

# SAN MATEO COUNTY SEA LEVEL RISE INITIATIVE



C/CAG WATER COORDINATION COMMITTEE// MAY 17, 2017

# WHY ARE SEAS RISING?

- Global temperature is **increasing**.
- Ocean water is **expanding** as it warms.
- Ice sheets and glaciers are melting, **adding freshwater** to the oceans.

Greenland Ice Sheet



Penderson Glacier, Alaska



# BEST AVAILABLE SCIENCE

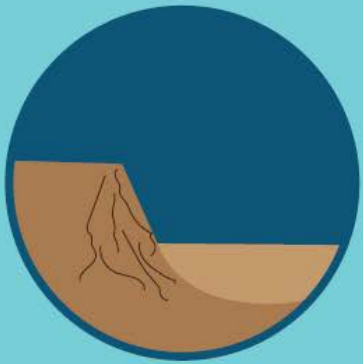
## Rising Seas in California: An Update on Sea-Level Rise Science Report

Year	Full Range	Likely Range
<b>2030</b>	4 to 10 inches	4 – 6 inches
<b>2050</b>	7 to 23 inches	7 inches – 13 inches
<b>2100</b>	12 to 83 inches	12 – 40 inches
<b>2100 high-end</b>	10 feet	

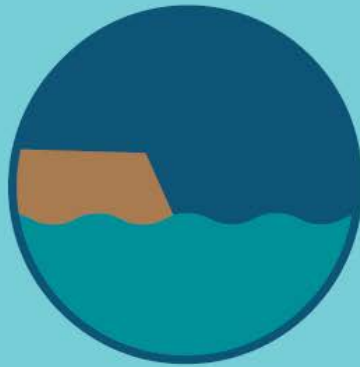
*Prepared by Ocean Protection Council (April 2017). Report available:*  
<http://www.opc.ca.gov/webmaster/ftp/pdf/docs/rising-seas-in-california-an-update-on-sea-level-rise-science.pdf>

# FUTURE IMPACTS

## WHAT ARE THE IMPACTS?



**Erosion**



**Permanent  
inundation**



**Temporary  
flooding**



**Saltwater  
intrusion**

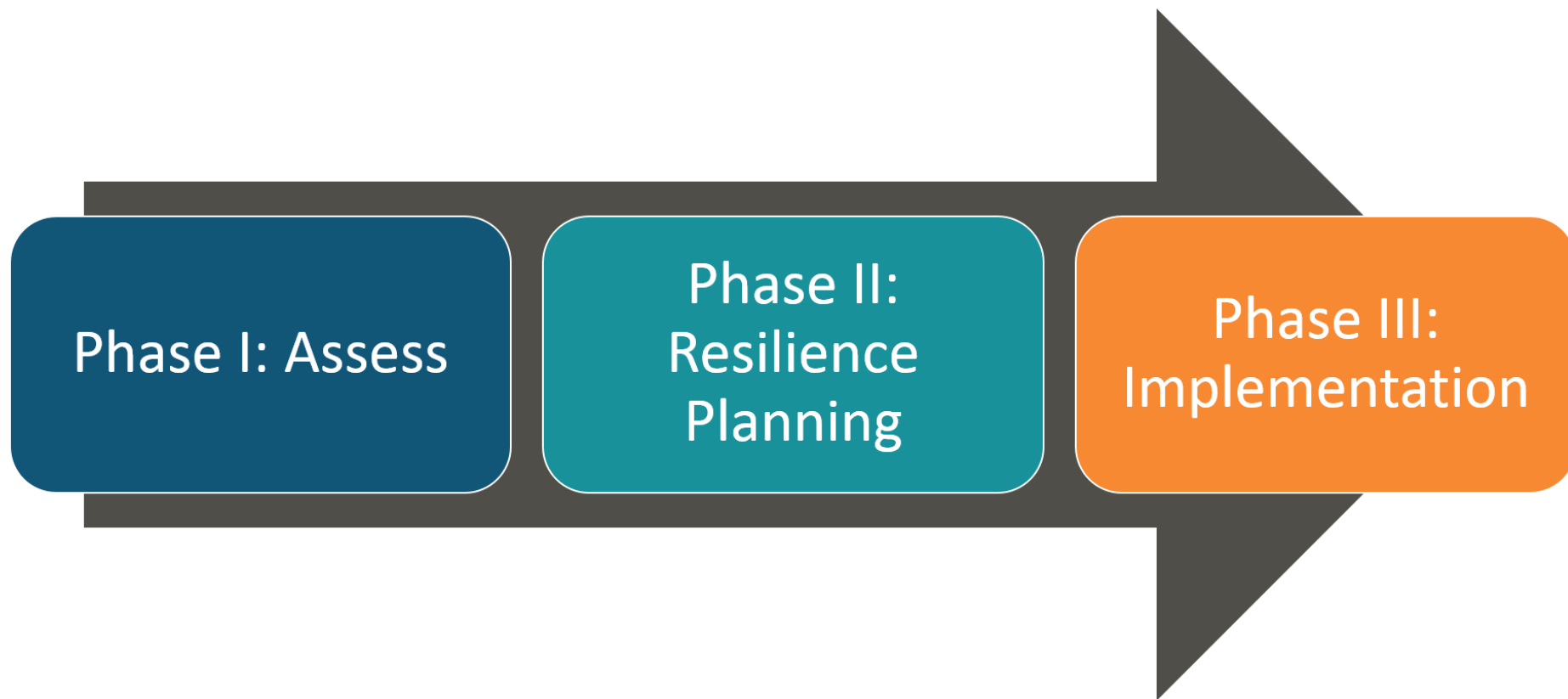


# SEA CHANGE

SAN MATEO COUNTY

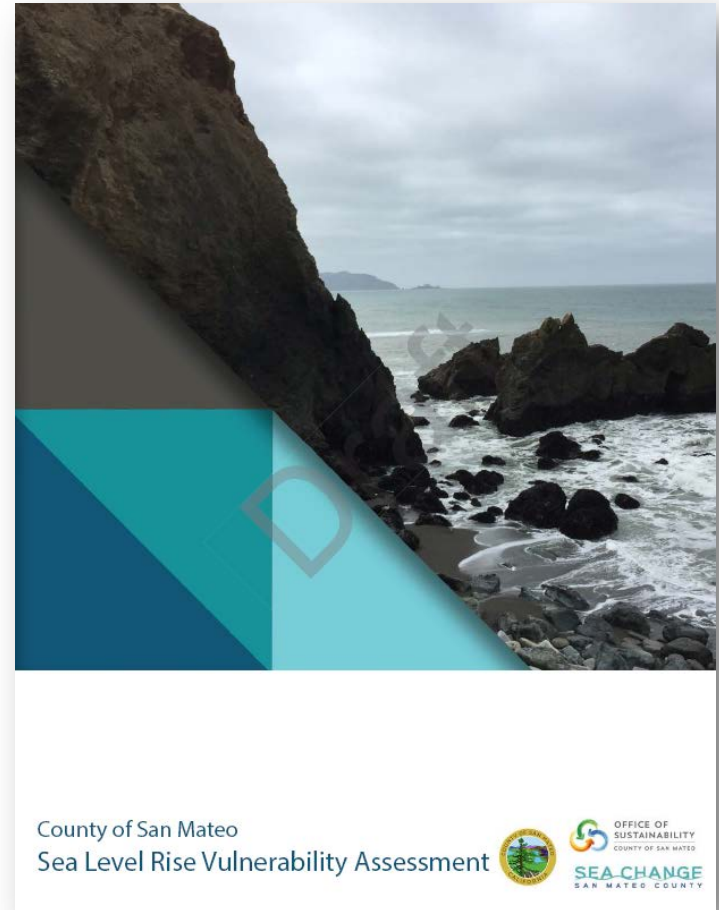


# SEA CHANGE SMC STEPS



# DRAFT VULNERABILITY ASSESSMENT

- Released April 5<sup>th</sup>
- Comment period closed May 15<sup>th</sup>
- Document available:  
<http://seachangesmc.com/current-efforts/vulnerability-assessment/>



# VULNERABILITY ASSESSMENT CONTENTS

	Executive Summary
Ch. 1	Introduction
Ch. 2	Methodology and Approach
Ch. 3A	Setting and Context
Ch. 3B	Vulnerability Data Analysis and Discussion
Ch. 3C	Community and Health Vulnerability
Ch. 3D	City- and County-Specific Findings
Ch. 4	Adaptation Planning
Ch. 5	Getting Ahead of Sea Level Rise
Appendices	



# STAKEHOLDER INVOLVEMENT & OUTREACH

- Technical Working Group
- Policy Advisory Committee
- Community Task Force
- Public Outreach

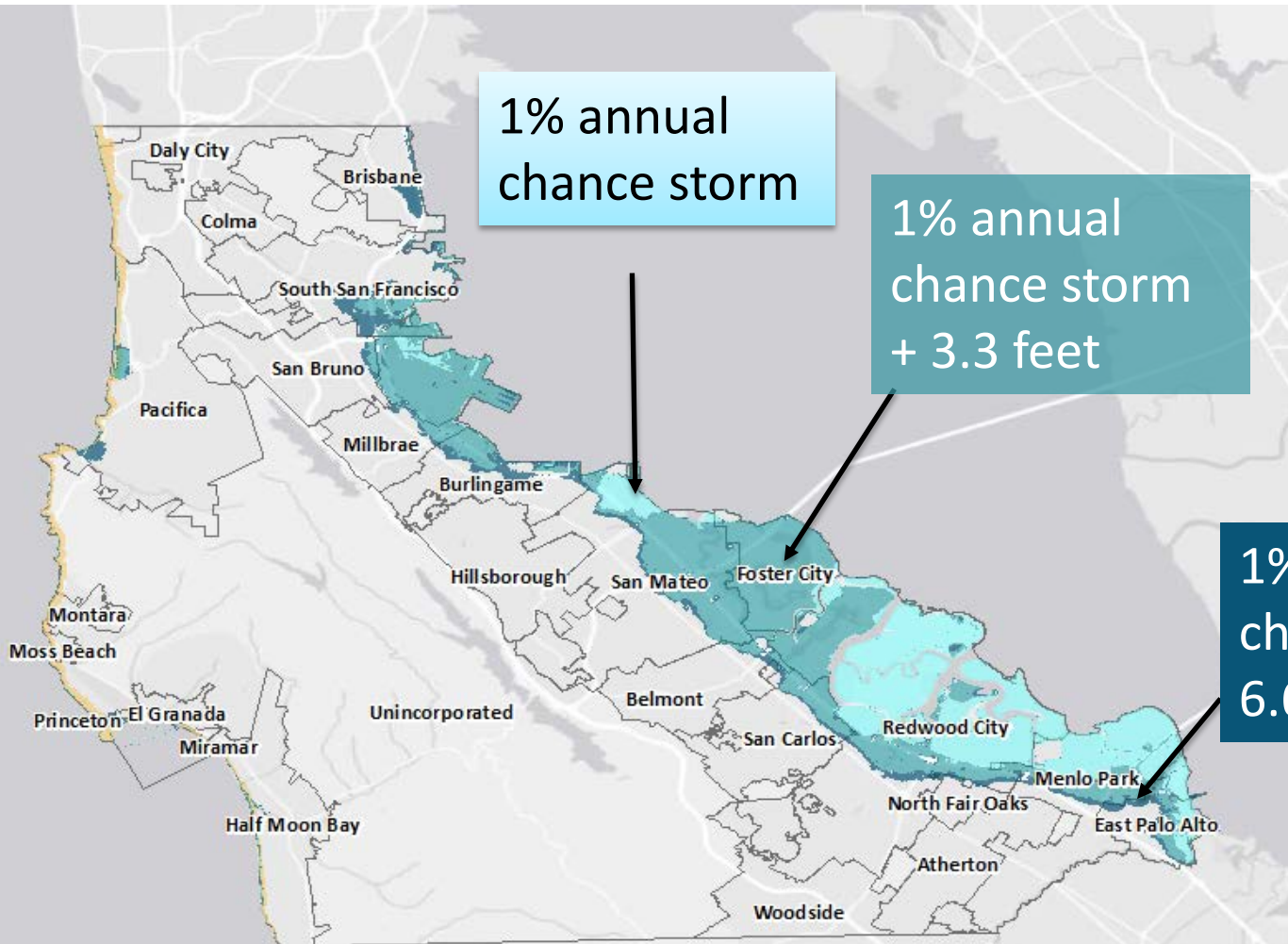


# ASSESSMENT RESULTS

1% annual  
chance storm

1% annual  
chance storm  
+ 3.3 feet

1% annual  
chance storm +  
6.6 feet



Data from Our Coast Our Future:

<http://data.pointblue.org/apps/ocof/cms/>

# COUNTYWIDE FINDINGS



**7,000 acres  
of wetlands**



**\$34 billion in  
assessed value**



**360 miles of  
roads**



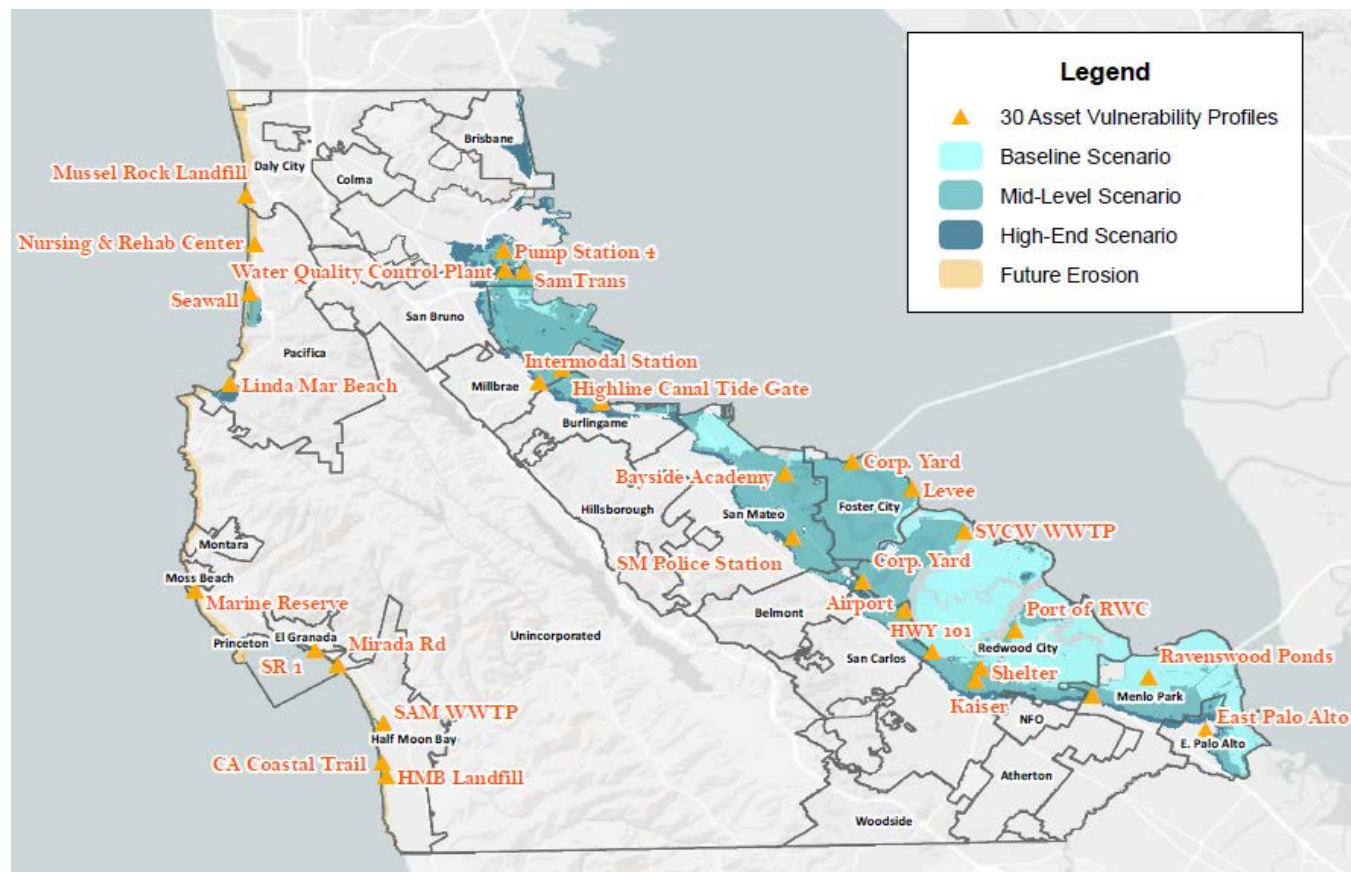
**Over 100,000  
people**

Based on 3.3 feet of sea level rise and a 1% annual chance storm

# 30 CASE STUDIES

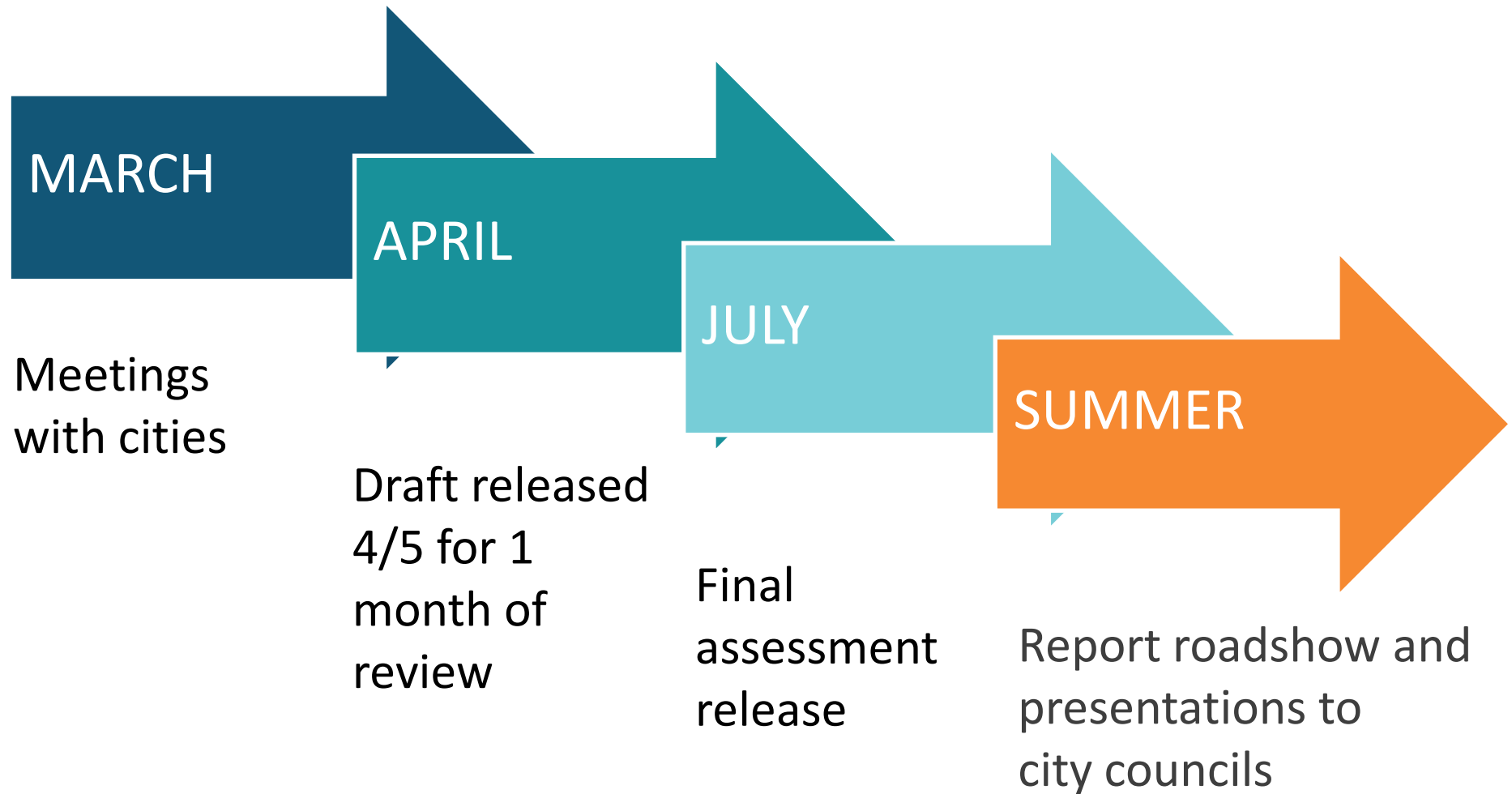
Case studies include:

- San Carlos Airport
- Highway 101
- Half Moon Bay Landfill
- Surfer's Beach





# PHASE I: FINAL STEPS



# PHASE II: RESILIENCE PLANNING

## Policy/ Planning

- Land Use Planning
- Zoning
- Building Code changes
- Capital Improvement Plans

## Flood Preparedness

- Improve Community Rating System
- Emergency preparedness efforts
- Flood- proofing

## Shoreline Improvements

- Natural solutions
- Hard structures
- Detention basins
- Green infrastructure



# ROLES

## County

- Promotes coordination
- Promote funding
- Provide best practices, policy toolkit

## Cities/ Unincorporated County

- Update land use policies
- Build coordinated projects with County/cities

## Asset owners

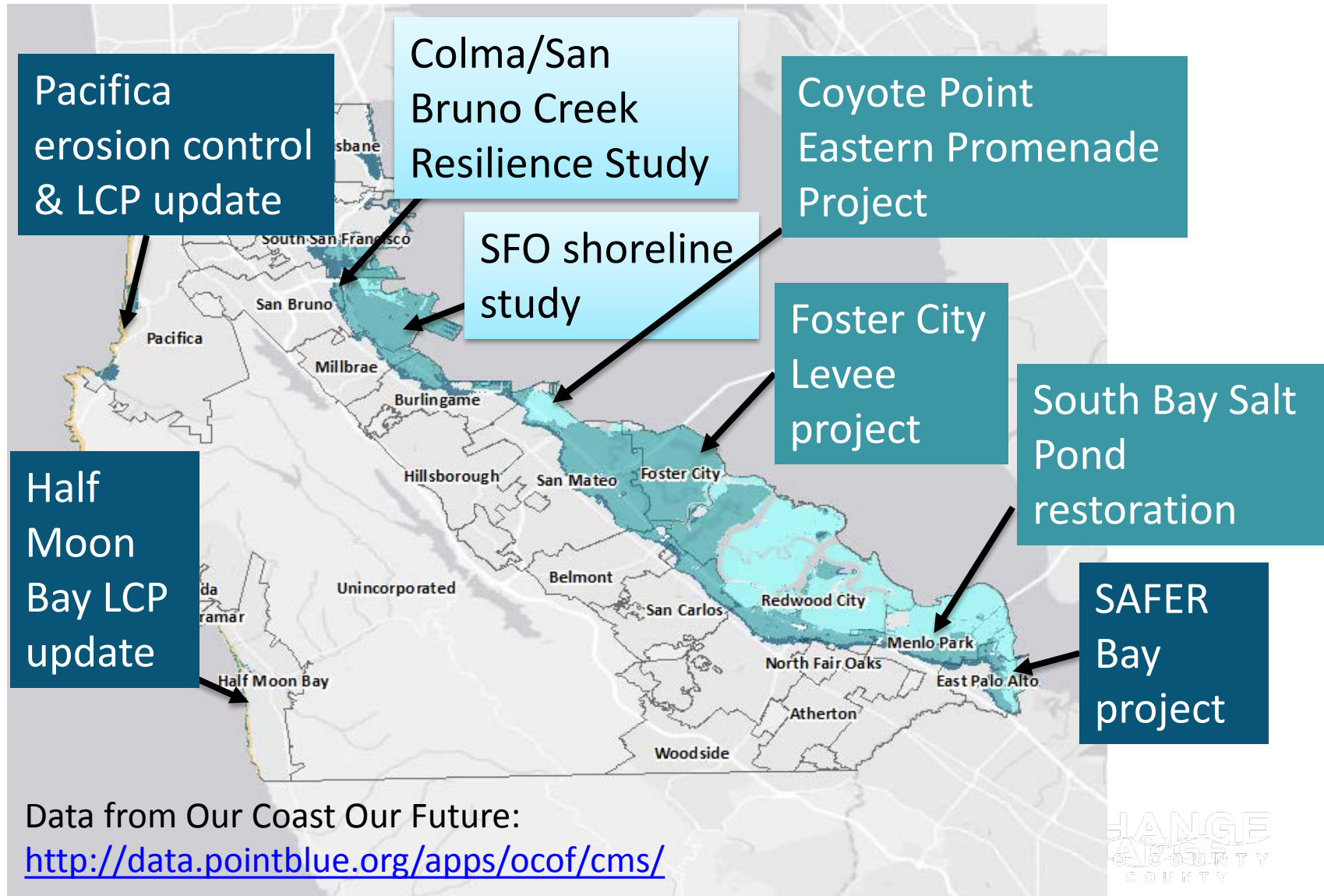
- Build protective devices
- Flood proof
- Relocate

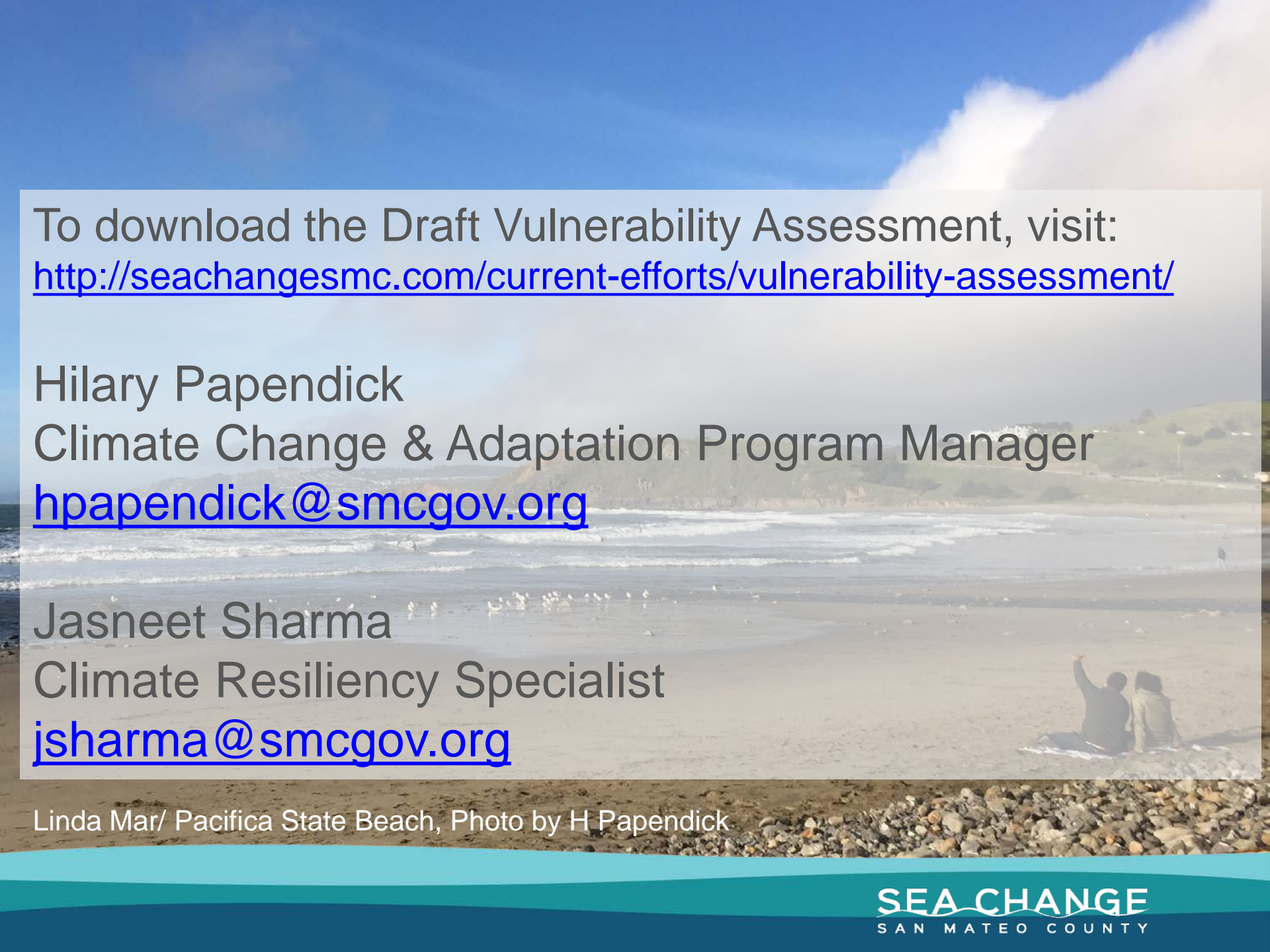
# FEEDBACK FROM STAKEHOLDERS

How can the Office of Sustainability help support resilience planning?

- Promote collaboration
- Provide:
  - Framework for consistent decision-making on sea level rise
  - Funding support
  - Communication and outreach support
  - Research and technical assistance
  - Clearinghouse / Data sharing

# EFFORTS ADDRESSING SEA LEVEL RISE





To download the Draft Vulnerability Assessment, visit:  
<http://seachangesmc.com/current-efforts/vulnerability-assessment/>

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Linda Mar/ Pacifica State Beach, Photo by H Papendick

# RISING SEAS REPORT

## (b) San Francisco, Golden Gate

<i>Feet above 1991-2009 mean</i>	<b>MEDIAN</b>	<b>LIKELY RANGE</b>	<b>1-IN-20 CHANCE</b>	<b>1-IN-200 CHANCE</b>
<b>Year / Percentile</b>	<i>50% probability SLR meets or exceeds...</i>	<i>67% proba- bility SLR is between...</i>	<i>5% probability SLR meets or exceeds...</i>	<i>0.5% probability SLR meets or exceeds...</i>
2030	0.4	0.3 – 0.5	0.6	0.8
2050	0.9	0.6 – 1.1	1.4	1.9
2100 (RCP 2.6)	1.6	1.0 – 2.4	3.2	5.7
2100 (RCP 4.5)	1.9	1.2 – 2.7	3.5	5.9
2100 (RCP 8.5)	2.5	1.6 – 3.4	4.4	6.9
2100 (H++)	10			
2150 (RCP 2.6)	2.4	1.3 – 3.8	5.5	11.0
2150 (RCP 4.5)	3.0	1.7 – 4.6	6.4	11.7
2150 (RCP 8.5)	4.1	2.8 – 5.8	7.7	13.0
2150 (H++)	22			

<http://www.opc.ca.gov/webmaster/ftp/pdf/docs/rising-seas-in-california-an-update-on-sea-level-rise-science.pdf>

# PHASE II: RESILIENCE PLANNING

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## **GOALS:**

- Share information
- Be a resource
- Identify and promote collaboration opportunities

## **STRATEGIES:**

- Technical Assistance
- Policy Toolkit/ Model Ordinances
- Coordination across County departments, cities, counties, region