October 14, 2021

Climate Change Risk and Resilience Forum:

Pacific Coastline

San Mateo County Flood and Sea Level Rise Resiliency District

Len Materman, CEO
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)**

![Global Warming Cartoon]

- **Tipping Point**
- **Famine**
- **Stronger Hurricanes**
- **Sea Level Rise**
- **Drought**
  - Too Late
  - Mass Migration
  - Crop Failure
  - Wild Fires
  - Flooding
  - Heat Waves

![Sea Level Rise Graph]

2000 baseline for sea level rise projections
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.

A long-standing County Flood Control District collected taxes and worked in 10% of the county and Bay shoreline and along none of the Pacific coastline.

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
San Mateo County Flood and Sea Level Rise Resiliency District

- Beach Blvd. Seawall, Pacifica
- Colma Creek
- Navigable Slough
- San Bruno Creek
- Burlingame & Millbrae
- SamTrans facility and SSF shoreline
- Belmont Creek in Twin Pines Park
- SFO
- Bayfront Canal & Atherton Channel
- Redwood Shores
- Foster City
- Countywide Flood Early Warning System
- Pillar Point Harbor
- Princeton Shoreline
- Mavericks & Surfers Beaches

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

With SFCJPA: San Francisquito Creek, SAFER Bay shoreline project
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)
In FY21-22, we will initiate multi-jurisdictional Emergency Action Plans in four watersheds, beginning with Colma Creek.

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.
Thank you
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

SHARP PARK
MANOR
MILAGRA RIDGE
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.

CityofPacifica.org/beachresiliency
Summary of Alternatives Analyzed

- No Project
- Beach Nourishment
- Seawall
- Rock Revetment
- Beach Nourishment with Sand Retention
- Hybrid
## Multi Criteria Analysis

<table>
<thead>
<tr>
<th>Technical Performance (40%)</th>
<th>Financial (30%)</th>
<th>Environmental (30%)</th>
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<tbody>
<tr>
<td>Flood Protection</td>
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<tr>
<td>Erosion Protection</td>
<td>- Capital</td>
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</tr>
<tr>
<td>Reliability</td>
<td>- Operations &amp; Maintenance</td>
<td>Visual Resources</td>
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<td>Operability</td>
<td>- Decommissioning</td>
<td>General Recreation</td>
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<td>Constructability</td>
<td>- Mitigation</td>
<td>Coastal Access</td>
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<td>Sea Level Rise Adaptability</td>
<td>Grant Funding Potential</td>
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CityofPacifica.org/beachresiliency
Preferred Alternative (Hybrid)

- No Project: 36%
- Beach Nourishment: 66%
- Seawall: 75%
- Rock Revetment: 71%
- Sand Retention: 63%
- Hybrid: 83%

CityofPacifica.org/beachresiliency
Thank you.

Ryan Marquez
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CityofPacifica.org/BeachResiliency
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

<table>
<thead>
<tr>
<th>Project Description</th>
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<td>Surfers Beach Restroom/Green Space Improvements</td>
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<td>Replacement of Docks 12, 13, and 14 at Oyster Point Marina/Park</td>
<td>Surfers Beach Restoration Project/Harbor Dredge/Eelgrass mitigation</td>
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## Potential Projects

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<td>Purchase of Admin Building:</td>
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Breakwater at Dock 14
Dock Landings
Surfers Beach Restroom/Green Space Improvements
Surfers Beach Restoration Project
Shoreline Rock Slope Protection Pillar Point Harbor
Pillar Point Sea-Level Rise Vulnerability Assessment

Potential Flood Zone
SLR Scenarios at 100-Year Flood
- 0.0 ft (0 cm) SLR
- 0.82 ft (25 cm) SLR
- 1.64 ft (50 cm) SLR
- 2.46 ft (75 cm) SLR
- 3.28 ft (100 cm) SLR

0 0.1 0.2 Miles
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

OneShoreline Forum | October 14, 2021
Study Overview

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?”

Seawalls Walls  Sand Retention  Rock Revetments  Sand Dunes

Final Vulnerability Assessment & Adaptation Plan by 2022

seachangesmc.org
THANK YOU!

Visit SeaChange SMC for project updates and upcoming engagement opportunities!

Carolyn Bloede
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Website: seachangesmc.org
What is the RCD?

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

• Technical Assistance
• Conservation Projects
• Education and Outreach
Water
Climate
Wildlife
Agriculture
Forest Health & Fire Resiliency
Thank you!

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