



Community Conversation 2: West Cliff

Resilient Coast Santa Cruz 2.0: Shoreline Adaptation + Management Plans



Welcome!



Today's Topics

- Coastal Update
- Project Goals + Overview
- Projected Coastal Hazards
- Toolbox of Potential Adaptation Solutions
- Opportunities to Improve the Experience
- Table-Top Breakout Activity: Potential Medium Term Adaptation Strategy
- Wrap Up + Next Steps



Updates: Active Coastal Projects

- Lighthouse Point Hazard + Alternatives Analysis proceeding
- Path relocation at Getchell's + Its Beach, design complete
- Road + path relocation at damaged bluff at 800 West Cliff into Lighthouse Field in design and environmental review process
- Coastal Commission permitting in progress for West Cliff Infill Walls, including "mitigation"
- Mosaic for Bethany Curve Bridge – in progress
- San Lorenzo River Mouth Culvert + Lagoon management

Updates: Winter Readiness

- Communications on household and business readiness
- Free Sandbag program available when rain is forecast
- Regular street, sidewalk and parking lot sweeping
- Regular cleaning of storm drain pipes and street inlets
- Vegetation trimming, culvert repairs
- Pumps and barriers staged
- Active engineering projects and coordinated planning

Project Goals

Fulfill Local Coastal Program policy requirement and demonstrate compliance with state law requiring sea level rise planning with best available science and meeting certain minimum criteria.

Develop plans, projects and policies to address coastal hazards and guide the next 30 years of coastal management proactively.



Project Overview



Phase 1:
Community Level
Setting
*Fall 2025-Winter
2026*

Phase 2: Refine
Adaptation Pathways
Winter-Summer 2026

Phase 3: Cost &
Funding Analysis
Summer 2026

Phase 4:
Shoreline Plan &
Blueprints
*Fall 2026 - Spring
2027*

Community engagement throughout each phase



COMMUNITY MEETING ETIQUETTE

**Equal Voice
Be Respectful**



**Active
Listening**



**Respect The
Meeting Agenda**



**Take Space,
Make Space**



**Question Ideas,
Not People**



**Remember,
We Are A
Community**



Community Conversation Objectives

- Review how erosion, flooding and sea level rise affect West Cliff
- Share feasible medium-term (10-30 year) project options to address coastal hazards
- Discuss tradeoffs of project options
- Gather feedback from diverse perspectives on proposed adaptation strategy



Main
Beach

Seabright
Beach

Cowell
Beach

West Cliff
Drive

Mitchell's
Cove

Its Beach

Pyramid
Beach

Project Area



Main
Beach

Seabright
Beach

Cowell
Beach

West Cliff
Drive

Mitchell's
Cove

Its Beach

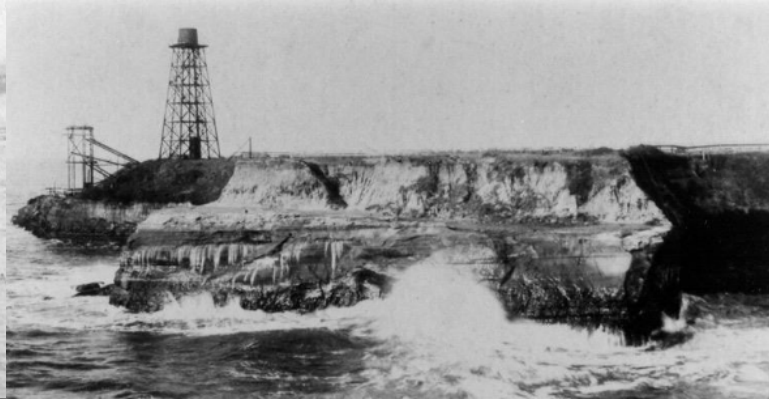
Project Area

Pyramid
Beach

An Everchanging Shoreline



Arch at Steamer Lane (1890)



Wave motor at Chico Avenue (1898)



Bird Rock at Lighthouse Point (1909)



Collapsed Arch at Steamer Lane (1920)



Wave motor at Chico Avenue (2006)



Bird Rock at Lighthouse Point (2006)

Today's Damages from the Ocean

Erosion from waves



Storms today are causing damages and disruption
→ \$50M+ from 2023-2025 storms alone

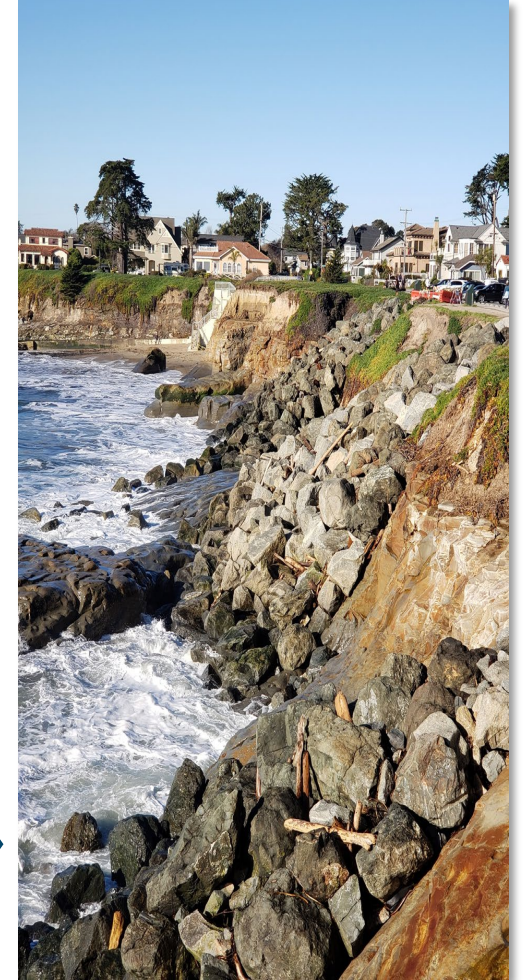
Tomorrow's Bluff + Pocket Beach Areas



Mitchell's Cove Beach



Its Beach



Without action, continued major + slower erosion continues;
Access to pocket beaches will become limited, making
waterfront beaches even more important

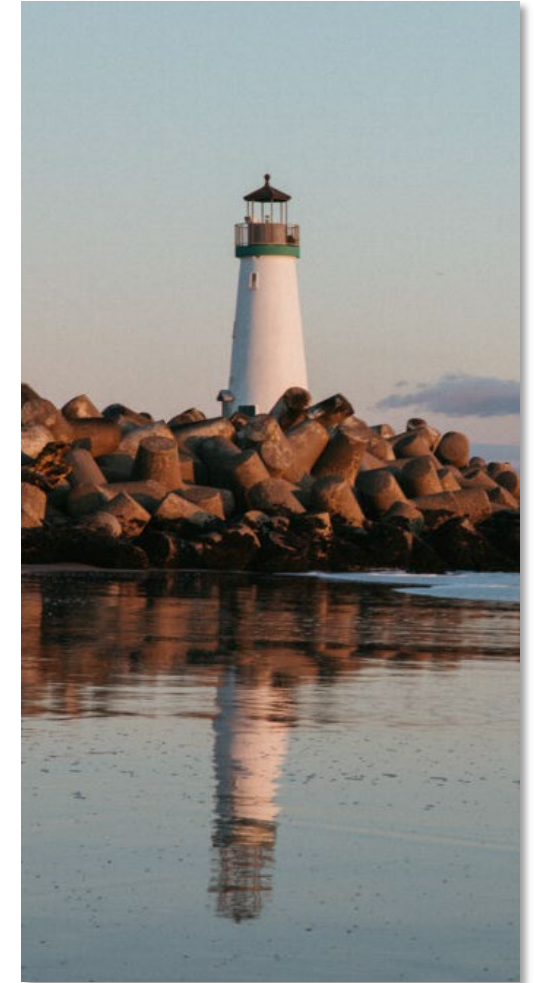
Tomorrow's Waterfront Beaches



Main Beach



Seabright Beach



Our wide sandy beaches that grew because of the Harbor Jetty have stopped growing and will begin to narrow due to erosion and sea level rise

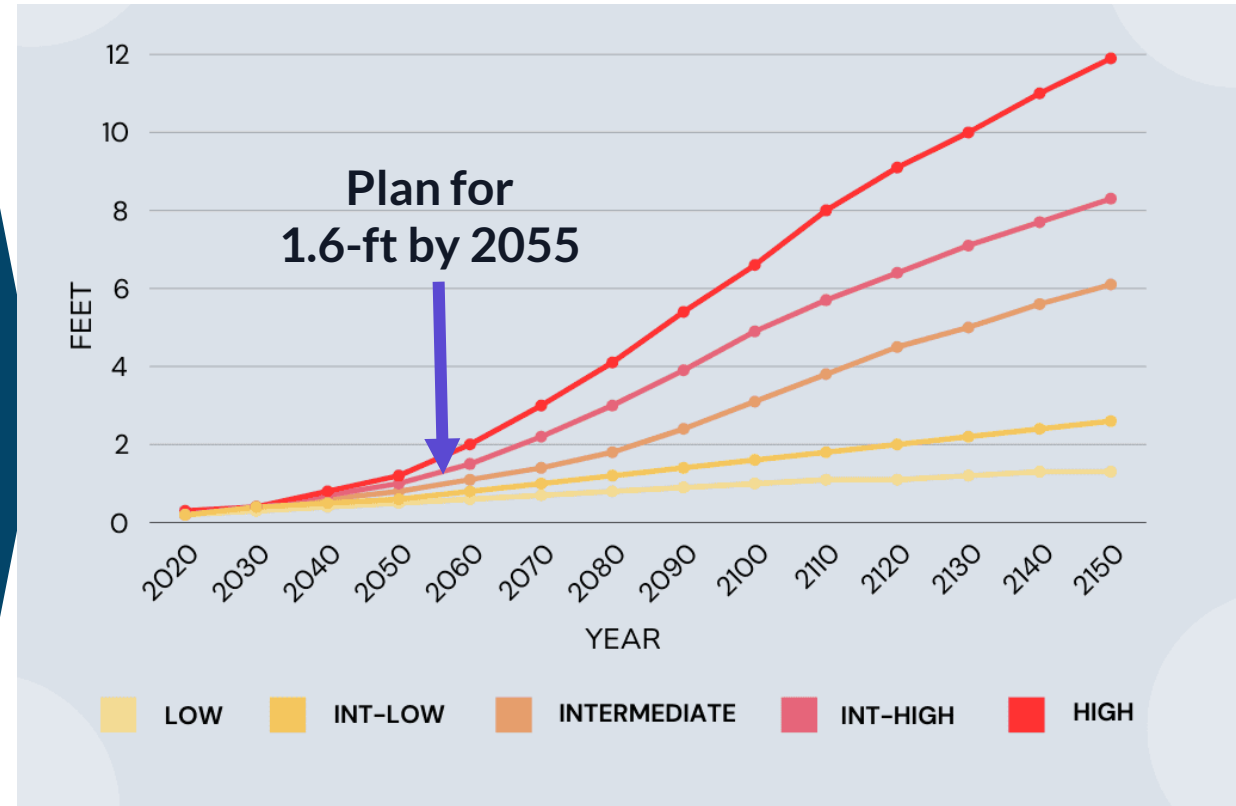
Sea Level Rise + Tomorrow's Shoreline

Today, El Niño and big waves are major threats

Swell direction + king tides also contribute

Sea level rise will increase storm damage and erosion

- 8" of sea level rise in 100 years
- Will accelerate in coming years

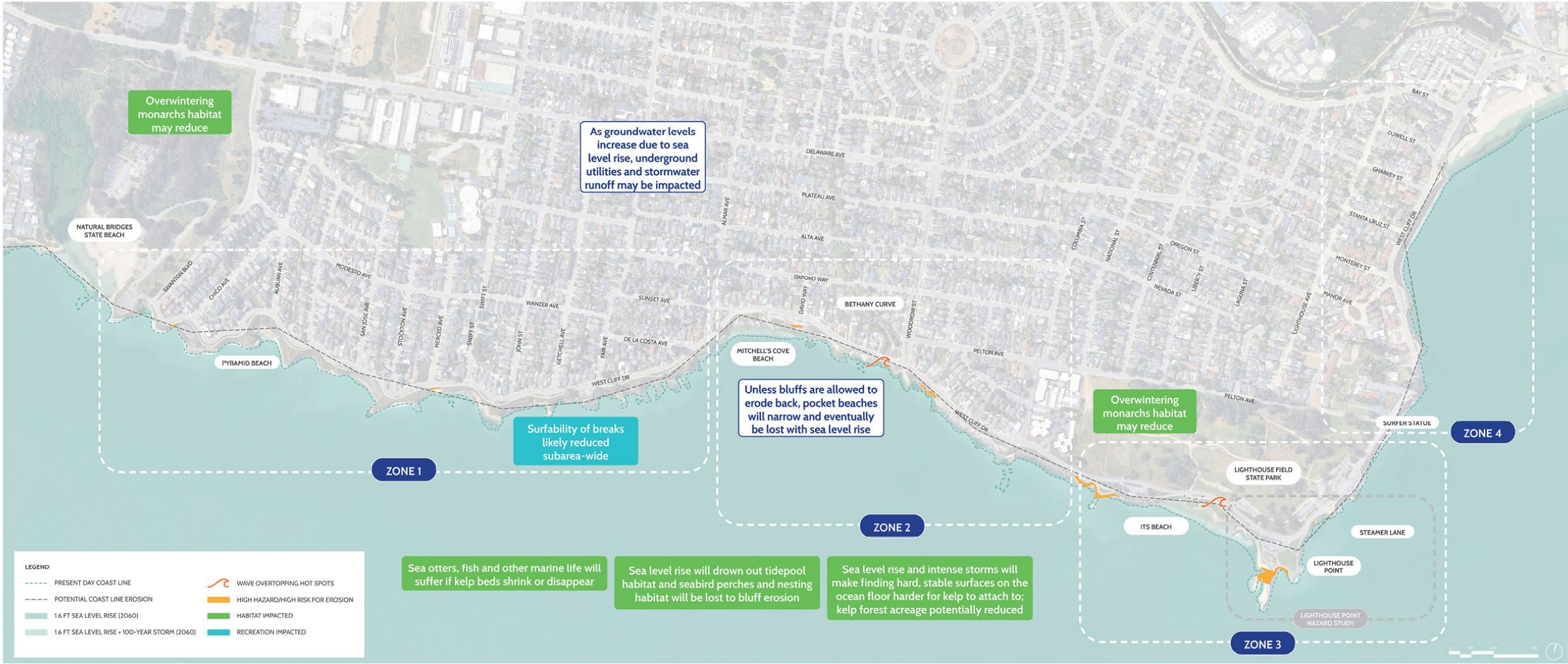


Source: Ocean Protection Council's Sea Level Rise Projections

COASTAL HAZARDS: beach erosion, wave overtopping, rising groundwater, episodic and slower bluff erosion, and sea level rise

WEST CLIFF SUBAREA

Mid-Term (30 Year) Sea Level Rise, Coastal Hazards & Potential Impacts



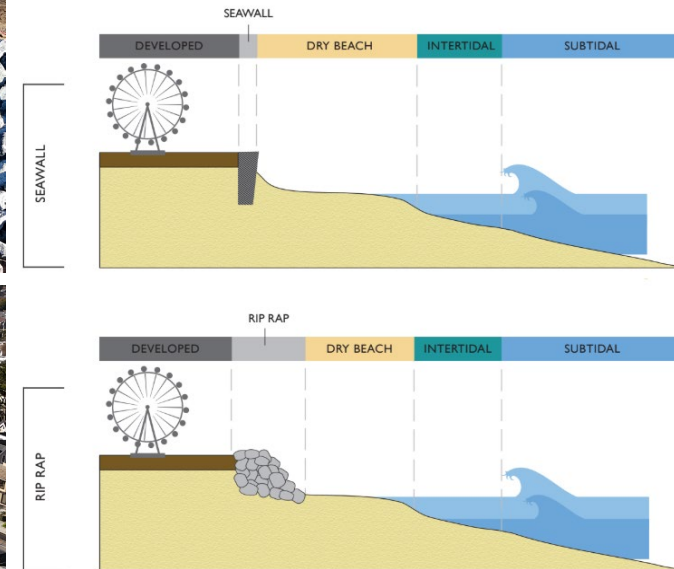


What are our Options?



Sea Walls & Revetments (Armor)

- Fixed edge along shoreline to limit erosion & flooding
- Make beaches narrower because shore doesn't erode back
- Complex permitting + “mitigation” space required



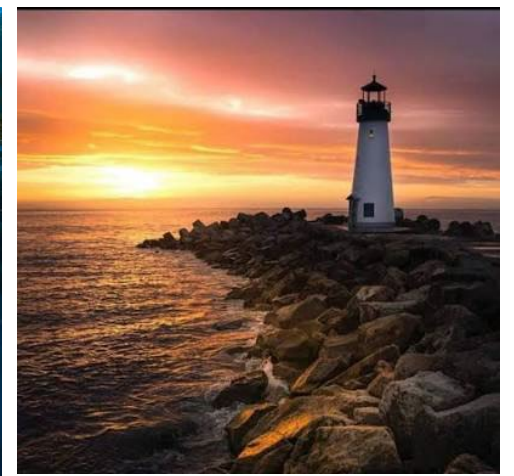
Beach Nourishment, Sand Berms, Dunes

- Widen beaches
- Quickly lost with big waves and storms
- Need sand source + is placed repeatedly
- Potential conditions for self-building dunes



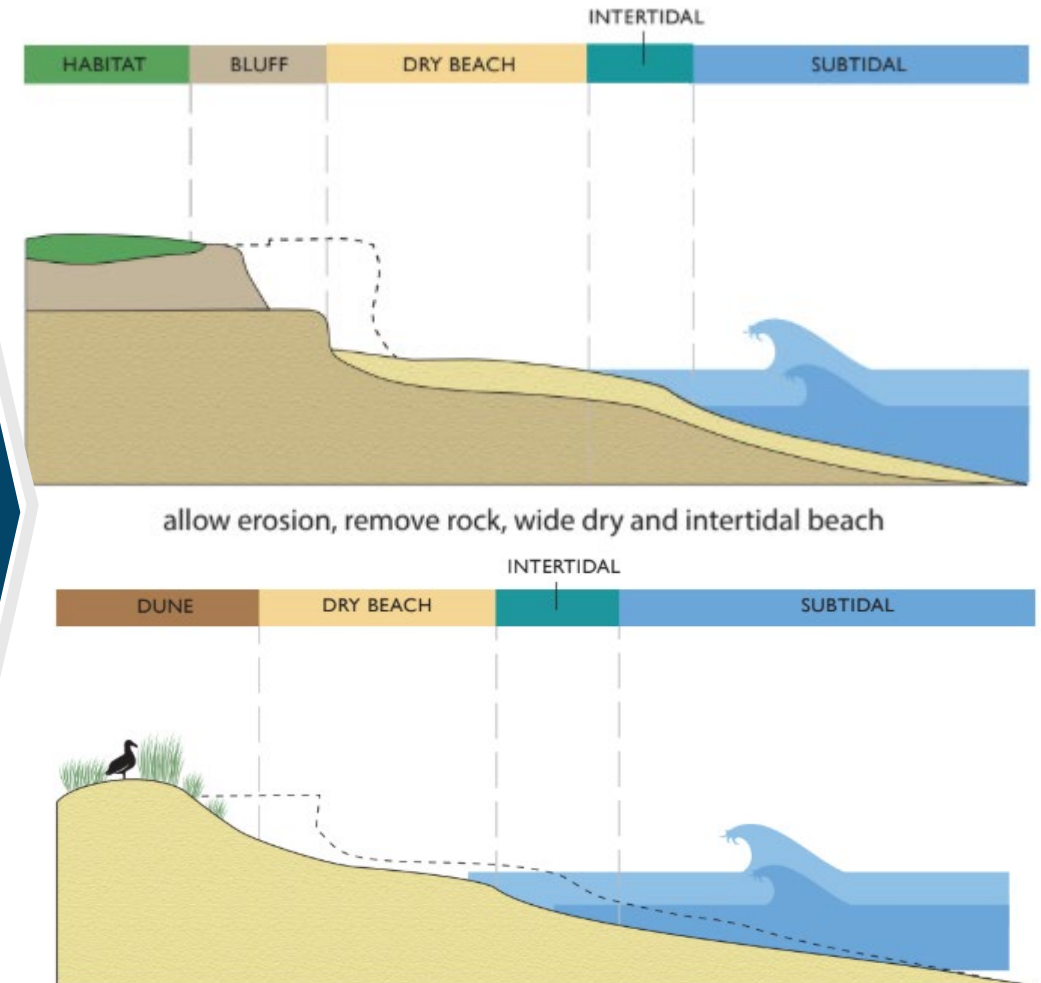
Groins, Headlands & Artificial Reefs

- Lessens wave energy
- Traps sand but depletes downcoast beaches' supply
- Hard to permit and costly
- Reefs need to restore habitat



Relocation of Infrastructure or Development

- Maintains sandy beaches as shoreline erodes inland
- Reduces risks
- Minimizes costly maintenance of bluff protection
- Need to consider:
 - *Ability to relocate*
 - *Changes in use, revenue, & leases*



Accommodate Coastal Hazards

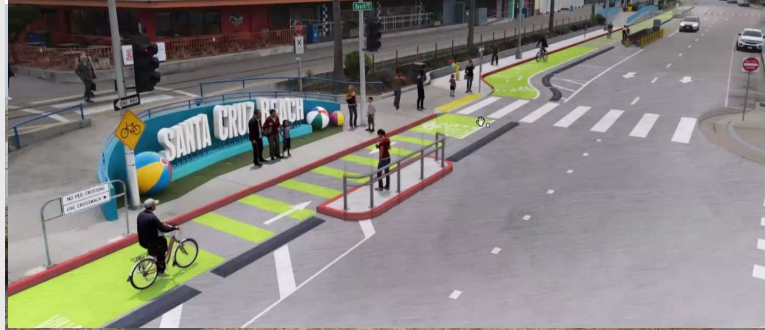
- Prepare properties for and protect from flooding
- Cantilever paths at West Cliff and Seabright to allow erosion
- Infiltration basins to capture stormwater runoff over bluffs



Opportunities to Improve the Experience



Separate walking/biking path



Neighborhood transportation improvements



Proactive Flood Preparedness + Protection



New Beach Access Points



Protect Wharf economic vitality



Protect + expand recreation

West Cliff Vision

Over the next 30 years, West Cliff evolves into a safe, resilient multimodal corridor that balances targeted protection or relocation of critical infrastructure to maintain continuous public access, prioritizing pedestrian and bicycle access. Through collaboration and adaptive management, use of suitable nature-based features, consideration of impacts to surrounding neighborhoods, and preparing for eventual bluff retreat, the corridor will accommodate public safety, access, and the natural dynamism of the coastline.

(Based on LCP Policies and West Cliff Vision, beaches adaptation strategy from Resilient Coast 1.0.)

Table Top Breakout Activity



Part 1: Introductions

Part 2: Current + near-term (10 year) projects

Part 3: Review potential medium-term adaptation strategy

- Discuss tradeoffs of project options
- Provide feedback on likes, improvements, additions to explore, priorities





LET'S START THE BREAKOUTS!



Breakout – Part 1

(10 minutes)

- Introduce city/consultant/workshop team
- Introduce yourself and affiliation to group
- Quickly review materials to reference throughout breakout

Breakout – Part 2

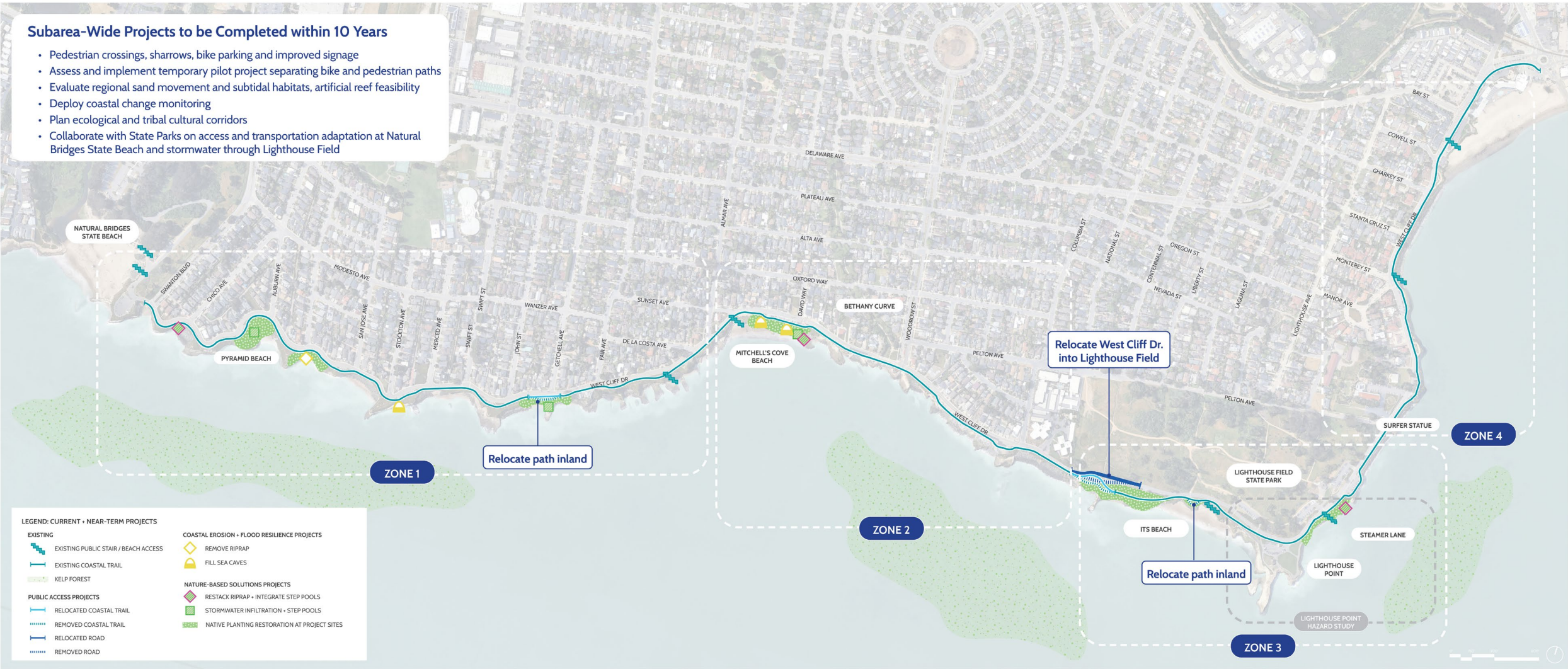
(10 minutes)

Address any questions on current and near-term projects the City is already committed to completing within 10 years.

- *Record questions that cannot be answered now*
- *Ask for Charles, Kevin or Tiffany to address questions*

WEST CLIFF SUBAREA

Current + Planned Near-Term Projects



Zones 1 and 2



Zones 3 and 4



Breakout – Part 3

(40 minutes)

Evaluate a Potential Hybrid Adaptation Strategy to address challenges over the next 30 years...

- *An all-armor scenario was analyzed and is not viable*
- *An all-relocate or move back scenario was analyzed and is not viable*
- *Aspects of both these scenarios are included in the hybrid strategy, considering tradeoffs*
- *The hybrid strategy includes “core adaptation options”, non-infrastructure projects and “improve the experience” projects*

WEST CLIFF SUBAREA

Potential Medium-Term Hybrid Adaptation Strategy

Subarea-Wide Medium Term Projects (10-30 Year)

- Adjust traffic patterns recommended based on pilots of separated bike and pedestrian traffic to enhance active transportation
- Construct sidewalks, bike paths, crosswalks and traffic calming in inland neighborhoods
- Manage informal access trails
- Study & design buyout programs for consideration of long term adaptation
- Implement ecological & tribal cultural corridors along coast
- Monitor coastal erosion, flooding, groundwater rising, sea level rise, surf quality and habitat health
- Evaluate regional sand movement and subtidal habitats, artificial reef feasibility
- Collaborate with State Parks on access and transportation adaptation at Natural Bridges State Beach and stormwater through Lighthouse Field



Zones 1 and 2



Zones 3 and 4



LEGEND: PROPOSED PROJECTS

- EXISTING**
- EXISTING PUBLIC STAIR / BEACH ACCESS
 - EXISTING COASTAL TRAIL
 - KELP FOREST
 - EXISTING STORMWATER OUTFALL
 - RESTORED NATIVE PLANTING SITE

NATURE-BASED SOLUTIONS PROJECTS

- NATIVE PLANTING RESTORATION AT PROJECT SITES

PUBLIC ACCESS PROJECTS

- RELOCATED COASTAL TRAIL
- REMOVED COASTAL TRAIL
- REMOVED COASTAL TRAIL
- RELOCATED ROAD
- REMOVED ROAD

COASTAL EROSION + FLOOD RESILIENCE PROJECTS

- POTENTIAL BEACH NOURISHMENT
- SEAWALL
- RIPRAP

Alignment with our Vision	Feasibility		Equity	
	Technical (Physical Efficacy)	Regulatory Feasible	Minimizes Burdens & Maximizes Benefits to EJ Communities	Tribal Community

LCP Consistency						
(Environmental Concerns) Maintains or Enhances:				(Human Concerns) Protects and Enhances:		
Ecological Systems and Habitats	Water Quality	Minimizes shoreline armoring to max extent feasible	Minimizes visual resource impacts	Public Access	Coastal Recreational Areas	Multi-Use Trail

Project Evaluation Criteria

Community Safety		
Maintains or Enhances Safety & Quality of Life for neighboring abutting subareas		
Transportation Safety	Neighborhood Safety	Improves Emergency Access

Next Steps and Thank You!



- Consider feedback and potential medium term adaptation strategy
- Launch online feedback platform + conduct focus groups*
- Compiling project costs and sequencing projects over 50 years
- End of summer City Council update
- Completing funding + financing study
- Public opinion polling

**ONLINE VERSION OF
BOTH WORKSHOPS
LAUNCHING IN 1 WEEK**



NEIGHBORHOOD SUSTAINABILITY & RESILIENCY WORKSHOPS

The City of Santa Cruz is offering neighborhood workshops to build local response networks and improve community-wide sustainability.



Scan the QR code or visit the City's website to learn more and schedule a workshop for your neighborhood!



santacruzca.gov/resiliency-workshops