

2021 CLIMATE CHANGE RISK & RESILIENCE FORUMS

April 8	San Mateo, Foster City, Redwood Shores, Belmont, San Carlos
April 29	Redwood City, Menlo Park, East Palo Alto
June 3	Countywide Wildfire Risk and Resilience
September 9	Brisbane, South San Francisco, San Bruno, Millbrae, Burlingame
October 14	San Mateo County Pacific Coastline

Forums are held on Thursdays, 7:00 PM to 8:30 PM



October 14, 2021

Climate Change Risk and Resilience Forum: Pacific Coastline

San Mateo County Flood and Sea Level Rise Resiliency District

Len Materman, CEO



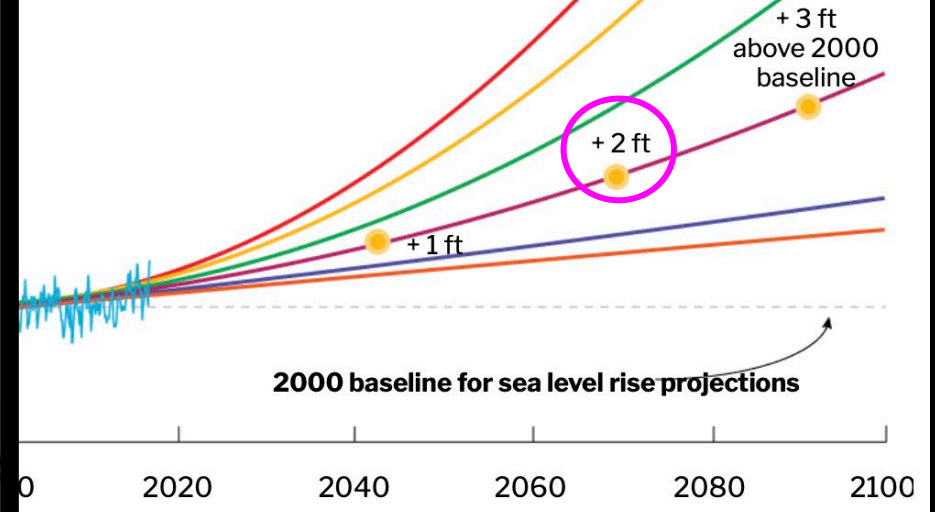
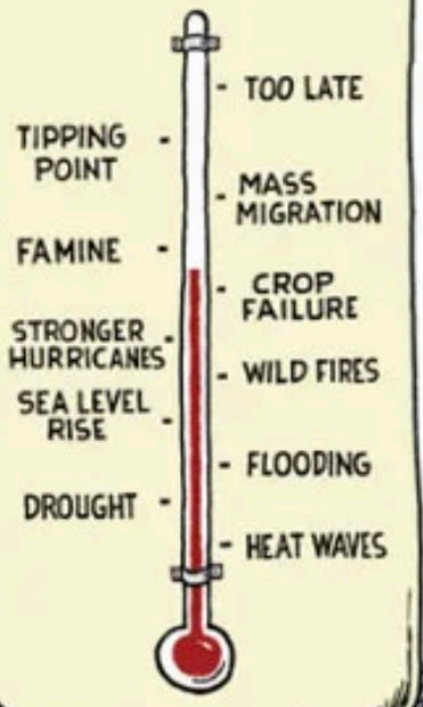
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8
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Sea Level Rise in San Francisco Bay: History and Future Scenarios

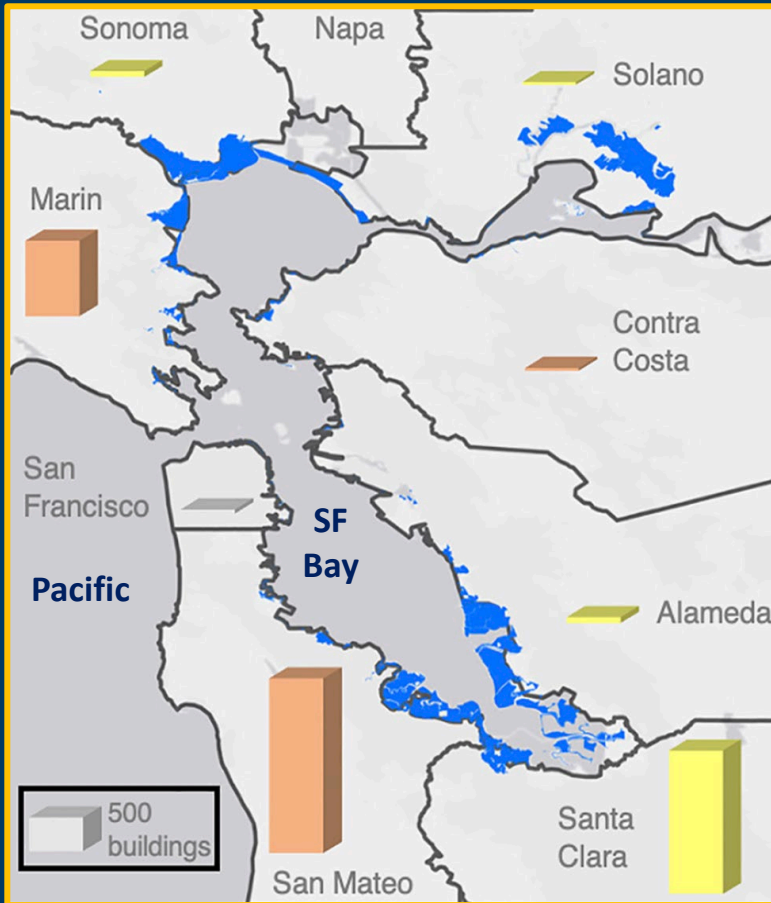
- extreme (2.5 meters by 2100)
- high (2 m)
- intermediate-high (1.5 m)

ARIAL 1972 8-10

GLOBAL WARMING



San Mateo County: Ground Zero for Sea Level Rise Vulnerability



Most vulnerable CA county to 3 feet of sea level rise in terms of:

- population, including underrepresented population
- property value
- number of homes
- number of contaminated sites

One of six counties in U.S. and only one on West Coast with over 100,000 people living in an area impacted by 3 feet of sea level rise.

Key community assets in the county vulnerable to sea level rise: schools, hospitals, beaches, highways, water treatment plants, power plants, wetlands, and major corporations.

With 12 cities along the Bay shoreline and 3 cities along the Pacific coast, the cities and County were not well-positioned to address this transformative challenge



Resilience to climate change's impacts requires an urgent, holistic approach to:

- THREATS – more extreme storms and substantial sea level rise
- GEOGRAPHY – align and connect protection for neighboring jurisdictions
- OBJECTIVES – reduce threats; turn waterways & shorelines from liabilities into assets integrated into communities; utilize green infrastructure and public and private lands

Through State legislation (AB 825 in 2019), the District was established January 1, 2020 with start up funding from the County and all 20 cities within it.

FY2021-22 priorities include:

- Complete our first construction project – a long-planned effort to protect 5 mobile home parks from frequent flooding from the Bayfront Canal and Atherton Channel**
- Advance new multi-jurisdictional projects that connect and align substantial protection for neighboring jurisdictions, and projects in 3 long-standing flood zones**
- Work with cities and developers so that private property and public infrastructure is planned in the context of future climate conditions and regional protection efforts**
- Develop a source of long-term, stable funding for climate resilience work**

2021-22 Projects with OneShoreline as a
Lead / Partner / Potential Partner
connecting to a **Project by Others**

Beach Blvd.
Seawall, Pacifica

Colma Creek
Navigable Slough
San Bruno Creek

SamTrans facility
and SSF shoreline

SFO

US
101

Burlingame
& Millbrae

Countywide
Flood Early Warning System

Foster City

Redwood Shores

Pillar Point Harbor
Princeton Shoreline
Mavericks & Surfers Beaches

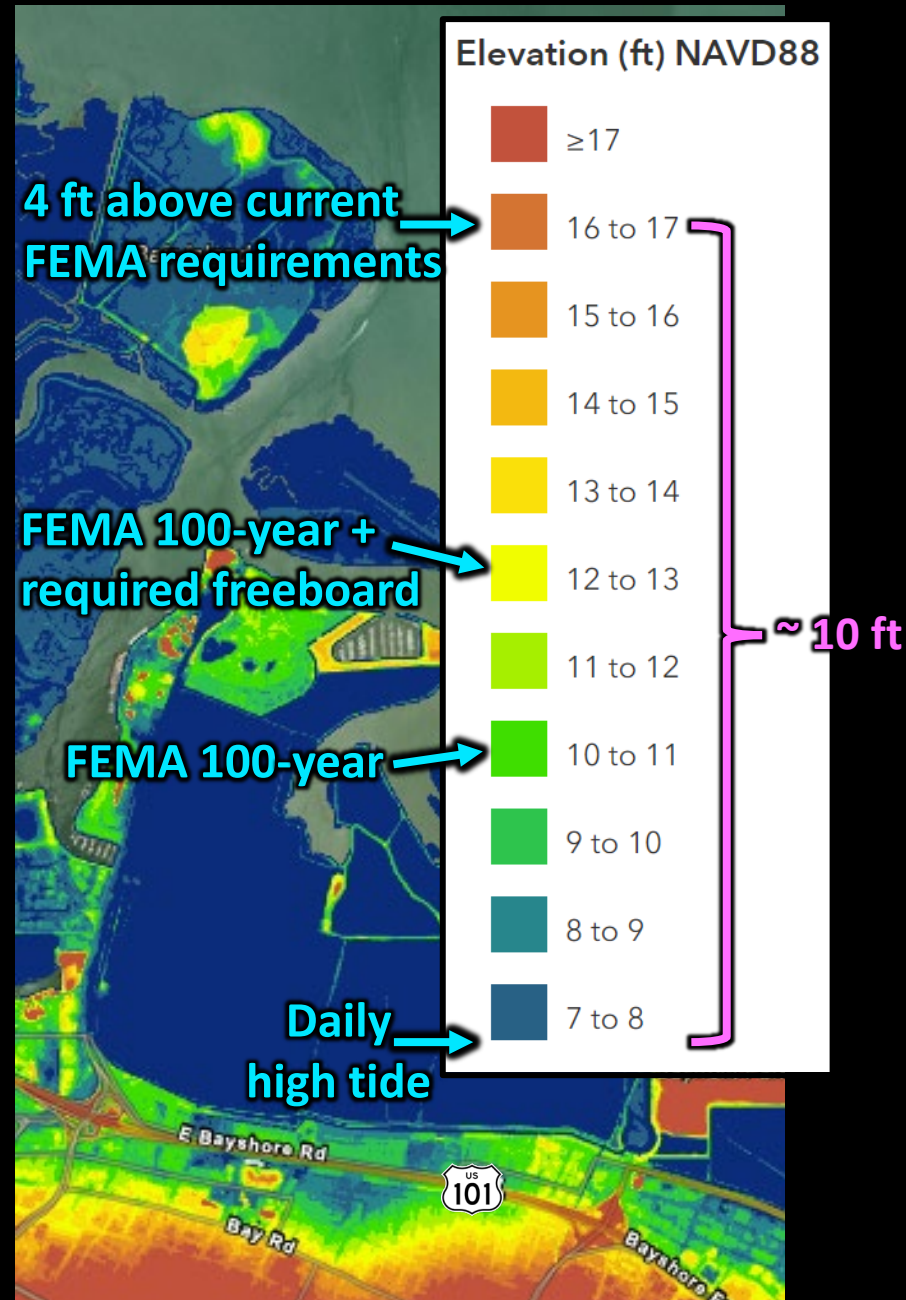
Belmont Creek
in Twin Pines Park

US
101

Cargill

Bayfront Canal &
Atherton Channel

Bay Shoreline



Pacific Coast

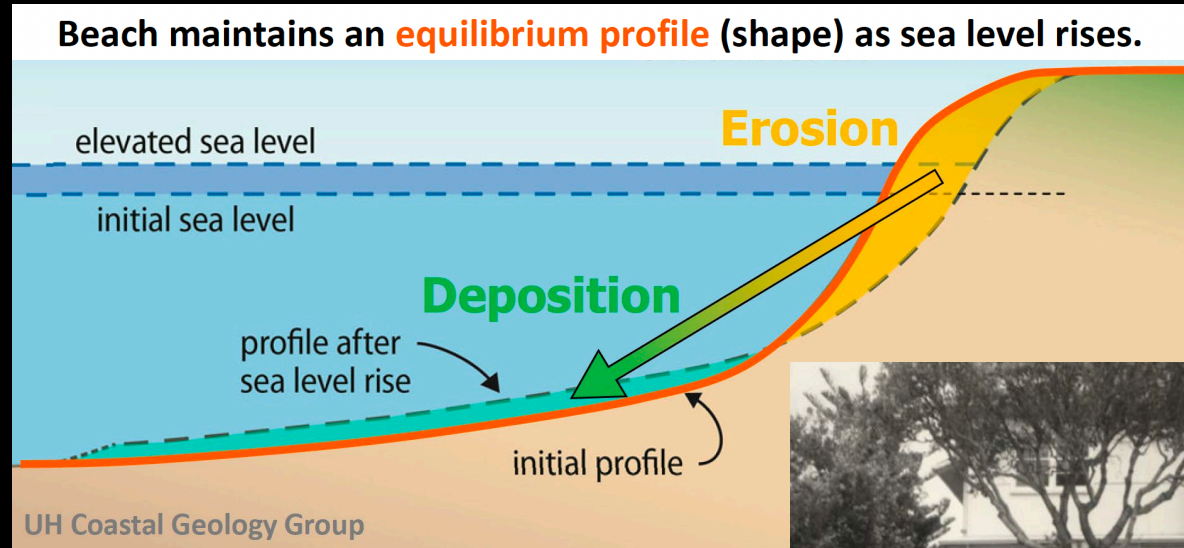


Figure 5 Use of car bodies to protect against storm erosion in 1967 (Source: GCCC)

To protect people and properties from current and future risks, and avoid the more challenging and costly work of retrofitting properties for protection later, starting today we should plan and build:

- Waterfront protection in the context of regional efforts that are part of, and to protect, private development and public infrastructure.
- Natural features for their flood protection & environmental benefits.
- Trails built into the protection and accessible from inland areas.



OneShoreline Objective:
Utilize General Plans, Specific Plans, Coastal Plans, and zoning ordinances to guide our region's resilience to the future conditions brought on by climate change.





Pillar Point Harbor Area along Pacific Coast

Area today
(with floodplain and water level 10 feet above high tide)

1956



Princeton
COUNTY

HARBOR DISTRICT

Highway 1
STATE (Caltrans)

Mavericks/Marine Reserve
COUNTY

Outer breakwaters
FEDERAL

Pacific Ocean

HMB
STATE BEACH

Flood Early Warning System & Emergency Action Plans

Colma Station
San Bruno Station

San Mateo Station

Atherton Station

In 2020, in-stream gauges were installed or upgraded on Colma Creek, San Bruno Creek, San Mateo Creek, and Atherton Channel.

Potentially Pescadero and Butano Creeks regarding post-wildfire erosion and flood threats.

(E) Pescadero Station

(P) Butano Flasher

(E) Butano Station

(P) Butano Station - Cloverdale Rd

Colma &
San Bruno Creeks

In FY21-22, we will initiate multi-jurisdictional
Emergency Action Plans in four watersheds,
beginning with Colma Creek

Belmont Creek

Bayfront Canal &
Atherton Channel

Thank you

LEAGUE OF WOMEN VOTERS COMMUNITY FORUM

October 14, 2021

Ryan Marquez



Beach Boulevard
INFRASTRUCTURE RESILIENCY PROJECT

Pacifica Coastal Projects

2020 Pacifica Coastal Projects

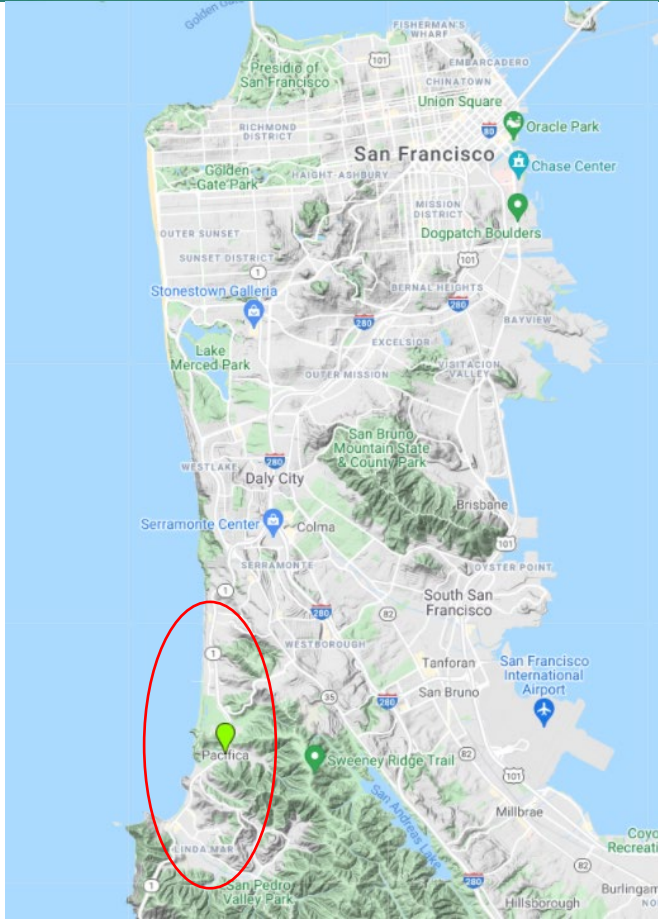
1. 310-330 Esplanade Infrastructure Preservation Project
2. 400 Esplanade Infrastructure Preservation Project
3. 400 Esplanade Coastal Trail
4. Beach Boulevard Seawall Reconstruction
5. Milagra Creek Outfall Reconstruction

MILAGRA RIDGE

MANOR

SHARP PARK

Legend
Projects



Background



Goals

- Replace the current seawall and outdated infrastructure
- Build climate resilience into one of the most vulnerable segments of the City's shoreline.
- Improve public access and use of the Beach Boulevard Promenade.
- Create a multi-benefit solution to protect public infrastructure, recreational activities, homes, businesses, and the community at large, from further coastal erosion impacts.



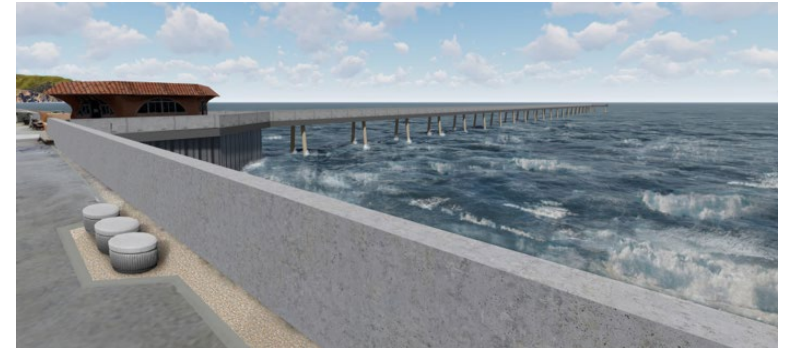
Summary of Alternatives Analyzed



No Project



Beach Nourishment



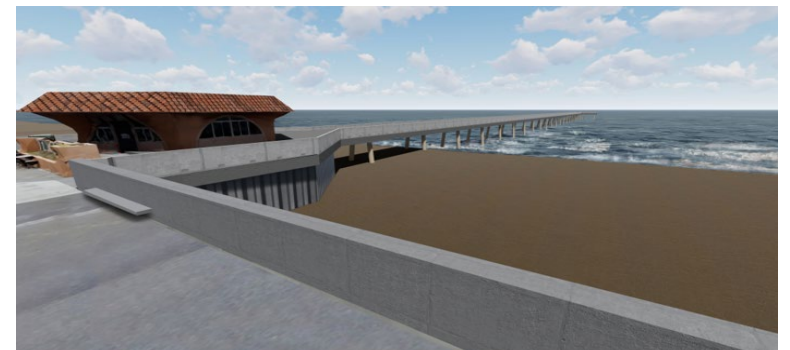
Seawall



Rock Revetment



Beach Nourishment with Sand Retention



Hybrid

Multi Criteria Analysis

Technical Performance (40%)

Flood Protection	20%
Erosion Protection	20%
Reliability	20%
Operability	10%
Constructability	10%
Sea Level Rise Adaptability	20%

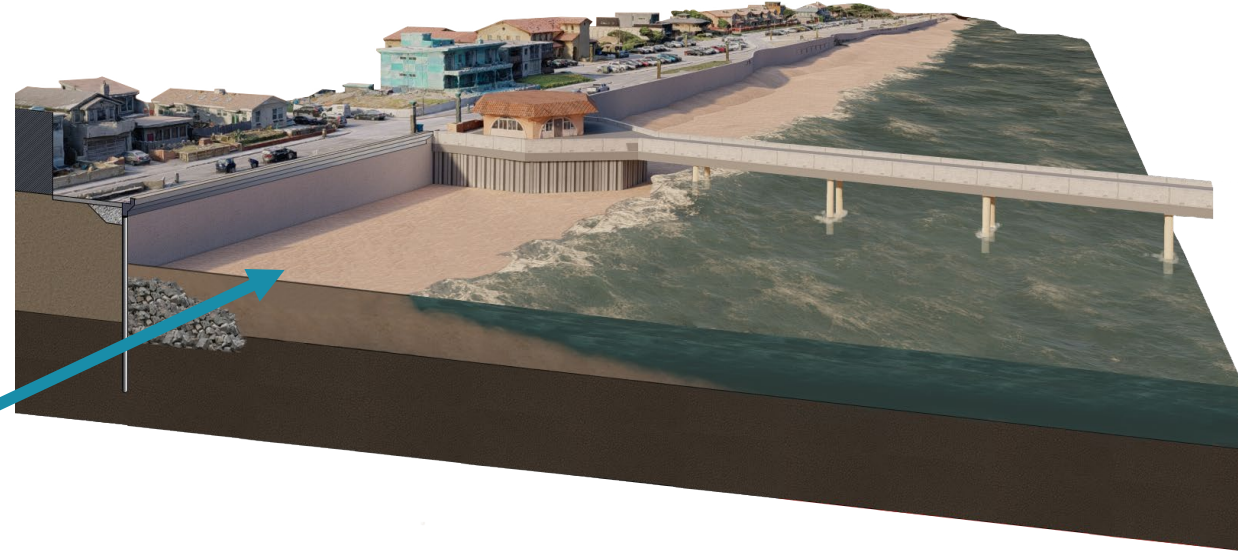
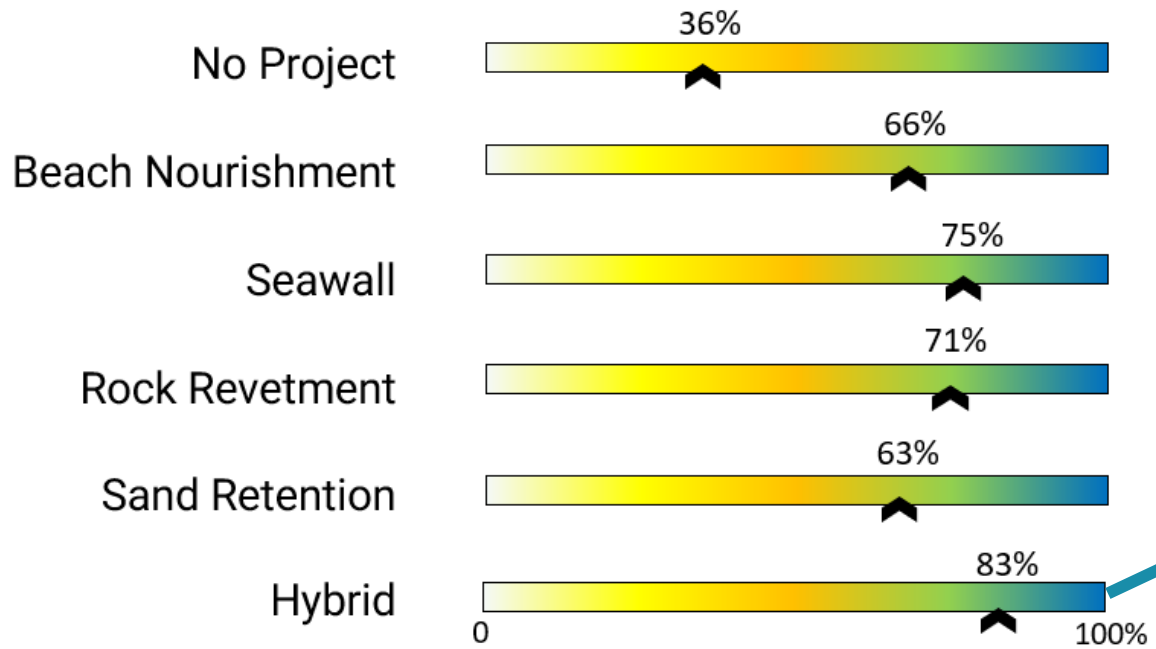
Financial (30%)

Lifecycle costs	70%
- Capital	
- Operations & Maintenance	
- Decommissioning	
- Mitigation	
Grant Funding Potential	30%

Environmental (30%)

Marine Bio Resources	20%
Terrestrial Bio Resources	20%
Visual Resources	20%
General Recreation	20%
Coastal Access	20%

Preferred Alternative (Hybrid)



An aerial photograph of a coastal town, likely Pacifica, California. The town is built on a narrow strip of land along the coast, with a grid of streets and numerous buildings. A prominent pier extends from the town into the turquoise ocean. The water is clear and vibrant, with white surf visible near the shore. The sky is not visible, as the image is dominated by the town and the sea.

Thank **you.**

Ryan Marquez
City of Pacifica Public Works Dept.
marquezzr@ci.pacifica.ca.us
CityofPacifica.org/BeachResiliency



SAN MATEO COUNTY
HARBOR DISTRICT

San Mateo County Harbor District October 14, 2021

League of Women Voters

Partnering with

San Mateo County Flood and Sea Level Rise Resiliency District

Forum

Local Climate Change Risks

Current Projects Approved and Funded

ADA Restroom Project Tenant Row	Surfers Beach Restroom/Green Space Improvemts
Replacement of Docks 12, 13, and 14 at Oyster Point Marina/Park	Surfers Beach Restoration Project/Harbor Dredge/Eelgrass mitigation
West Trail Living Shoreline Protection Project	Replacement of the Oyster Point Marina Entrance Navigation Aids

Potential Projects

Johnson Pier Reconfiguration, H-Dock & Fuel Dock Replacement Engineering/design	Fuel Dock at PPH
Pillar Point Harbor Launch Ramp Restroom/ Boat Wash:	Purchase of Admin Building:
Oyster Point Marina West Basin Access Ramps for Docks 1 through 6:	Shoreline Rock Slope Protection
Pillar Point Harbor Replace Dock G, F or E Engineering/design	Pillar Point Harbor Parking Lot Improvements
Pillar Point Habitat Restoration	Pillar Point Coastal Trail Improvement
Signage/Wayfinding Program	Oyster Point Marina 40,000 Square Foot Building

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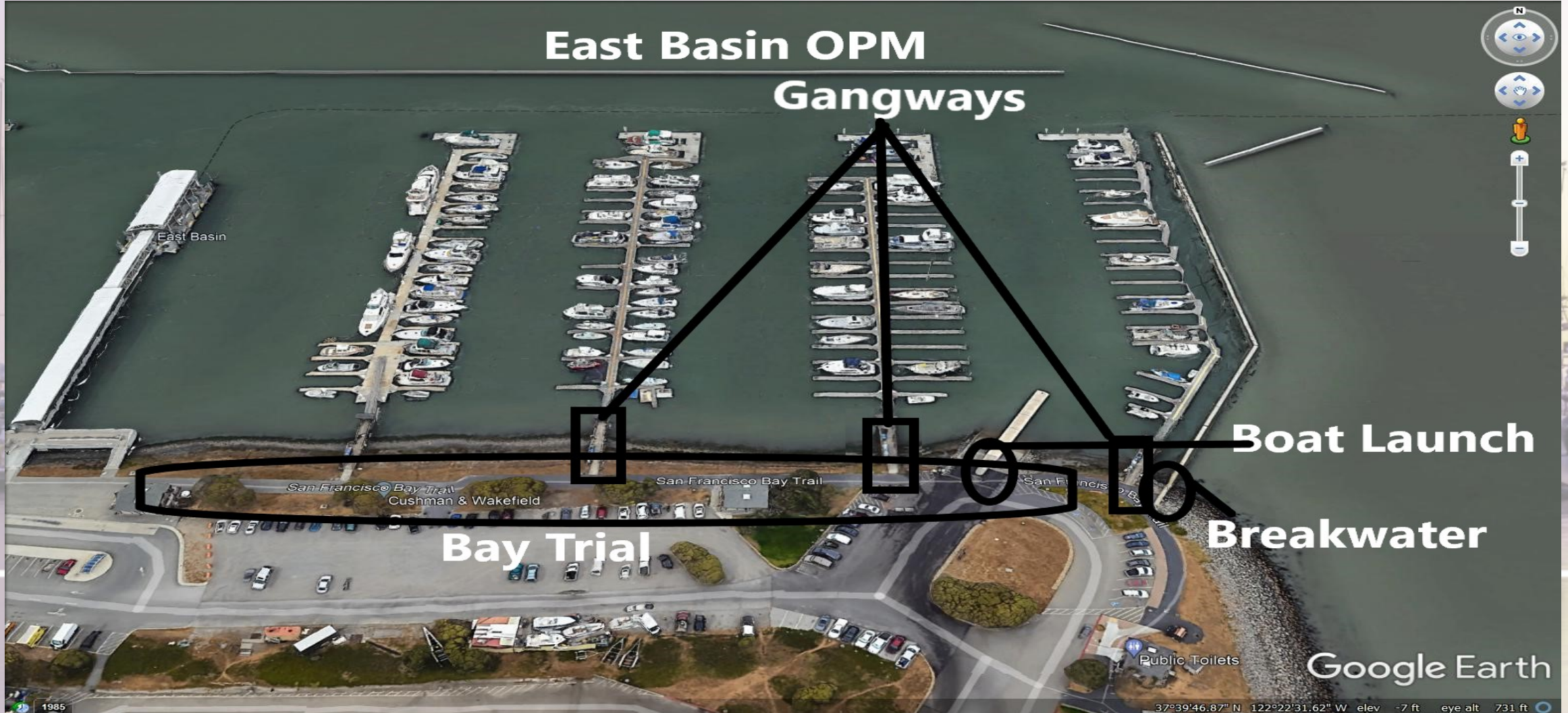
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SAN MATEO COUNTY
HARBOR DISTRICT

East Basin OPM Gangways



Boat Launch

Breakwater

Bay Trail

Google Earth

37°39'46.87" N 122°22'31.62" W elev -7 ft eye alt 731 ft



SAN MATEO COUNTY
HARBOR DISTRICT

Breakwater at Dock 14





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HARBOR DISTRICT

West Basin OPM

The Spit

West Basin

Oyster Point Marina

Oyster Point Marina

San Francisco Bay Trail

San Francisco Bay Trail

San Francisco Bay Trail

Marina Blvd

Marina Blvd

E Bay Blvd

Ramps

Google Earth



SAN MATEO COUNTY
HARBOR DISTRICT

The Spit





SAN MATEO COUNTY
HARBOR DISTRICT

Dock Landings





SAN MATEO COUNTY
HARBOR DISTRICT

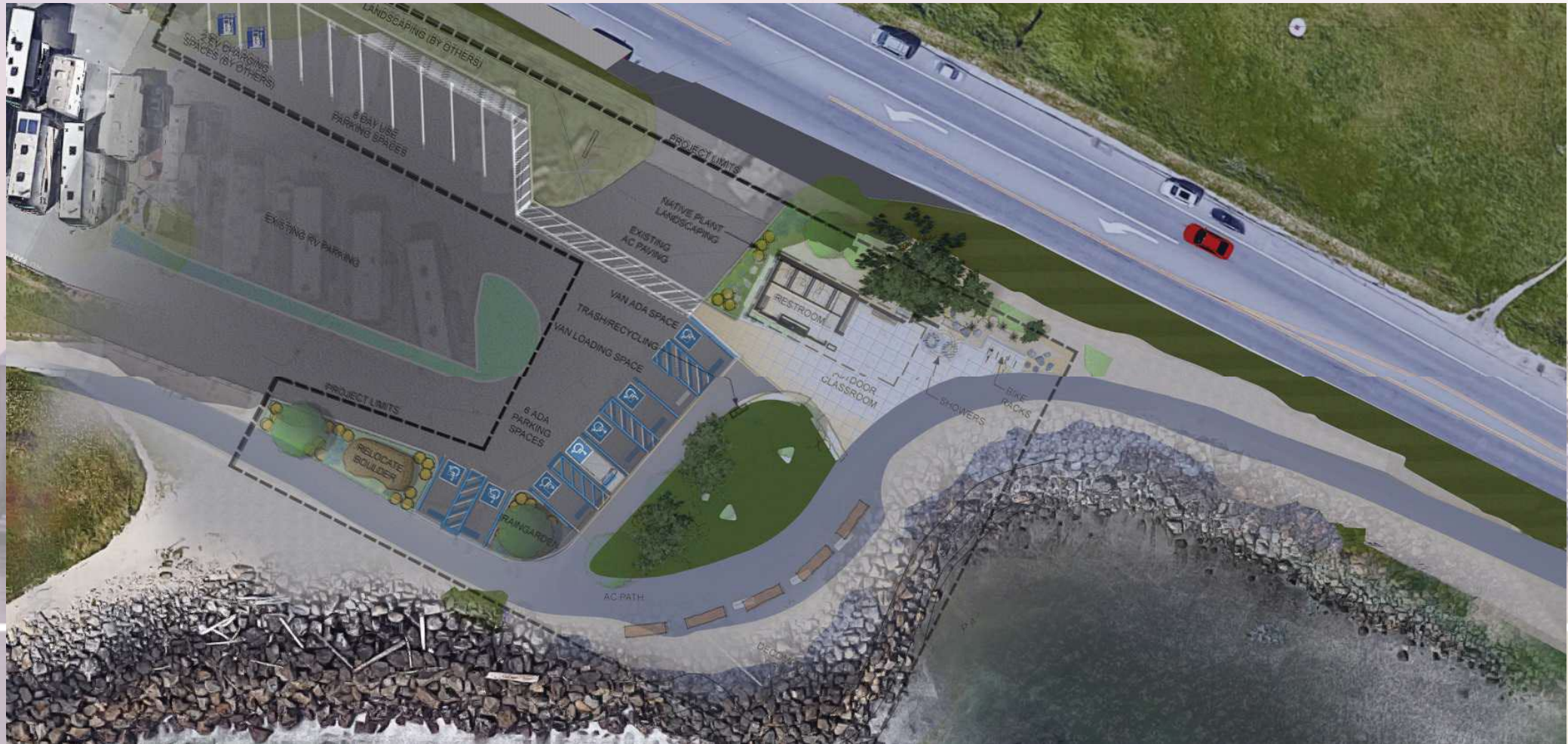
West Trial





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HARBOR DISTRICT

Surfers Beach Restroom/Green Space Improvements





SAN MATEO COUNTY
HARBOR DISTRICT

Surfers Beach Restoration Project





SAN MATEO COUNTY
HARBOR DISTRICT

Shoreline Rock Slope Protection Pillar Point Harbor





SAN MATEO COUNTY
HARBOR DISTRICT

Pillar Point Sea-Level Rise Vulnerability Assessment

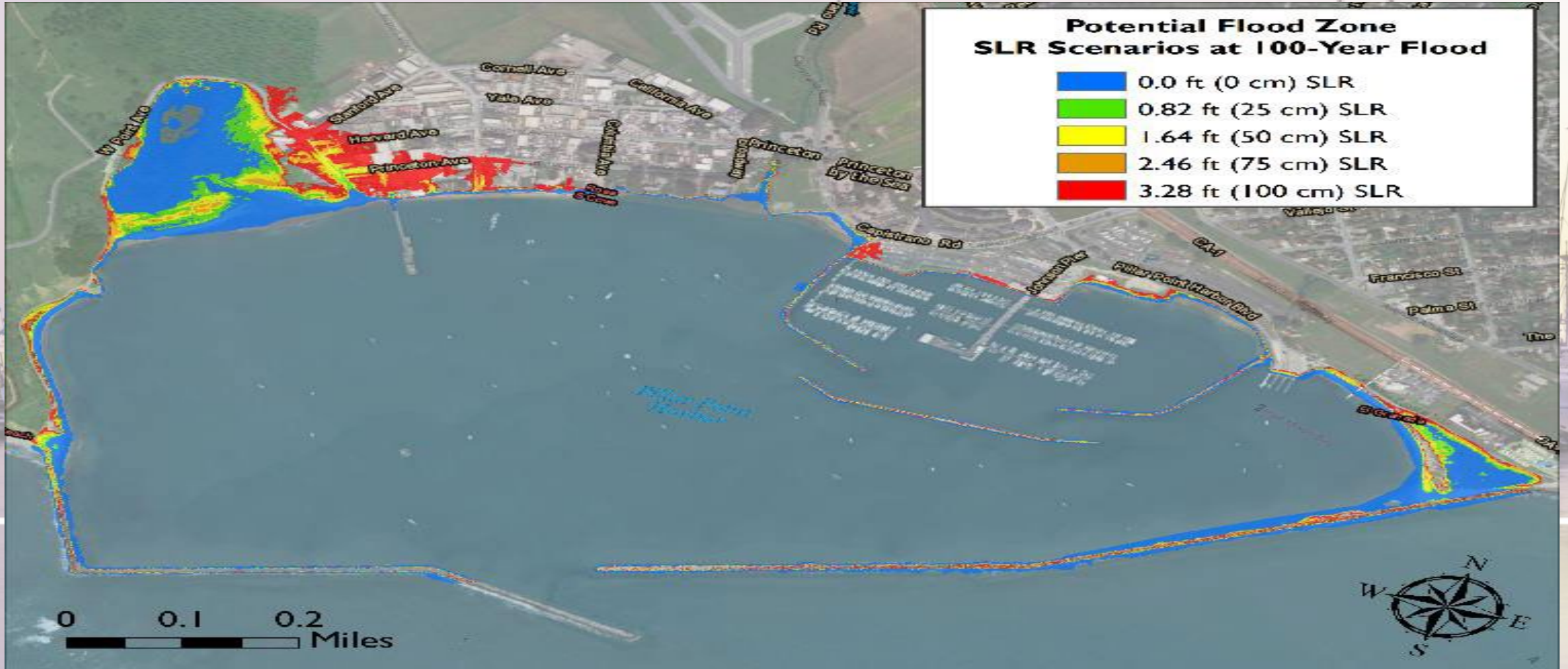
May 3, 2018





SAN MATEO COUNTY
HARBOR DISTRICT

Pillar Point Sea-Level Rise Vulnerability Assessment





SAN MATEO COUNTY
HARBOR DISTRICT

Thank you

Jim Pruett

General Manager

San Mateo County Harbor District

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SAN MATEO COUNTY SOUTH COAST Sea Level Rise Vulnerability Assessment and Adaptation Plan



Carolyn Bloede
Director, Office of Sustainability



Study Overview

Study area: Southern Half
Moon Bay to the Santa
Cruz County Line

Purpose:

Analyze vulnerability to coastal hazards, like flooding and erosion, from sea level rise, potential economic impacts, and identify adaptation solutions.

Sectors analyzed

- Communities and Structures
- Transportation and Parking
- Parks and Recreation
- Agriculture
- Ecosystems



RESULTS: What is at risk from sea level rise?

Potential impacts with 5 feet of sea level rise:

- **123 structures and residences at risk, mostly due to erosion**
 - Pescadero CalFire Station, Ritz-Carlton, Pigeon Point Lighthouse, Gazos Creek Gas Station and Brewery
- **Vulnerable communities from creek and storm wave flooding**
 - Pescadero, Martin's Beach, Tunitas Creek
- **15 miles of trails, coastal access and parks**
 - Beach facilities at Bean Hollow, Pescadero Creek, Pomponio
 - Cultural artifacts at risk around Año Nuevo State Park



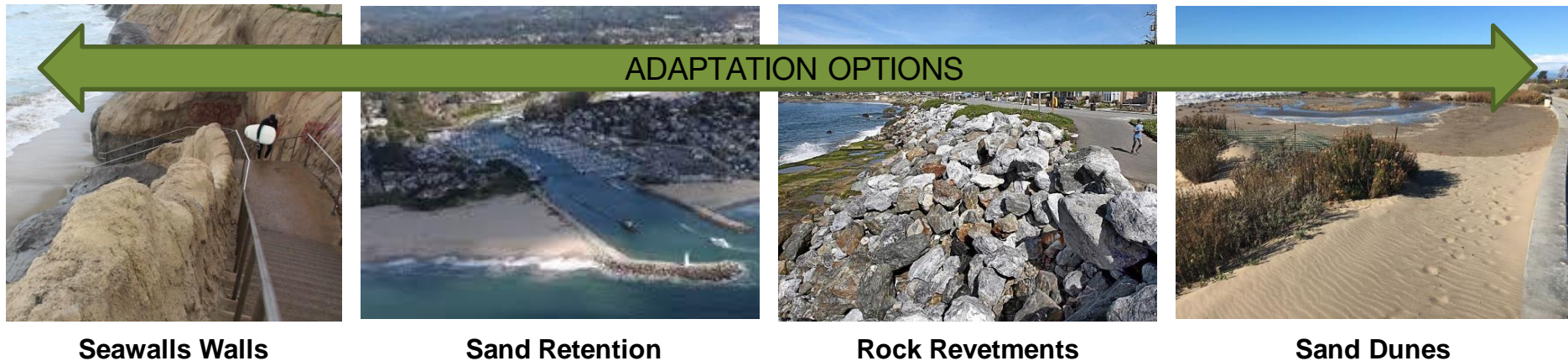
RESULTS: What is at risk of sea level rise?

- **Highway 1:**
 - ~4.5 miles of highway at risk from erosion, including:
 - Bean Hollow Beach to Pescadero Point
 - Vicinity of Pomponio Beach
- **Pescadero Creek Road** affected by flooding
- 11 parking lots along main roads affected by erosion and wave flooding
- **551 acres of potential agricultural lands** affected by erosion



Next step: Adaptation Planning

- Analyze adaptation options, costs, and areas to prioritize
- Stakeholder meetings and community conversations:
“what kind of adaptation approaches do we want to take to protect the South Coast from sea level rise?”



Final Vulnerability Assessment & Adaptation Plan by 2022

THANK YOU!

Visit [SeaChange SMC](#) for project updates and upcoming engagement opportunities!

Carolyn Bloede
cbloede@smcgov.org

Website: seachangesmc.org





What is the RCD?

- Special district
- Help people help the land
- Boots on the ground
- Since 1939

A man in a blue jacket and white hat is gesturing towards a group of people in a forest stream. The group is sitting on a log in the water, surrounded by lush greenery and trees. The man is wearing a blue jacket, a white hat, and has binoculars around his neck. The group consists of about ten people, some wearing waders and hats, sitting on a large log in a stream. The background is a dense forest with tall trees and a clear blue sky.

Our Services

- Technical Assistance
- Conservation Projects
- Education and Outreach



Water



Climate



Wildlife



Agriculture



Forest Health & Fire Resiliency











RECONNECTION

- PROJECT MAP -

↑
TO
HALF
MOON
BAY

PESCADERO
STATE BEACH

EQUIPMENT
MOBILIZATION
AREA

HIGHWAY ONE

STAGE ROAD

PESCADERO CREEK

WATER LANE

TO
DOWNTOWN
PESCADERO →

SEDIMENT DEPOSIT AREA
SEDIMENT REMOVAL AREA

VEGETATION
REMOVAL

PESCADERO CREEK ROAD

BUTANO CREEK

SEDIMENT WILL
BE REMOVED
FROM BUTANO
CHANNEL BY
THE SEDIMENT
WILL BE RE-

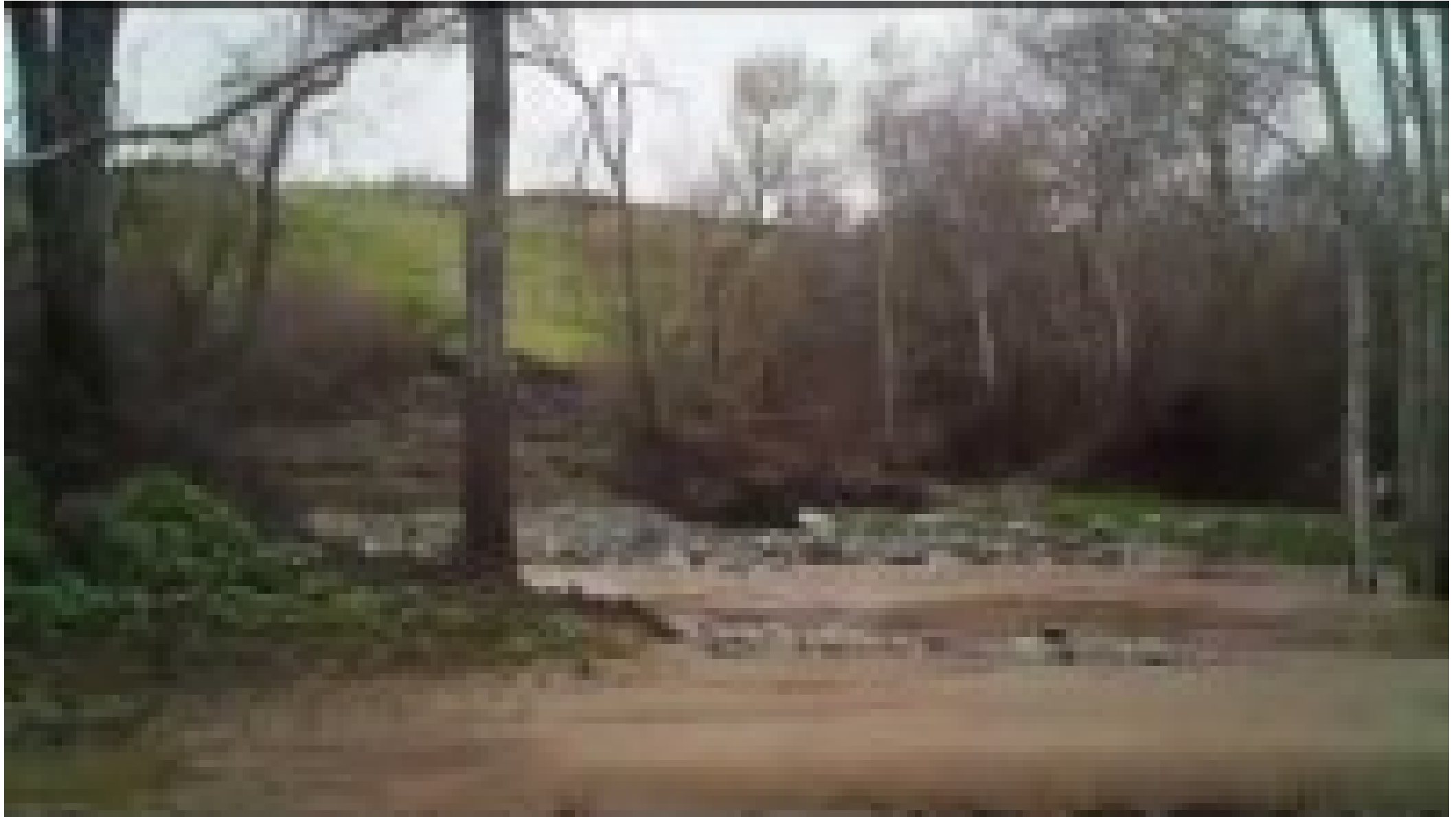
AT FIRST THE TOP
OF THE PROJECT AREA
WILL BE FLATTENED



Before



After





Thank you!

Kellyx Nelson

kellyx@sanmateoRCD.org

www.sanmateoRCD.org

Facebook, YouTube & Instagram: sanmateoRCD

