

Introduction to the Adaptation Atlas Toolbox: Resources for Communities

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What We Know...



Shoreline communities need adapt to rising sea levels and more extreme storms using strategies that are effective, equitable, and durable.

What We Know...



There is no one-size-fits-all approach to adaptation.
Different communities will have different needs.

What We Know...

Natural and nature-based solutions like wetlands, beaches, and living shorelines can provide flood protection as well as co-benefits like habitat for wildlife and green space for people.



MLK Regional Shoreline, Oakland
Photo: CA King Tides Project

What We Need to Understand...

What types of nature-based solutions are most effective along the Bay's varying shorelines?



What We Need to Understand...

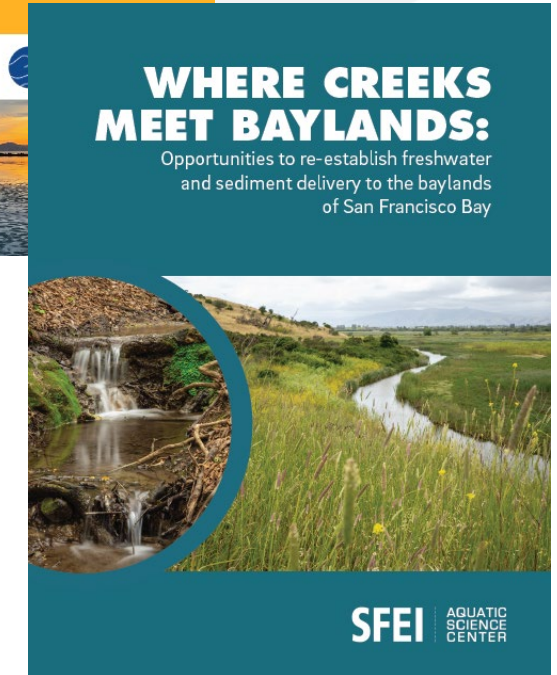
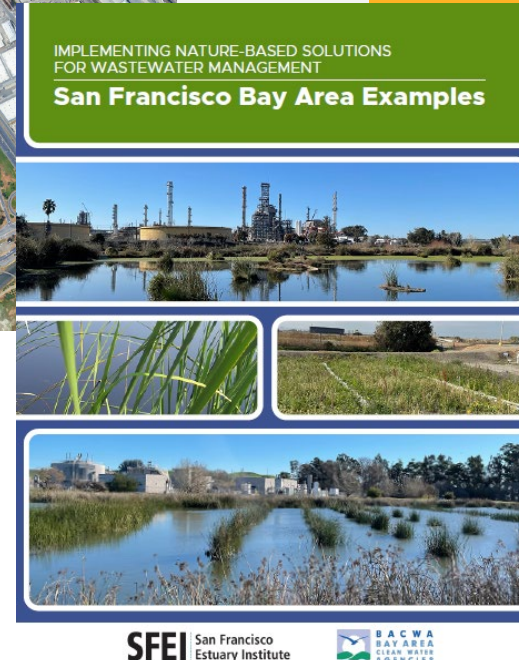
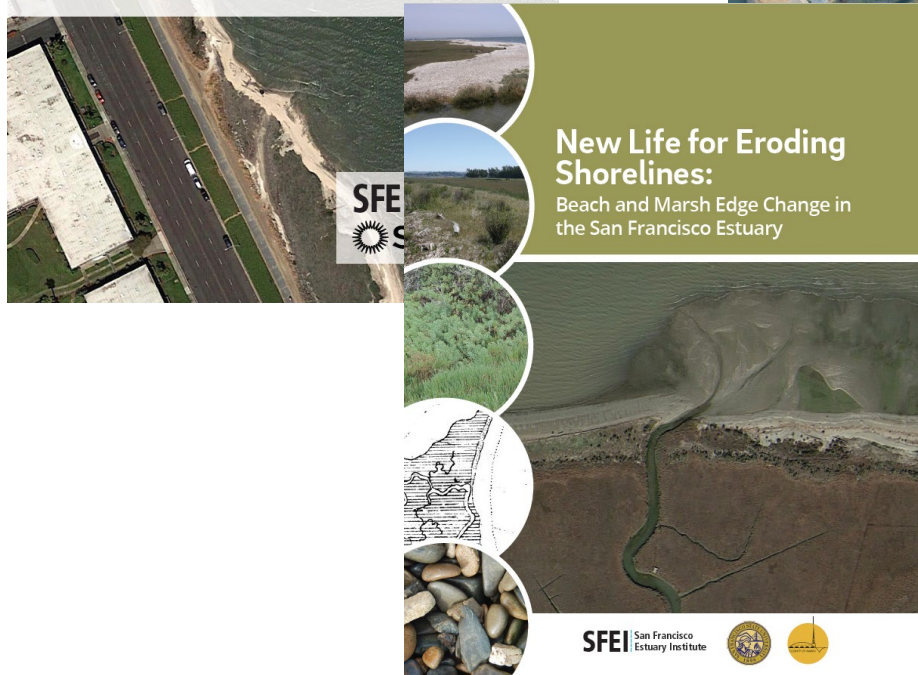
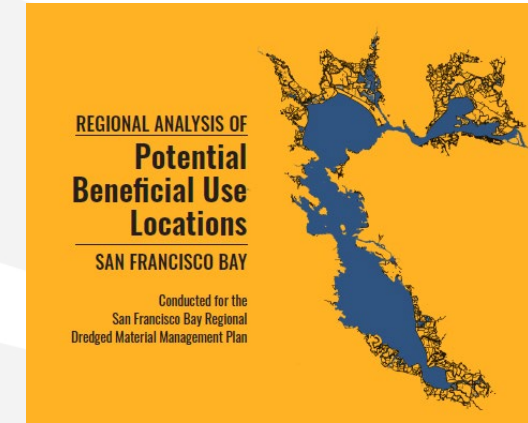
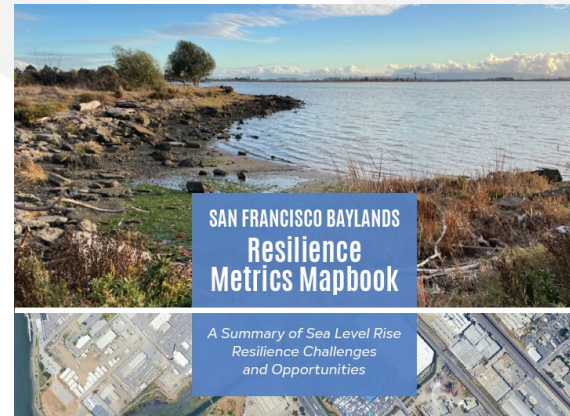
How can neighboring communities work together to develop cost-effective strategies for shoreline adaptation?



What We Need to Understand...

How can these strategies maximize the co-benefits of nature-based solutions for people and the environment?

Adaptation Atlas Toolbox



What does the Adaptation Atlas do?



1

Provides a planning methodology to use nature's boundaries
(instead of traditional boundaries)

2

Identifies nature-based solutions that could work well in a given place
(and encourages the use of nature as much as is feasible)

3

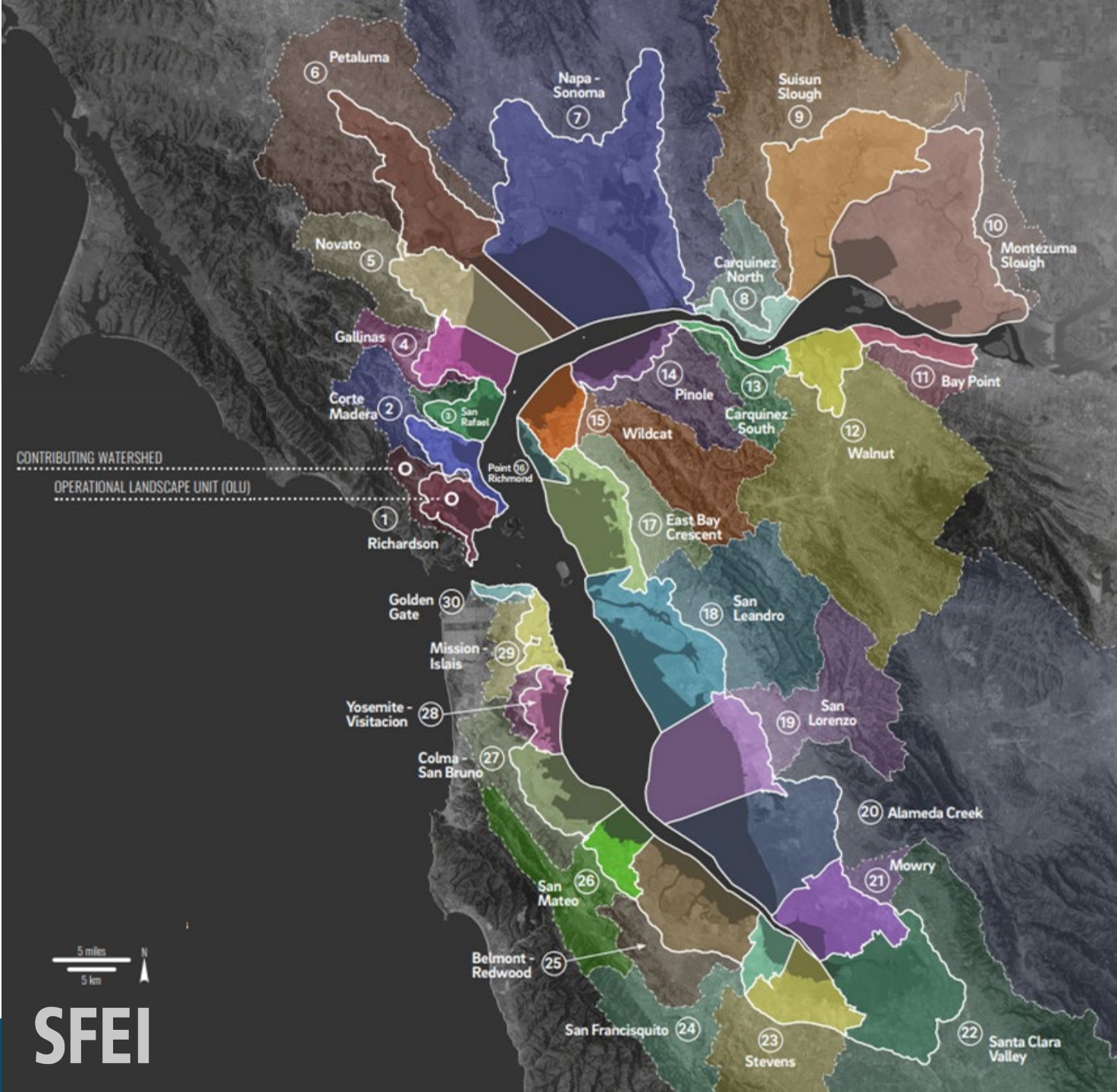
Offers a framework to combine measures into strategies *(and is a way to bring many groups together to envision a resilient future)*

“Nature’s Boundaries”

Operational Landscape Unit (OLU):

*A natural planning unit where the landscape **would benefit from being managed holistically***

- 30 OLUs around SF Bay
- Defined by shared physical attributes like geomorphic processes, bathymetry, and sea level rise
- Includes baylands and watershed boundaries



Legend

CONDITIONS SUITABLE FOR*:

- Nearshore reefs
- Submerged aquatic vegetation (eelgrass)
- Beach along natural shoreline
- Beach along fortified shoreline
- Tidal marsh
- Polder management
- Ecotone levee
- Migration space preparation (unprotected)
- Migration space preparation (protected)

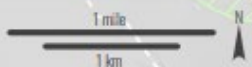
EXISTING FEATURES

- Creek
- Mudflat
- Tidal marsh
- Development

OTHER

- Elevation unknown per USGS 2013
- Newly restored or planned restoration

For a map of current baylands habitats, see page 39.



***Disclaimer:** This is not an adaptation plan. This map only provides information on the suitability of nature-based measures according to the methods detailed in this report. Additional study, planning, and engineering will be required to further refine these opportunities.

Nature-based Adaptation Measures

Nearshore reefs, Submerged aquatic vegetation, Beaches, Tidal marshes, Polder management, Ecotone levees, Migration space preparation

Selected Measures		Suitability	
NATURE-BASED	Nearshore reefs	●	
	Submerged aquatic vegetation	●	
	Beaches	●	
	Tidal marshes	●	
	Polder management	◐	
	Ecotone levees	●	
	Migration space preparation	●	
<hr/>			
○	◐	●	
Limited suitability		Some suitability	High suitability



Tidal marsh fronting wastewater treatment ponds and industrial areas along Richmond's shoreline in the Wildcat OLU (Photo by Micha Salomon, SFEI)

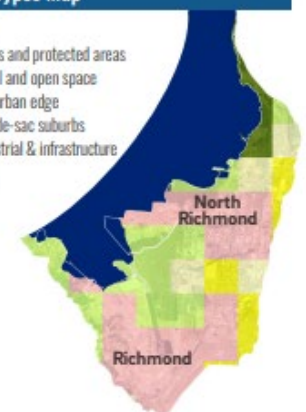
Other Adaptation Opportunities

Easements, buyouts in open/protected areas
Elevating sites / floodproofing
Rezoning, tax incentives, buyouts

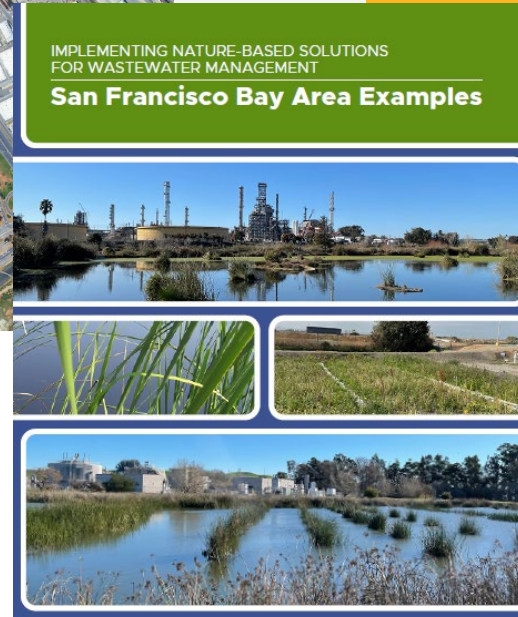
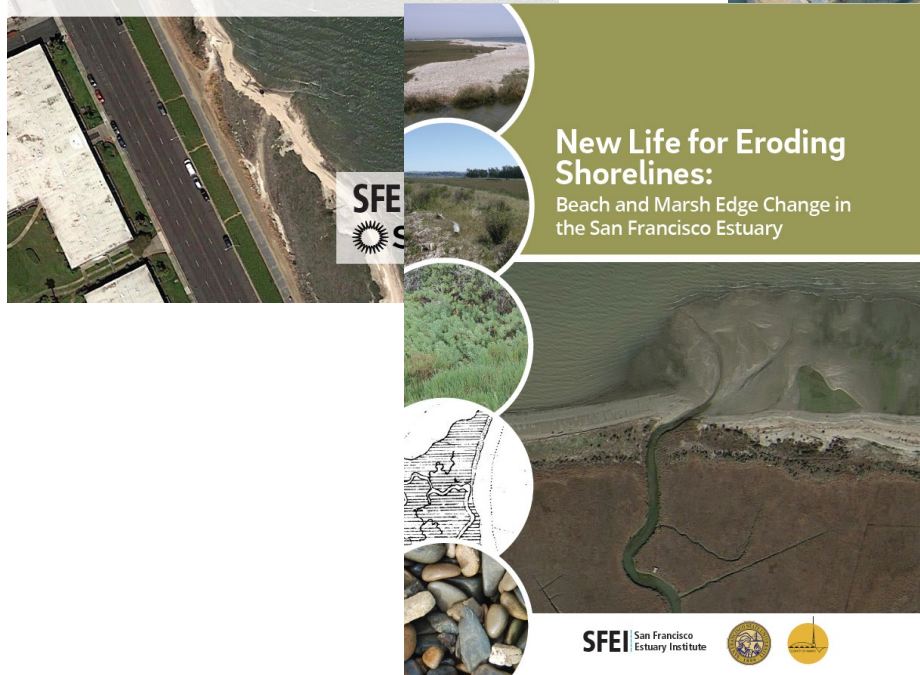
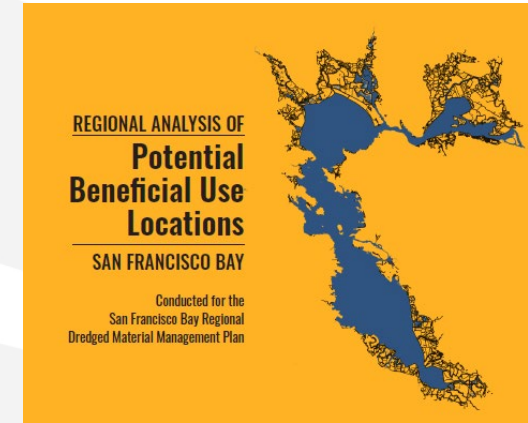
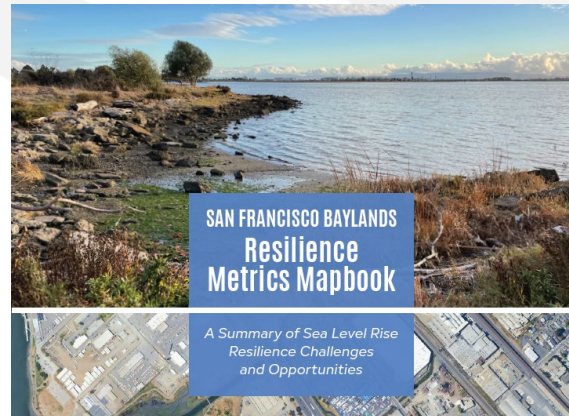
Place Types Map

Legend

- Parks and protected areas
- Rural and open space
- Suburban edge
- Cul-de-sac suburbs
- Industrial & infrastructure
- Bay



Adaptation Atlas Toolbox



Supporting BCDC's Regional Shoreline Adaptation Plan



Regional Shoreline Adaptation Plan:

One Bay Vision,
Strategic Regional Priorities,
and Subregional Shoreline
Adaptation Plan Guidelines

December 2024



San Francisco
Bay Conservation
and Development
Commission (BCDC)

ONE BAY VISION

As sea levels rise...

Healthy Baylands ecosystems thrive.

To achieve this:

- **Protect, restore, and enhance** Baylands ecosystems to improve their function, scale, biodiversity, and services, and meet regional habitat goals.
- **Prioritize nature-based solutions where possible** and incorporate habitat connectivity, sediment management, and whole watershed approaches into shoreline planning and projects.
- Identify and facilitate **opportunities for ecosystems to migrate landward** to support and enhance natural adaptation processes.

Session Talks

- ***1:20-1:45 PM: Mapping Nature-Based Adaptation Opportunities for San Francisco Bay***, Ellen Plane, Senior Scientist, San Francisco Estuary Institute
- ***1:45-2:10 PM: From Atlas to Action: Updated Guidance and Local Visioning for Nature-Based Adaptation in San Francisco Bay***, Katie McKnight, Senior Design Manager and Scientist, San Francisco Estuary Institute
- ***2:10-2:35 PM: Nature-Based Solutions for Nutrient Removal: Expanding the Adaptation Atlas Framework to Address Water Quality Challenges***, Ian Wren, Staff Scientist, San Francisco Baykeeper
- ***2:35-3:00 PM: Advancing Nature-based Solutions in the East Bay Crescent***, Heidi Nutters, Principal Program Manager, San Francisco Estuary Partnership