MONTEREY BAY SEA LEVEL RISE VULNERABILITY STUDIES AND ADAPTATION PLANNING

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STATE GUIDANCE ON SLR PLANNING

Table 1. Comparison of OPC 2013 Guidance Document and 2018 Update's Probabilistic SLR projections

SCENARIO BASED PROJECTION: TIME HORIZON	SCENARIO BASED PROJECTION: EMISSIONS SCENARIO	SCENARIO BASED PROJECTION: SLR[1]	PROBABILISTIC PROJECTION: EMISSIONS SCENARIO	PROBABILISTIC PROJECTION: LIKELY RANGE*: 66% PROBABILITY SLR IS BETWEEN…	PROBABILISTIC PROJECTION: 1-IN-200 CHANCE**: 0.5% PROBABILITY SLR MEETS OR EXCEEDS…	H++ SCENARIO***
2030	Med	4 in	High	**3.6 – 6 in**	9.6 in	12 in
2060	High	28 in	Low	6 – 14.4 in	**27.6 in**	45.6
			High	8.4 – 16.8 in	31.2 in	
2100	High	63 in	Low	10.8 – 27.6 in	**66 in**	121.2
			High	18 – 39.6 in	82.8 in	

*Notes: * low risk aversion projection, **Medium-high risk aversion projection, ***Extreme risk aversion projection*

Regional Collaboration

MB Climate Action Compact

Coastal Resilience Network

Central Coast Climate Collaborative

WCB GHG funding

Local Funding

CCC LCP update funding

OPC Planning & Imp funds

DWR Planning funds

SCC Planning & Imp funds

Ten years of Adaptation Planning

City of Santa Cruz 2012

PWA Monterey Bay Vulnerability Model Update

Center for Ocean Solutions Natural Habitat Report

Pacific Institute 2009

Southern Monterey Bay Coast Report

Monterey Bay SLR Vulnerability Evaluation

Marina, Monterey, Pacific Grove Vulnerability

Moro Cojo Management Plan Update

Salinas River Dune Restoration Plan

City of Santa Cruz Update 2017

Capitola Vulnerability

Santa Cruz County Vulnerability

Moss Landing Vulnerability

City of Santa Cruz Coastal Adaptation

West Cliff Plan (Caltrans)

Moss Landing Harbor Report

Agricultural Lands Adaptation Plan

Highway 1 Corridor Plan

Santa Cruz County LHMP update (draft)

Santa Cruz County IRWMP Climate CH.

Monterey C. Stormwater and LHMP Plan

Monterey C. IRWMP Climate Chapter

The Monterey Bay "Pipeline"

TYPES OF COASTAL HAZARDS & TEMPORAL IMPACTS

Cliff erosion

Dune erosion

Rising tides

Storm flooding

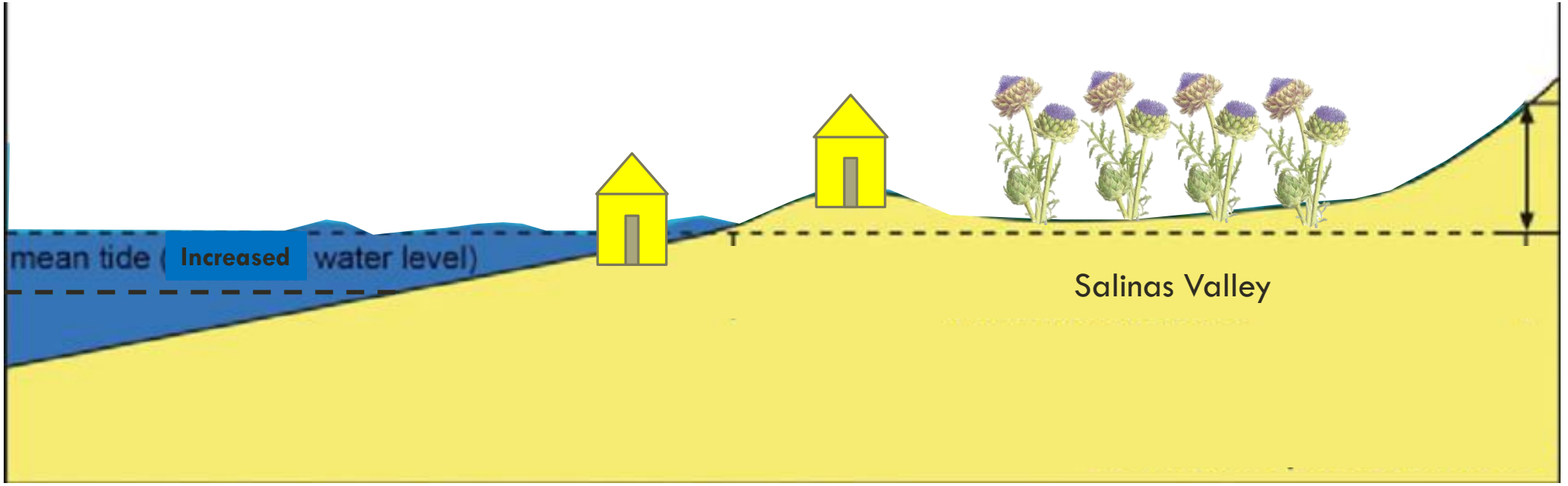
Temporary Impacts

- Fluvial Flooding
- Coastal Storm Flooding

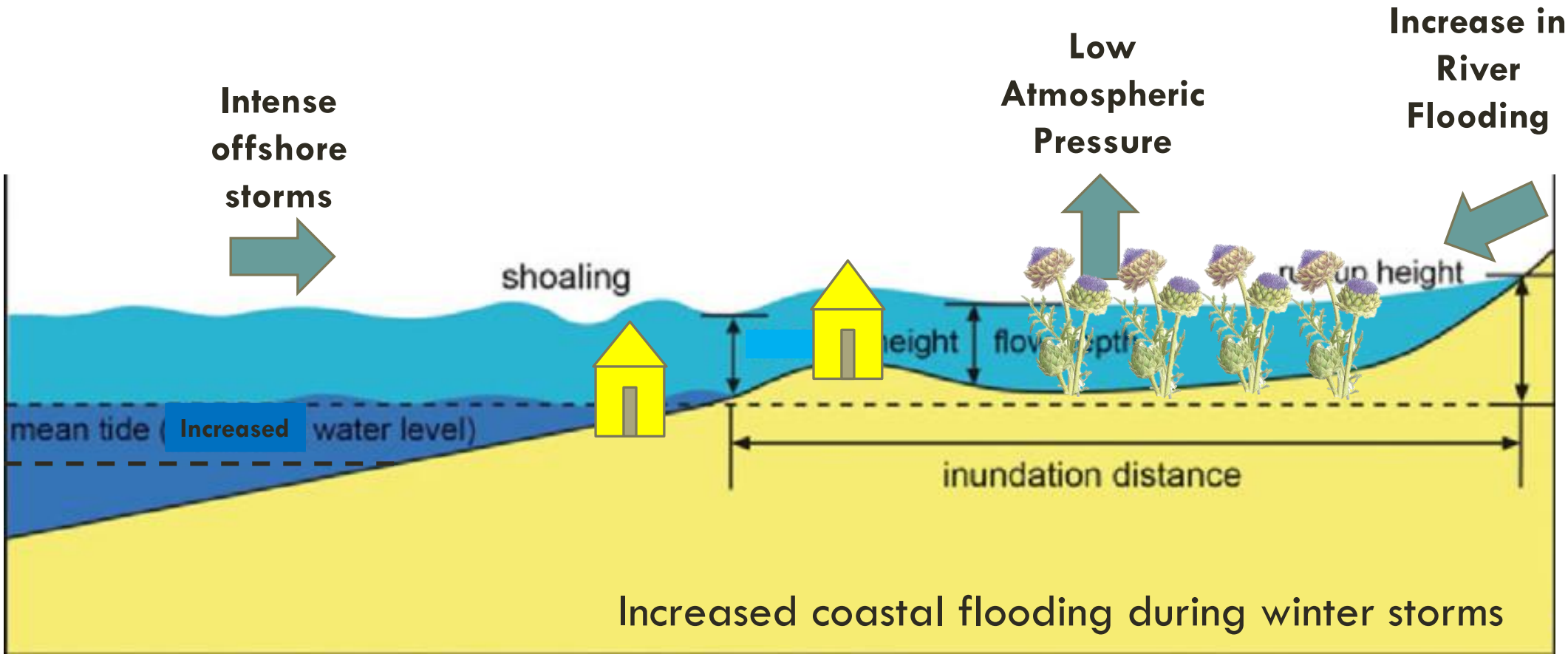
Permanent Impacts

- Tidal Inundation
- Cliff and Dune Erosion

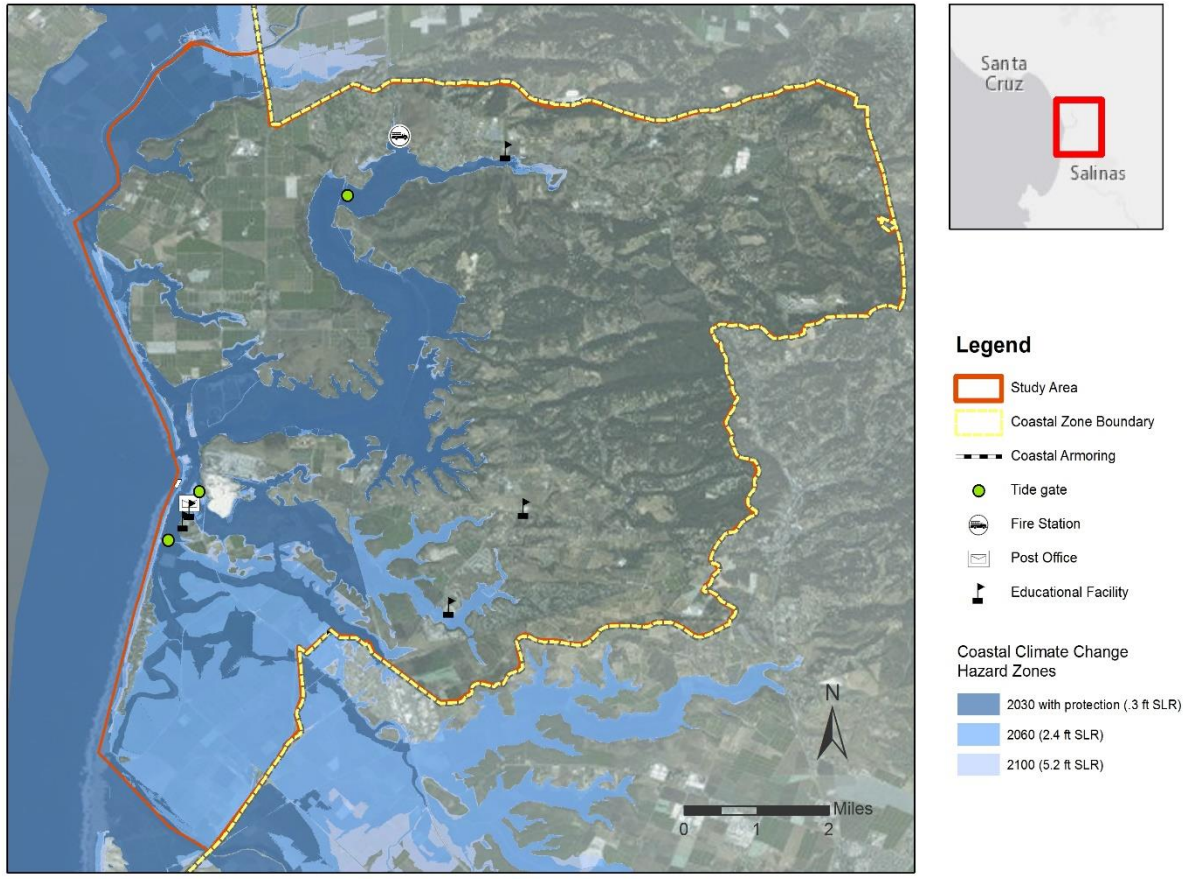
EFFECTS OF SEA LEVEL RISE

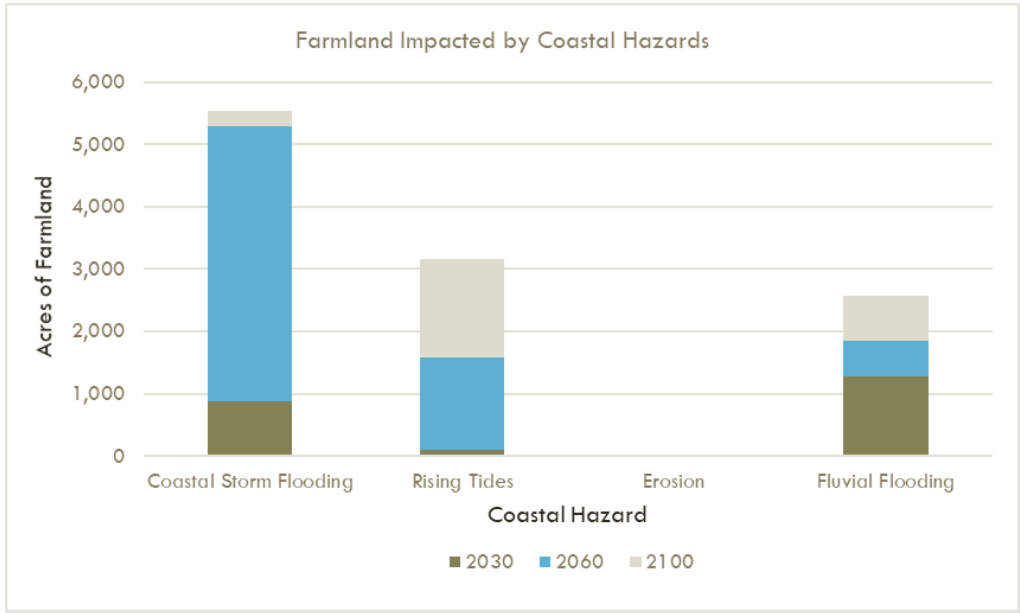


CUMULATIVE EFFECTS OF COASTAL CLIMATE CHANGE



MOSS LANDING SEA LEVEL RISE VULNERABILITY REPORT





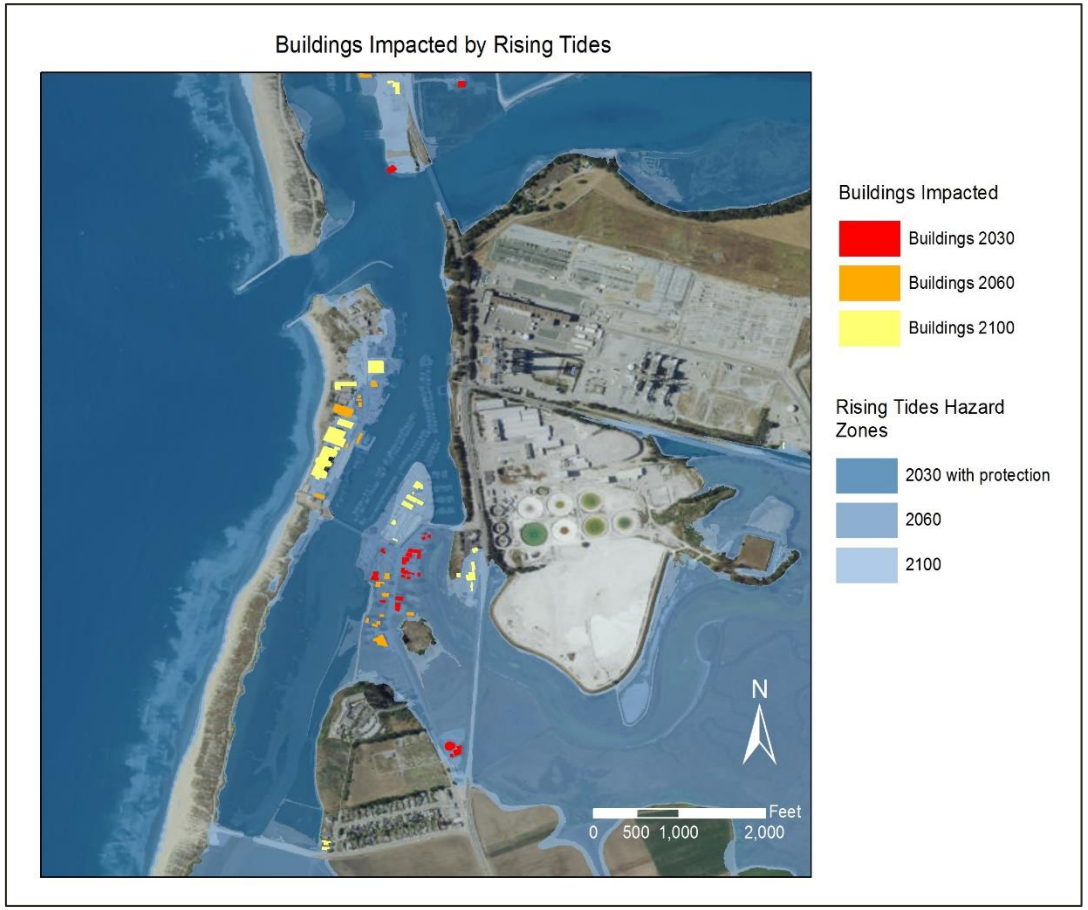
Farmland vulnerable to different coastal hazards at each planning horizon.

Disclaimer: These data represent outputs of regional climate models and are estimates of potential risks.

Final reports available at *www.centralcoastwetlands.org*

http://coastalresilience.org/project/monterey-bay/

FINANCIAL IMPLICATIONS OF PREDICTED HAZARDS
(MOSS LANDING AREA VALUES)



ASSET	UNITS	2030 (WITH PROTECTION)	2060 (NO PROTECTION)	2100 (NO PROTECTION)
Buildings				
Residential	property value	$8,925,000	$30,975,000	$59,325,000
Commercial	property value	$17,057,808	$19,104,745	$21,833,994
Public	replacement cost	$27,500,000	$56,500,000	$64,500,000
Agriculture	property value	$99,550,000	$264,500,000	$276,600,000
Property losses		*$153,032,808*	*$371,079,745*	*$422,258,994*

HAZARD ANALYSIS FINDINGS –LEADING TO ACTION (MOSS LANDING AREA)

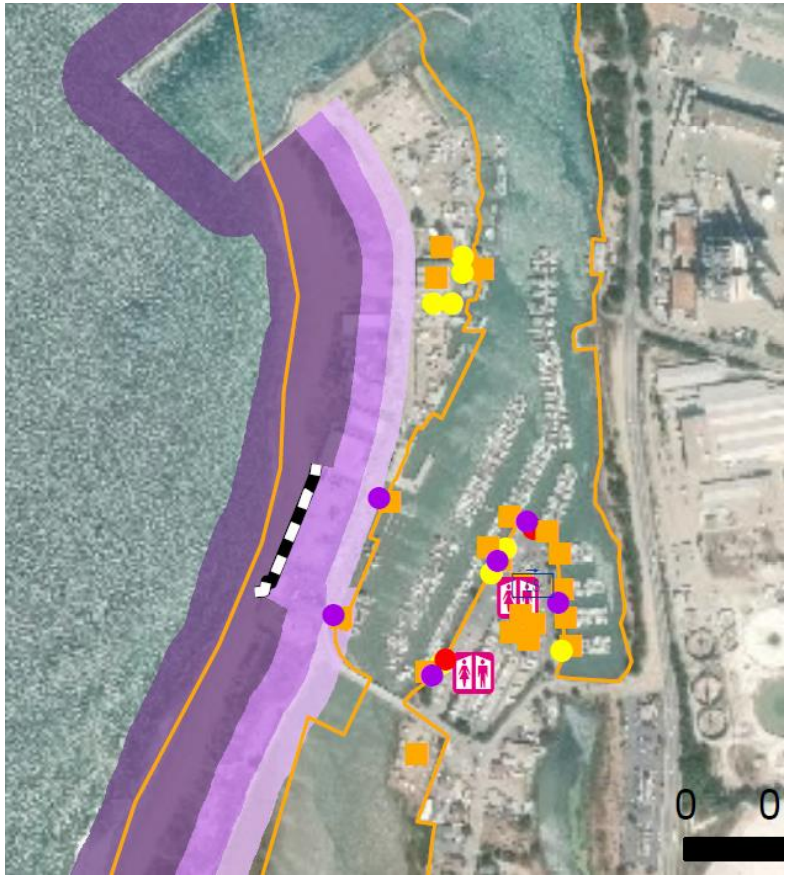
By 2060, Moss Landing sand dunes are at risk of wave overtopping, and risk flooding of the lower Salinas Valley.

By 2060 much of the agriculture lands west of Highway 1 will be vulnerable to frequent flooding from more intense rains and higher seas.

By 2060, there may be almost complete loss of services on the Moss Landing island and Harbor may not be viable.

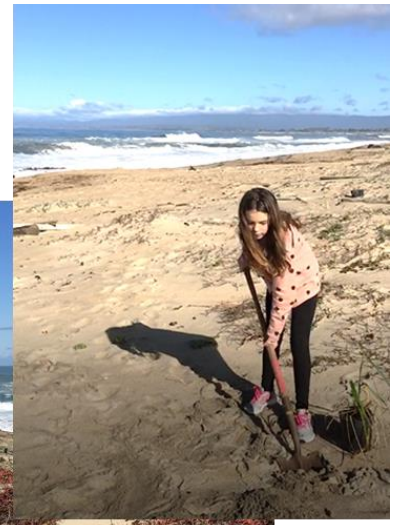
COASTAL EROSION: RISK TO ACTION

MOSS LANDING HARBOR VULNERABILITY AND ADAPTATION PLAN (2019)



DUNE EROSION: RISK TO ACTION

SALINAS RIVER SB DUNE RESTORATION AND MANAGEMENT PLAN (2020)



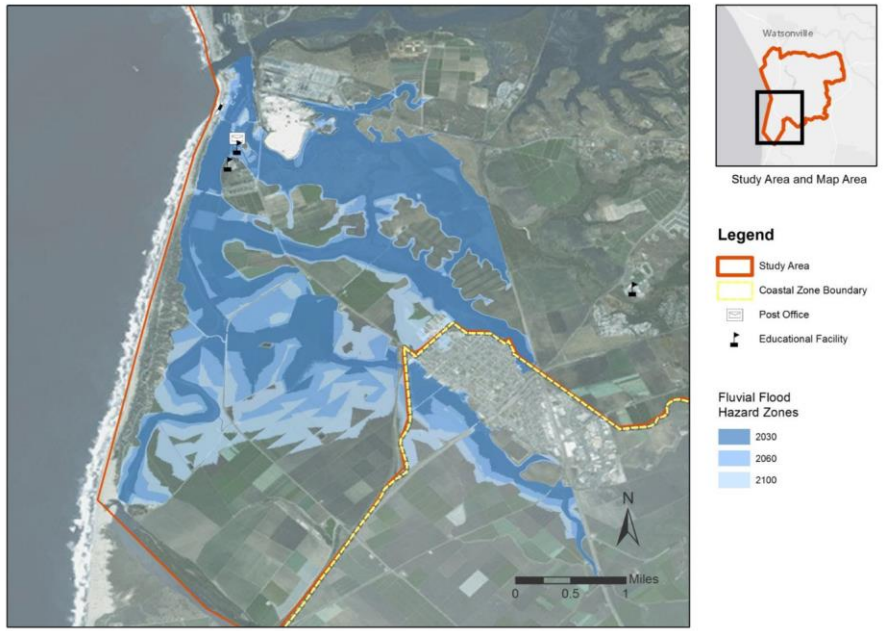
Dunes along the Moss Landing Coast vulnerable to Coastal Erosion

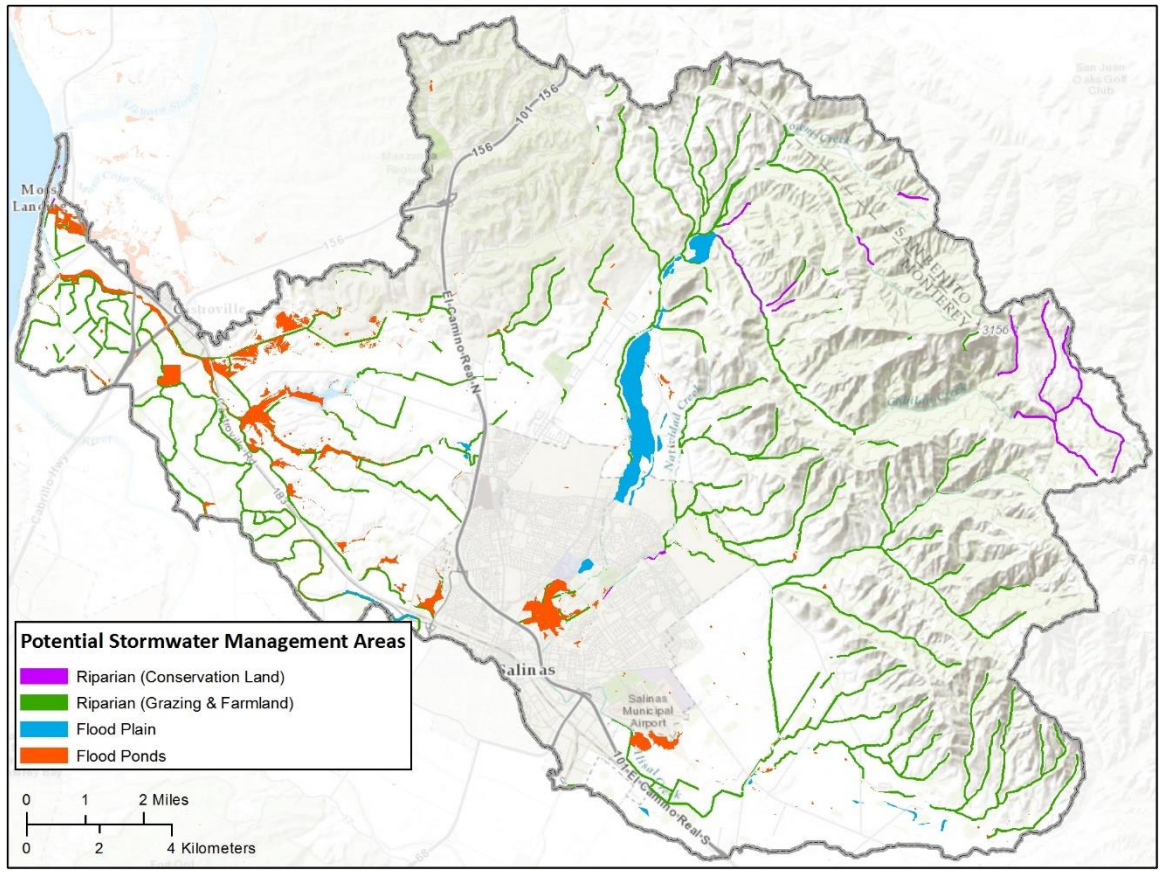
RIVER FLOODING: RISK TO ACTION

SALINAS VALLEY STORMWATER PLAN (2019)

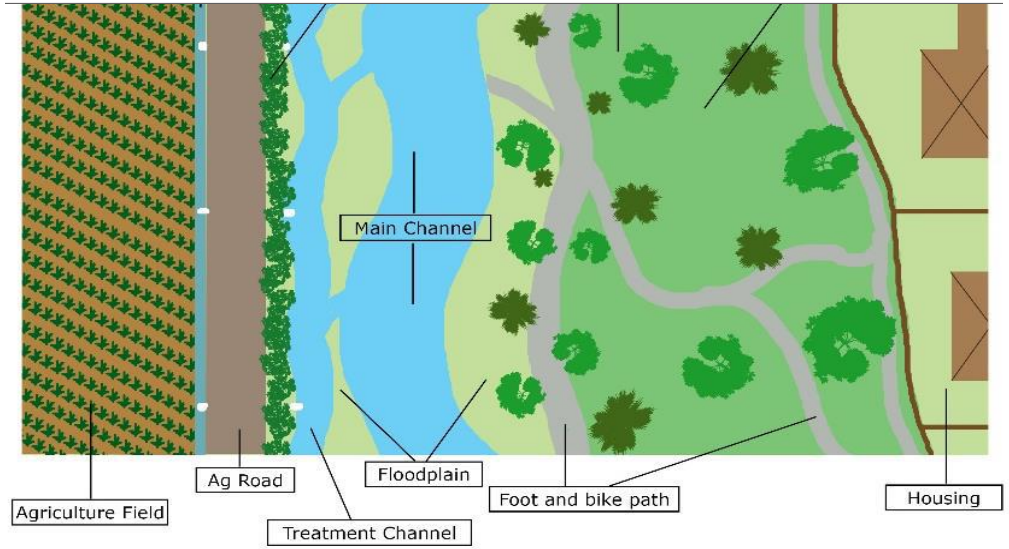
Table 1. Increases in 100-year Discharge for the Reclamation Ditch System Relative to Historic Period (1950-2000)

EMMISIONS SCENARIO	2030	2060	2100
Medium (RCP 4.5 5th percentile)	20% Increase	40% Increase	60% Increase
High (RCP 8.5 90th percentile)	140% Increase	210% Increase	275% Increase





CASTROVILLE TO THE COAST (2022)
(FLOOD RESILIENCE AND PUBLIC ACCESS)



ONGOING PROJECTS AND NEXT STEPS

Lower Salinas Valley floodway management

- Watershed Coordinator Position Funded!
- Castroville to the Coast
- Salinas Valley Stormwater Plan
- GSA watershed planning and coordination
- Salinas River State Beach Management Plan

Image 1. February 20th, 2017 flooding of lower Salinas Valley (note similarities with hazard map Fig. 16)
(Photo: KSBW drone footage)

Moss Landing Community Plan

- Integrate hazards
- Identify infrastructure upgrades
- Update the Moro Cojo Slough Management and Enhancement Plan
- Coordinate Coastal Resiliency efforts with

  State Parks, Moss Landing Harbor District, CalTrans, MBARI

THANK YOU

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www.centralcoastwetlands.org

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