

# Bay Adapt and the Regional Shoreline Adaptation Plan

DRB/ECRB Joint Meeting  
7/26/2023



**Dana Brechwald, Assistant Planning Director for Climate Adaptation**

**Ethan Lavine, Assistant Regulatory Director for Climate Adaptation**

# Planned Discussion

- Introduce Bay Adapt initiatives
- Questions to consider as you listen:
  - As Advisory Board members, how and when would you like to engage?
  - What resources would you recommend to support these initiatives?

# 2/3 of California's sea level rise impacts will be felt in the Bay Area

- Temporary Flooding
- Permanent Inundation
- Shoreline Erosion
- Groundwater Rise



<b>ALREADY SEEN:</b>	<b>+ 8 inches SLR</b>
<b>PROJECTED BY 2050:</b>	<b>+ 12 to 32 inches</b>
<b>END OF CENTURY:</b>	<b>10+ feet?</b>

# No matter where you live, shoreline flooding will impact everyone in the Bay Area

What's at risk?  
(40-100 years)



5 million daily highway vehicle trips

60,000 daily rail commuters



13,000 existing housing units

104,000 existing jobs

70,000 new, planned housing units

85,000 new, planned jobs

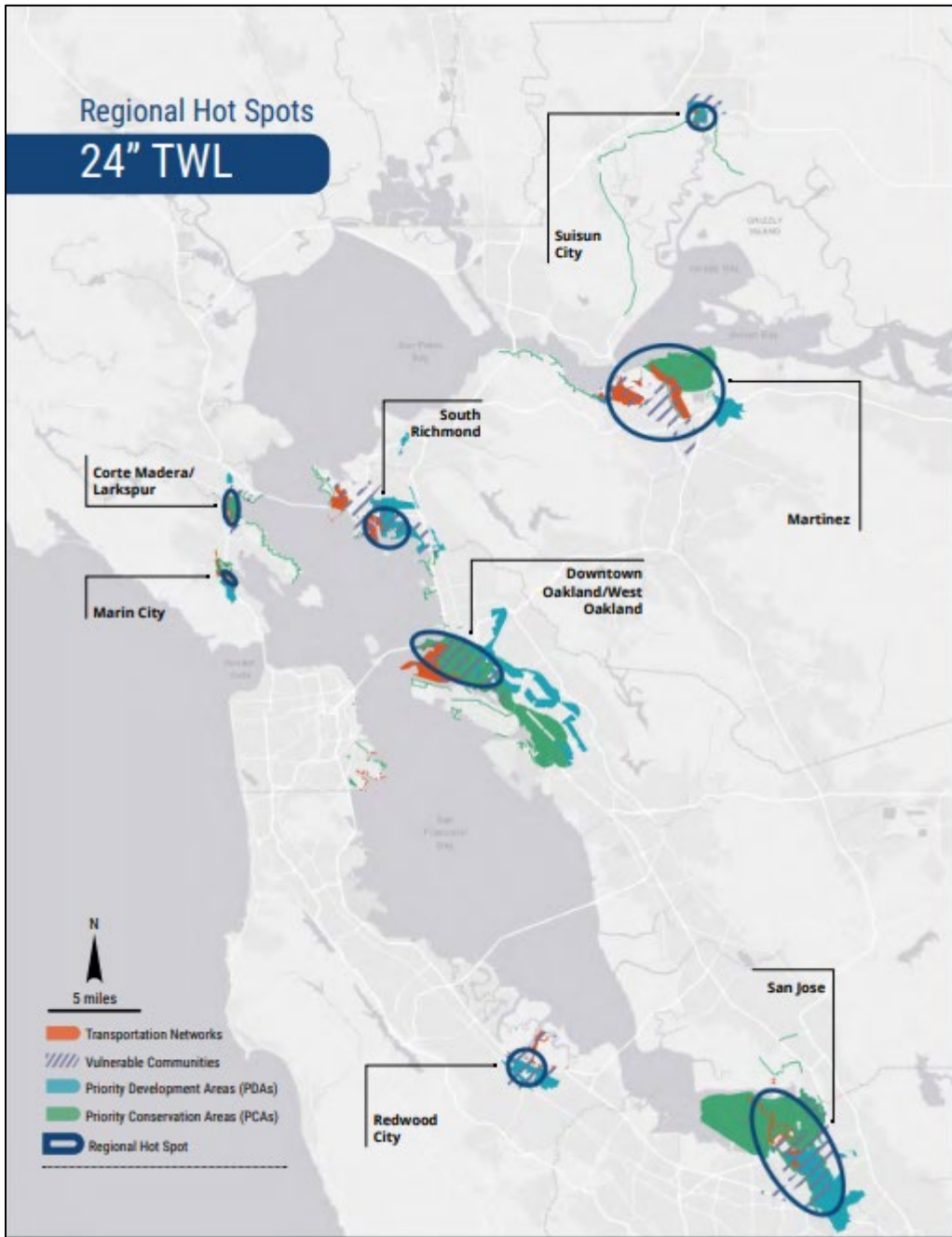


28,000 socially vulnerable residents

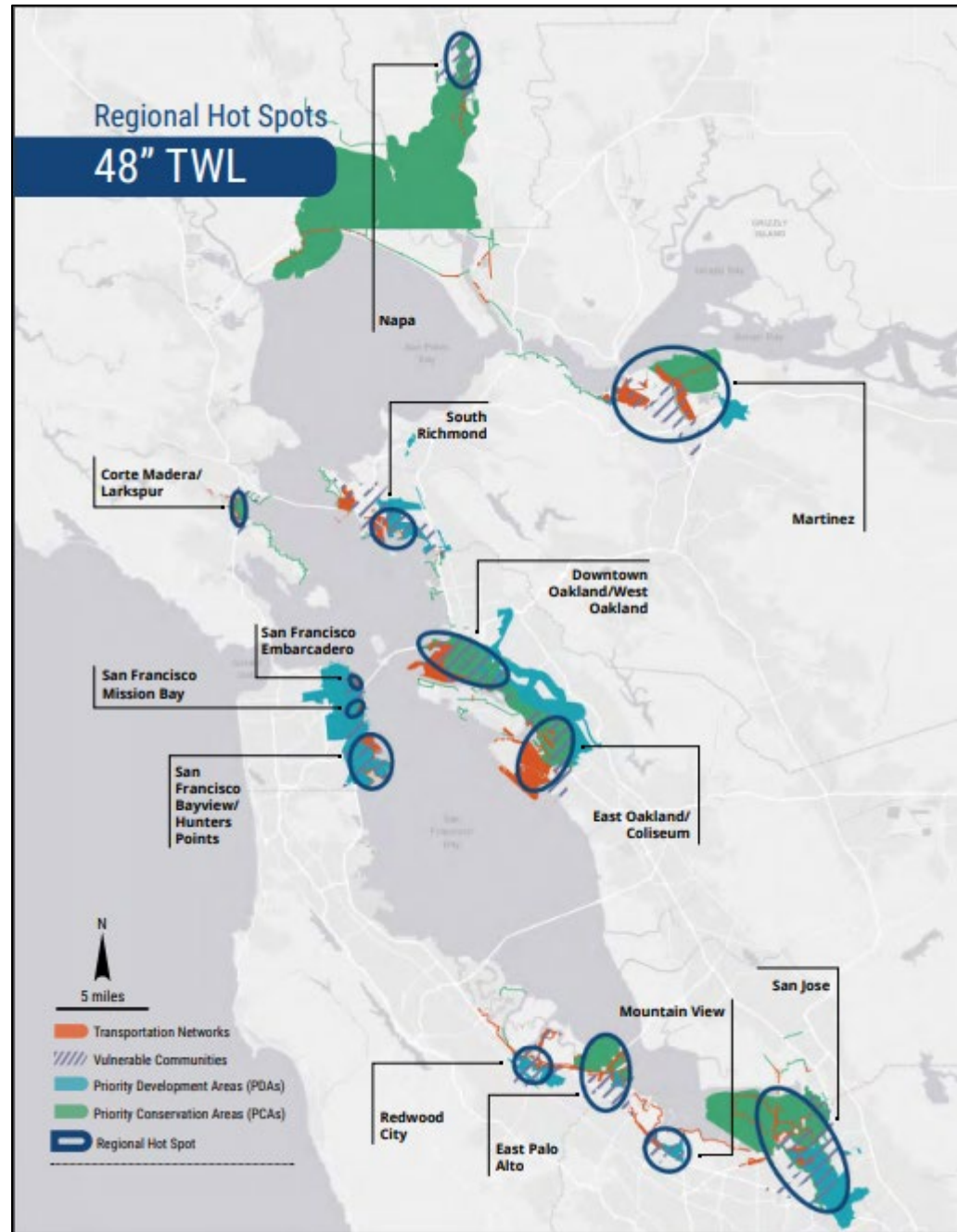


20,000 acres of depressional wetlands, lagoon and tidal marsh habitat

## Regional Hot Spots 24" TWL



## Regional Hot Spots 48" TWL

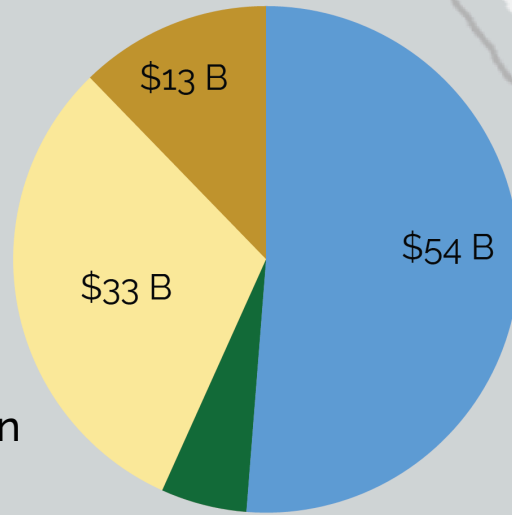


# Adaptation Needs

# \$110 b<sup>1</sup>

Estimated cost of sea level rise adaptation through 2050

- \$52 billion: Estimated cost for known or planned projects
- \$54 billion: Estimated placeholder cost for areas with adaptation needs
- \$3 billion: Estimated additional sediment management needs<sup>2</sup>



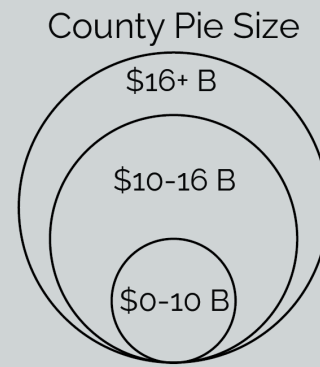
**Escalated Regional Cost by Project Type<sup>1</sup>**  
\$110 billion (B)

<sup>1</sup> In year of expenditure (YOE) dollars. <sup>2</sup> Estimate developed by BCDC and SFEI analysis.



<sup>1</sup> Values represented in Year of Expenditure dollars; Regional cost includes \$3B in additional sediment need.

<sup>2</sup> Locally identified projects do not account for studies or plans without defined interventions.



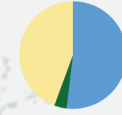
Sonoma  
\$8 B



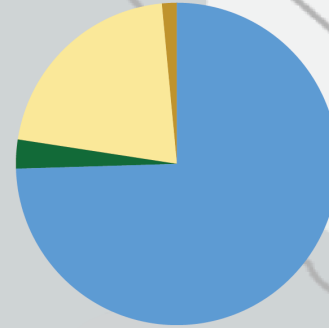
Napa  
\$5 B



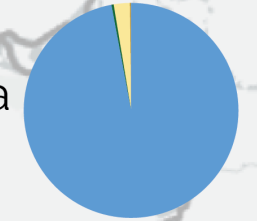
Solano  
\$7 B



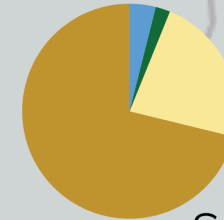
Marin  
\$17 B



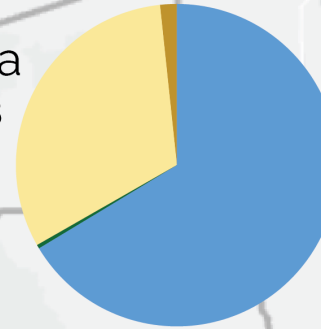
Contra Costa  
\$13 B



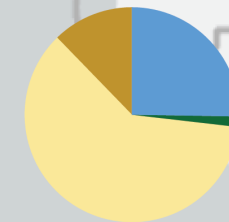
San Francisco  
\$15 B



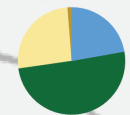
Alameda  
\$22 B



San Mateo  
\$11 B



Santa Clara  
\$8 B



## A Rising Bay

**A regional  
problem  
requires  
regional  
solutions**



### Why?

- Flooding knows no boundaries
- Frontline communities: Most impacted and fewest resources
- Near-term loss of wetlands
- Patchwork of protective actions
- Inconsistent application of science
- Competition not collaboration for limited funding
- No way to measure collective progress

# What is Bay Adapt?



A regional, consensus-driven strategy that lays out the actions necessary to adapt the Bay Area to rising sea level to protect **people** and the **natural** and **built environment**





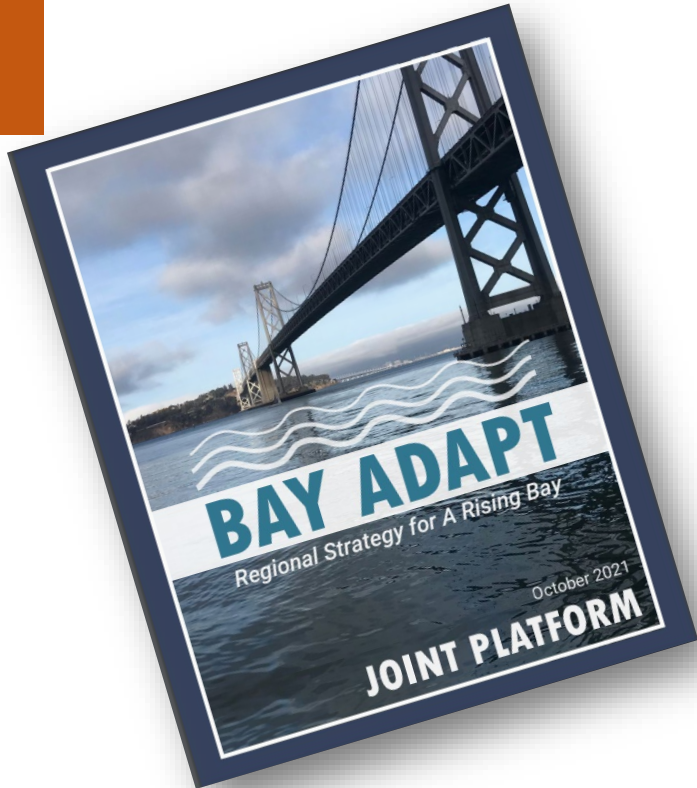
## Guiding Principles

- ▶ Support socially vulnerable communities
- ▶ Put nature first whenever possible
- ▶ Solve interconnected problems at the same time
- ▶ Practice inclusive, community-led governance and decision-making
- ▶ Support existing efforts but plan for the long term
- ▶ Pick the right strategy for the right place at the right time



# Joint Platform

- Engaged over **360+** participants in two public workshops
- Had **81** working group members
- Held **10** focus group meetings
- Gave over **50** presentations around the region
  
- Identified **9 actions** and **21 tasks**
- Adopted by BCDC October 2021
- Has **over 55 endorsements** from cities, counties, and organizations



# Implementing **Bay Adapt**

**1**

Increasing  
**Community  
Capacity**

**2**

Regional  
**Shoreline  
Adaptation  
Plan**

**3**

Regulatory  
**Improve-  
ments**

**4**

**Backbone  
Agency  
Strategy**



OCEAN  
PROTECTION  
COUNCIL



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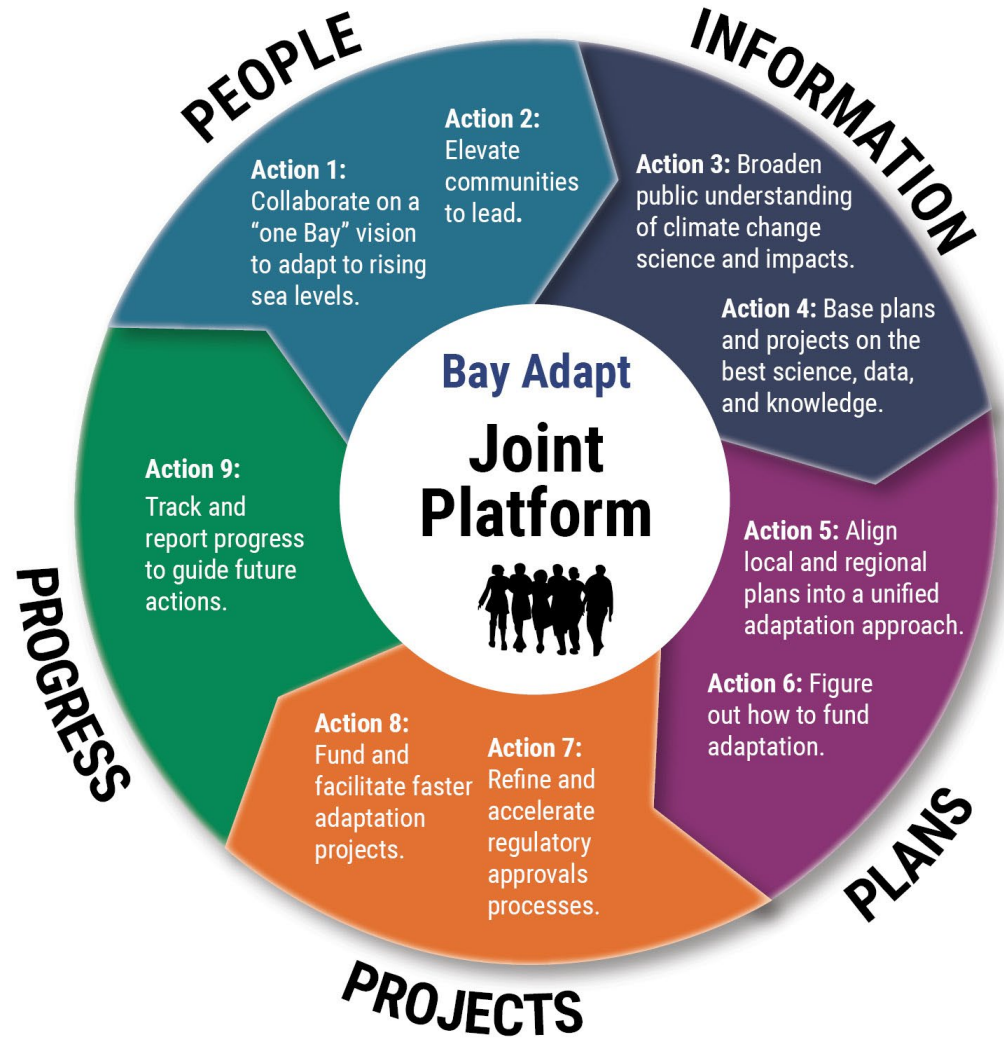
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# Bay Adapt Joint Platform



## Actions Addressed by the Regional Shoreline Adaptation Plan:

- Action 1:* Collaborate on a “one Bay” vision to adapt to rising sea levels
- Action 5:* Align local and regional plans into a unified adaptation approach
- Action 8:* Fund and facilitate faster adaptation projects
- Action 9:* Track and report progress to guide future actions

# What is the Regional Shoreline Adaptation Plan?



## Regional Shoreline Adaptation Plan

An implementing project of **BAY ADAPT**

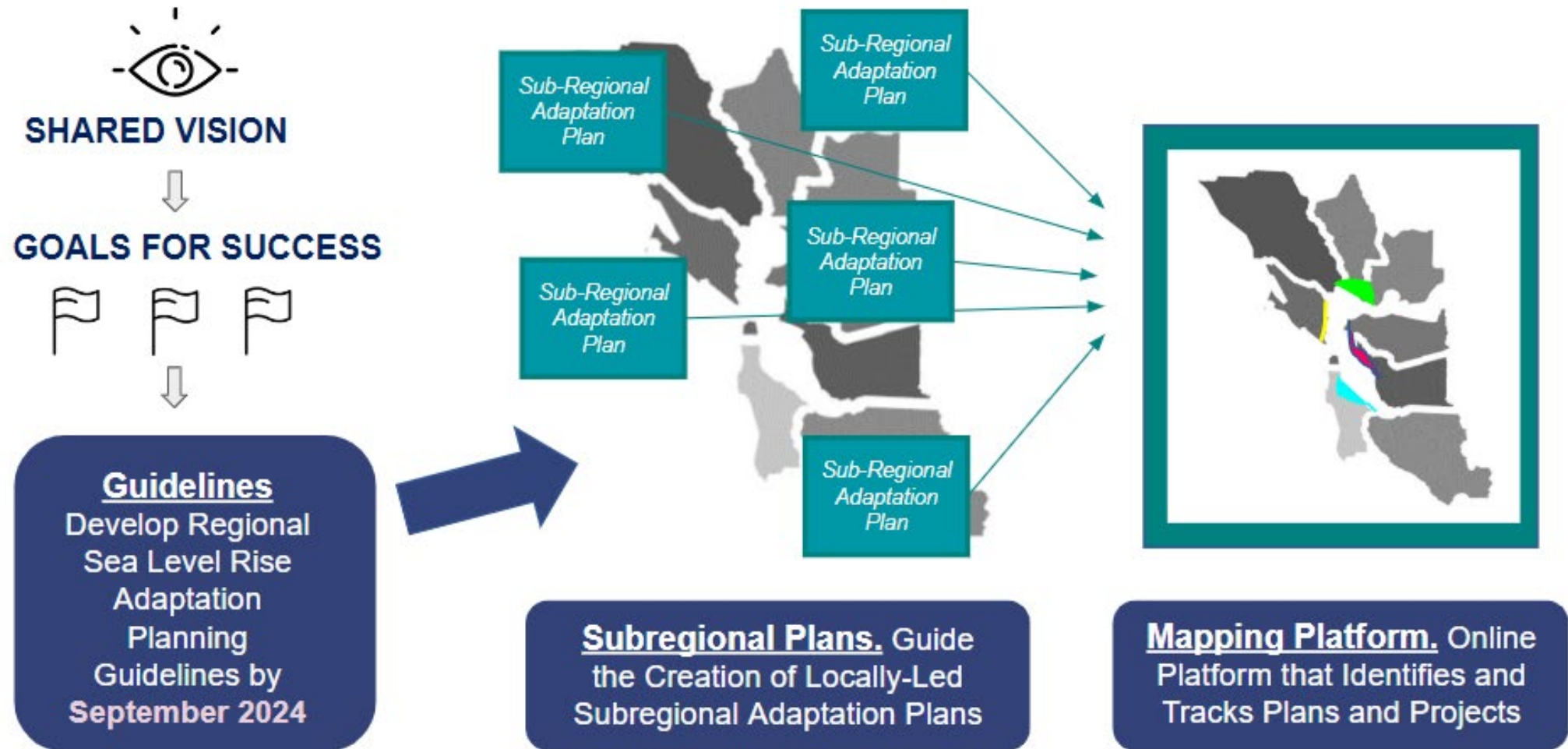
A region-wide plan for the bay shoreline that guides the creation of coordinated, **locally-planned** sea level rise **adaptation actions** that **work together** to meet **regional goals**.

# What can the Regional Shoreline Adaptation Plan achieve?



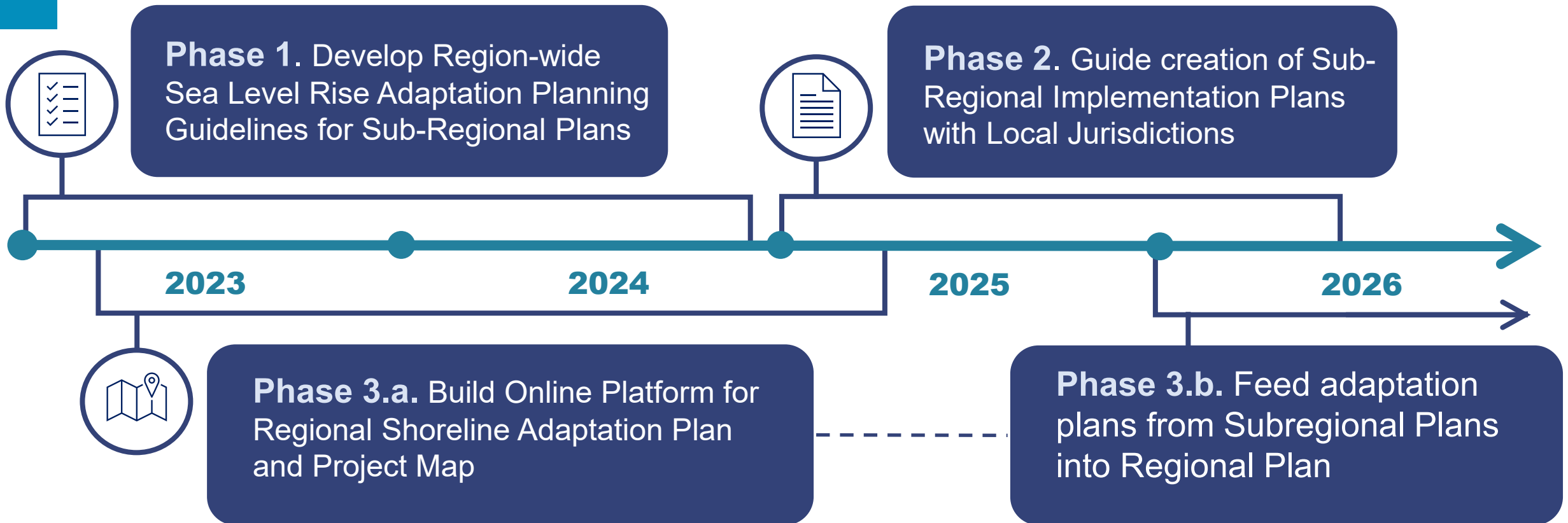
- Adaptation that **coordinates** with neighboring jurisdictions
- **Priority** resources to frontline communities
- Long-term **health** of wetlands
- Strategy for **adaptation implementation** based on risk
- Common **standards and methods** for applying science
- **Funding pipeline** that reduces burdens on local jurisdictions
- Tracking and evaluation towards **collective vision of progress**

# Regional Shoreline Adaptation Plan





# Regional Shoreline Adaptation Plan Timeline



# What does a Sub-regional Adaptation Plan **Look Like?**

*Could be a standalone plan or elements could be developed as components of other plans*

## Vulnerability Assessment

- *Based on region-wide standards for flood projections and models*
- *Minimum assessment categories*
- *Assessment of multi-jurisdictional and regional consequences*

## Identification and evaluation of adaptation options

- *Responsive to standardized definition of vulnerability*
- *Evaluated using a common set of considerations tied to regional priorities*

## Development of “final option” adaptation pathways for all vulnerable sections of shoreline

- *Pathways developed using a common set of considerations tied to regional priorities*

# Developing the Region-Wide Guidelines

## Topics that plans should consider:

- People and Health
- Contaminated Sites
- Habitat
- Development
- Transportation
- Critical Infrastructure
- Public Access
- Environmental Justice Communities
- Ecosystem Health
- GHG Reductions
- Multi-Jurisdictional

## Why these topics?

- Responsive to known risks from SLR in the Bay Area
- Acknowledge shared land boundary of flooding impacts or implementation coordination and/or cross-Bay impacts
- Address Networked Systems or Biophysical Connectivity
- Reflect Regional Priorities

# Guideline **Expectations**

## What the Guidelines **Are** **Envisioned to Be**

- A guide for *plans*
- Best practices for vulnerability assessments, identifying and evaluating shoreline adaptation options, and developing adaptation pathways that consider issues the region thinks are important
- Voluntary, non-enforceable, and incentive driven
- Aligned with existing planning processes
- Applicable only where relevant

## What the Guidelines **Are NOT** **Envisioned to Be**

- Project design guidelines
- Mandatory or enforceable by BCDC permitting or other legal authority
- An additional burden on top of existing planning processes
- Blanket rules that don't consider local conditions, needs, or values

# Engaging Diverse Stakeholders Throughout the Process

(Subject to change)



## Regional Vision and Goals

## Region-wide Guidelines

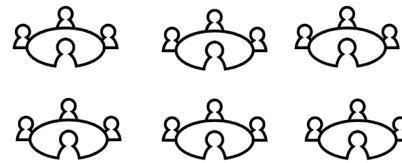
## Public Comment

BCDC Adoption



- Leadership Groups**
- BCDC Commission
  - Local Elected Regional Task Force
  - Advisory Group

Public Workshop #1



Public Workshop #2

Local Meetings

- Additional Outreach*
- Potential focus groups
  - Presentations as requested
  - Community pop-up events
  - Other creative ideas

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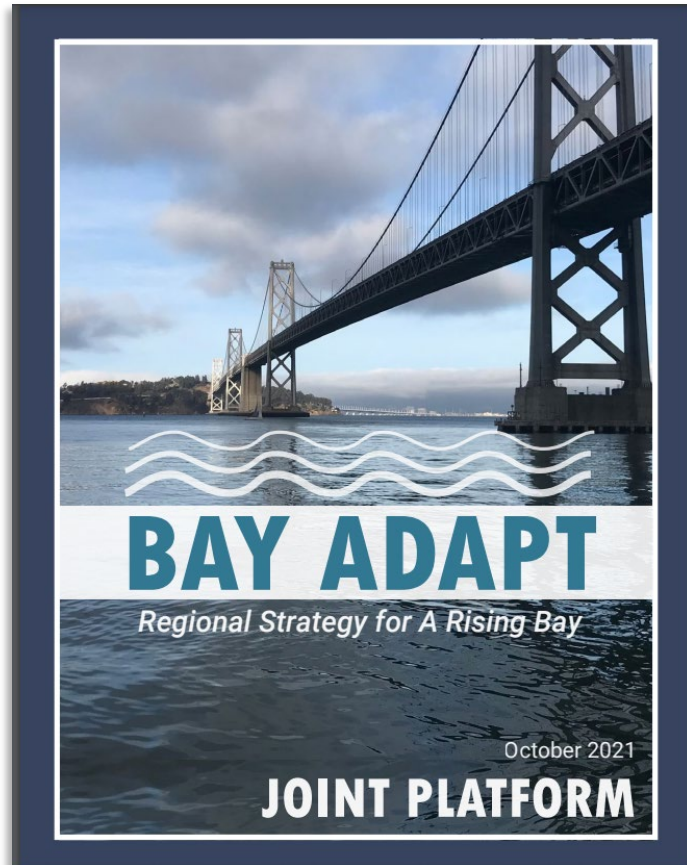
**Backbone  
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# Permitting for a resilient shoreline



*“Permitting and construction should accelerate, not hold back, resilient shoreline adaptation projects that...*

- ... value ecosystems and people,*
- ... align with the region’s vision and funding priorities,*
- ... and apply innovative approaches.”*

# How this fits in



**Do you love the Bay shoreline?**

Photo: Andrea Gaffney, BCDC

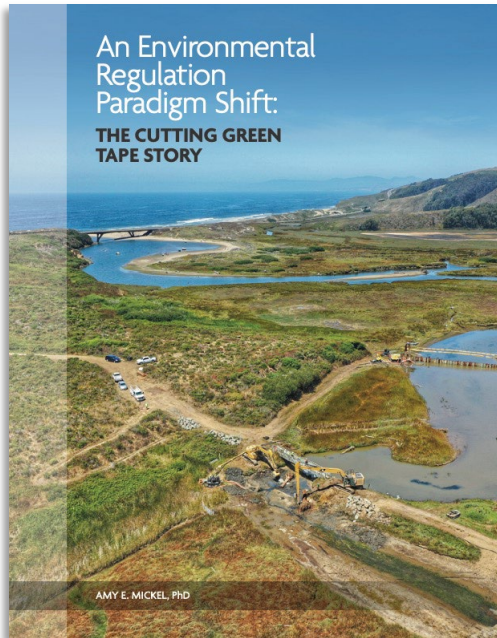
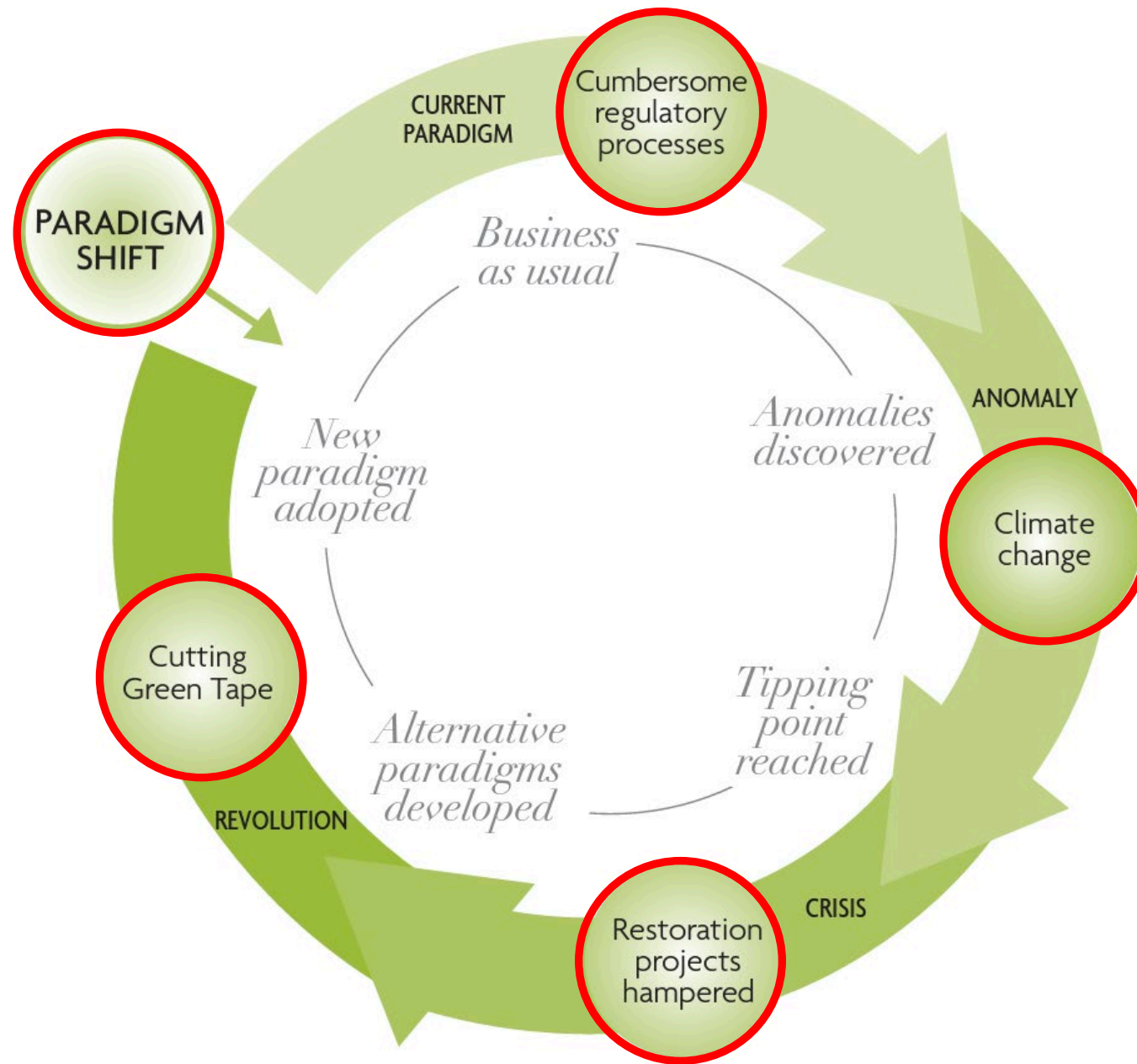
The San Francisco Bay Conservation and Development Commission (BCDC)  
*invites you to join a conversation on*

**Racial Equity**





**“Culture eats strategy  
for breakfast.”**



**FIGURE 2.** FIVE PHASES OF A PARADIGM SHIFT AS APPLIED TO CGT

# Areas of focus

- 1. Make permitting faster and more efficient**
2. Make our regulatory program easier to navigate
3. Remove roadblocks to effective nature-based adaptation
4. Work together with our regulatory partners
5. Reimagine BCDC's role in the region

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5. **Reimagine BCDC's role in the region**

# How we'll move forward

Now – Early 2024

Assess  
Challenges  
and Solutions



Early 2024

Plan and  
Prioritize  
Initiatives



2024 - 2025

Implement  
Priority  
Projects



# Program assessment

## “Lessons Learned”

The collage features 15 distinct documents:

- Shoreline Restoration/Resiliency Projects in SF Bay: An Opportunity for Improving Regulatory Efficiency** (November 21, 2017) by the Bay Planning Coalition, Sustainable Watersheds Committee.
- California Coastal Management with a Changing Climate** by Ellen Hanak and Georgina Moreno.
- Changing Government for a Changing Climate: A Concept for Discussion by Will Travis** (June 22, 2018).
- San Francisco Bay Multi-Benefit Wetlands Restoration Common Challenges in Permitting "Sand in the Gears"** (April 27, 2018).
- Shifting the Regulatory Paradigm Toward Bold Innovations Action for a Resilient California** by Jan Anders, Alex Ecological, and others.
- Toward improved sediment management and coastal resilience through efficient permitting in California** by Robert A. Gagliardi, Heidi Gilman, and others.
- SPUR IDEAS - ACTION FOR A BETTER CITY** (February 20, 2020) by Laura Tam, SPUR, and Julie Siegle, SFCF.
- Four Key Actions to Solve for Coastal Flooding and Sea Level Rise in the Bay Area: a Governance Proposal** (February 20, 2020) by Laura Tam, SPUR, and Julie Siegle, SFCF.
- CUTTING GREEN TAPE REGULATORY EFFICIENCIES FOR A RESILIENT ENVIRONMENT** (November 2020).
- Advancing Ecosystem Restoration with Smarter Permitting Case Studies from California** (August 2021) by Letitia Gensler, Stephanie Pantanovic, Clancy Pickett, and Golec Sencan.
- San Francisco Bay Sea Level Rise & Flood Strategy** (February 2012) by the San Francisco Bay Regional Water Quality Control Board.
- THE GOVERNANCE GAP: CLIMATE ADAPTATION AND SEA-LEVEL RISE IN THE SAN FRANCISCO BAY AREA** (July 2016) by Mark J. Daniels, Ph.D., University of California, Davis.
- SAN FRANCISCO BAY SHORELINE Adaptation Atlas** (Working with Nature to Plan for Sea Level Rise Using Operational Landscape Units) by SFEI and SPUR.



Mission-Based Review

15 Papers Reviewed

31 Recommendations Drawn

# How we'll move forward

Now – Early 2024



- Mission-based review
- Today's presentation on "lessons learned"



Early 2024



2024 - 2025



- Improve BCDC processes
- Coordinate with our partners



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[BAY ADAPT ↓](#)

[RESOURCES ↓](#)

[CONTACT US](#)

**THE BAY IS RISING.**  
THE TIME TO COME  
TOGETHER TO ACT IS NOW

[www.bayadapt.org](http://www.bayadapt.org)



[What is Bay Adapt?](#)



[A Rising Bay](#)



[News & Events](#)

# Public Comment



# Planned Discussion

- As Advisory Board members, how and when would you like to engage?
- What resources would you recommend to support these initiatives?

# Sea Level Rise Funding and Investment Framework Project Map

## Local Adaptation Projects and Study Areas<sup>1</sup>

- Local Adaptation Projects
- Local Study Areas

192 projects in original inventory

132 projects updated with stakeholder input

Includes 47 new projects added

## Potential Protective Infrastructure Needs<sup>2</sup>

- Placeholder Adaptation Needs

<sup>1</sup> Includes projects identified in BCDC's Shoreline Adaptation Project Map, a regional project inventory hosted through EcoAtlas: <https://www.ecoatlas.org/groups/303>

<sup>2</sup> Placeholder needs determined by assuming the protection of the shoreline in place.