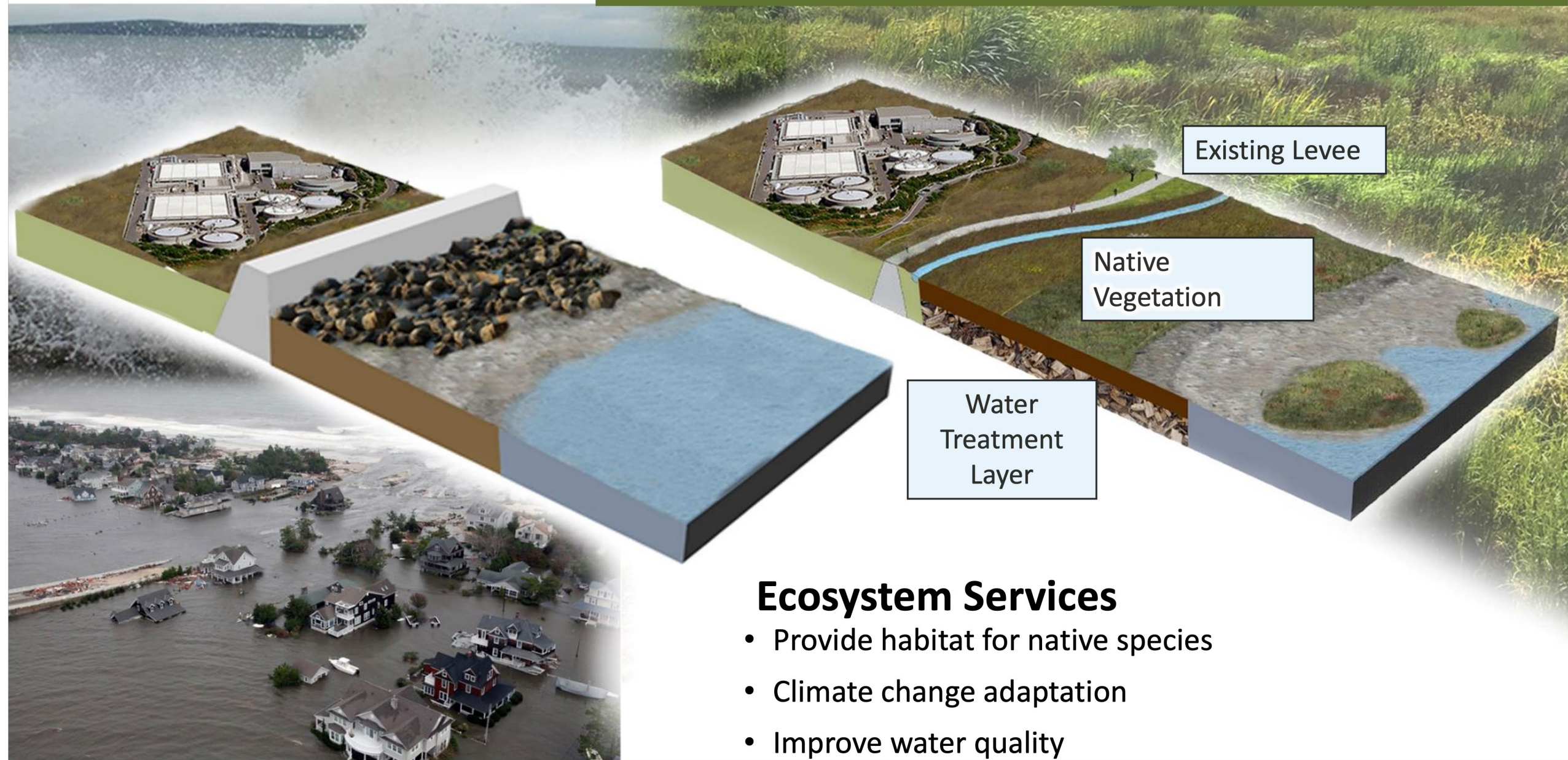
# Types of Shoreline NBS

- Natural habitats such as tidal marshes, tidal flats, sandy beaches, eelgrass and oyster beds
- Hybrid approaches such as "living" seawalls
- Horizontal levees



## CONVENTIONAL LEVEES & SEA WALLS

## HORIZONTAL LEVEE SOLUTION



### Ecosystem Services

- Provide habitat for native species
- Climate change adaptation
- Improve water quality



# Reimagining Wastewater as a Resource

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# Reimagining Wetlands for People and Nature

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# SFEP's Work on NBS

## Regional Scale

- Technology transfer & convenings
- Address barriers to implementation – funding, regulatory, governance

## Local Scale

- Advance on the ground projects in partnership with local jurisdictions and communities





We partner with communities around the region



# Oro Loma Horizontal Levee

- Pilot project built in 2015 to study water quality improvement opportunities
- Partnership between UC Berkeley, Valley Water, Oro Loma Sanitary District, SF Estuary Institute, Save The Bay, East Bay Dischargers Authority, SFEP
- Findings show significant removal of nutrients and contaminants of emerging concern



# North Richmond Living Levee

- Provide public access, habitat, and stormwater treatment
- Protect vulnerable communities and valuable infrastructure from sea level rise
- Community-driven design process led by The Watershed Project, West County Wastewater District, Mithun



# Fairfield Suisun Sewer District Climate Resiliency Project

- Develop freshwater wetlands, providing both wildlife habitat and nutrient removal benefits.
- Increase public access, educational and recreation opportunities in an area with few public parks.
- Reduce nutrients to San Francisco Bay, decreasing risks of harmful algal blooms.
- Conceptual design development stage: 2023-2027

# Key Implementation Challenges

- PACE AND SCALE
- REGULATORY
- GOVERNANCE
- KEEPING COMMUNITIES AT THE CENTER

# Thank you!

Caitlin Sweeney, Director

[caitlin.sweeney@sfestuary.org](mailto:caitlin.sweeney@sfestuary.org)

Heidi Nutters, Senior Program Manager

[heidi.nutters@sfestuary.org](mailto:heidi.nutters@sfestuary.org)

