



COMMUNITY DEVELOPMENT DEPARTMENT
CITY OF SANTA BARBARA
DRAFT SEA-LEVEL RISE ADAPTATION PLAN

www.SantaBarbaraCA.gov/SLR

Sea-Level Rise Planning: Why Now?

- Sea-level rise expected to accelerate.
- Increased erosion and flood events like those seen in previous El Niño's
- General Plan and Coastal Plan direct preparation of a sea-level rise plan.
- Sea-level rise analysis required for coastal and other permitting.



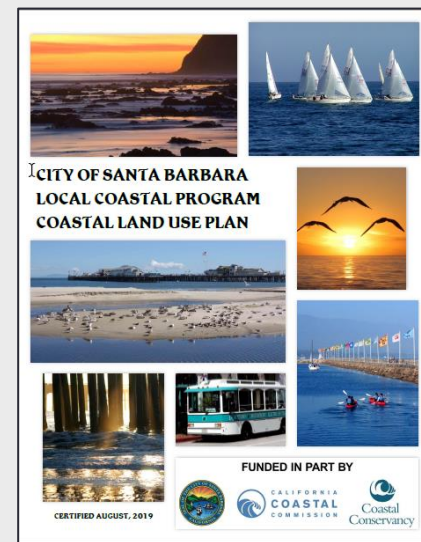
March 1983



Source: Santa Barbara Newspress

Previous SLR Work

- 2011 General Plan Update
- 2012 Griggs/Russell Vulnerability Assessment
- 2013 Climate Action Plan
- 2015 S.B. County/ESA Coastal Resiliency Model
- 2015 UCSB Bren Vulnerability Assessment
- 2015 Goleta Slough Area SLR Plan
- 2017 Hazard Mitigation Plan Update
- 2018 U.S.G.S. CoSMoS 3.0 model
- 2019 Updated Coastal Land Use Plan:



Sea-Level Rise Planning Process

- City Staff Interdepartmental Team
- Consultants (*ESA and AECOM*)
- SLR Adaptation Plan Subcommittee
- Consultations with Coastal Commission (CCC), County, and other agencies
- Meetings with public stakeholders
- Website (www.SantaBarbaraca.gov/SLR)



Plan Components

- **Vulnerability Assessment (2018)**

- Diagnoses the problem
- What would happen if no action taken



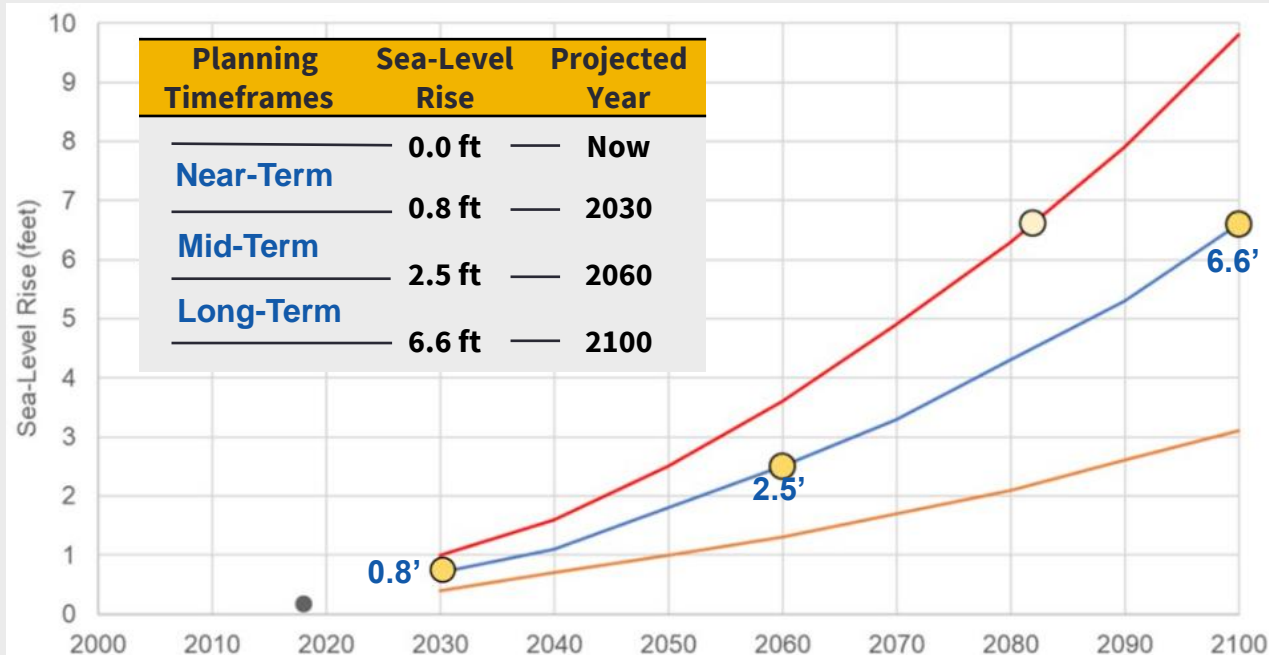
- **Adaptation Plan (2020)**

- Provides framework for future planning
- Includes guiding principles for prioritization of actions
- Analyzes adaptation options (protect, accommodate, retreat)
- Considers economic and fiscal impacts

Adaptation Planning Approach

- Sea-Level Rise Adaptation Plan
 - Phased approach: monitoring of conditions and trigger-based actions
 - Recommends specific near-term (ten-year) actions
 - Proposes structure for decision making in mid- and long-term
- Five-year Implementation Plan
 - Further prioritizes near-term actions and Identifies costs, funding, timelines, and required resources
- Shoreline Monitoring Program
- Re-evaluation of adaptation plan every 10 years

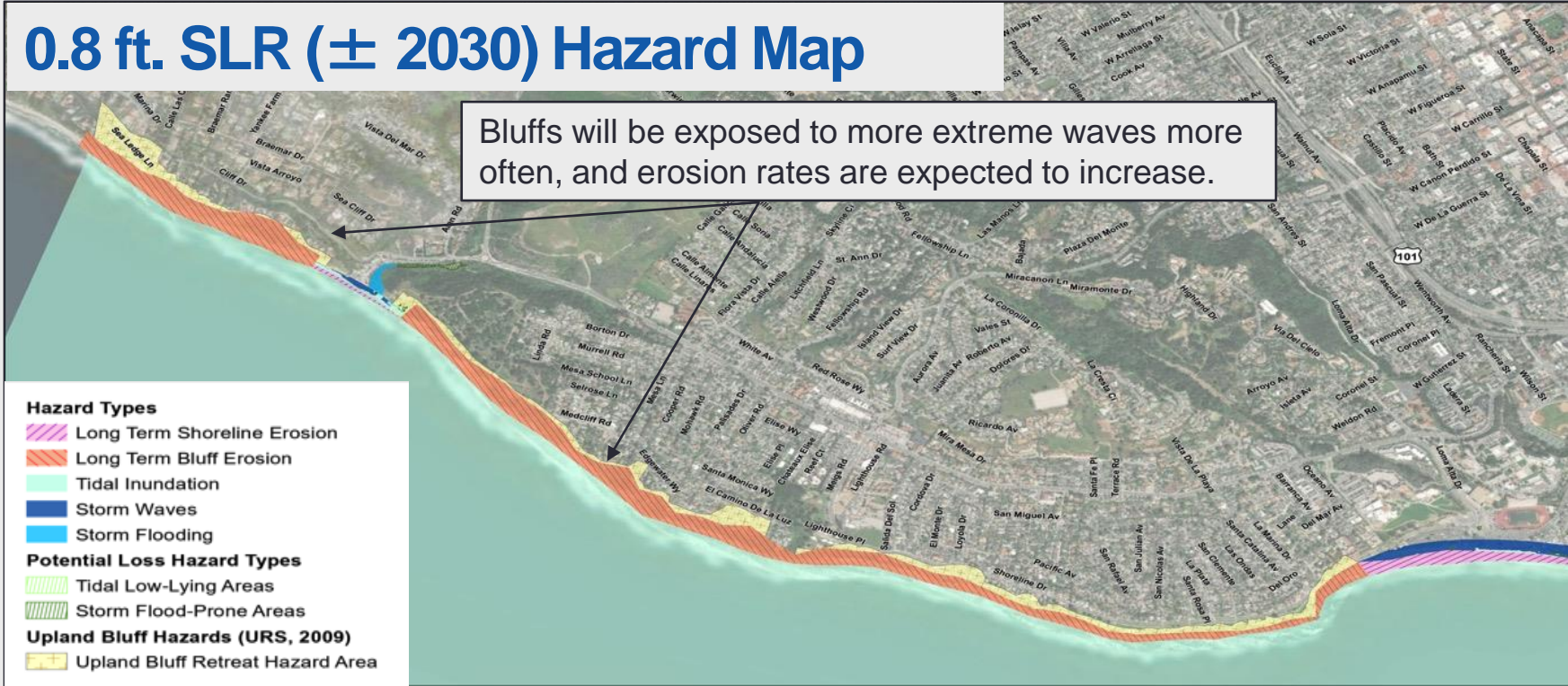
Sea-level Rise Planning Timeframes



Source: ESA 2018; 2018 State of California Sea-Level Rise Guidance

0.8 ft. SLR (\pm 2030) Hazard Map

Bluffs will be exposed to more extreme waves more often, and erosion rates are expected to increase.



Hazard Types

- Long Term Shoreline Erosion
- Long Term Bluff Erosion
- Tidal Inundation
- Storm Waves
- Storm Flooding

Potential Loss Hazard Types

- Tidal Low-Lying Areas
- Storm Flood-Prone Areas

Upland Bluff Hazards (URS, 2009)

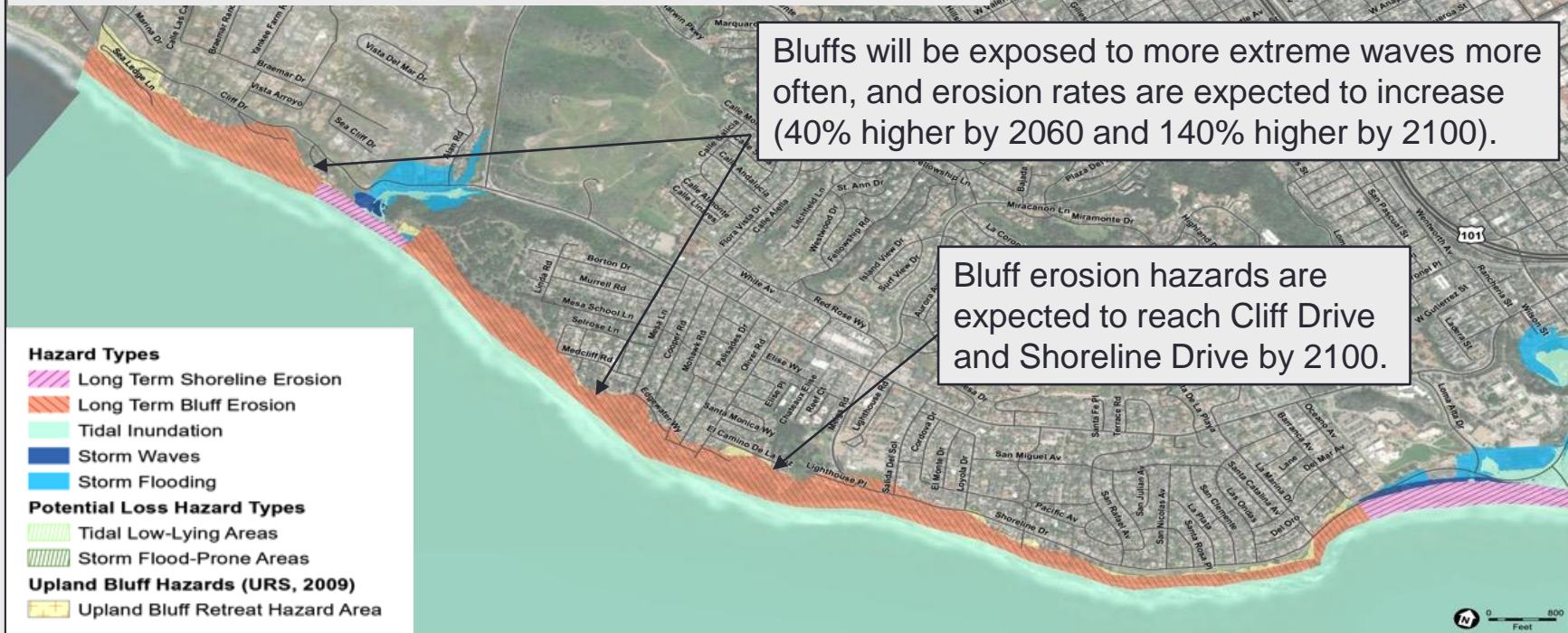
- Upland Bluff Retreat Hazard Area

2.5 ft. SLR (\pm 2060) Hazard Map

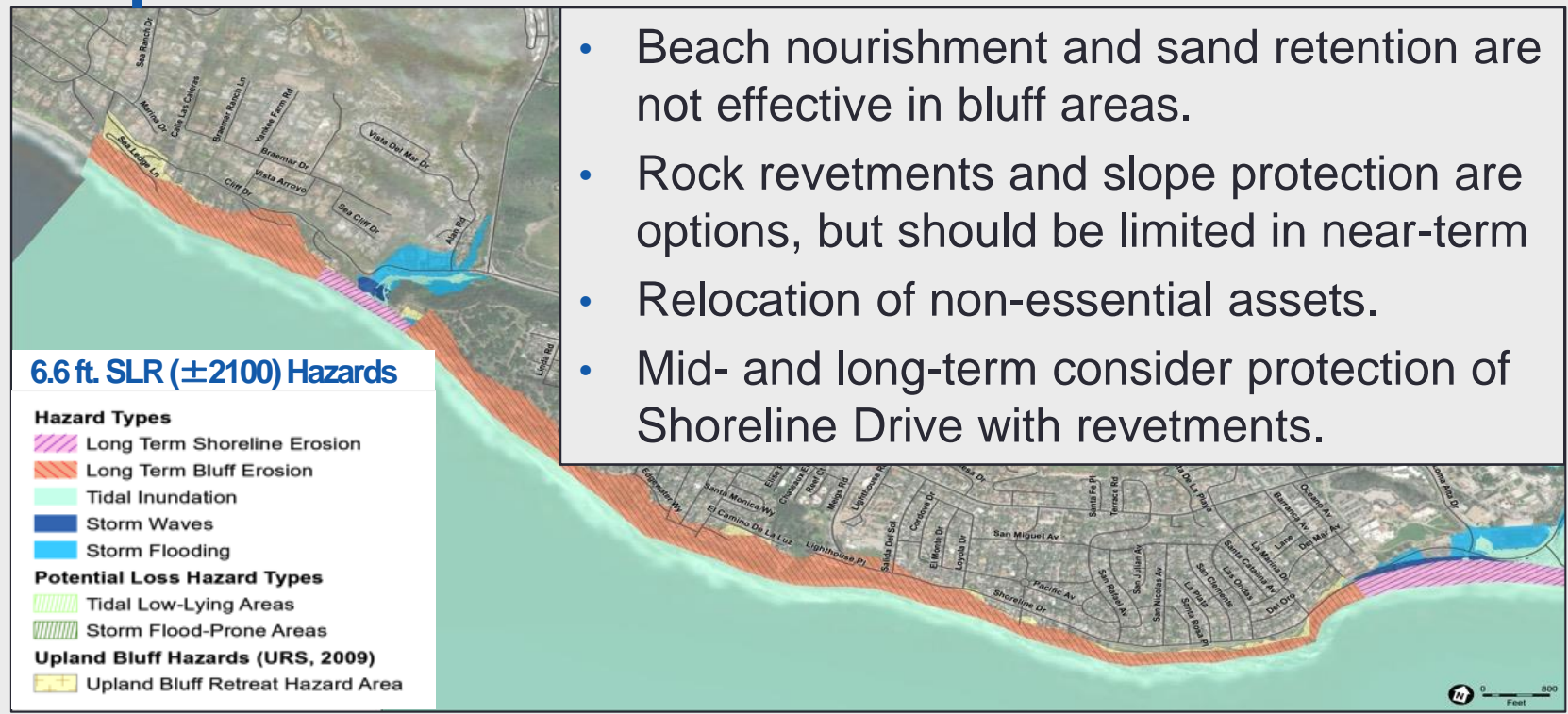
Bluffs will be exposed to more extreme waves more often, and erosion rates are expected to increase.



6.6 ft. SLR (± 2100) Hazard Map



Adaptation Recommendations: Coastal Bluff Areas



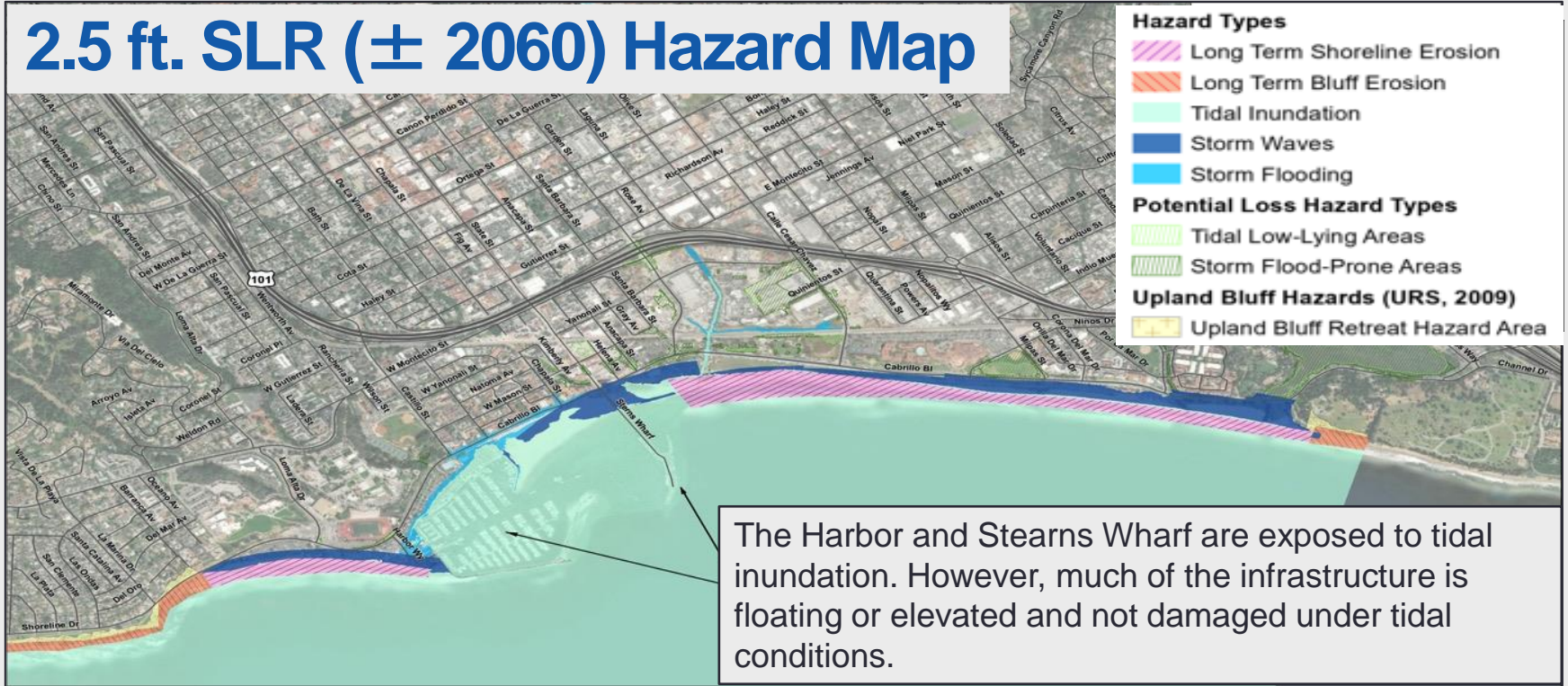
0.8 ft. SLR (\pm 2030) Hazard Map



- Hazard Types**
- Long Term Shoreline Erosion
 - Long Term Bluff Erosion
 - Tidal Inundation
 - Storm Waves
 - Storm Flooding
- Potential Loss Hazard Types**
- Tidal Low-Lying Areas
 - Storm Flood-Prone Areas
- Upland Bluff Hazards (URS, 2009)**
- Upland Bluff Retreat Hazard Area

The Harbor and Stearns Wharf are exposed to tidal inundation. However, much of the infrastructure is floating or elevated and not damaged under tidal conditions.

2.5 ft. SLR (\pm 2060) Hazard Map



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6.6 ft. SLR (± 2100) Hazard Map

North of 101

- More frequent flooding
- Future coastal flooding in areas already flooded during heavy rains

South of 101

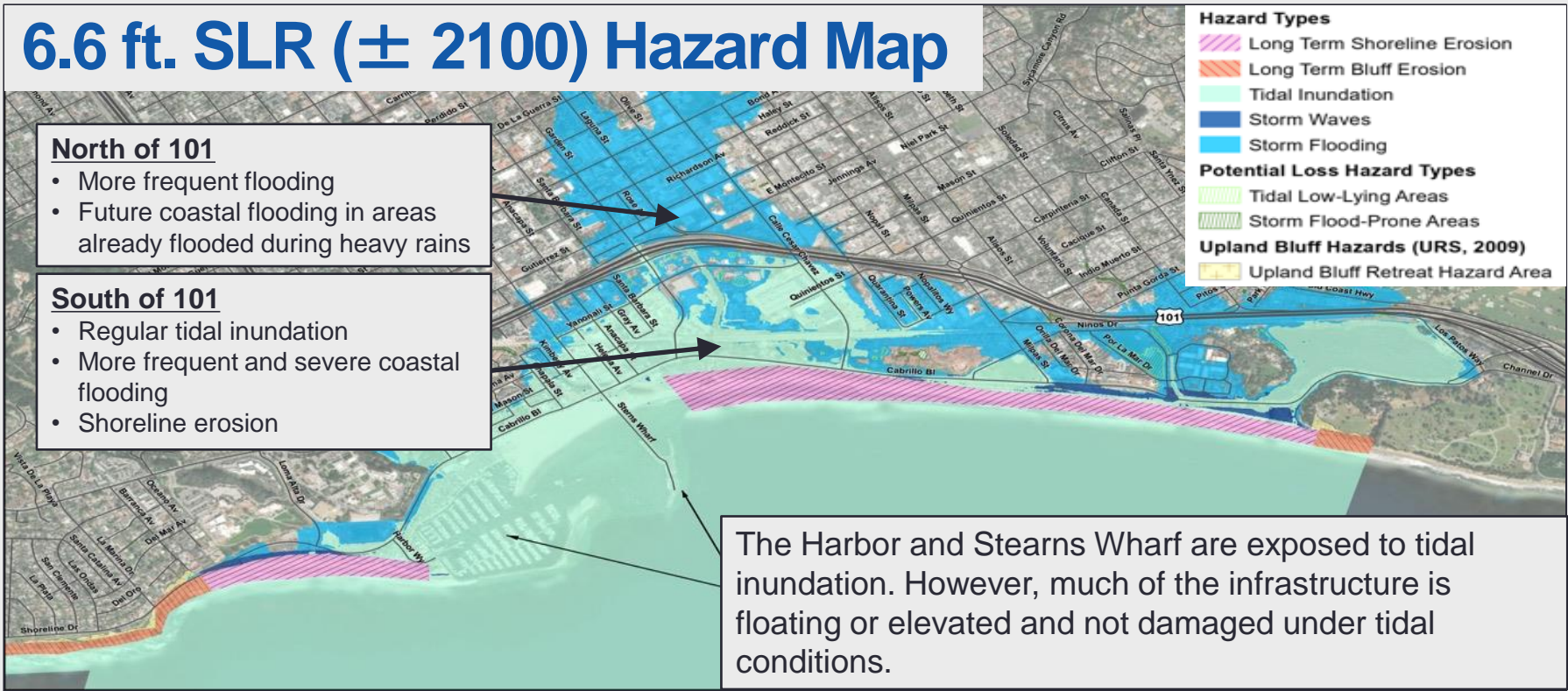
- Regular tidal inundation
- More frequent and severe coastal flooding
- Shoreline erosion

Hazard Types

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Potential Loss Hazard Types

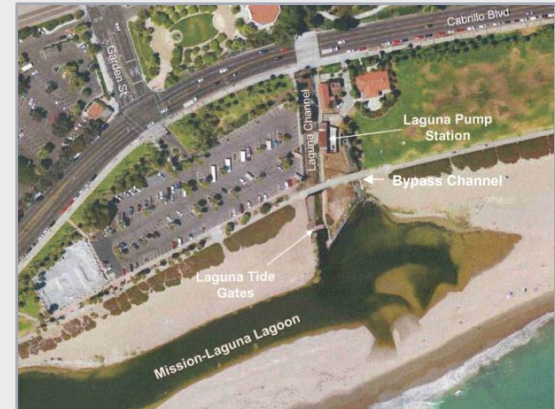
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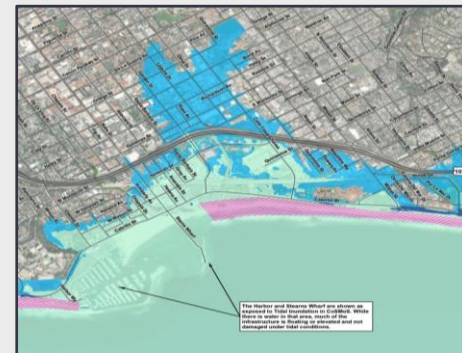
Low-Lying and Waterfront Areas

- Recommended Near-Term Actions
 - Raise Harbor breakwater and groins
 - Raise Harbor marinas and pier
 - Introduce additional beach nourishment, beach berms, or dunes
 - Redesign Laguna Tide Gate
 - Relocate or flood proof sewer mains and utilities under beach



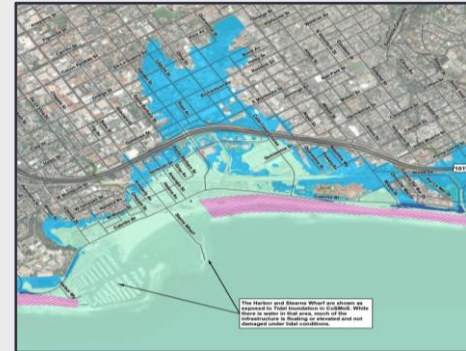
Low-Lying and Waterfront Areas

- Recommended Near-Term Actions
 - Revise floodplain regulations for development south of Highway 101
 - Continue development requirements south of Cabrillo Blvd. that factor in SLR
 - Initiate studies of mid- and long-term options for wastewater, stormwater, and water



Low-Lying and Waterfront Areas

- Decisions in the Mid- and Long-Term
 - Consider flood protection measures:
 - Seawalls or levees along the Waterfront
 - Levees or floodwalls along lower portions of major creeks
 - Groundwater dewatering wells and stormwater pumps
 - Relocation and flood proofing of facilities
 - Raising Harbor Commercial area grades
 - Redesign or removal of Stearns Wharf



Regional Collaboration Needs

- SLR and shoreline monitoring so that all jurisdictions use same parameters and data.
- Joint regional principles for adaptation
- Joint funding, studies, and projects (sediment management and others)
- Coordinated messaging to State and Federal legislature and agencies on needs

ADAPTATION PLAN SCHEDULE

Public outreach and comment period	August 11 – September 30
Revisions to Draft Plan	October 2020
Subcommittee recommendation	October/November 2020
Council consideration of Final Plan	November/December 2020
Implementation, including LCP Amendment	2021 onward

- Webpage: www.SantaBarbaraCA.gov/SLR
- Comments by September 30th:
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