



SUSTAINABILITY & RESILIENCE DEPARTMENT

**ENERGY & CLIMATE DIVISION**

# 30-YEAR WATERFRONT ADAPTATION PLAN

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Planning Commission

March 13, 2025

# Outline

1. Adaptation & Resilience Program
2. Project Overview
3. Work Program
4. Questions

# ADAPTATION & RESILIENCE PROGRAM

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Background & Other Projects

# Climate Adaptation & Resilience Program

Sea-Level Rise  
Adaptation  
Implementation  
Projects

Other Climate  
Hazards:  
Stormwater  
Flooding,  
Groundwater,  
Heat, Wildfire

Hazard Mitigation  
Planning and  
FEMA Funding

Community  
Resilience: Hubs  
and Programs

Interdepartmental Assistance

Community Outreach Campaign

# Program's Role

- Centralized planning providing unified approach and reducing duplication of effort
- Consolidated monitoring and documentation
- Project management
- Coordination of interdepartmental staff teams
- Grants and other funding sources
- Regulatory and permitting assistance
- Liaisons with regional, state, and federal entities

# Program Drivers

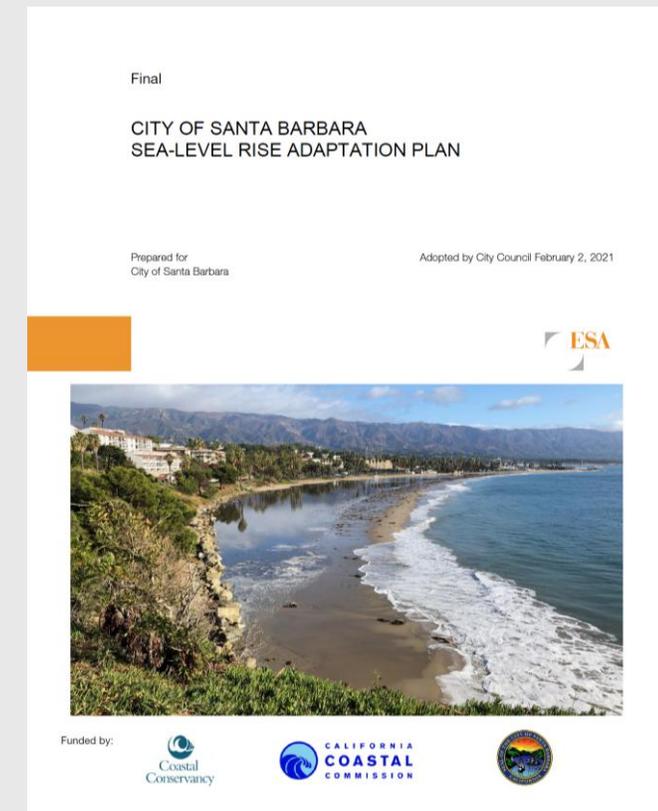
- Implementation of Council approved policies for climate adaptation and hazard reduction
- Compliance with State planning and permitting requirements
- Eligibility for State and Federal climate hazard reduction funds

# Existing Hazards

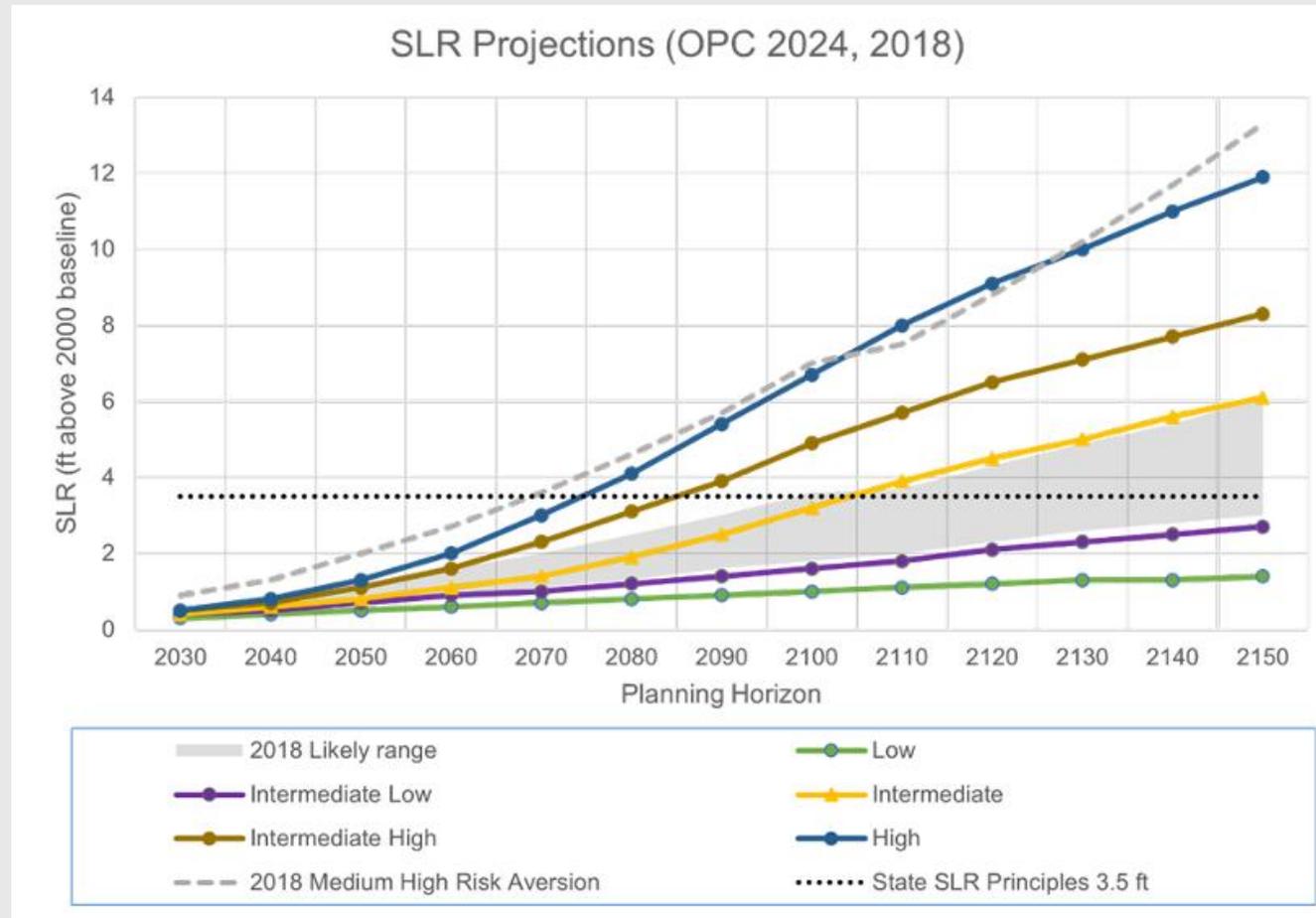


# 2021 Sea-Level Rise Adaptation Plan

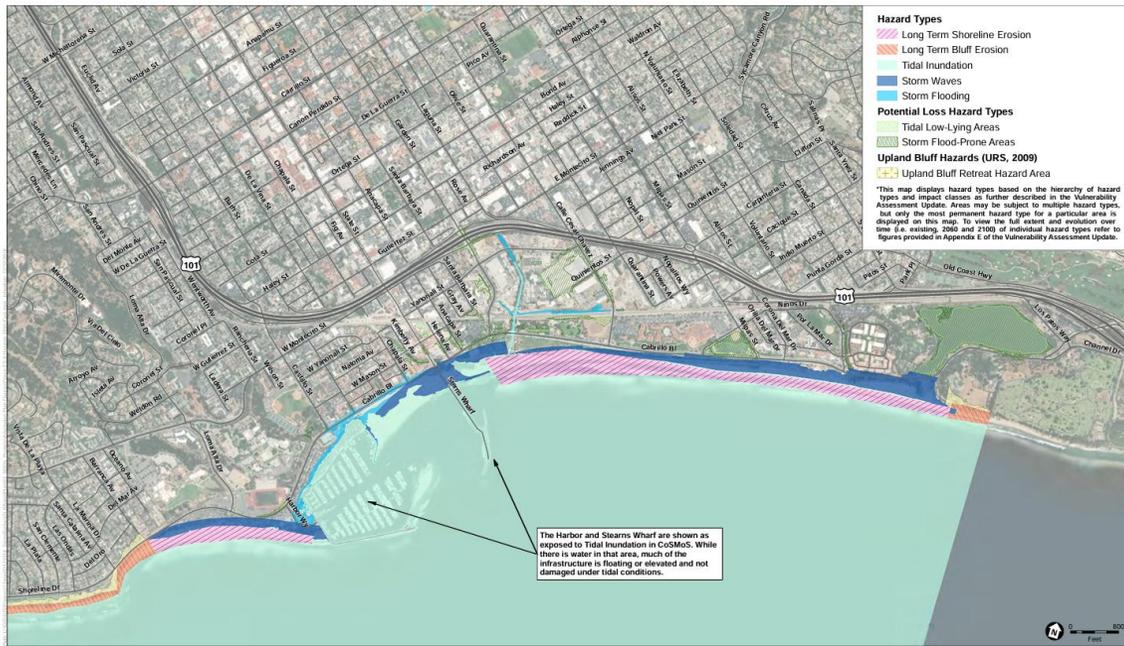
- Guiding principles for adaptation
- Phased planning based on monitoring and trigger-based actions
- Specific near-term (ten-year) actions
- Decision structure for mid- and long-term
- Relies on Shoreline Monitoring Program
- Highest priority implementation underway (>\$5 million in grant funds)



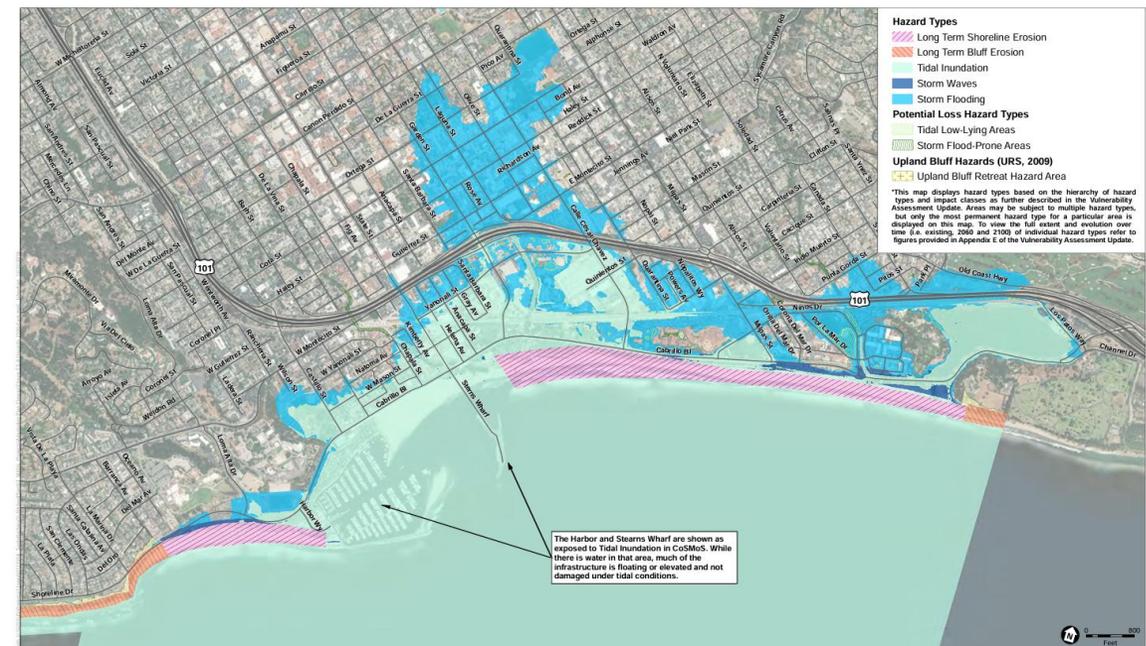
# Sea Level Rise Projections



# Projected Coastal Hazard Exposure



*Hazards with 2.5' of SLR*



*Hazards with 6.6' of SLR*

Source: 2021 SLR Adaptation Plan and Vulnerability Assessment



# Changes in Rainfall Intensities

**Table ES-3. Projected 24-hour Rainfall Event Return Interval (and Annual Percent Chance of Occurrence) with Climate Change**

Scenario	24-hr Rainfall Event Return Interval (Annual Chance of Occurrence)				
	5-year storm (20%)	~10-year storm (10%)	50-year storm (2%)	100-year storm (1%)	500-year storm (0.2%)
Past Precipitation					
Future Precipitation with Climate Change (2030 to 2100)	2- to 3-year storm (33%-50%)	~5-year storm (20%)	10-year storm (10%)	10- to 20-year storm (5% - 10%)	30- to 50-year storm (2% - 3%)

## Current Projects (~5M grant funding)

- Regional Coastal Adaptation Monitoring Program
- Wastewater & Water Systems Climate Adaptation Plan
- 30-Year Waterfront Adaptation Plan
- Airport Climate Adaptation Plan
- Stormwater Modeling



# Future Projects (FY 26 - FY 30)

- Address critical infrastructure or are otherwise required
- Major categories:
  - *Waterfront*
  - *Wastewater collection system and El Estero WRC*
  - *Flood control (stormwater system and creeks)*
  - *Monitoring and centralized event documentation*
  - *Development regulations and coastal planning*
  - *Airport flooding and LCP*
  - *Hazard mitigation planning and FEMA funding*
  - *Wildfire mitigation*
  - *Community outreach and resilience*

# Timing of Implementation

- Current Conservancy planning grants allow for future follow-on project implementation funding
- Climate Bond (Proposition 4; \$4 Billion)
- City of S.B. uniquely poised to obtain funding
- Momentum with community and stakeholders
- Successful coastal permitting now relies on having a coordinated, phased approach

# 30-YEAR WATERFRONT ADAPTATION PLAN

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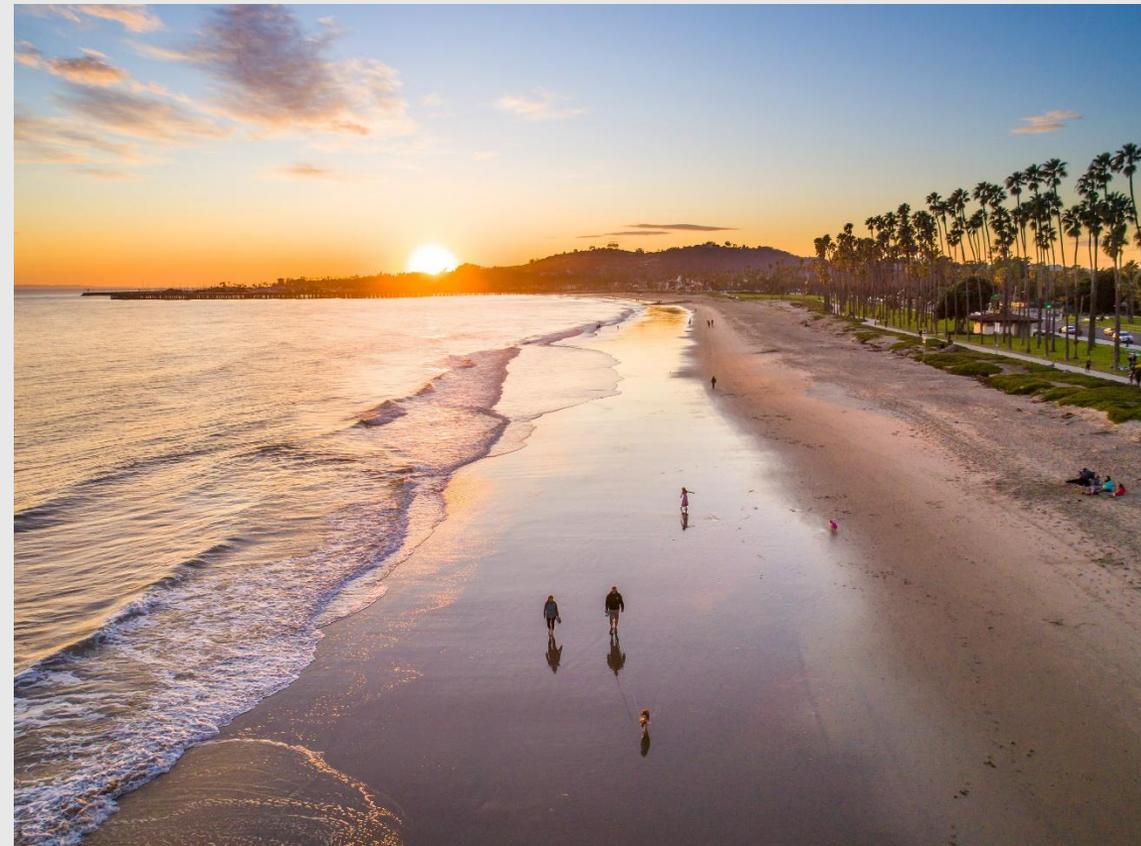
## Project Overview

## Overall Plan Vision

*Develop a practical plan that prepares the Santa Barbara waterfront for increased storm surges, erosion, and flooding by providing solutions that preserve and enhance recreation, commerce, beach access, habitat, and critical infrastructure for the near term and future generations*

# Project Scope: The Waterfront Area

- Leadbetter to Clarke Estate
- Central to SB identity
- Cherished coastal resources
- Publicly owned and managed



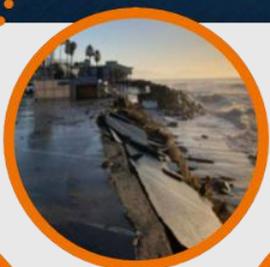
# Project Need

- Hazard impacts during storm events today
- SLR will magnify impacts
- 2021 Adaptation Plan high priority
- Required for permitting
- Funding benefit





Bank Erosion



Edge Collapse



Safety Hazards



Flooding



Shoaling & Sedimentation



Structures Damage



Flooding & Erosion



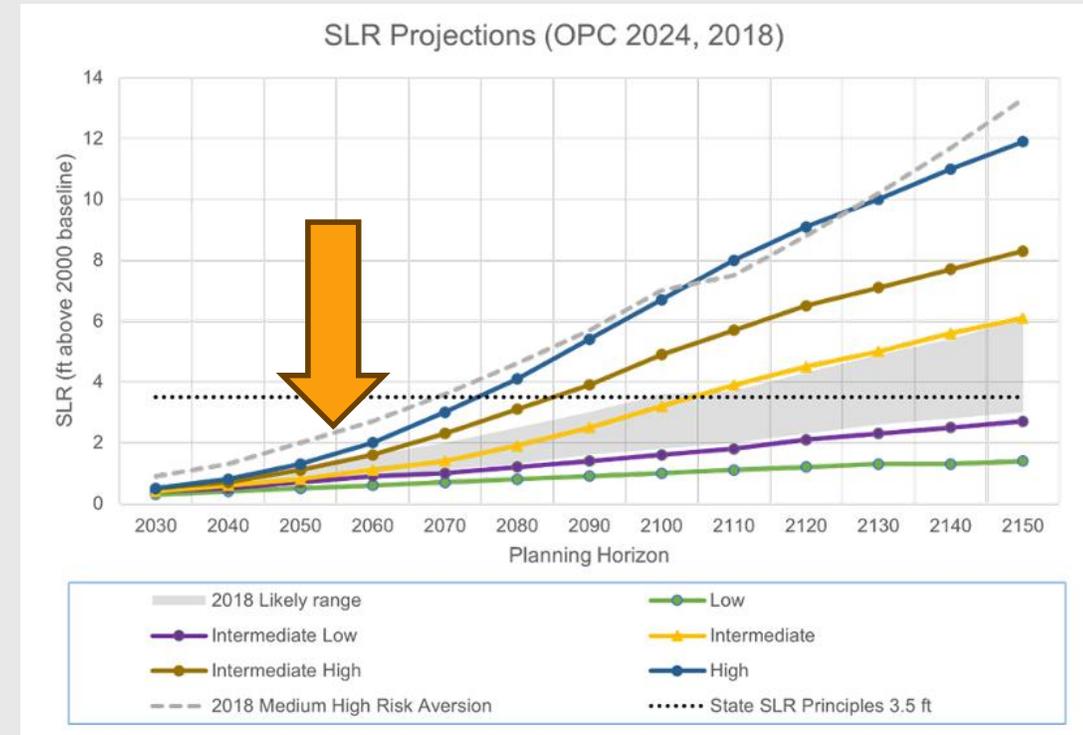
Exposure & overtopping



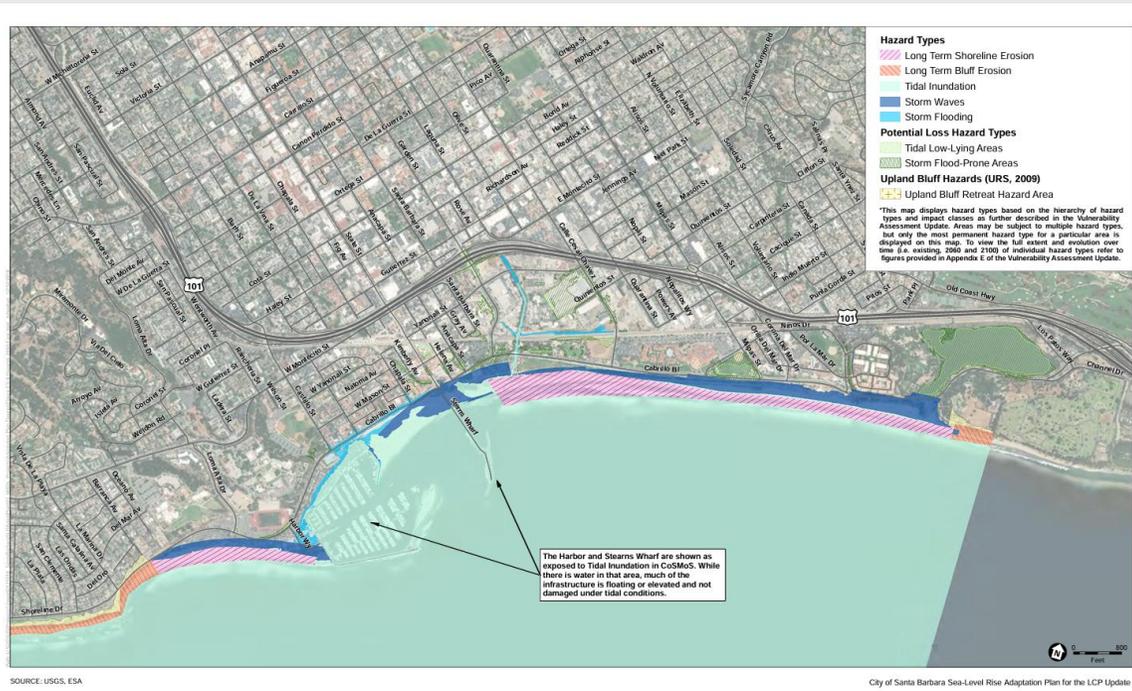
Preserving Recreation & Access

# Why 30 years?

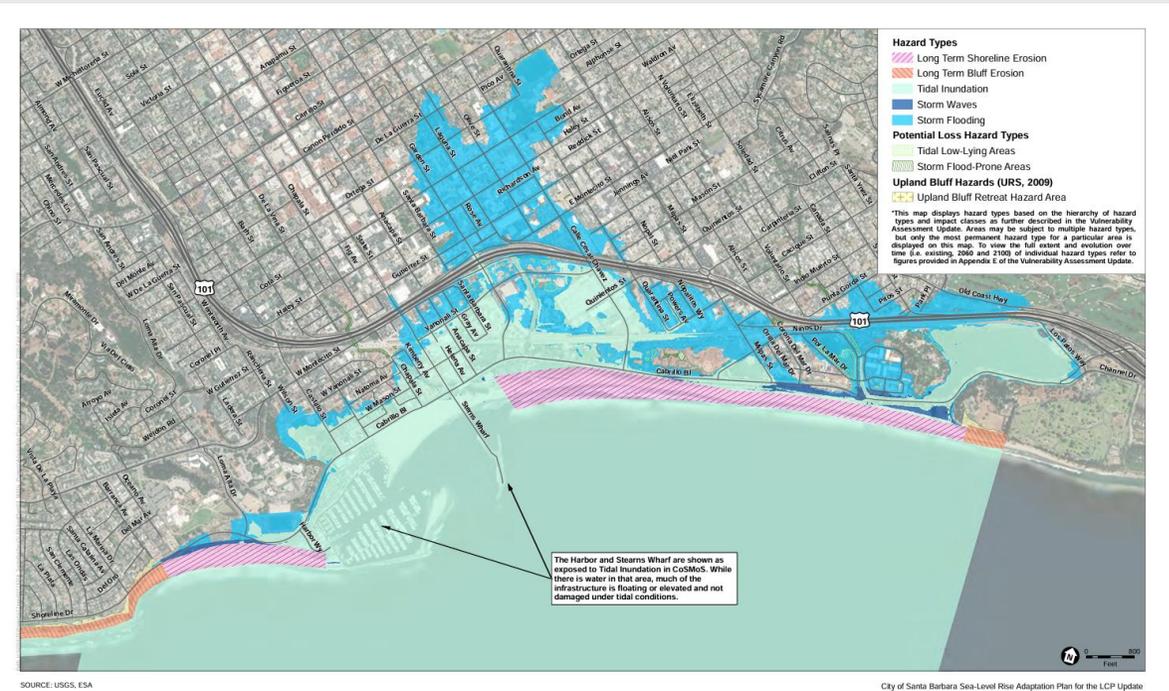
- SLR projections are more certain
- Broad range of adaptation options
- Doesn't require large-scale flood control measures



# Projected Coastal Hazard Exposure



Hazards with 2.5' of SLR (±2060)



Hazards with 6.6' of SLR (±2100)

Source: 2021 SLR Adaptation Plan and Vulnerability Assessment

# WORK PROGRAM

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# Staff Team



# Consultant Team



# Key Project Elements

- Refined vulnerability assessment
- Model of sediment movement
- Harbor breakwater & groins analysis
- Adaptation strategy & implementation Plan
- Conceptual designs for Beachway & Harbor Commercial Area
- Bilingual community engagement

## 30-Year Adaptation Plan

Actionable

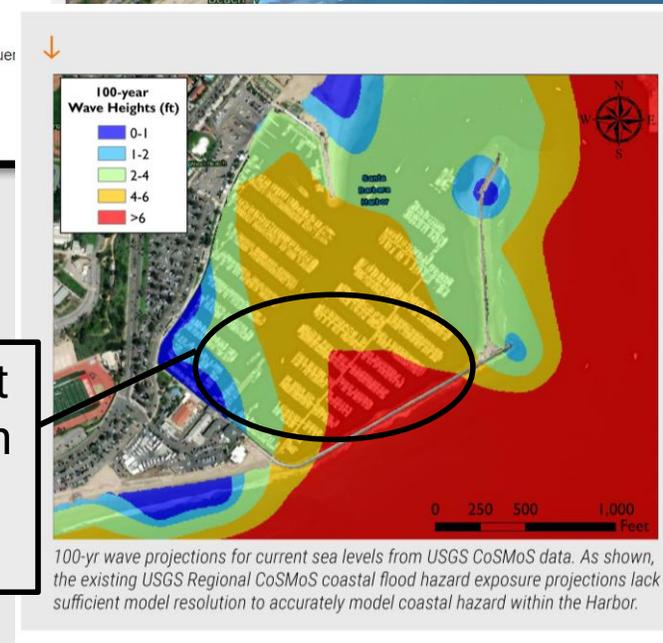
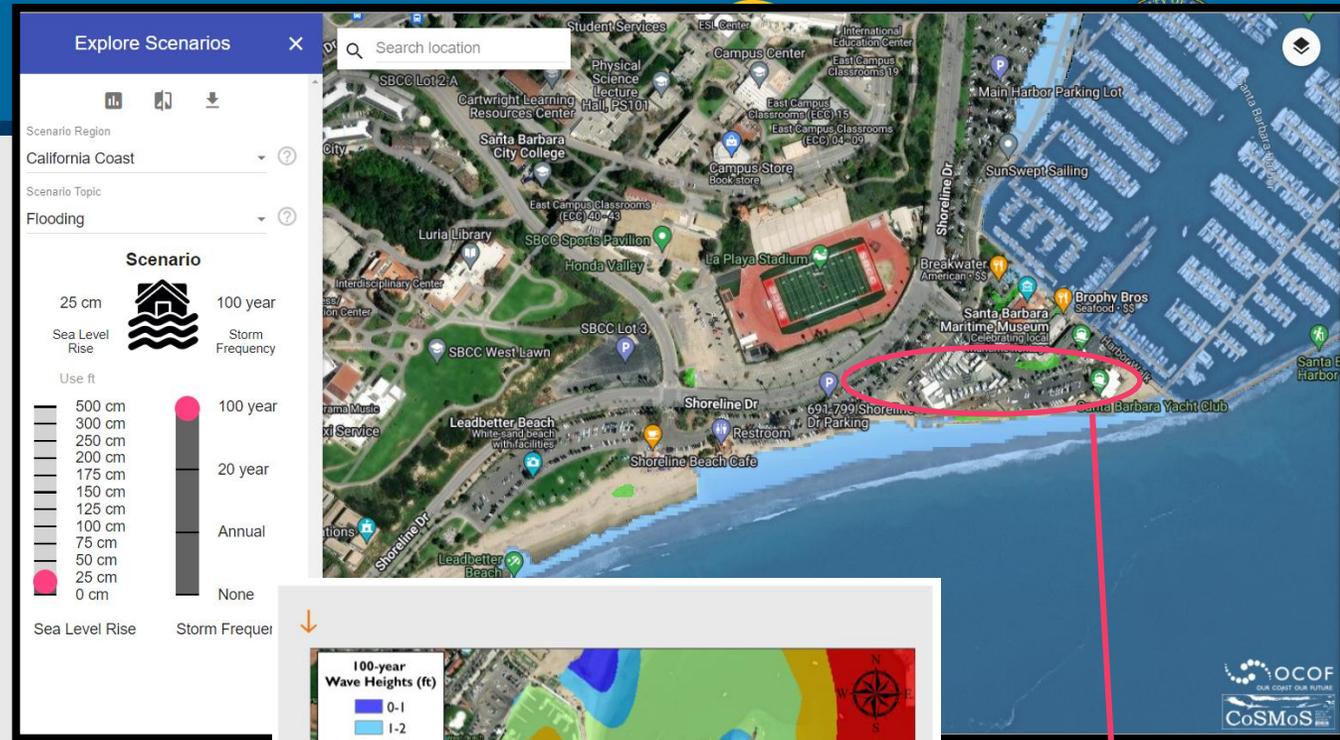
Adoptable

Permittable

Inspirational

# Refine Model & Assess Vulnerability

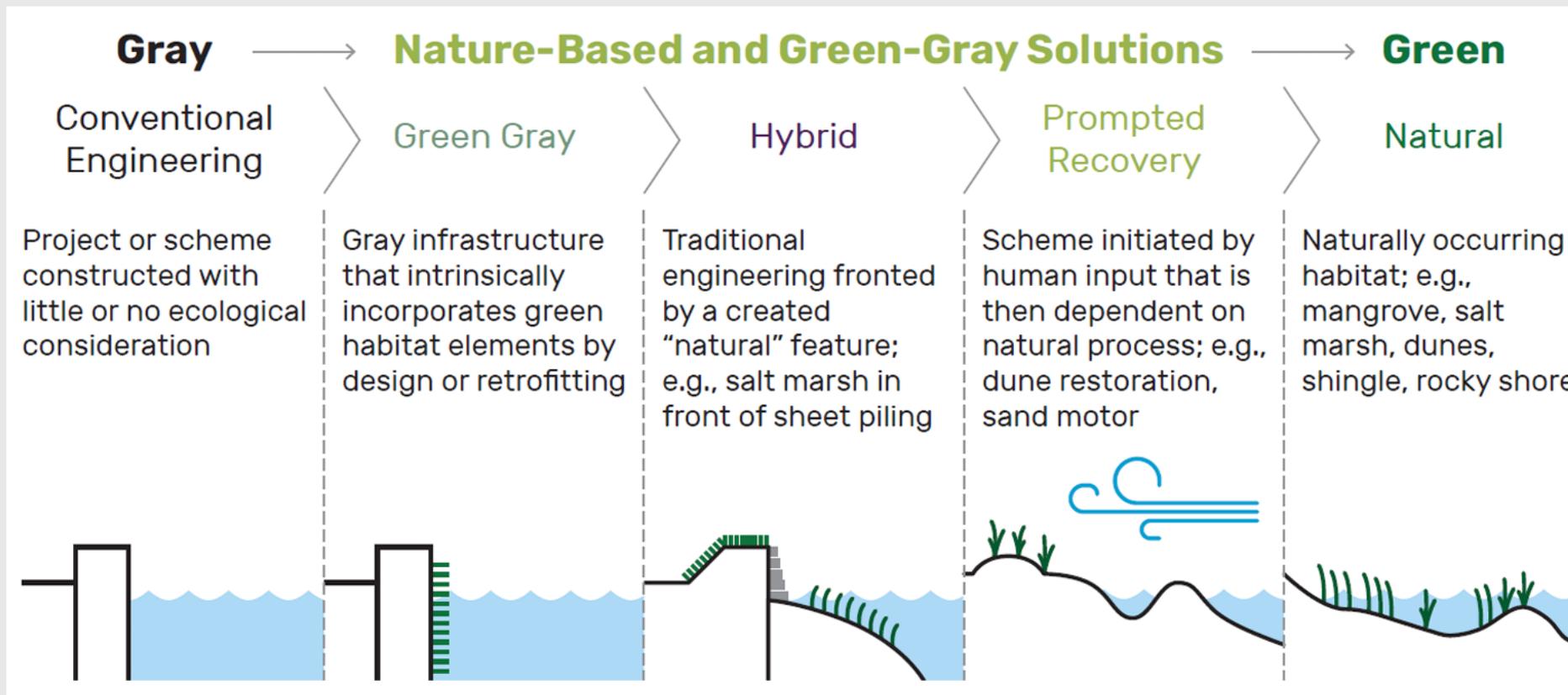
- Improve model resolution
- Address known issues
- Incorporate updated data
- Sediment movement



Breakwater not well-resolved in CoSMoS wave models

Commercial Area not in 100-year flood zone?

# Adaptation Spectrum of Options



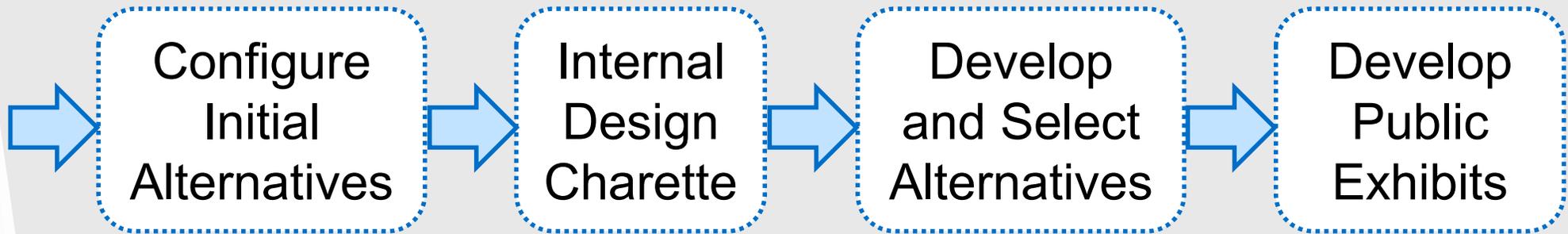
Source: USACE and Port of San Francisco; USACE International Guidelines on Natural and Nature-Based Features for Flood Risk Management



# Develop & Select Adaptation Alternatives



Starting with the  
2021 Adaptation  
Plan

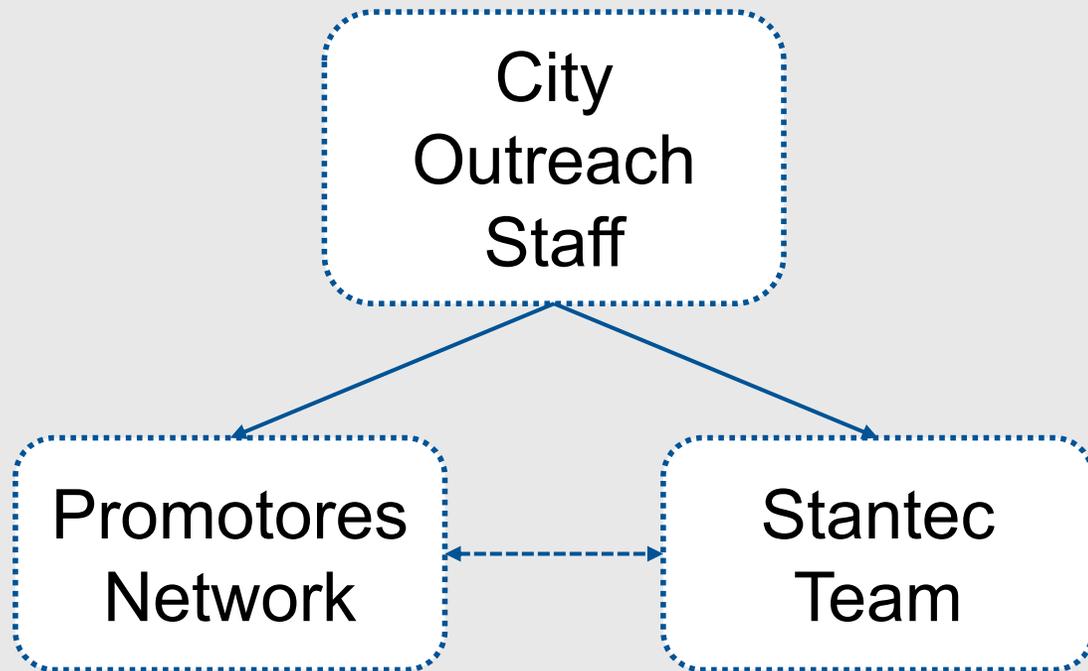


*3 to 5 Waterfront-  
Wide Alternatives*

*2 to 3 Waterfront-  
Wide Alternatives*

*Up to 3 Beachway  
and Commercial  
Area Alternatives  
(5% & 10% designs)*

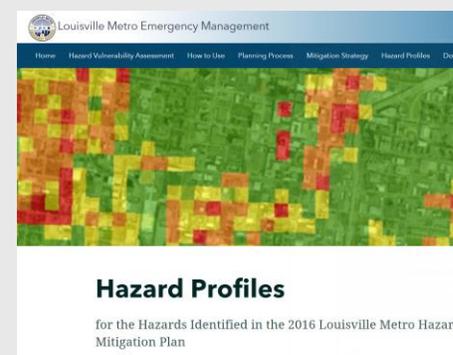
# Community Engagement



- Initial tasks:
  - Goals and objectives
  - Target audiences
  - Sentiment survey
  - Phasing and timing
  - Engagement plan

# Engagement Approaches

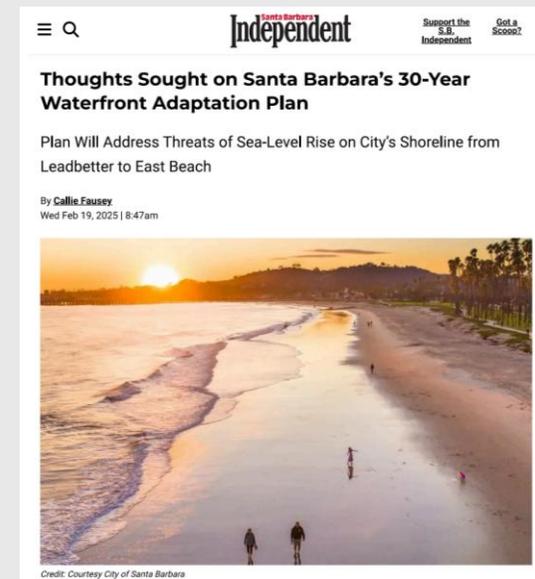
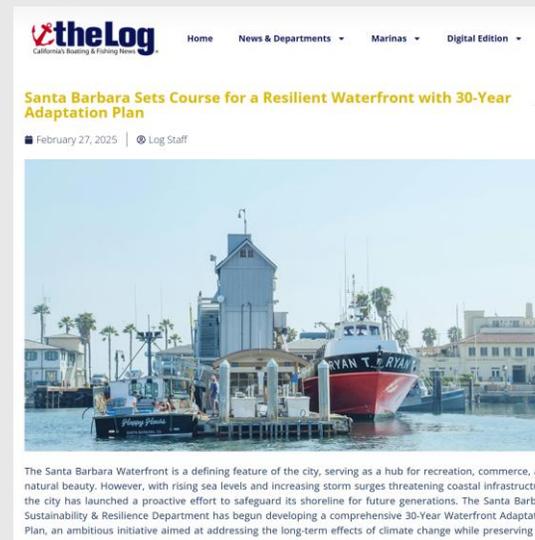
- Meet people where they are
- Pop-up interviews
- Open houses
- Handouts & posters
- Digital maps & renderings
- Community survey
- Community meetings
- Road show



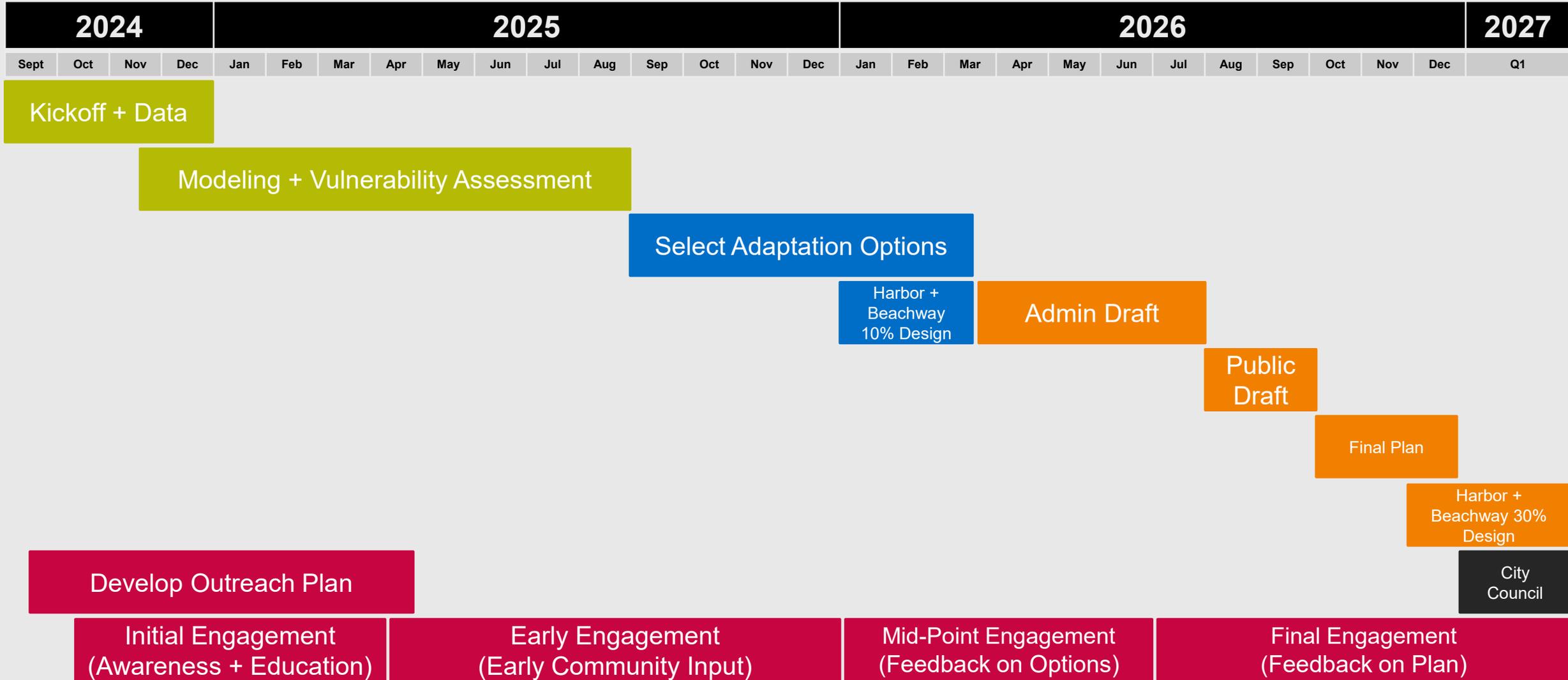
*Example Bionic Rendering for Malibu*

# Initial Outreach: Project Launch & Survey

- >170,000 potential touch points:
  - Newsletters + press
  - Stakeholder emails
  - Social media
  - Posters + a frames
- ~800 survey responses



# Schedule Overview



# Commission's Roles

- Review major deliverables
- Help guide adaptation strategy development
- Support community engagement
- Make a recommendation to Council on the final plan



# QUESTIONS?

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