

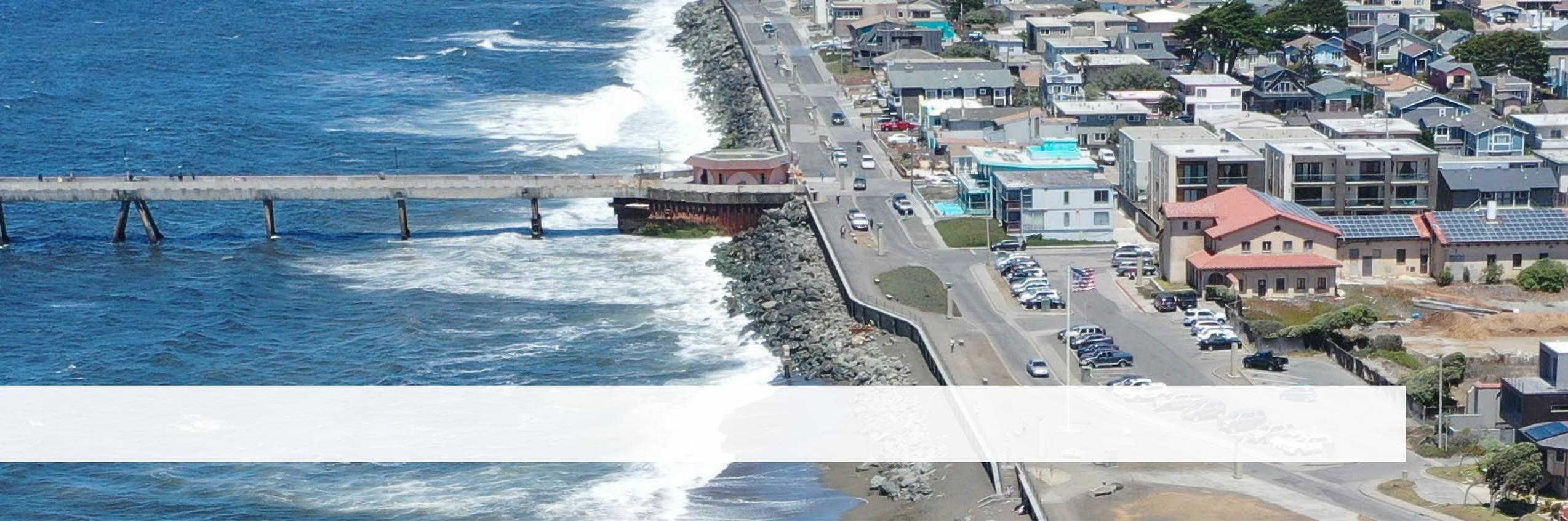
# Beach Boulevard

INFRASTRUCTURE RESILIENCY PROJECT

WELCOME

# Phase 2A Public Meeting #2

Sept 13, 2023



# Beach Boulevard

INFRASTRUCTURE RESILIENCY PROJECT

[CityofPacifica.org/beachresiliency](https://CityofPacifica.org/beachresiliency) →



# Welcome, Introductions, & Agenda Review

Mary Bier, Councilmember

Christine Boles, Councilmember

Katie DeLeuw, Kearns & West, Facilitator





# Meeting Objectives

- Provide details on Preliminary Design Process.
- Explain rationale on major design criteria and elements.
- Gather feedback and input on:
  - Features and amenities to prioritize within Project subsections.
  - Aesthetic themes of features and amenities.
- Provide opportunities for the public to engage with City staff and Project Team.



# Agenda

Time	Topic	Lead
6:00 p.m.	Open House: Information stations and opportunities to engage with Project Team <ul style="list-style-type: none"><li>• BBIRP Overview and Phase 1 Findings</li><li>• BBIRP Design Criteria</li><li>• Share Your Feedback!</li></ul>	All
6:15 p.m.	Presentation <ul style="list-style-type: none"><li>• Opening Remarks</li><li>• Overview of Design Criteria</li><li>• Wave Runup and Overtopping Analysis</li><li>• Beach Boulevard Features and Amenities</li><li>• Upcoming Engagement Opportunities</li></ul>	<i>Presenters</i> Councilmembers Bier and Boles Aaron Holloway, GHD Louis White, ESA Lucas Piper, GHD Katie DeLeuw, Kearns & West, Facilitator
7:00 p.m.	Continuation of Open House	All
8:00 p.m.	Next Steps and Adjourn <ul style="list-style-type: none"><li>• Upcoming Engagement Opportunities</li></ul>	Katie DeLeuw, Kearns & West, Facilitator



# Virtual Meeting Opportunity

- Wednesday, Sept. 27 from 6:00 pm – 8:00 pm.
- Similar content, including a presentation on the Preliminary Design Process and opportunities for the public to share feedback on features and amenities associated with the Project.
- Registration in advance is required.
- Visit [cityofpacifica.org/beachresiliency](https://cityofpacifica.org/beachresiliency) to register and for additional information



# Upcoming Engagement Opportunities

- Mid-September: Virtual Survey
- September 23 and 24: Fog Fest
- September 27: Virtual Meeting – Features and Amenities
- October 11 and 17: Virtual Office Hours
- October 14: Pacifica Pier Popup Tabling
- December 5: Public Meeting – Preliminary Design (*tentative date*)





# Overview of Design Criteria

Aaron Holloway, GHD





# Beach Boulevard Infrastructure Resiliency Project

## Design Criteria:

- 50-year design life
- Extreme storm event
- 2 feet of SLR
- Tolerable overtopping of 0.5-1 cfs/ft
- Stability under seismic loading

## Design Codes & Guidelines:

- California Building Code (CBC), 2019 Edition
- ASCE 7-16 Design Standard - Minimum Design Loads for Buildings and Other Structures
- American Concrete Institute (ACI), Building Code Requirements for Structural Concrete and Commentary, ACI 318-14, 2014
- American Institute of Steel Construction (AISC), Steel Construction Manual, 15th Edition, 2016
- USACE Engineering Manual 1110-2-110 Coastal Engineering Manual, 2004
- EurOtop. Manual on wave overtopping of sea defences and related structures. 2018. Van der Meer et al.



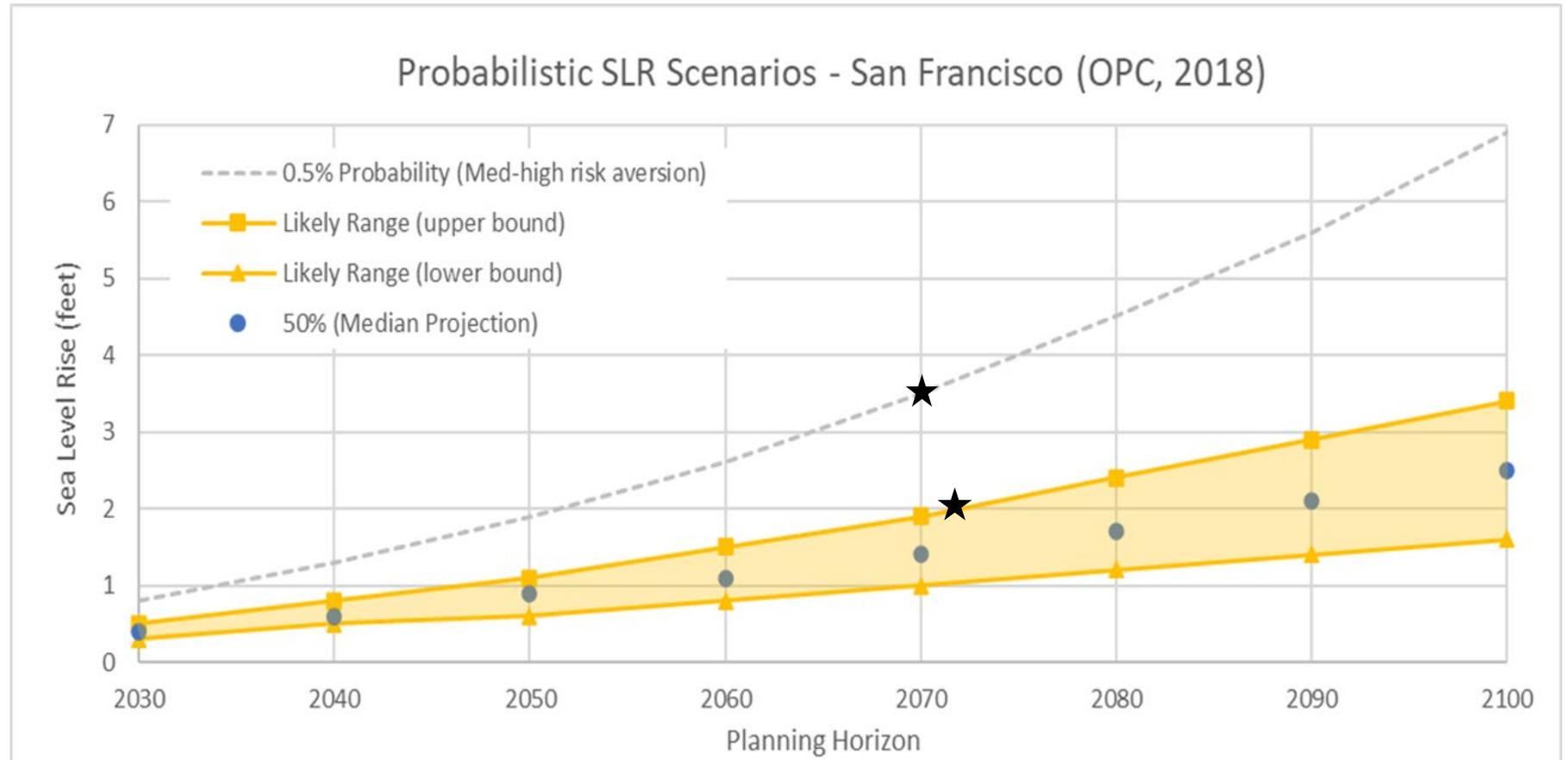
# Sea Level Rise

## Design Criteria:

- Design event has extremely low joint probability of exceedance over next 50 years (~0.5%)

## Planning Criteria:

- 75-100 years (CCC guidance)
- High-extreme SLR scenarios

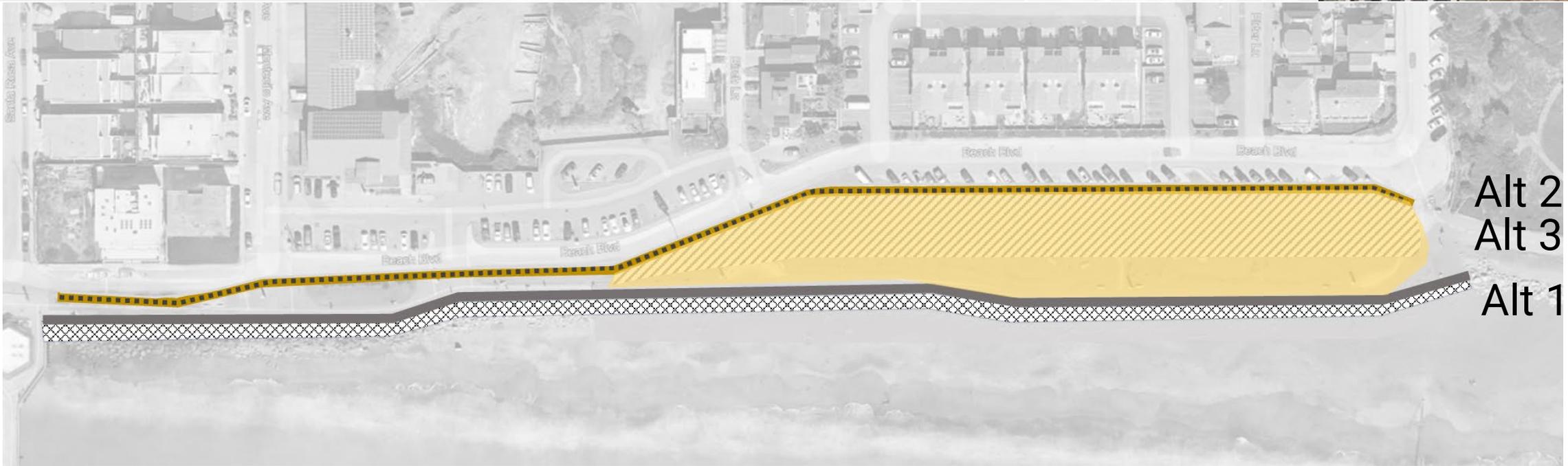


# Project Location & Alignments

- North Wall
  - Existing alignment
  - Opportunity to modify Beach Blvd. to increase promenade space
- Pier Wall System
  - Existing alignment
- South Wall
  - Multi-criteria analysis of 3 alternative alignments led to recommended inland alignment
- South Gap
  - Ensuring tie in with golf course trail for flood protection and recreational continuity and connectivity



# South Wall Alignment Alternatives

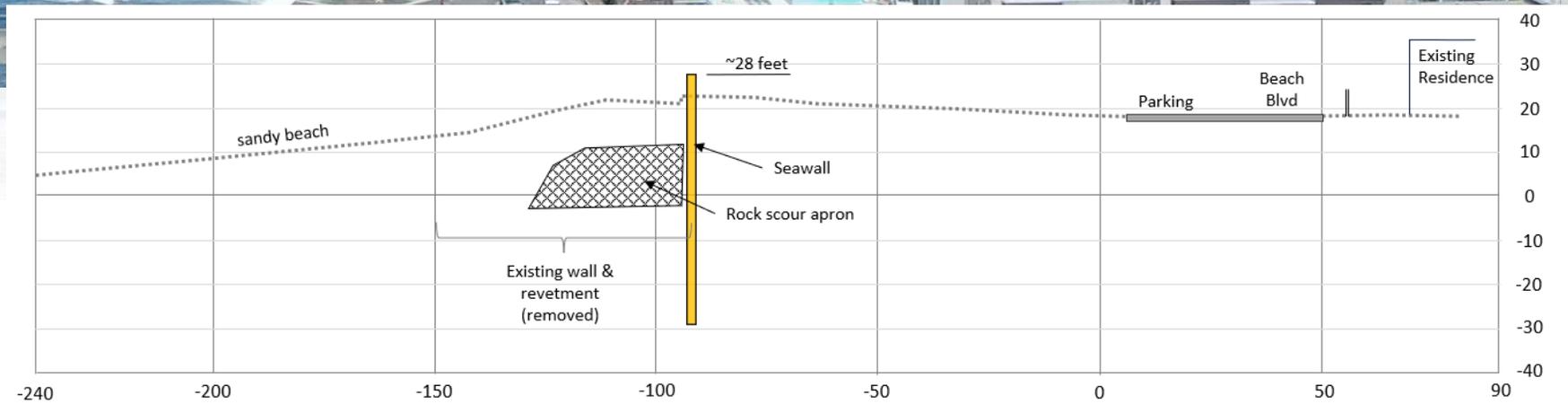


Alt 2  
Alt 3  
Alt 1

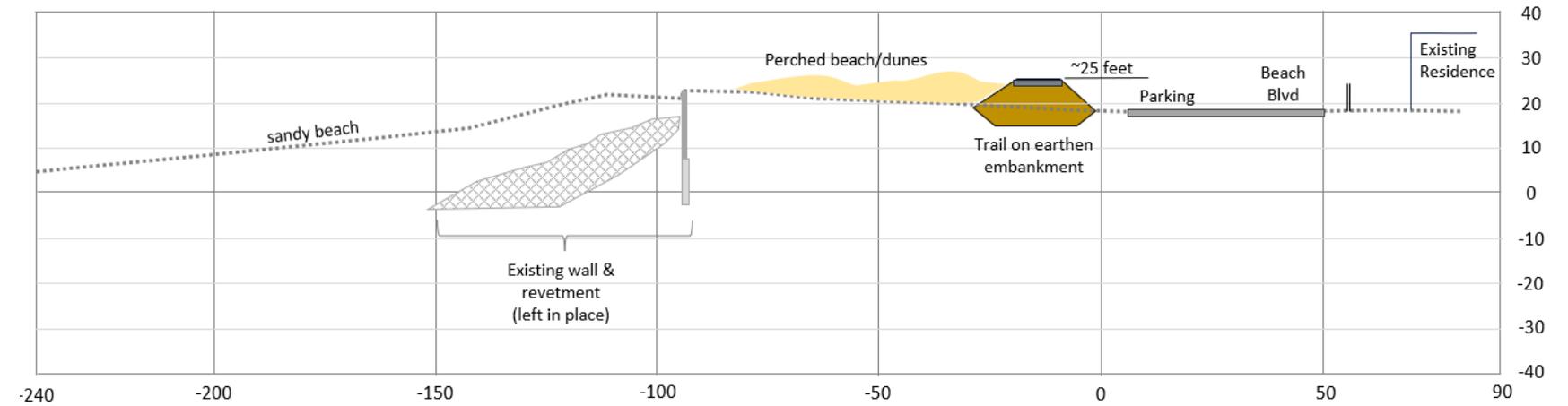
- Alt 1 – Seawall follows existing alignment (seawall replaced)
- Alt 2 – Elevated trail behind “perched” beach (seawall left in place)
- Alt 3 – Elevated trail & nature-based erosion protection (seawall removed)



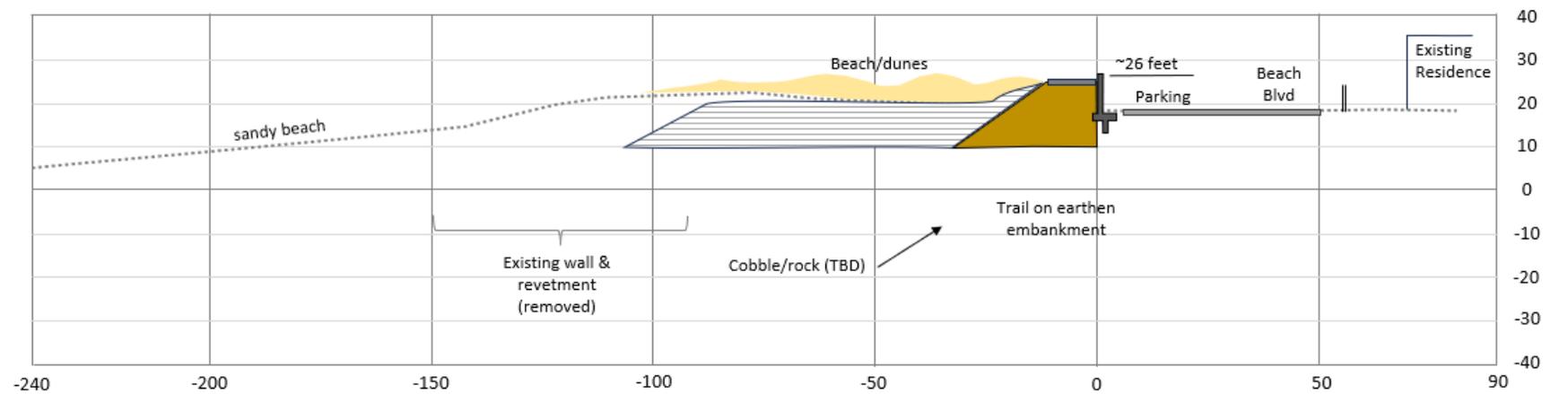
Alt 1 –  
Seawall follows existing  
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Alt 2 –  
Elevated trail behind  
“perched” beach  
(seawall left in place)



Alt 3 –  
Elevated trail & nature-  
based erosion protection  
(seawall removed)



# South Wall Alignment Multi-Criteria Analysis

- Utilized same criteria as Phase 1

## Technical Performance (40%)

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

## Financial (30%)

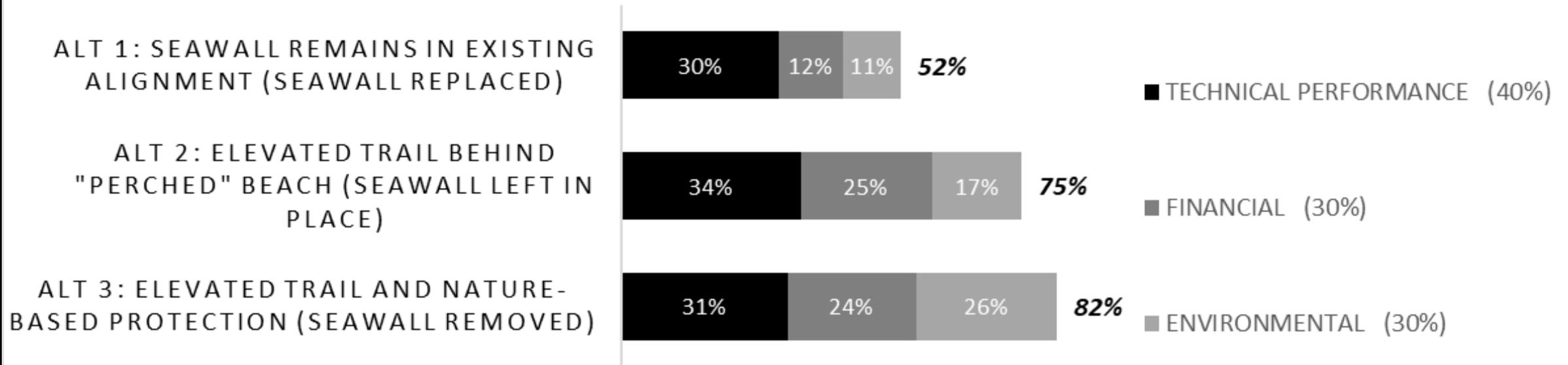
Lifecycle costs	70%
- Capital	
- Operations & Maintenance	
- Decommissioning	
- Mitigation	
Grant Funding Potential	30%

## Environmental (30%)

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

# South Wall Alignment Alternatives

## BBIRP MULTI-CRITERIA ANALYSIS SCORING





# Summary of Recommended Alignment

- Recommended to pursue Alternative 3- Elevated trail & nature-based erosion protection (seawall removed)
- Removal of existing wall, alignment of new protective feature inland along Beach Blvd. provides:
  - Reduction of visual impacts compared to existing alignment with increased height
  - Likely preferred by regulatory agencies and funding entities
  - Increased continuous beach and dunes
  - Elevated trail and nature-based protective components
  - New paths and accessways to beach
  - Financially less burdensome
  - Reduces future complications and nuisance from relic infrastructure



# Wave Runup and Overtopping Analysis

Louis White, ESA





# Flood Mechanisms and Risk

- Primary flooding mechanisms, wave runup and overtopping
- Combinations of high water levels (high tide + storm surge) and large wave events
- Frequency of overtopping, damages → Level of risk
- Existing condition provides a marginal level of protection
- Sea-level rise will make flooding worse (more frequent and greater damages)



# North of Pier (1/5/2023)



# South of Pier (1/5/2023)



<https://www.youtube.com/watch?v=tqjw5KnNR3I>



<https://www.youtube.com/watch?v=sUy-8x8P7PE>

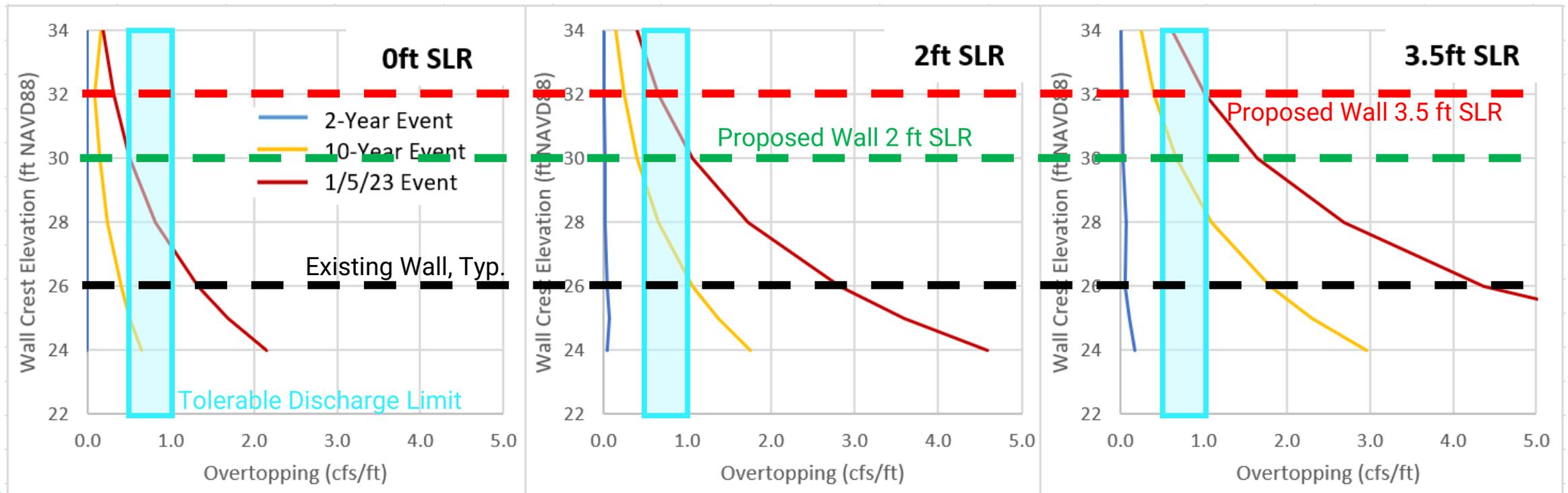
# Wall Height Considerations

- Existing wall height varies in elevation north to south
- Design wall height based on runup calculations
- Tradeoffs of increasing the wall height:
  - Reduction in flood risk
  - Increase in visual impacts
- Design alternatives to mitigate visual impacts
  - Elevated promenade
  - Overlooks



# Wave Overtopping as function of Wall Height

- Overtopping rate calculated for different events using EuroTop equations
- As wall height increases, overtopping rate decreases
- Other factors can reduce the wave runup and overtopping (e.g., realign segment of south wall inland)

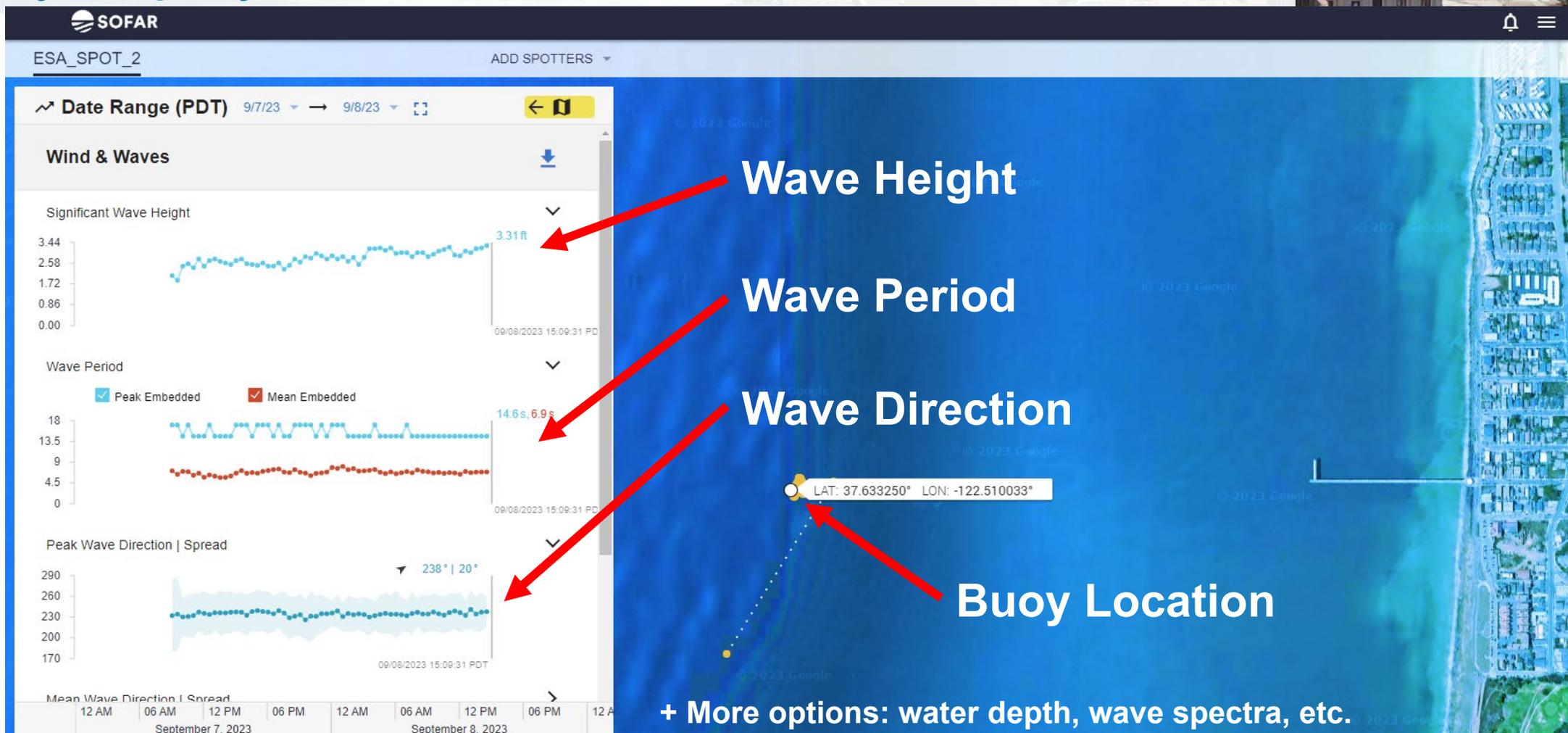


# Data Collection Program

- Buoy deployed 9/7/23
  - Measuring waves and water levels
- Planning to install two downward-facing radar systems on the pier (expected installation early October 2023)
  - To measure waves and water levels in the outer and inner surf zone
- Goals of Data Collection Program
  - Verify accuracy of other available wave data offshore of project site
  - Verify calculated “wave setup” in the surf zone
  - Verify calculated “total water level” (i.e., wave runup elevation) above the wall
  - Distill information to inform design parameters: wall height, structural loading, etc.



# Buoy Deployment – Real-time data dashboard





# Beach Boulevard Promenade and Amenities

Lucas Piper, GHD





# What we've heard so far

## DESIRED CHARACTER / CONSIDERATIONS

- Design needs to be reflective of the Pacifica community and City guidelines (Sharp Park Specific Plan)
- Pedestrian focus with need to manage active and passive recreation uses
- Planted landscape, though desired, faces challenges for growth and establishment and should be limited
- Maintain views and use of the promenade and pier
- Material and furnishing themes currently under consideration

## DESIRED USE

- Maintain or increase beach access
- Continuous pathway and connections from North to South
- Maintain existing level of parking
- Various levels of use focused on pedestrian level

## DESIRED AMENITIES

- Gathering and viewing spaces
- Bike racks
- Additional restrooms
- Water stations
- Pet waste receptacles
- Lighting along promenade
- Benches and rest areas
- Access to parking and easy circulation
- Public art features
- Enhanced paving
- Beach and ocean access
- Play structures (integrated with art?)

# Promenade Layout Concept Overview

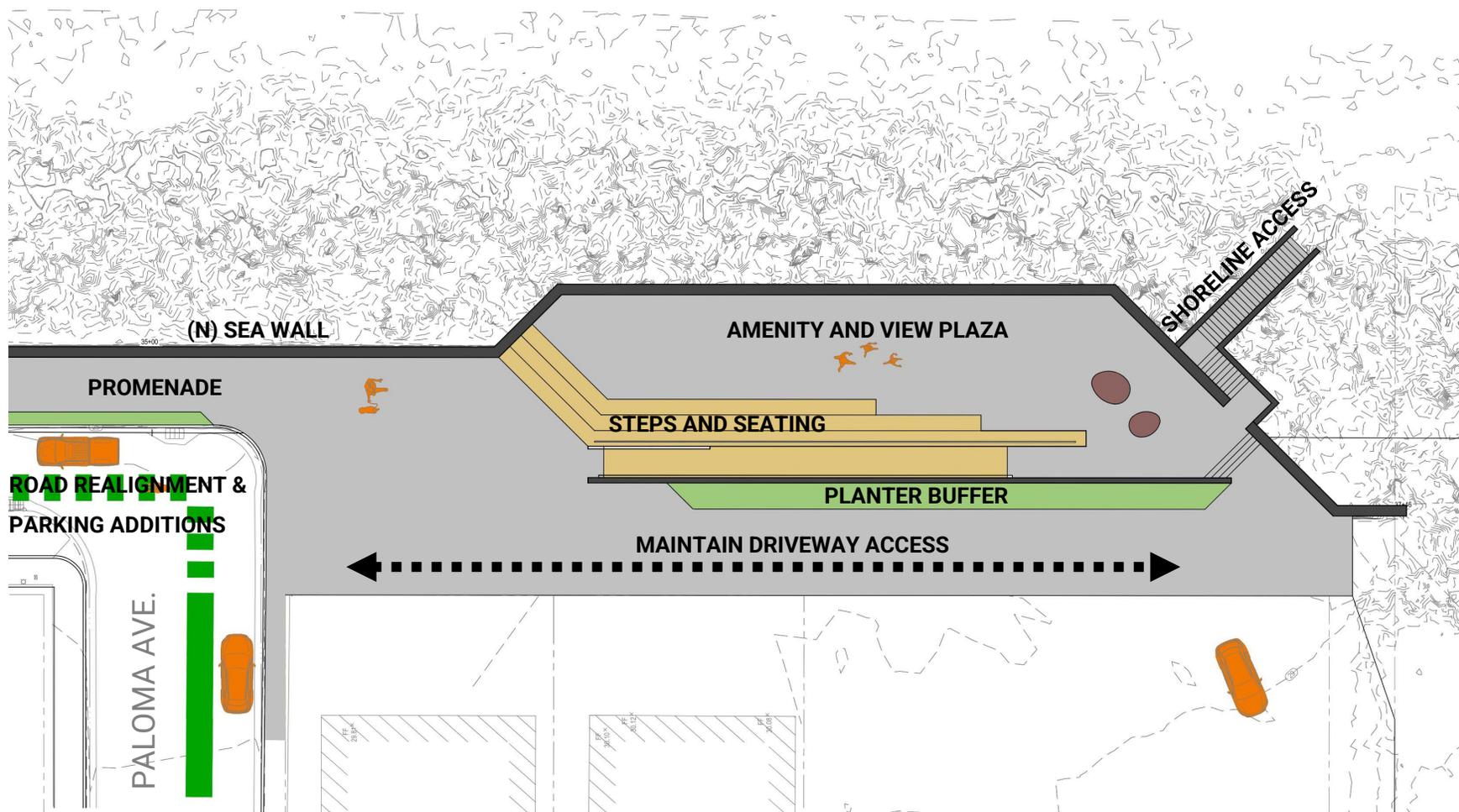
## SOUTHERN PROMENADE & DUNES

## PIER PLAZA & ACCESS

## NORTH PROMENADE & PLAZA



# North Promenade Plaza – Conceptual Design



## Design Highlights / Intent

- Maintain existing driveway easement access
- Redesign road and add additional street parking
- Expand wall to create widened plaza for gathering and access to shoreline / adjacent beach to the north
  - Any adjustment to wall would require permit approval from Coastal Commission.
- Multi-tiered plaza for seating, views, amenities, and access.

# North Promenade Plaza – Conceptual Design



**EXISTING CONDITIONS**

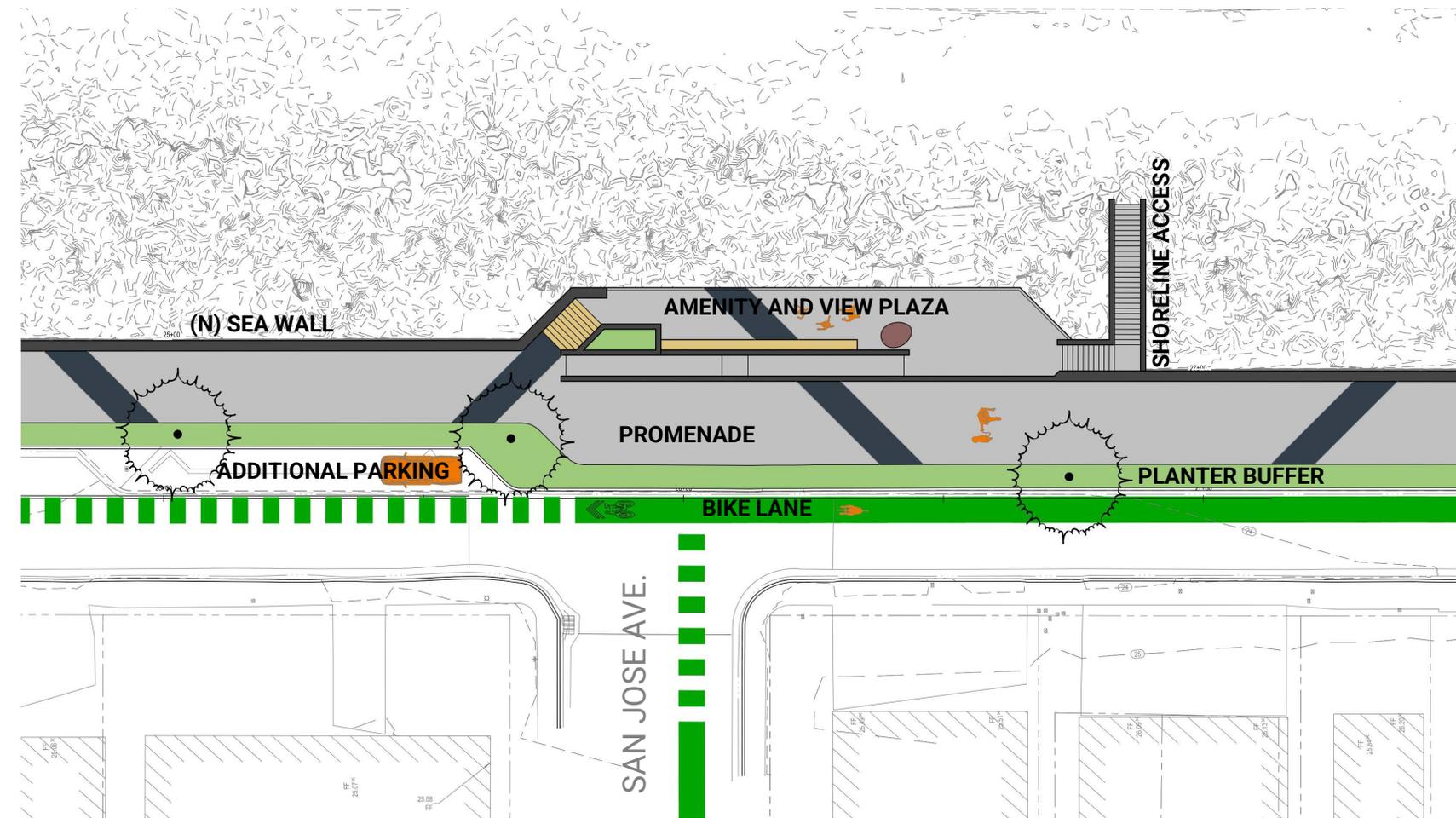


**PROPOSED CONDITIONS**

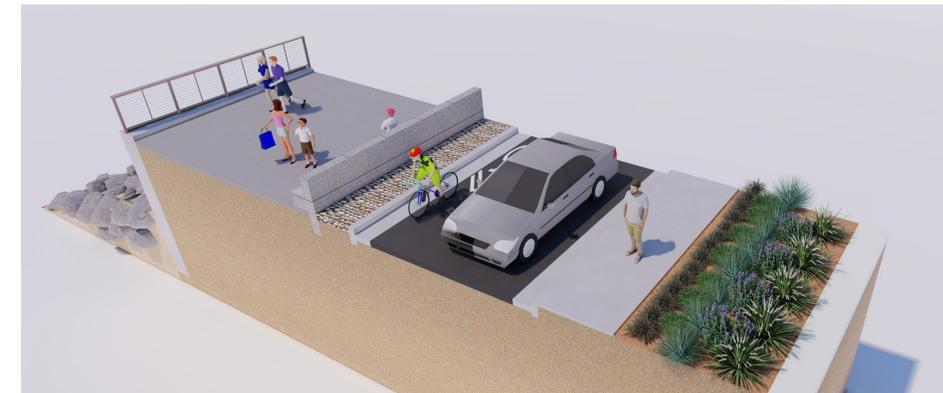
# Pier Plaza & Access – Conceptual Design

## Design Highlights / Intent

- Multi-tiered plaza for seating, views, amenities, and access
- Provide ADA access from parking to promenade and plaza
- Add additional street parking
- Replace existing steps and shoreline access with a safer and more resilient option
- Any adjustment to wall would require permit approval from Coastal Commission.



# Pier Plaza & Access – Conceptual Design

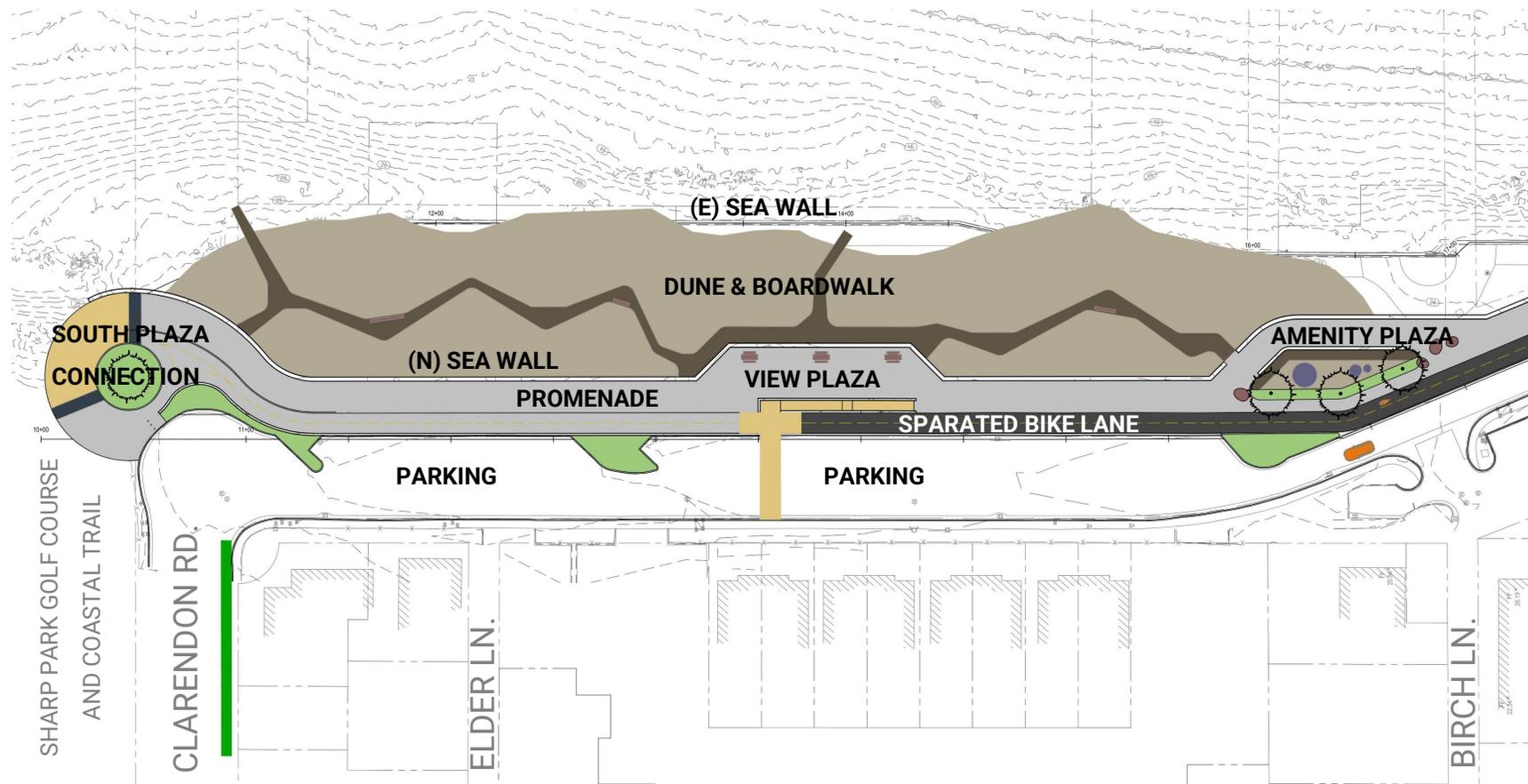


**EXISTING CONDITIONS**



**PROPOSED CONDITIONS**

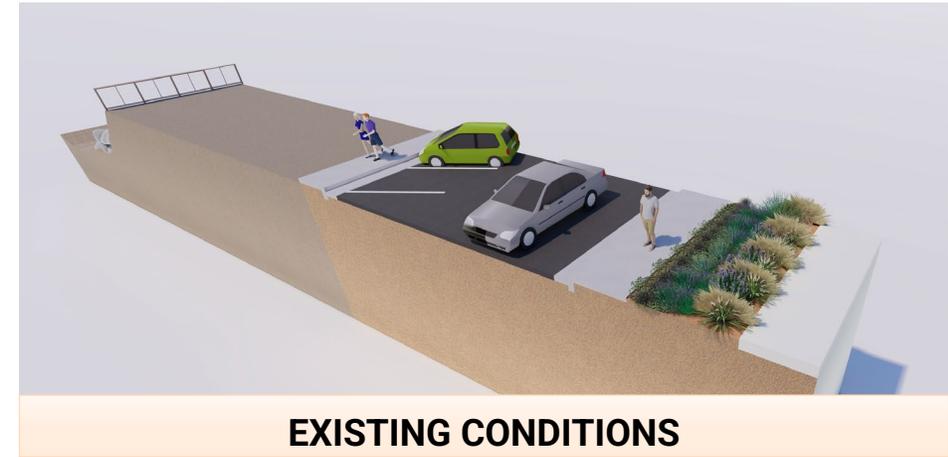
# South Promenade & Dune – Conceptual Design



## Design Highlights / Intent

- Relocation and increased height of seawall / promenade
- Provided separated bike lane and promenade buffer
- Provide ADA access to new promenade elevation
- Provide enhanced connection to southern trail and shoreline via promenade and boardwalks
- Maintain existing parking
- Expand beach and develop dune and boardwalk network
- Create plaza nodes for rest, play, and dune / beach access

# South Promenade & Dune – Conceptual Design



**EXISTING CONDITIONS**



**PROPOSED CONDITIONS**



# Possible Material and Furnishing Themes

## Existing City Precedence

- Prior input from Phase 1
- Sharp Park Specific Plan & Vision
- Recent Projects (Civic Center & Library)

## Sharp Park Specific Plan Objectives

- Preserve and respect seaside atmosphere
- Pedestrian and circulation improvements
- Allow spaces for experiences and activities
- Resilient, sustainable, and adaptable

## THEME OPTIONS

### Bohemian Coastal

- Wood
- Weathered
- Freeform
- Cooler Earth tones with pops of color
- Natural Materials

### Modern

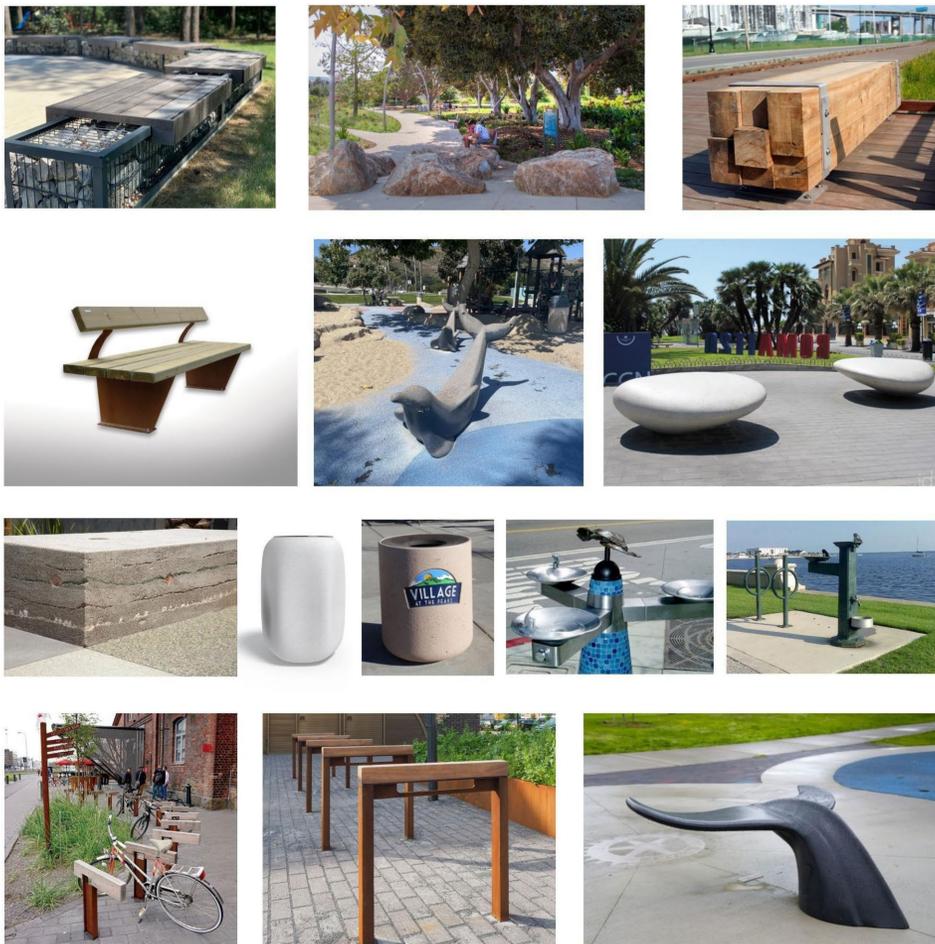
- Clean lines
- Concrete and metal
- Sleek
- Angular

# Architectural Precedence

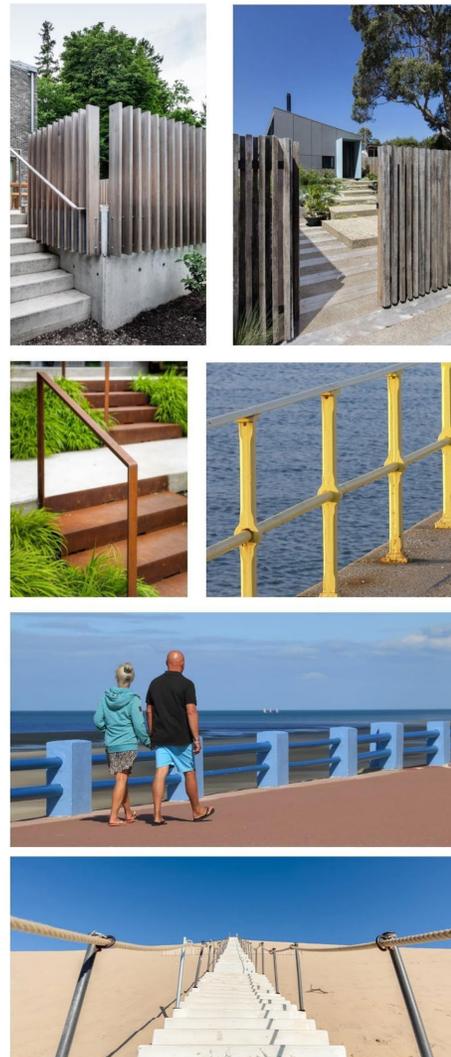


# Bohemian Coastal

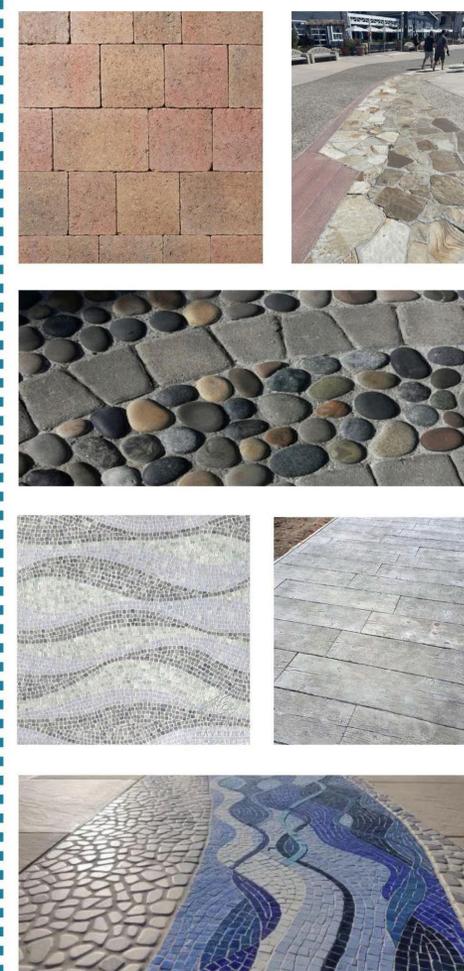
## SITE FURNISHINGS



## RAILING / FENCE

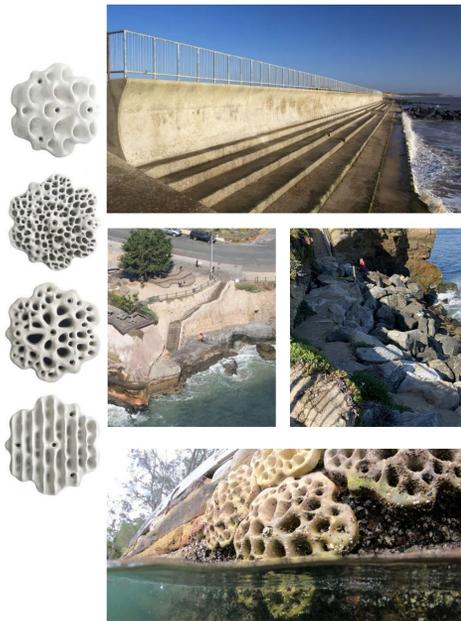


## PAVING / SURFACES



# Bohemian Coastal

WALL MATERIALS



ART INSTALLATIONS



LIGHTING OPTIONS

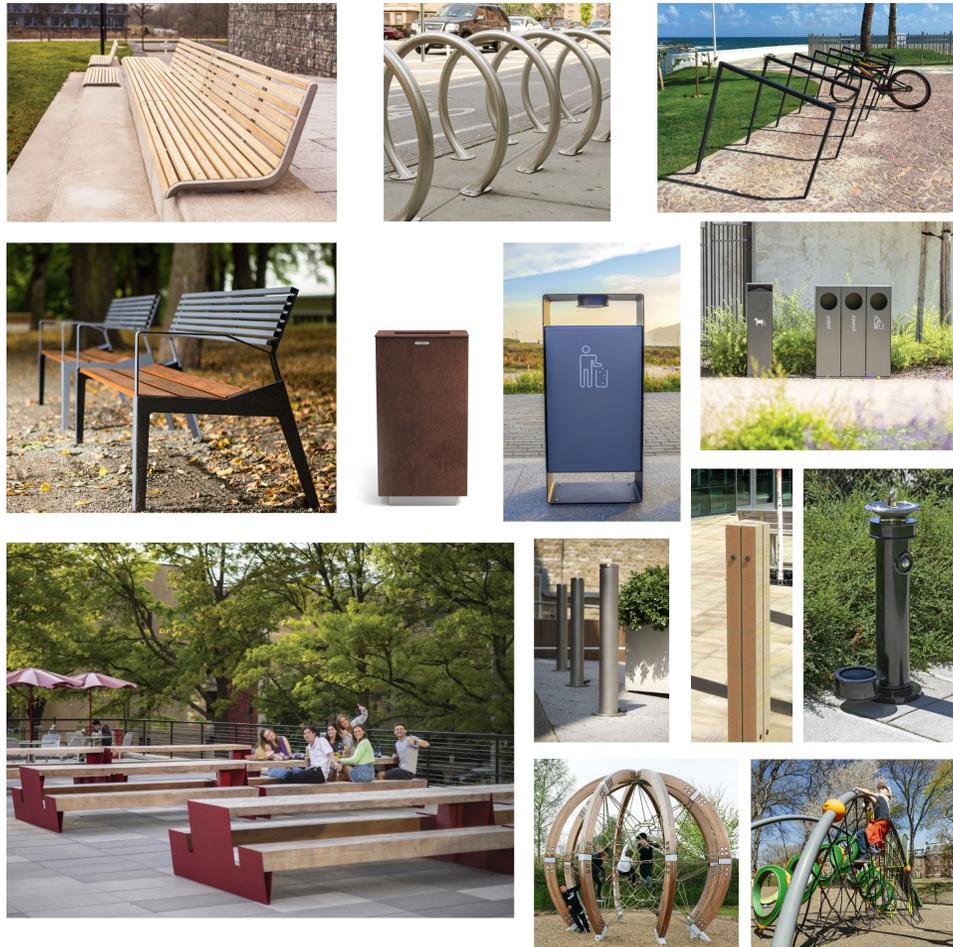


SIGNAGE

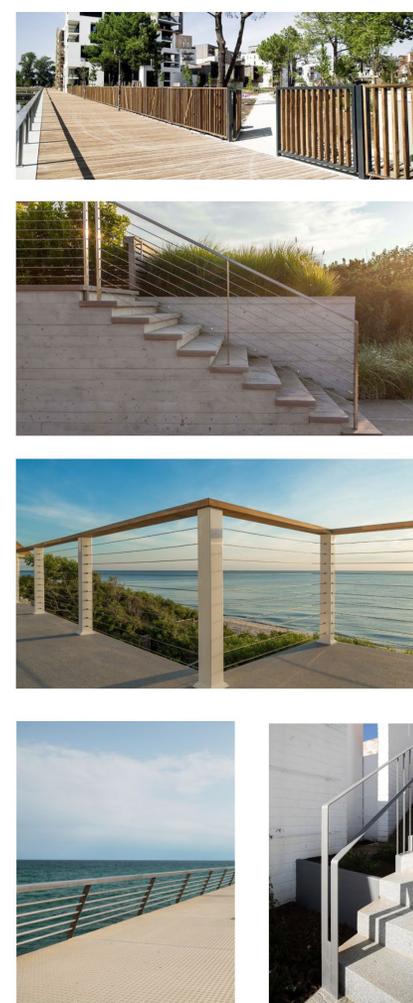


# Modern

## SITE FURNISHINGS



## RAILING / FENCE



## PAVING / SURFACES



# Modern

## WALL MATERIALS



## ART INSTALLATIONS



## LIGHTING OPTIONS



## SIGNAGE





# Information Stations

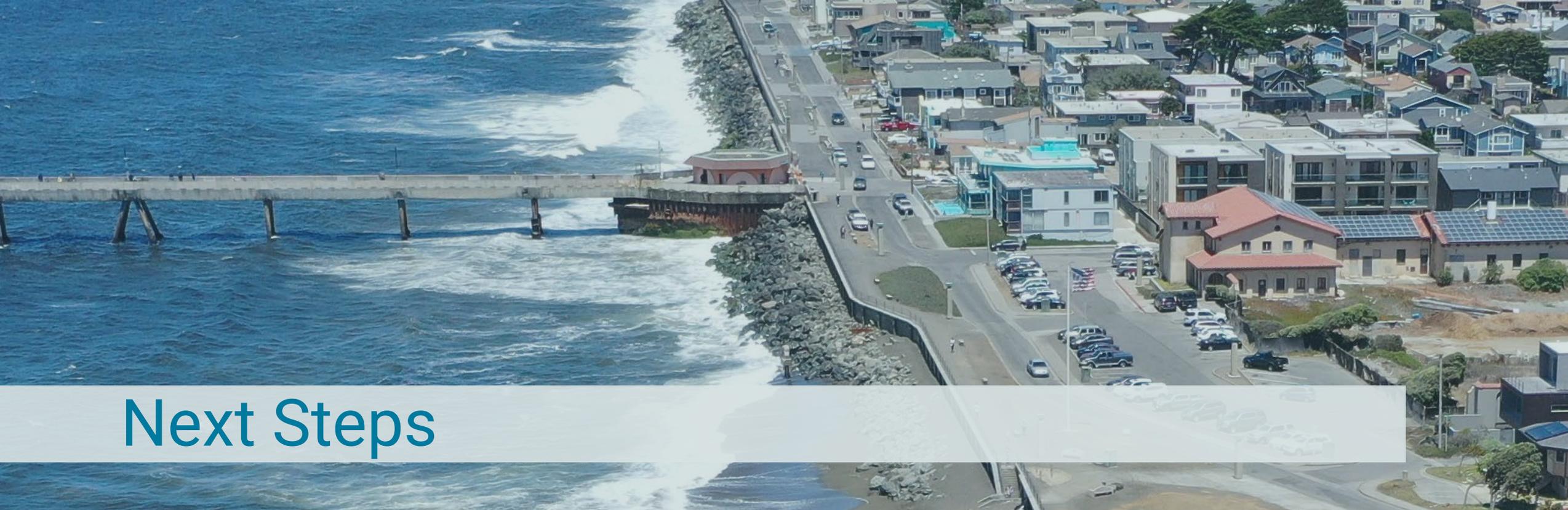
**Station B:** BBIRP Overview and Phase 1 Findings

**Station C:** BBIRP Design Criteria

**Station D:** Share Your Feedback!

**Station E:** Comment Form Station





# Next Steps

Katie DeLeuw, Kearns & West, Facilitator



# Engagement Timeline

2020-2021	Spring 2023	Summer 2023	Fall 2023	Winter 2023/2024	2024 Onwards
<b>PHASE 1:</b> Preliminary Planning and Feasibility	<b>PHASE 2A</b>				<b>PHASE 2B</b>
					<b>PHASE 2C</b>
					<b>PHASE 3: Construction</b> (Timeline TBD)
Preferred concept design alternative identification		Seawall Prelim Design	Draft 35% Plan	Final 35% Plan Notice of Preparation	
		Public Meeting #1: Project overview, Phase 1 recap, initial design	Public Meeting #2: Features and Amenities	Public Meeting #3: Preliminary Design Public CEQA Meeting	
		Regulatory Agency Engagement			
		Pop-ups and  Online Engagement			



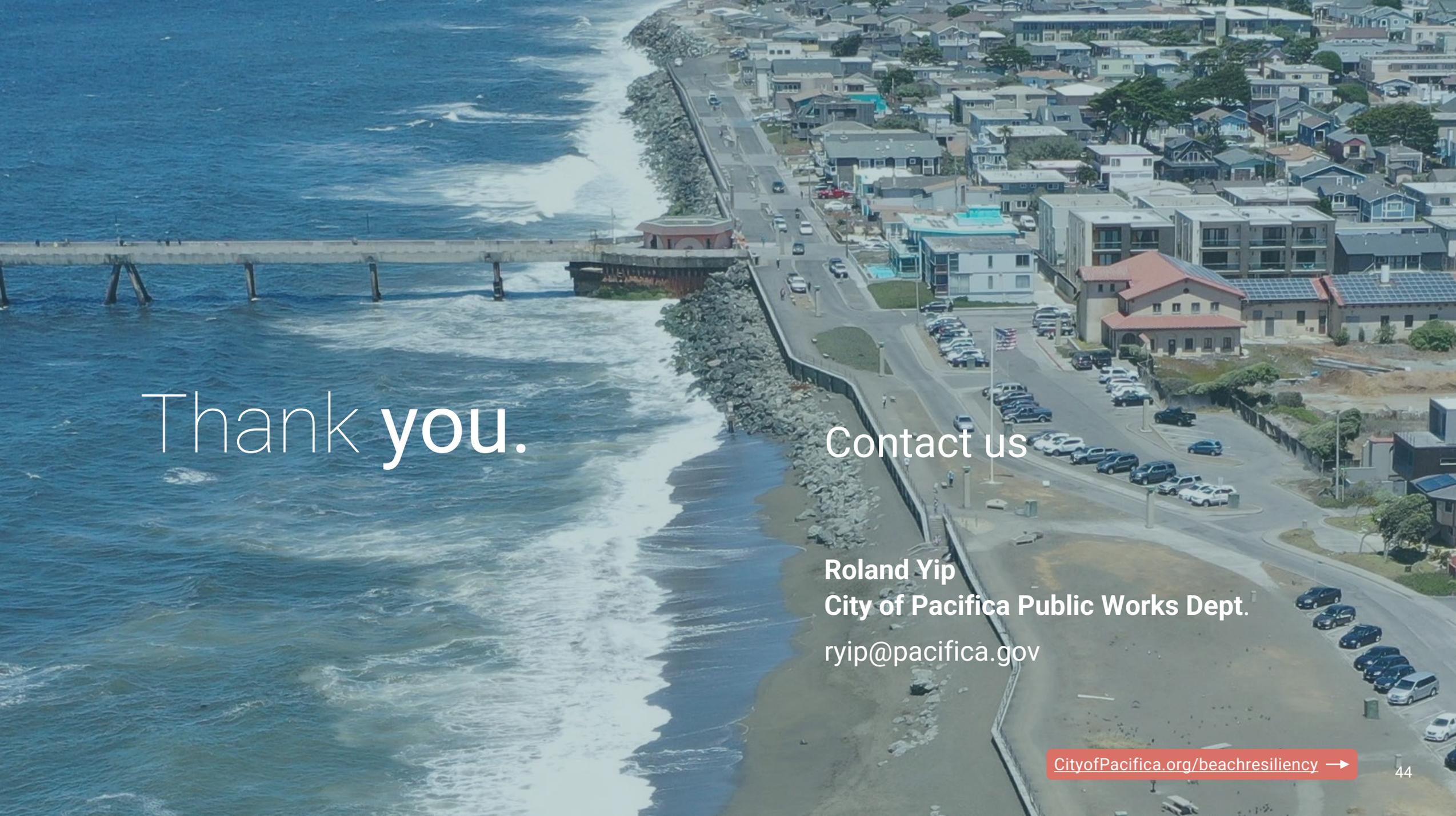
Proposed activities subject to change



# Next Steps

- **Submit all comment forms** to project staff prior to leaving the meeting.
- **Visit the project website** ([CityofPacifica.org/beachresiliency](https://CityofPacifica.org/beachresiliency)) to:
  - Find Phase 2A materials.
  - Sign-up for our email list.
- **Upcoming Engagement Opportunities**
  - Mid-September: Virtual Survey
  - September 23 and 24: Fog Fest
  - September 27: Virtual Meeting – Features and Amenities
  - October 11 and 17: Virtual Office Hours
  - October 14: Pacifica Pier Popup Tabling
  - December 5: Public Meeting – Preliminary Design (tentative date)



An aerial photograph of a coastal town. On the left, the ocean is turbulent with white-capped waves crashing against a long concrete pier and a seawall. The town, built on a slight rise, features a mix of residential buildings, including houses with gabled roofs and modern multi-story structures. A parking lot with several cars is visible in the foreground. The overall scene conveys a sense of coastal resilience and infrastructure.

Thank **you.**

Contact us

**Roland Yip**  
**City of Pacifica Public Works Dept.**  
**[ryip@pacificagov](mailto:ryip@pacificagov)**