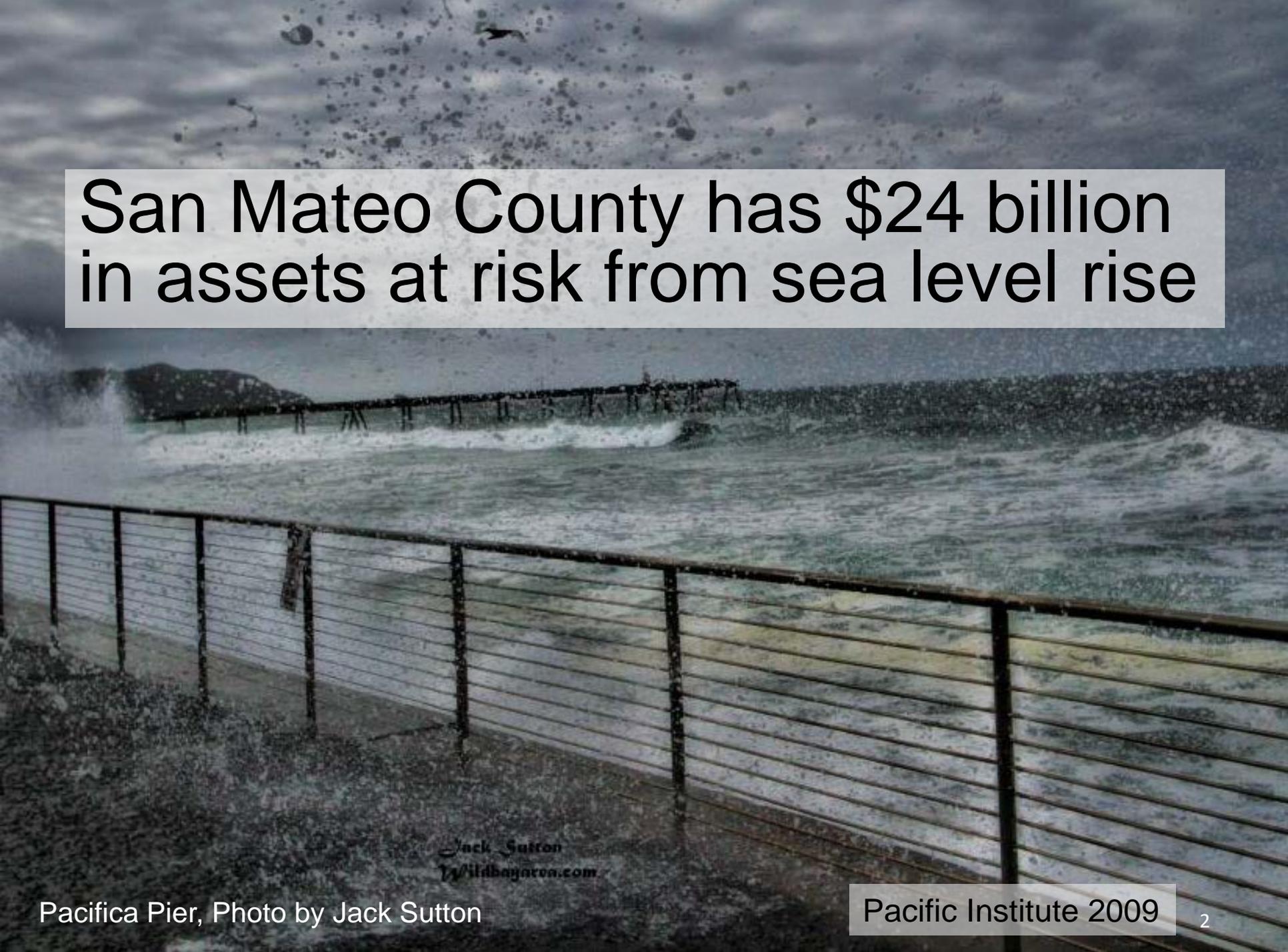


# SAN MATEO COUNTY SEA LEVEL RISE INITIATIVE

OCEAN CLIMATE SUMMIT // **MAY 17, 2016**

Jack Sutton  
Wildbagarea.com



San Mateo County has \$24 billion  
in assets at risk from sea level rise

Jack Sutton  
WildBayaron.com

Pacifica Pier, Photo by Jack Sutton

Pacific Institute 2009

# RESILIENCY PLANNING

Making San Mateo County more resilient means understanding flood & erosion risk **today**



Le Mar Trailer Park, Redwood City, Photo by John Green/Bay Area News Group



Surfers' Beach, Half Moon Bay, Photo by Ben Pittenger



# PREPARING FOR SEA LEVEL RISE

## Adapting to Rising Tides Planning Process



# SEA LEVEL RISE VULNERABILITY ASSESSMENT



# VULNERABILITY ASSESSMENT STEPS

**Develop County-specific approach**

**Gather data and categorize assets**

**Inundation exposure analysis and mapping**

**Vulnerability and risk analysis**

**Initial adaptation planning**

**ACTIONABLE OUTCOMES**

# ASSET CATEGORIZATION

Assets were organized into classes based on:

- Public health, safety, welfare (built assets)
  - Ranked by potential risk to life & safety (1 to 4)
- Ecosystem and habitat (natural assets)
- Social vulnerability (human assets)

# ASSET CATEGORIZATION



Airports



Community land uses,  
services, and facilities



Contaminated lands



Energy infrastructures  
and pipelines



Ground  
transportation



Hazardous materials



Natural areas



Parks and  
recreation areas



Seaports



Structural shorelines

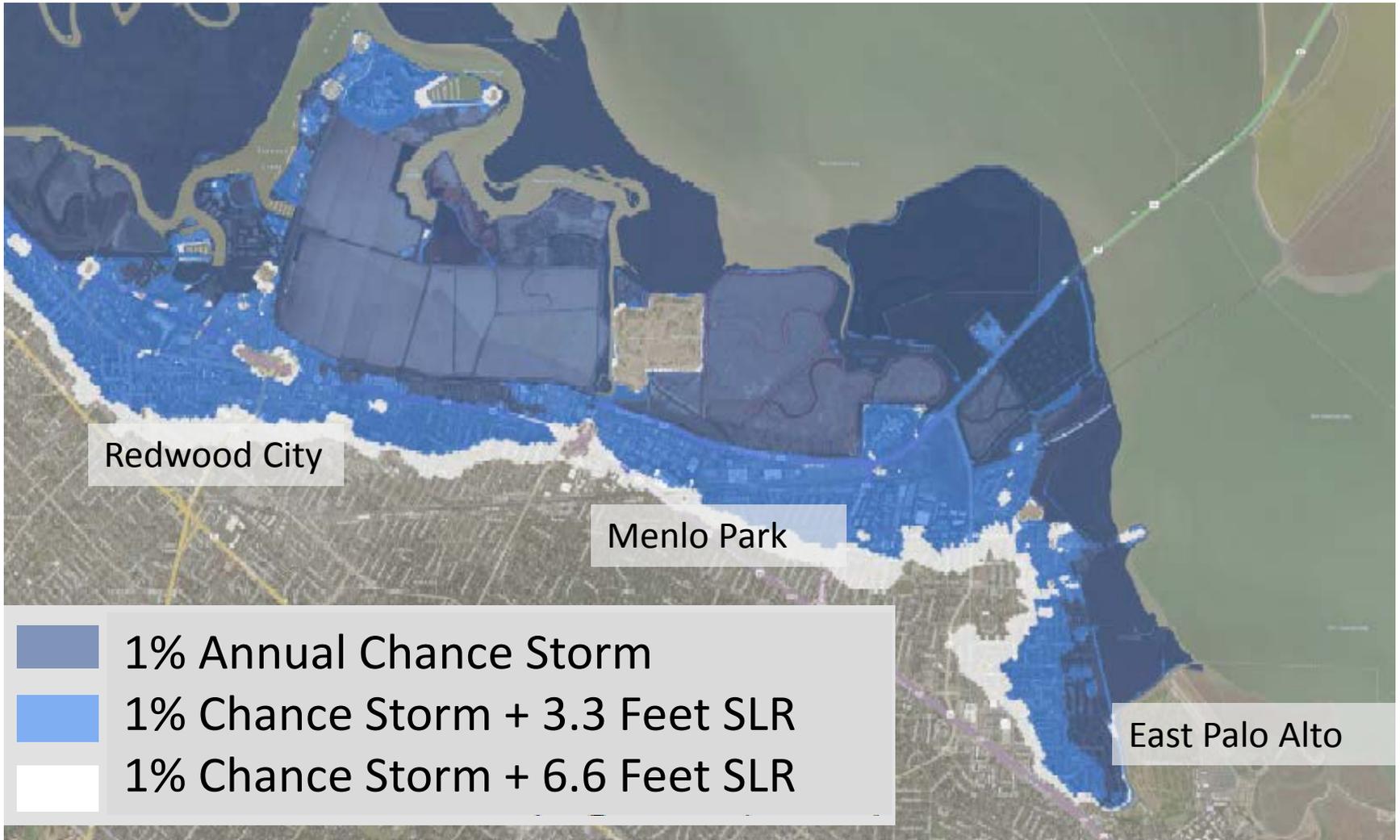


Storm drains



Wastewater

# SEA LEVEL RISE MAPPING



# DRAFT MAPS - COAST



# OVERTOPPING MAPS

## San Mateo County Sea Level Rise Inundation Scenarios (DRAFT)

MHHW + 12" SEA LEVEL RISE

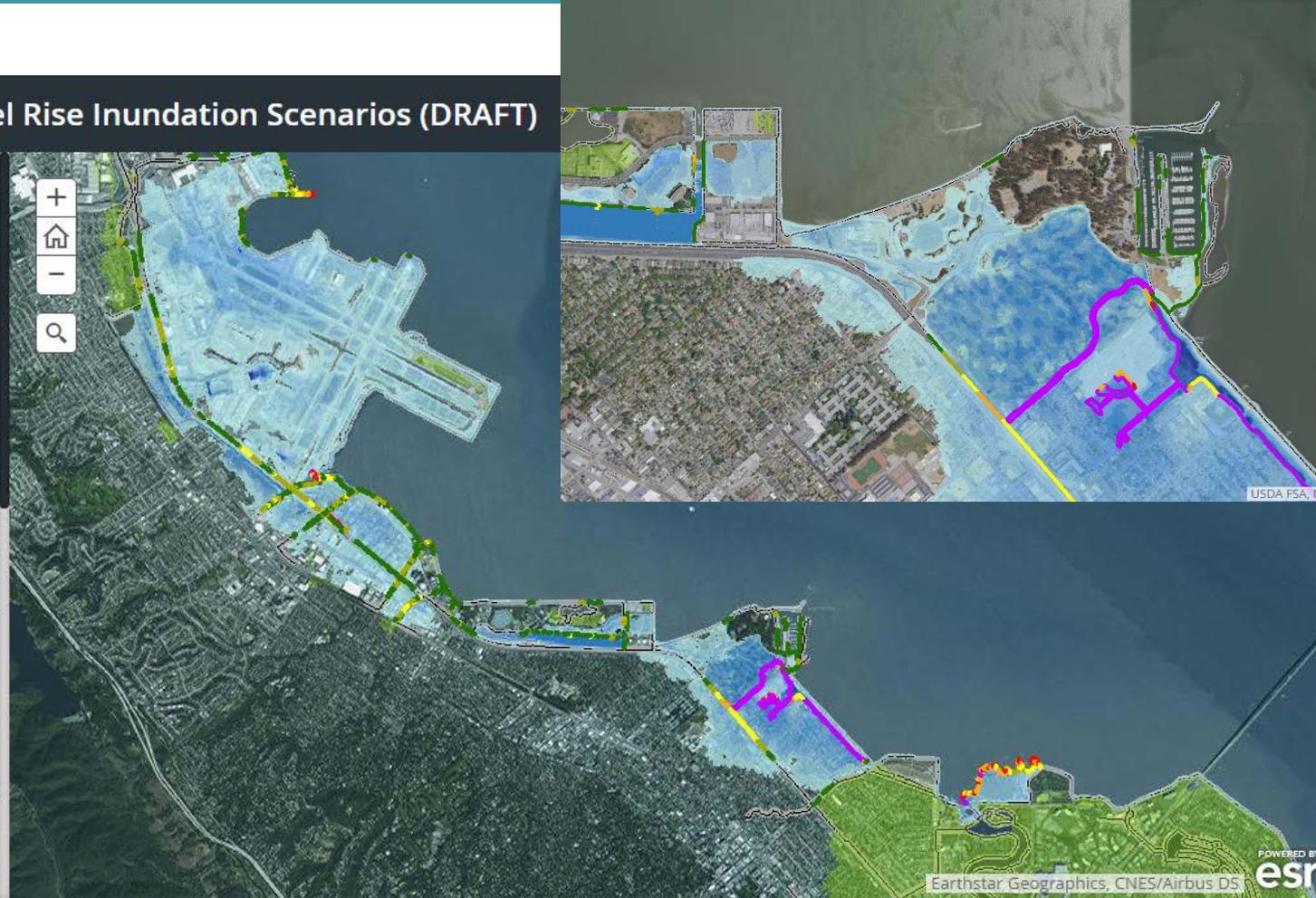
MHHW + 24" SEA LEVEL RISE

MHHW + 36" SEA LEVEL RISE

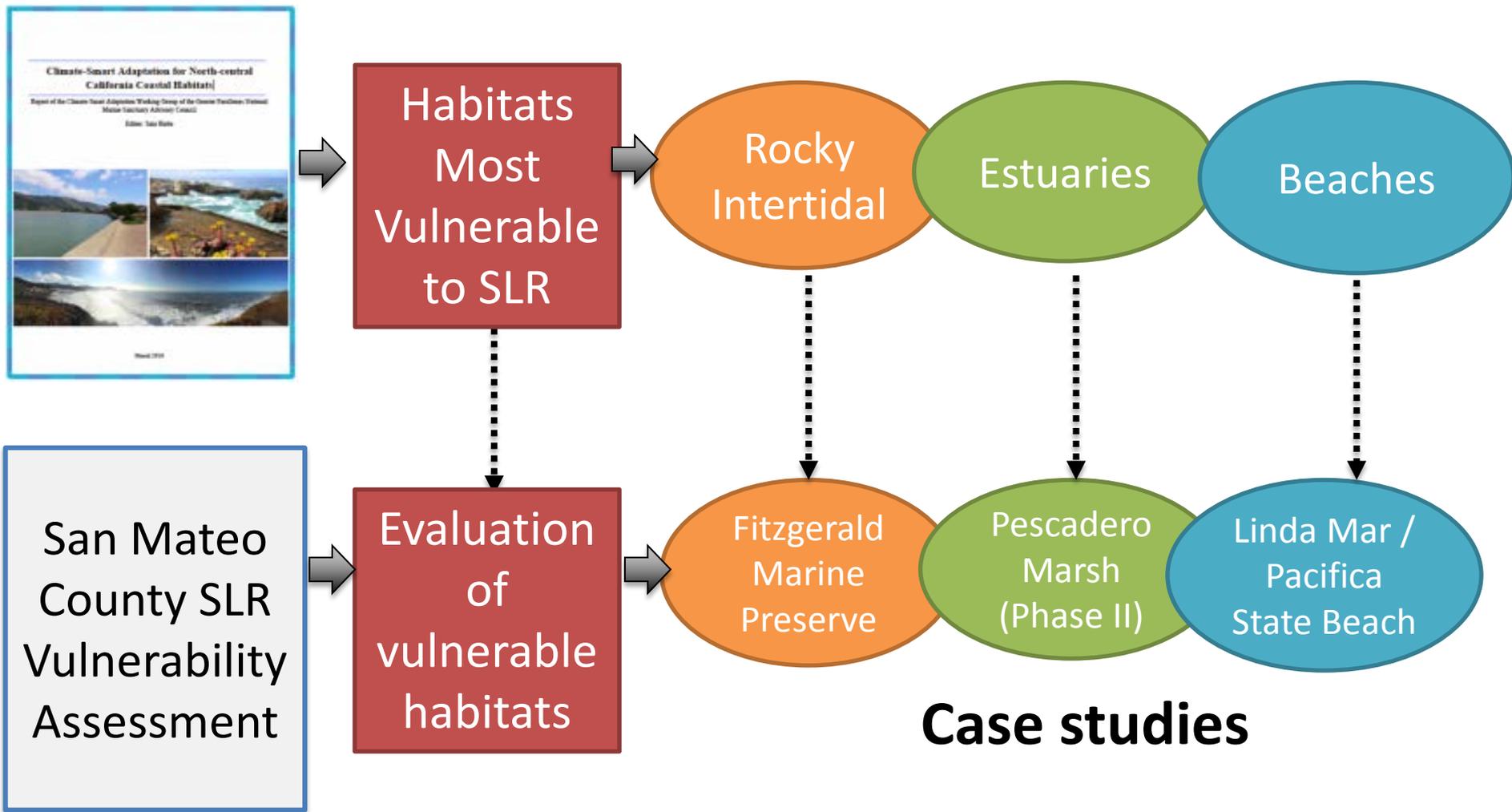
*Disclaimer:*  
The inundation maps and the associated analyses provide a regional-scale illustration of inundation and coastal flooding due to specific sea level rise and storm surge scenarios, and are intended to improve sea level rise awareness and preparedness. The maps are not detailed to the parcel-scale and should not be used for navigation, permitting, regulatory, or other legal uses.

*Flooding due to sea level rise and storm surges is possible in areas outside of those predicted in these maps, and the*

MHHW + 48" SEA LEVEL RISE



# HABITAT & NATURAL RESOURCES



# INVENTORY OF ASSETS AT RISK

Developed for each city & unincorporated area:

- El Granada
- Harbor/Industrial
- Miramar
- Mobile Home Parks
- Montara
- Moss Beach
- North Fair Oaks
- Olympic Country Club
- Princeton
- SFO
- Unincorporated

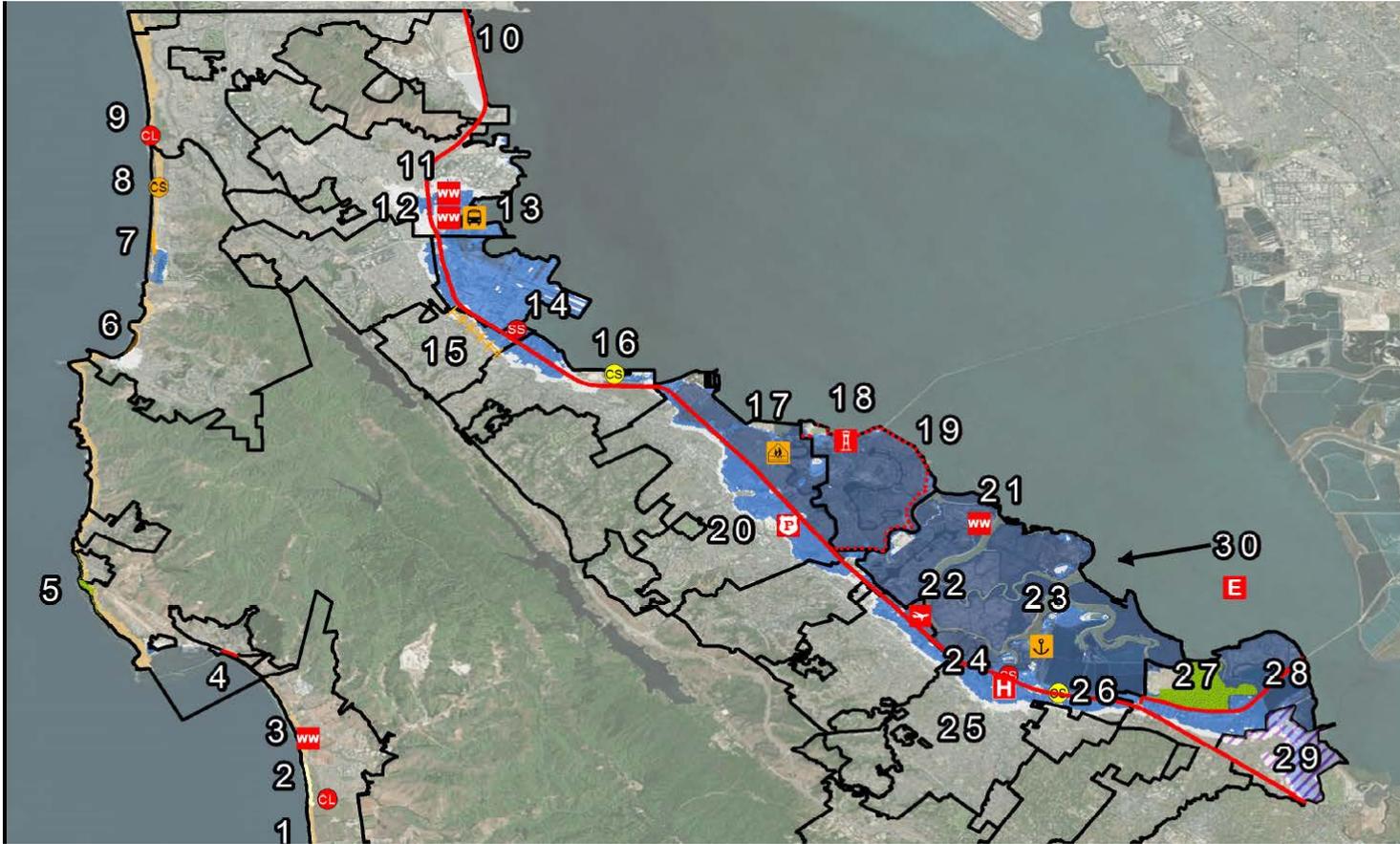
## Princeton (Uninc)

Map: Zone 9

Summary					
General	Total	QTY 1% AEP	QTY 1% AEP + 3.3ft	QTY 1% AEP + 6.6ft	Er
Land area	0.10	0.00	0.00	0.04	
Population at risk	27	0	0	17	
Vulnerable population at risk	166	3	6	68	
Urban Land (Sq. Miles)	0.1	0	0	0	
Agricultural Land (Sq. Miles)	0	0	0	0	
Industrial Land (Sq. Miles)	0	0	0	0	
Natural Land (Sq. Miles)	0	0	0	0	
<b>Total Inventory (asset counts)</b>					
Natural assets	0	0	0	0	
ASCE Class 4	4	0	0	2	
ASCE Class 3	0	0	0	0	
ASCE Class 2	0	0	0	0	
ASCE Class 1	1	1	1	1	
<b>Total Inventory (linear assets, in miles)</b>					
Natural assets	0	0	0	0	
ASCE Class 4	0.3	0.1	0.1	0.2	
ASCE Class 3	2.3	0.1	0.1	0.9	
ASCE Class 2	0	0	0	0	
ASCE Class 1	0.6	0	0	0.4	

Natural	Asset Type	Total	QTY 1% AEP	QTY 1% AEP + 3.3ft	QTY 1% AEP + 6.6ft	Er
N-B	Beaches (Sq. Miles)	0	0	0	0	
N-EG	Eelgrass Habitat (Sq. Miles)	0	0	0	0	
N-K	Kelp Habitat (Sq. Miles)	0	0	0	0	
N-LS	Lakes (Sq. Miles)	0	0	0	0	
N-S	Species of concern (Sq. Miles)	0.1	0	0	0.1	
N-SG	Surfgrass Habitat (Miles)	0	0	0	0	
N-W	Wetlands (Sq. Miles)	0	0	0	0	
N-LS	Streams (Miles)	0	0	0	0	

# CASE STUDY ASSETS



- |   |  |   |   |   |  |
|---|--|---|---|---|--|
| 1.)  Half Moon Bay Landfill (Closed)    | 6.)  Linda Mari/Pacifica State Beach   | 11.)  South San Francisco Pump Station 4              | 16.)  Burlingame Airport Hotel Corridor                     | 21.)  Silicon Valley Clean Water  | 26.)  Redwood City Mobile Home Park      |
| 2.)  Coastal Trail                      | 7.)  Beach Boulevard                   | 12.)  South San Francisco Water Quality Control Plant | 17.)  The Bayside S.T.E.M Academy                           | 22.)  San Carlos Airport  | 27.)  Ravenswood Ponds near Bedwell Park |
| 3.)  Sewer Authority Mid-Coastside WWTP | 8.)  Pacifica Nursing and Rehab Center | 13.)  SamTrans Island (SamTrans North Base Facility)  | 18.)  Foster City Corporation Yard and Communications Tower | 23.)  Port of Redwood City  | 28.)  State Route 84/101                 |
| 4.)  State Route 1                      | 9.)  Mussel Rock Disposal Site         | 14.)  Highline Canal Tide Gate                        | 19.)  Foster City Levee                                     | 24.)  Redwood City Police Department, San Mateo Women's Jail, and InnVision Shelter Network | 29.)  East Palo Alto                     |
| 5.)  Fitzgerald Marine Reserve          | 10.)  Highway 101                      | 15.)  Caltrain/BART                                   | 20.)  San Mateo Police Department                           | 25.)  Kaiser Permanente Redwood City Medical Center   | 30.)  Energy Infrastructure (TBD)        |

# CASE STUDIES – NORTH COAST



Pacifica Nursing & Rehab Facility



Linda Mar, Pacifica



Mussel Rock, Daly City



Fitzgerald Marine Preserve



Beach Boulevard, Pacifica

# CASE STUDIES – SOUTH COAST



SAM Plant (wastewater)



California Coastal Trail



Closed Landfill



Mirada Rd, Half Moon Bay



Surfer's Beach/ Hwy 1

# STAKEHOLDER INVOLVEMENT & OUTREACH

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



# YESS PROGRAM PILOT

Students from  
Redwood High  
School presenting to  
San Mateo County  
Board of  
Supervisors

5/10/16



# NEXT STEPS

- Finalize Vulnerability Assessment (Fall)
- Begin South Coast Vulnerability Assessment (Summer)
- Launch Phase II (Fall)
  - County sea level rise policy
  - Adaptation planning
  - Pilot projects

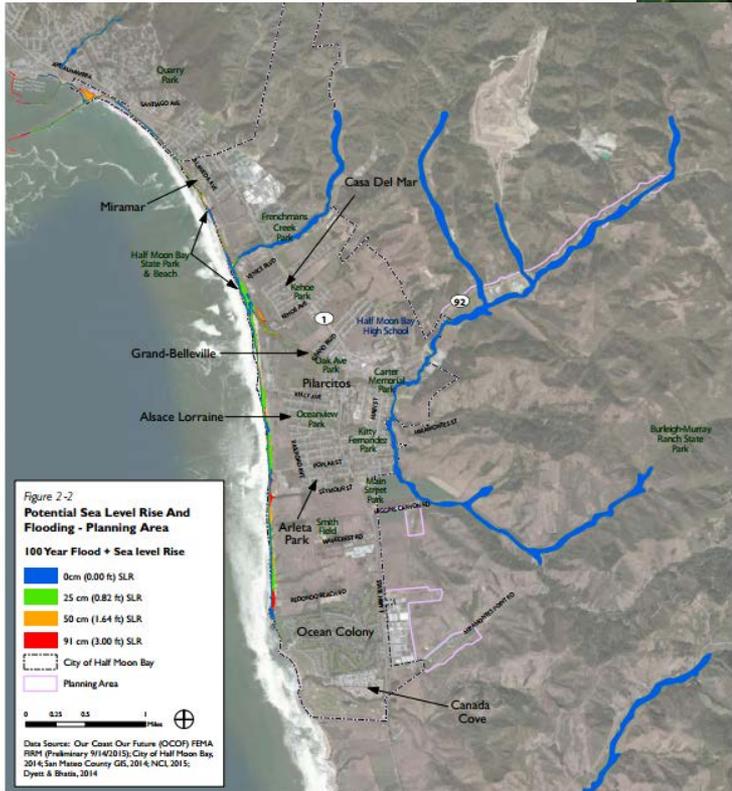
# COASTAL PROJECTS

- Surfer's Beach Sand Placement Pilot Project (in scoping phase)



# GENERAL PLAN/LCP UPDATES

- Half Moon Bay (includes [SLR vulnerability assessment](#))



# QUESTIONS?

## CONTACT:

Hilary Papendick

Climate Resiliency Specialist

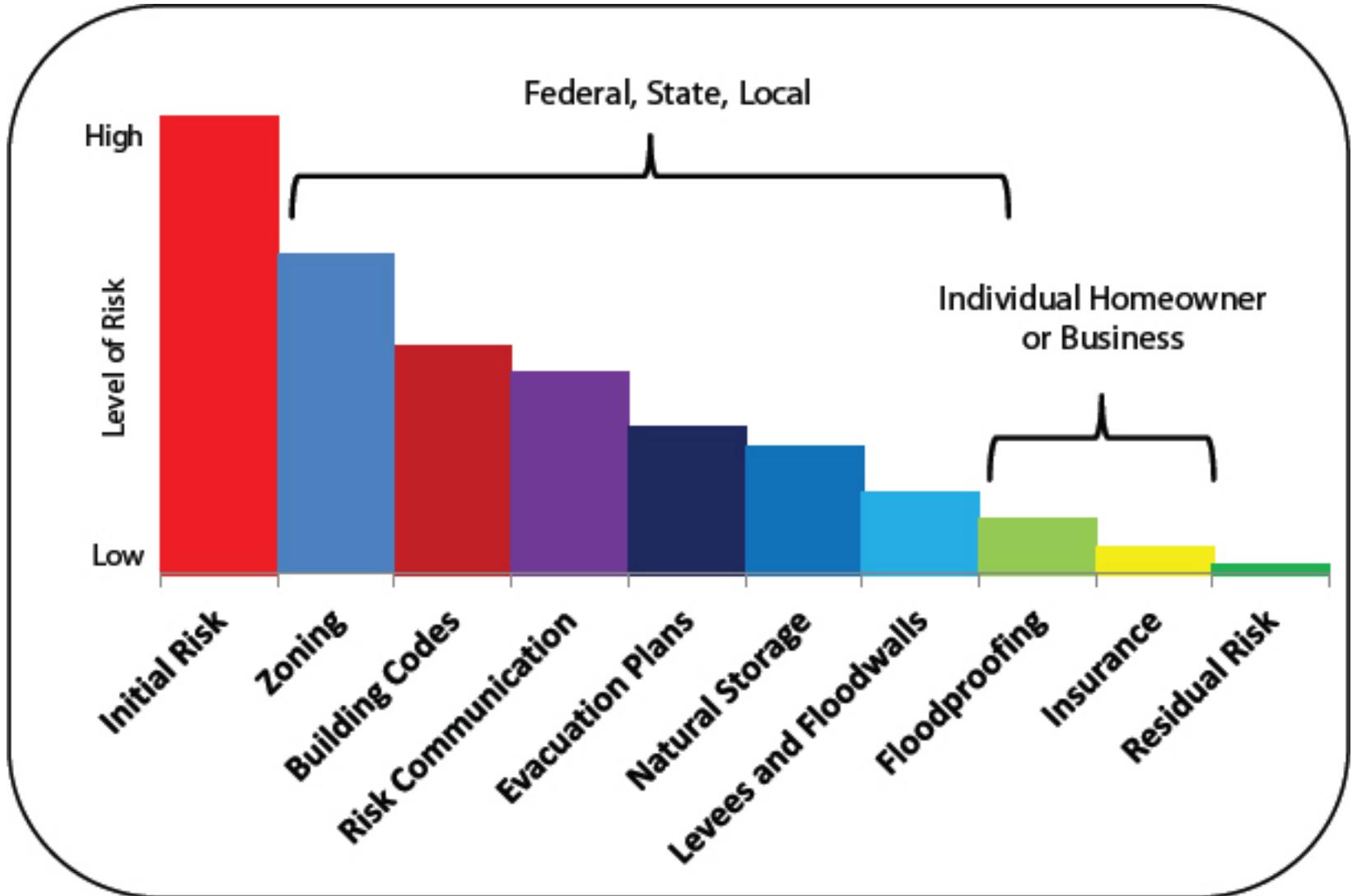
[hpapendick@smcgov.org](mailto:hpapendick@smcgov.org)

650-363-4194

[www.seachangemc.com](http://www.seachangemc.com)



# AVAILABLE ADAPTATION MEASURES



# PROJECT OVERVIEW

Task	Jun-Aug	Sep-Nov	Dec - Feb	Mar-May	Jun-Aug	Sep-Oct
Develop Approach/ Convene Stakeholder groups	x					
Data Gathering		x				
Sea Level Rise Mapping & Exposure Analysis						
Vulnerability & Risk Analysis / Asset Profiles			x	x		
Adaptation Strategies					x	
Draft Report					x	
Final Report						x

x = Stakeholder Meeting

# DRAFT MAPS - COAST

These draft maps are subject to change. They are intended to improve sea level rise awareness and preparedness by providing a regional-scale illustration of inundation and coastal flooding due to specific sea level rise and storm surge scenarios. The maps are not detailed to the parcel-scale and should not be used for navigation, permitting, regulatory, or other legal uses.

Flooding due to sea level rise and storm surges is possible in areas outside of those predicted, and even the best predictions cannot guarantee the safety of an individual or structure. Nor do the maps model flooding from rivers, surface water flooding from non-torrential events, or other sources. The contributors and sponsors of this product do not assume liability for any injury, death, property damage, or other effects of flooding.

All underlying data for the inundation layers is from the Our Coast Our Future tool and the erosion layers are from the Pacific Institute. Although care was taken to capture relevant topographic features and coastal structures that may impact coastal inundation, it is possible that structures may not be fully represented.

Daly City

Sharp Park,  
Pacifica

Linda Mar, Pacifica

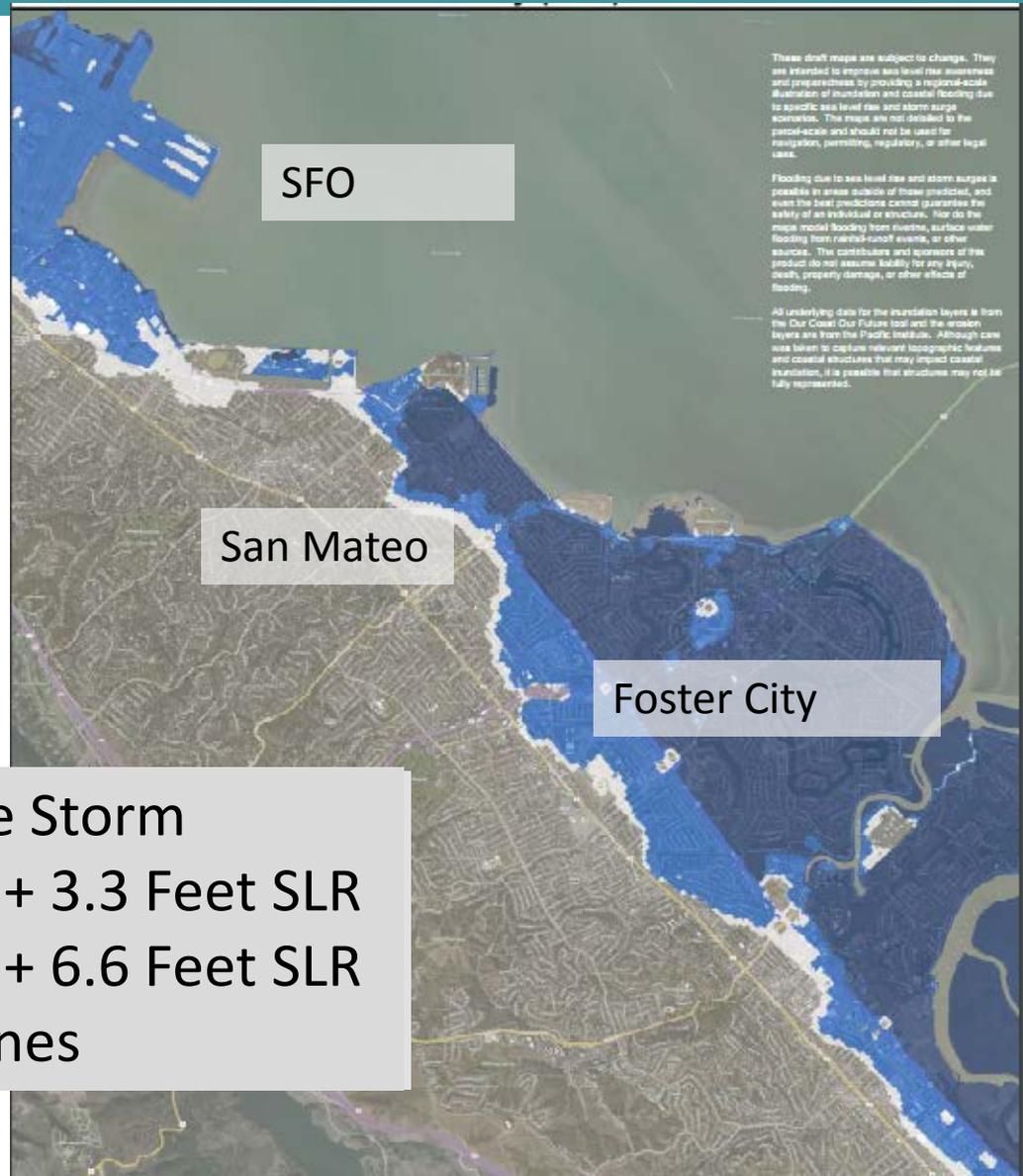
1% Annual Chance Storm

1% Chance Storm + 3.3 Feet SLR

1% Chance Storm + 6.6 Feet SLR

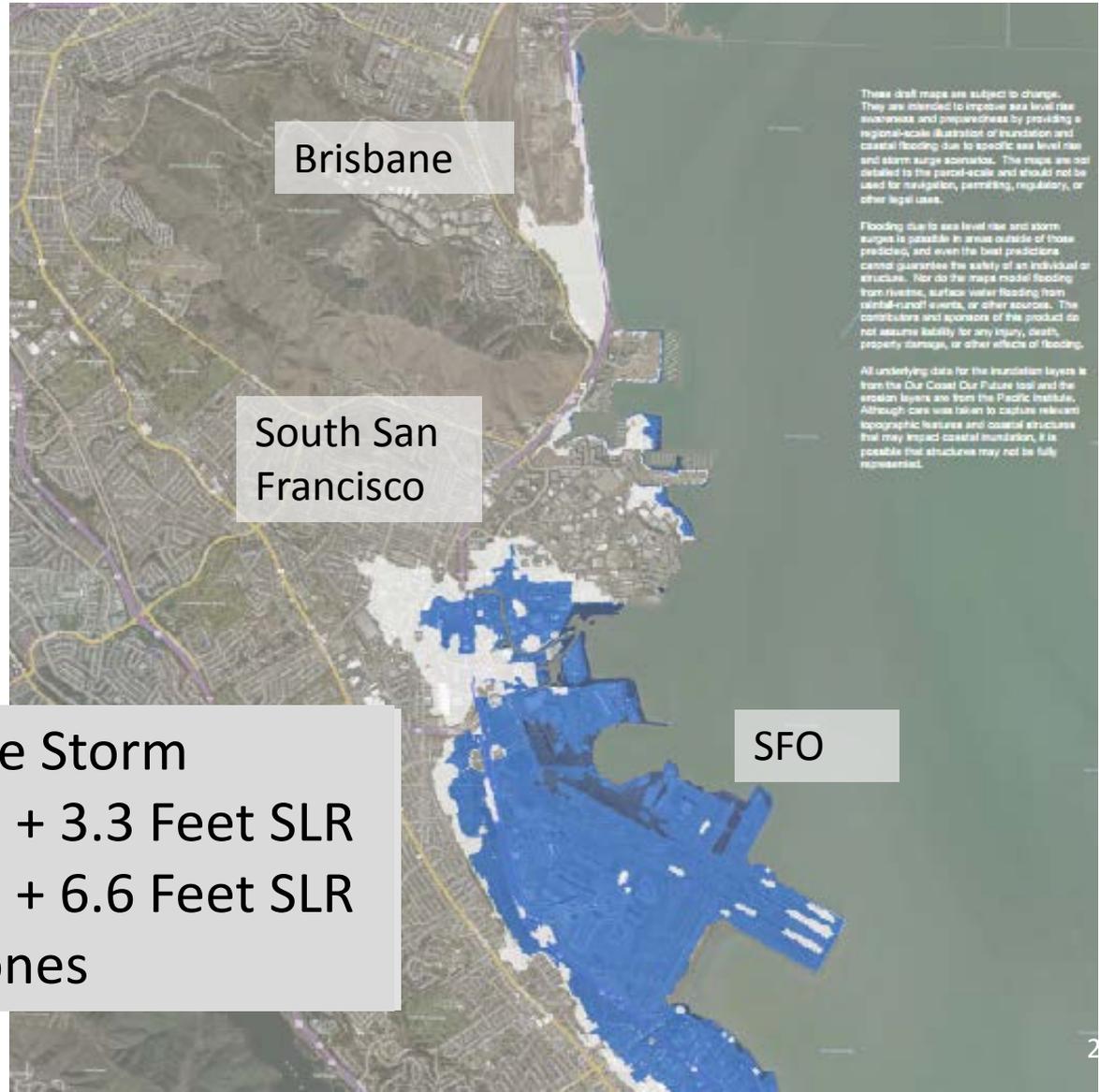
Future Erosion Zones

# DRAFT MAPS – CENTRAL BAY



- 1% Annual Chance Storm
- 1% Chance Storm + 3.3 Feet SLR
- 1% Chance Storm + 6.6 Feet SLR
- Future Erosion Zones

# DRAFT MAPS – NORTH BAY



Brisbane

South San Francisco

SFO

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- Future Erosion Zones