

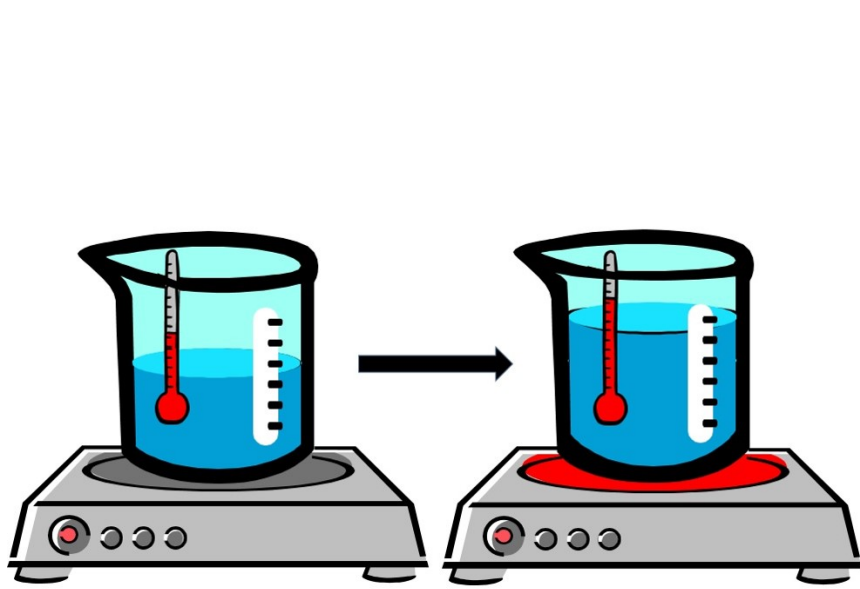
The logo features a green silhouette of a mountain range against a light blue sky. Below the mountains is a white horizontal band, and below that is a blue gradient representing water. The text 'Marin County' is in black, and 'Sea Level Rise' is in a large, blue, stylized font. The website 'marinslr.org' is in a smaller blue font.

Marin County

Sea Level Rise

marinslr.org

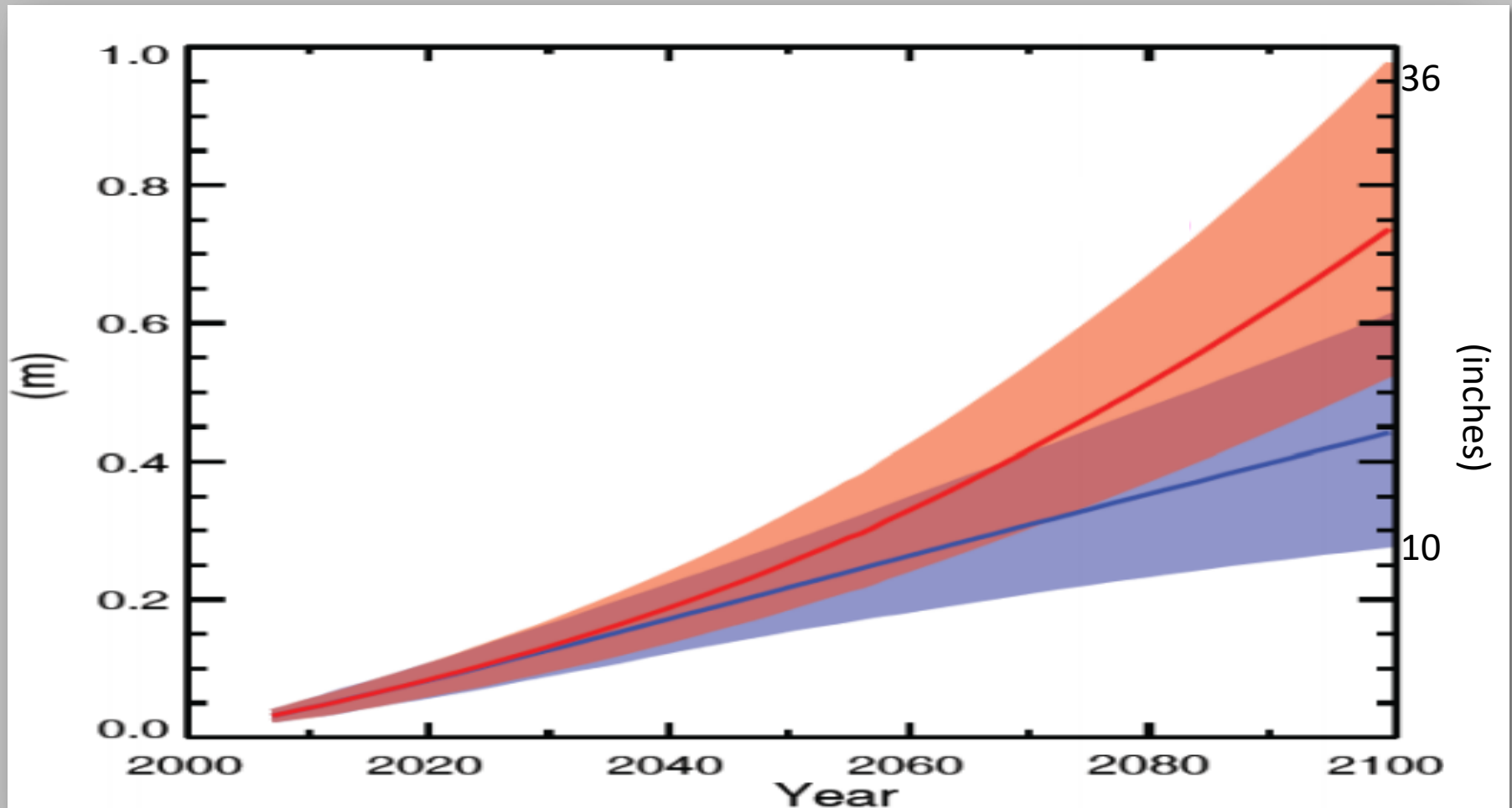
**Bay Shoreline Sea Level Rise
Adaptation Planning**



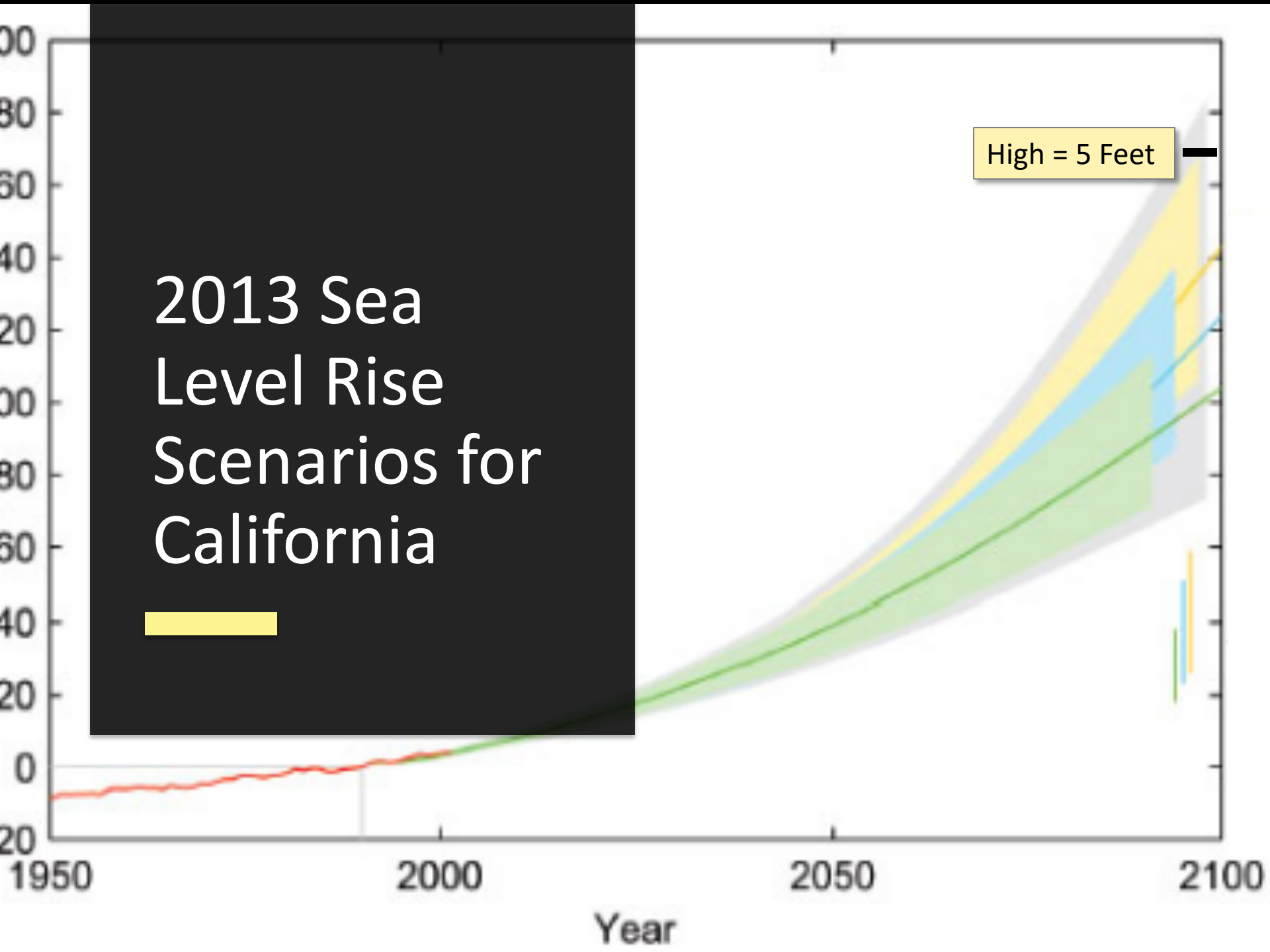
SLR = increased volume of seawater from thermal expansion
+ increased mass of water from melting land ice.

2008 IPCC Sea Level Rise Scenarios

High = 3 ft



2013 Sea Level Rise Scenarios for California

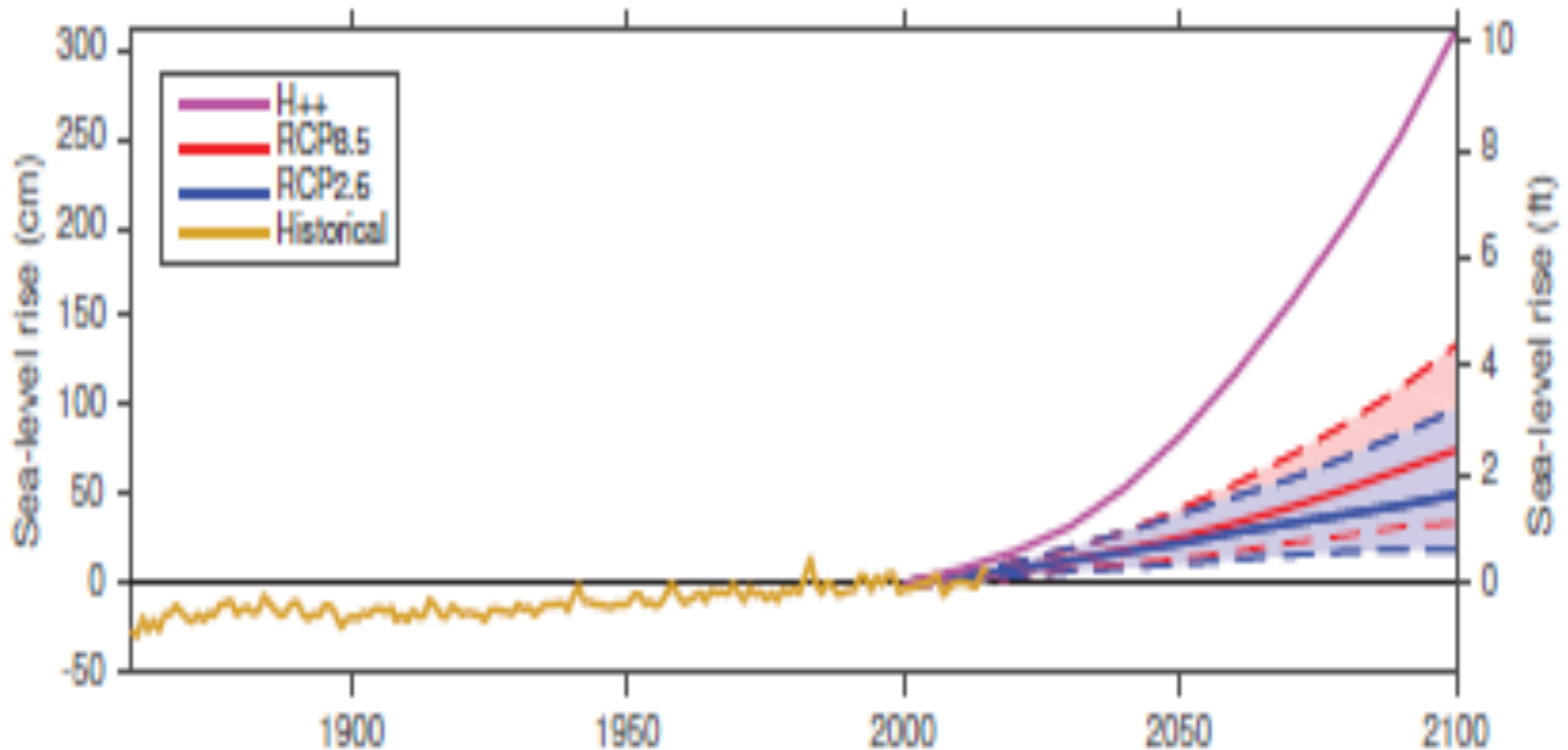


2017 Sea Level Rise Scenarios for California

High = 5 ft

H++ = 10 ft

(b) Relative sea level in San Francisco, California



Marin County Already Floods

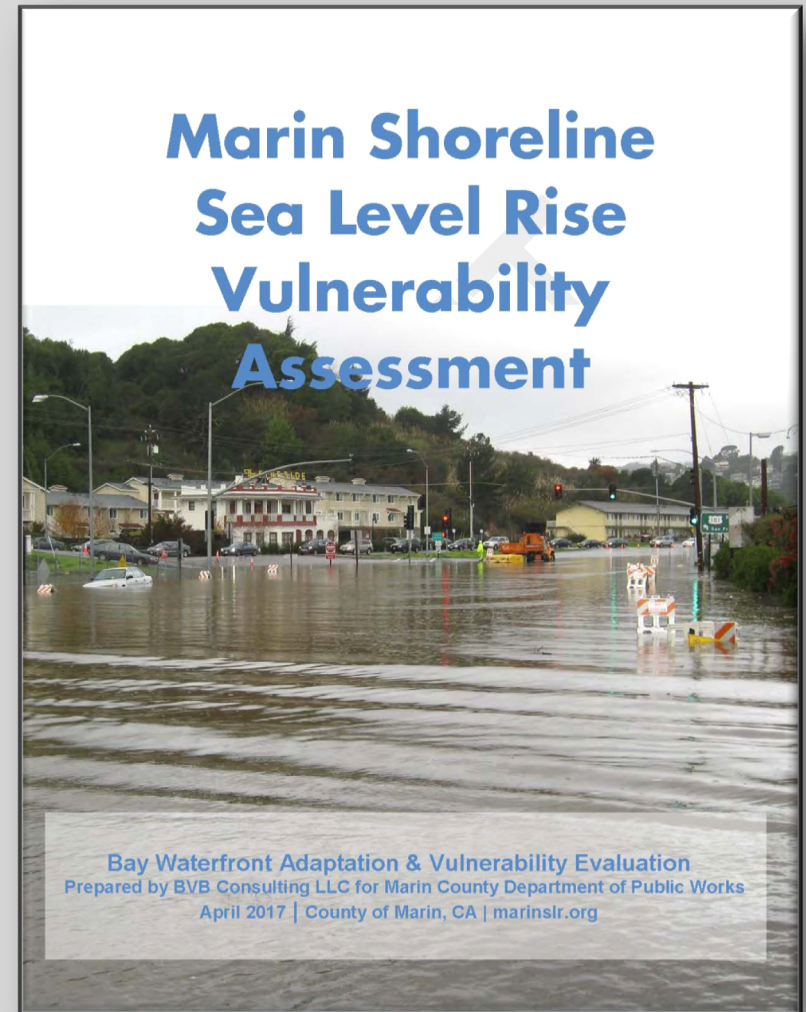


The “New Normal”



Marin's report – what it is

- A study of the bay shoreline
- Used the best available science combined with over 100 stakeholder interviews
- A summary of the findings presented in two major sections: Assets and Locations
 - Assets include: land, buildings, transportation, utilities, agriculture, habitats and wildlife, recreation, emergency services, and cultural resources



How we did it

Six Sea Level Rise Scenarios

	Sea Level Rise (SLR)	SLR + 100-year Storm
Near Term	10 inches	46 inches
Mid Term	20 inches	56 inches
Long Term	60 inches	96 inches

What happens in San Rafael?

Map 97. Southern San Rafael Vulnerable Buildings

Vulnerable Assets

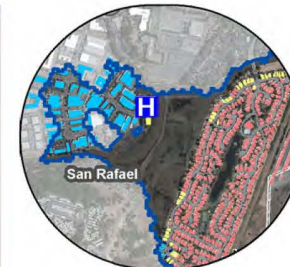
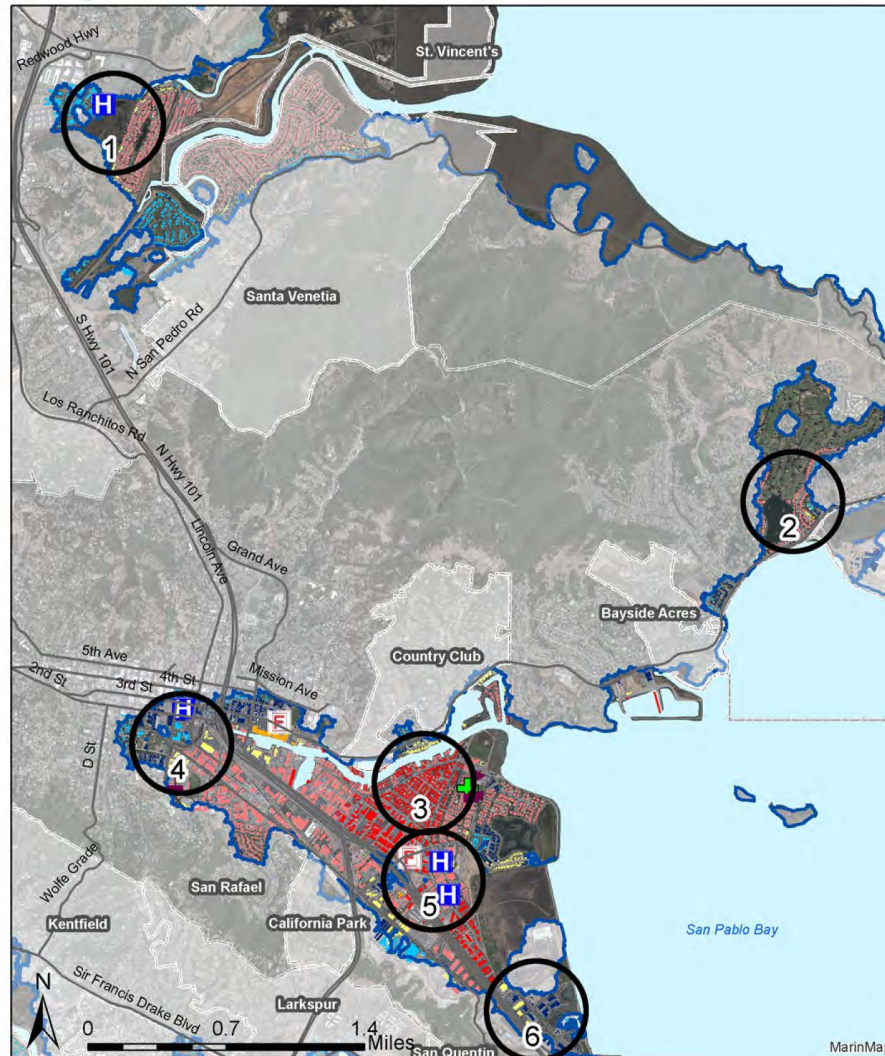
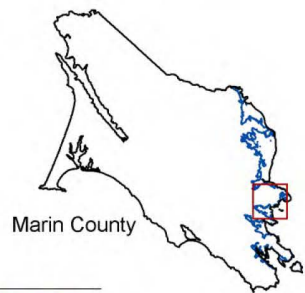
-  School
-  Medical Facility
-  Emergency Shelter
-  Fire Station

Vulnerable Buildings

-  Scen. 1: 10" Sea Level Rise (SLR)
-  Scen. 2: 10" SLR+Storm Surge
-  Scen. 3: 20" Sea Level Rise
-  Scen. 4: 20"SLR+Storm Surge
-  Scen 5: 60" Sea Level Rise
-  Scen. 6: 60"SLR+Storm Surge

Location Indicators

-  Unincorporated
-  Municipality
-  Road
-  Bay
-  Inland Extent: Sea Level @ 60"+100-year Storm



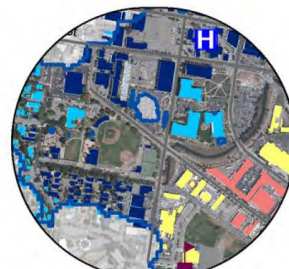
1: Las Gallinas



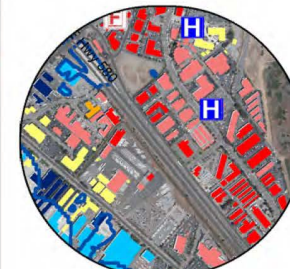
2: Peacock Gap



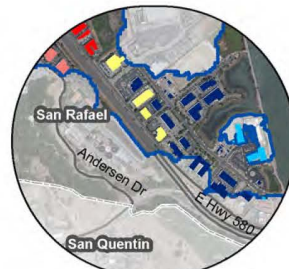
3: Canal Neighborhood



4: Downtown



5: State Route 580



6: End of Kerner Blvd.

Disclaimer: Vulnerability Assessment maps, tables, etc. can be used as a resource to help identify potential hazardous areas and vulnerable assets. Marin County, and data providers here in, make no warranties of the accuracy or completeness of maps and data. Maps are representational and subject to future revision. Local site conditions must be examined. Commercial use is prohibited.

Map 98. San Rafael Vulnerable Transportation Assets

Vulnerable Assets

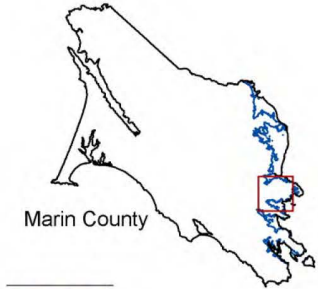
- ▲ Park & Ride
- GGT Bus Stop
- SMART Track
- MT Bus Stop
- SMART Station
- Bike path
- ⚓ Marina
- Bay Trail
- ✈ Airport
- Trail
- 🚤 Public Boat Launch

Vulnerable Roads

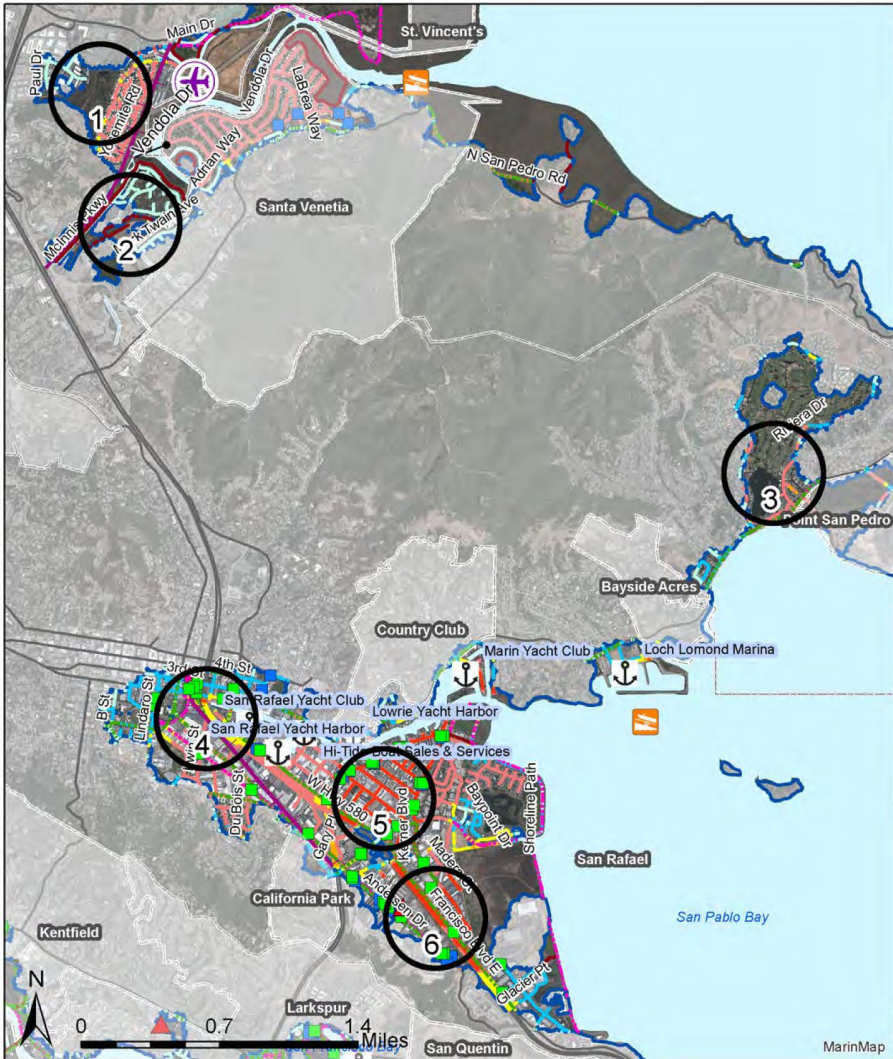
- @10" Sea Level Rise (SLR)
- @10"SLR+ 100-year Storm Surge
- @20" Sea Level Rise
- @20"SLR+ 100-year Storm Surge
- @60" Sea Level Rise
- @60"SLR+ 100-year Storm Surge

Location Indicators

- Unincorporated
- Municipality
- Road
- Bay
- Inland Extent: Sea Level @ 60"+100-year Storm



Date: 3/29/2017



1: Las Gallinas



2: N. San Pedro Rd. @ U.S. Hwy.101



3: Peacock Gap



4: Central San Rafael



5: Canal Neighborhood



6: Interstate 580 corridor

Disclaimer: Vulnerability Assessment maps, tables, etc. can be used as a resource to help identify potential hazardous areas and vulnerable assets. Marin County, and data providers here in, make no warranties of the accuracy or completeness of maps and data. Maps are representational and subject to future revision. Local site conditions must be examined. Commercial use is prohibited.

Doesn't stay in San Rafael....

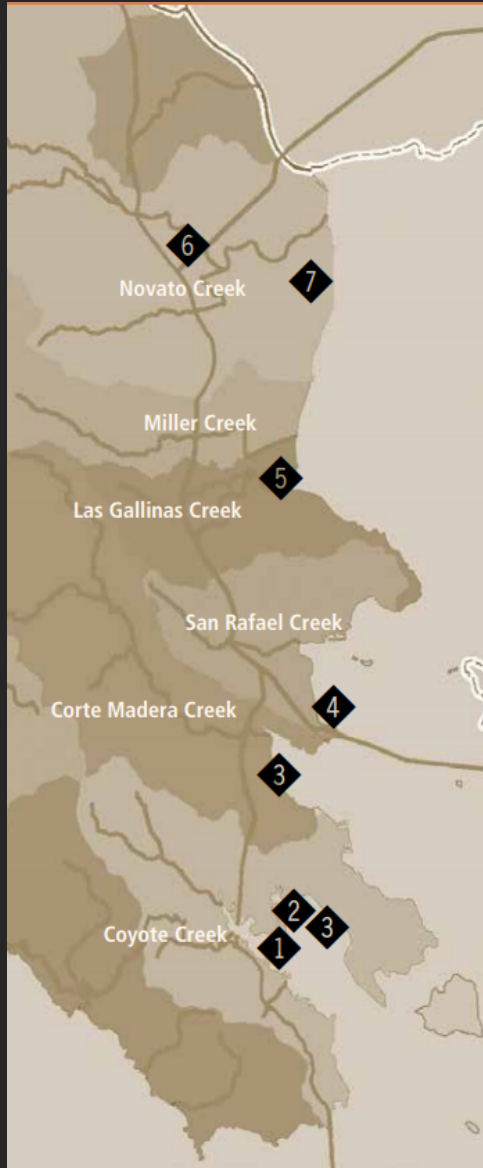


Students photograph King Tides in Tam Junction

7 Sea Level Rise Science) [↗](#)

THE GAME OF FLOODS *Marin Island*





- 1 Coyote Creek/Bothin Marsh Dredge Sediment Reuse Project, Richardson Bay
- 2 Aramburu Island Constructed Beach Demonstration Project, Richardson Bay
- 3 Potential Engineered Bay-Beach Shorelines: Blackie's Pasture, Tiburon; Corte Madera Marsh Ecological Reserve
- 4 Subtidal Oyster Reef Construction Project, San Rafael Bay
- 5 McInnis Marsh Restoration Project
- 6 Novato Placement of Dredged Sediment
- 7 Novato Creek Baylands Adaptation Projects

First Steps to Address Sea Level Rise in Marin County

Demonstration Projects on the Eastern Shoreline—Past, Present, and Future

Marin County's demonstration projects for sea level rise resiliency
 Marin Bay Waterfront Adaptation and Vulnerability Evaluation (BayWAVE)
 Marin County Department of Public Works

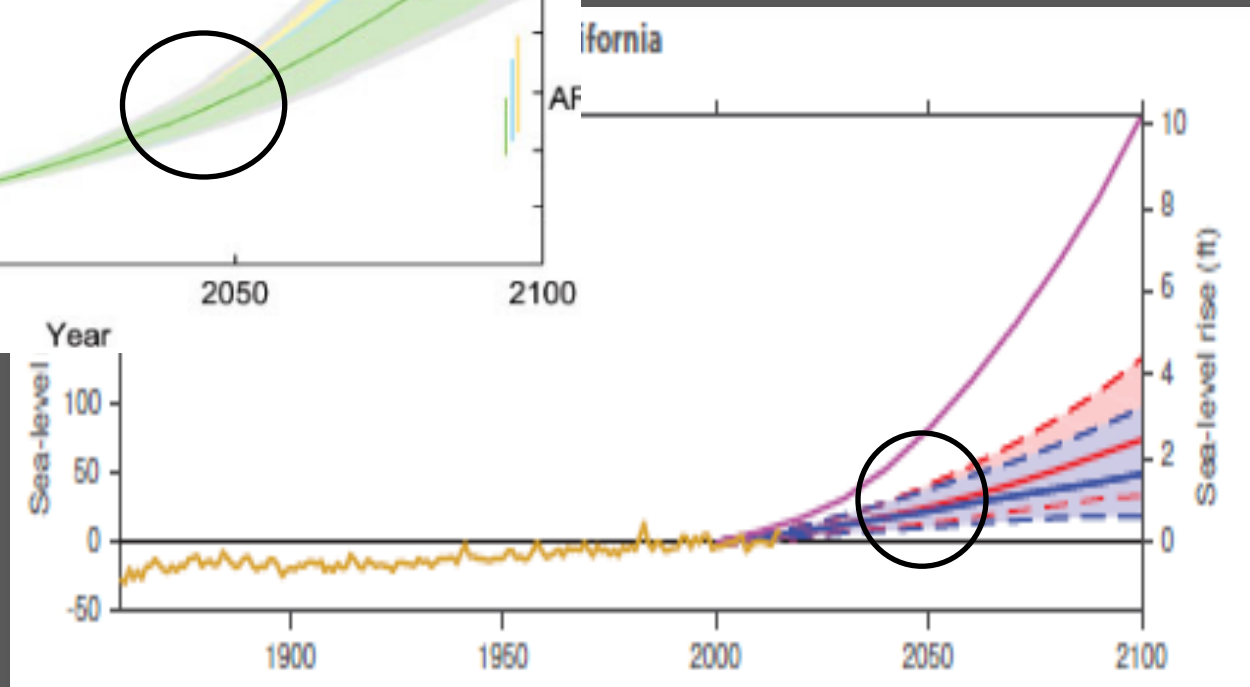
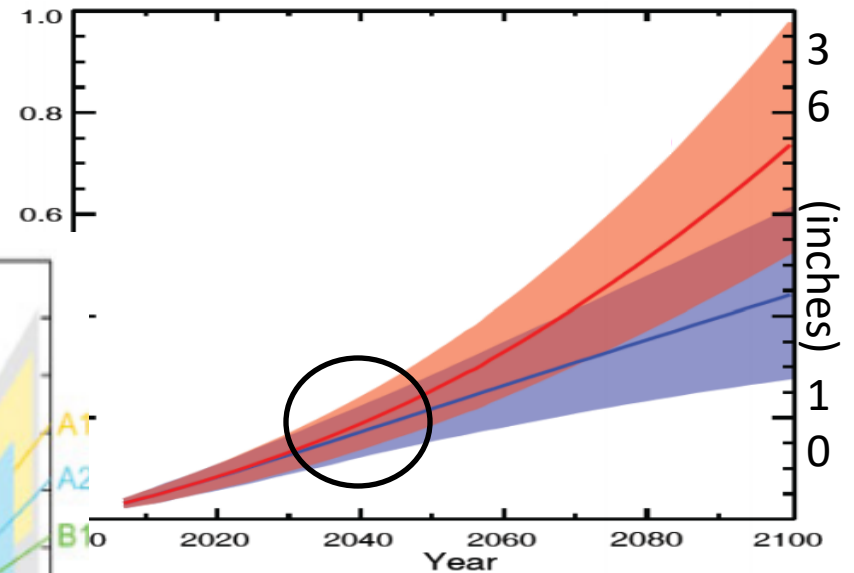
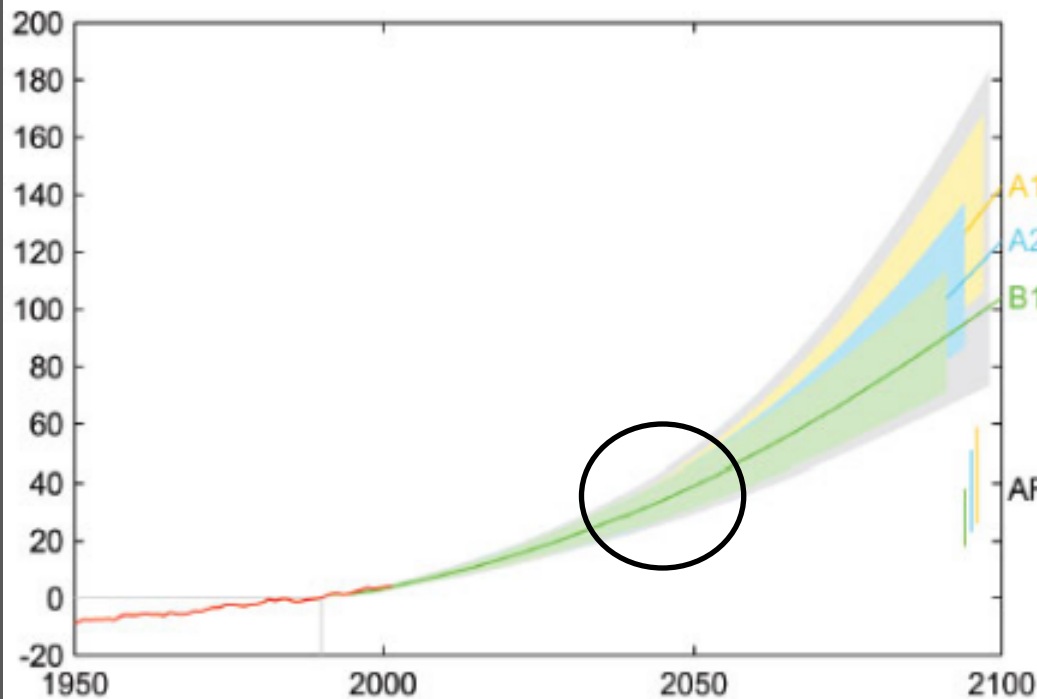


Phase II Projects



- **Adaptation Framework:**
Divides the shoreline by landscape units rather than jurisdictions to identify options best suited to each unit.
- **Adaptation Land Use Planning:**
Identifies gaps between vulnerabilities and General Plan policies and identifies new policies.
- **Capital Planning:**
Identifies infrastructure and other capital improvement projects that can support adaptation.

2030-2050



Here's what you can do to make a difference?

- ☐ Opt up to 100% renewable energy with your electricity provider: MCE Clean Energy <https://www.mcecleanenergy.org/opt-up/> or PG&E <https://www.pge.com/solarchoice/>
- ☐ Turn off electronic appliances when not in use and install LED lights: CA Youth Energy Services will install them for you. Call for an appointment (510) 655-1501
- ☐ Adopt fuel-efficient driving habits, walk, bike, carpool, use public transportation.
- ☐ Buy locally-produced food and shop at farmers' markets: support Marin's farmers and our local economy!
- ☐ Participate in the CA King Tide Photo Initiative and take photos of flooding during Kings Tides and post to: <https://www.flickr.com/groups/cakingtides/>
- ☐ Own a home? Contact BayREN to get your energy score and qualify for rebates on energy upgrades <http://www.bayareaenergyupgrade.org>
- ☐ Learn about carbon sequestration in Marin's rangelands and open space <https://www.marincarbonproject.org/>

Thank You



Leslie Lacko • llacko@marincounty.org