

# Flood Zone 3 Update



MARIN COUNTY FLOOD CONTROL AND WATER  
CONSERVATION DISTRICT

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TAMALPAIS COMMUNITY SERVICES DISTRICT

JULY 10, 2024

**Judd Goodman, PE**  
Senior Civil Engineer



# Agenda

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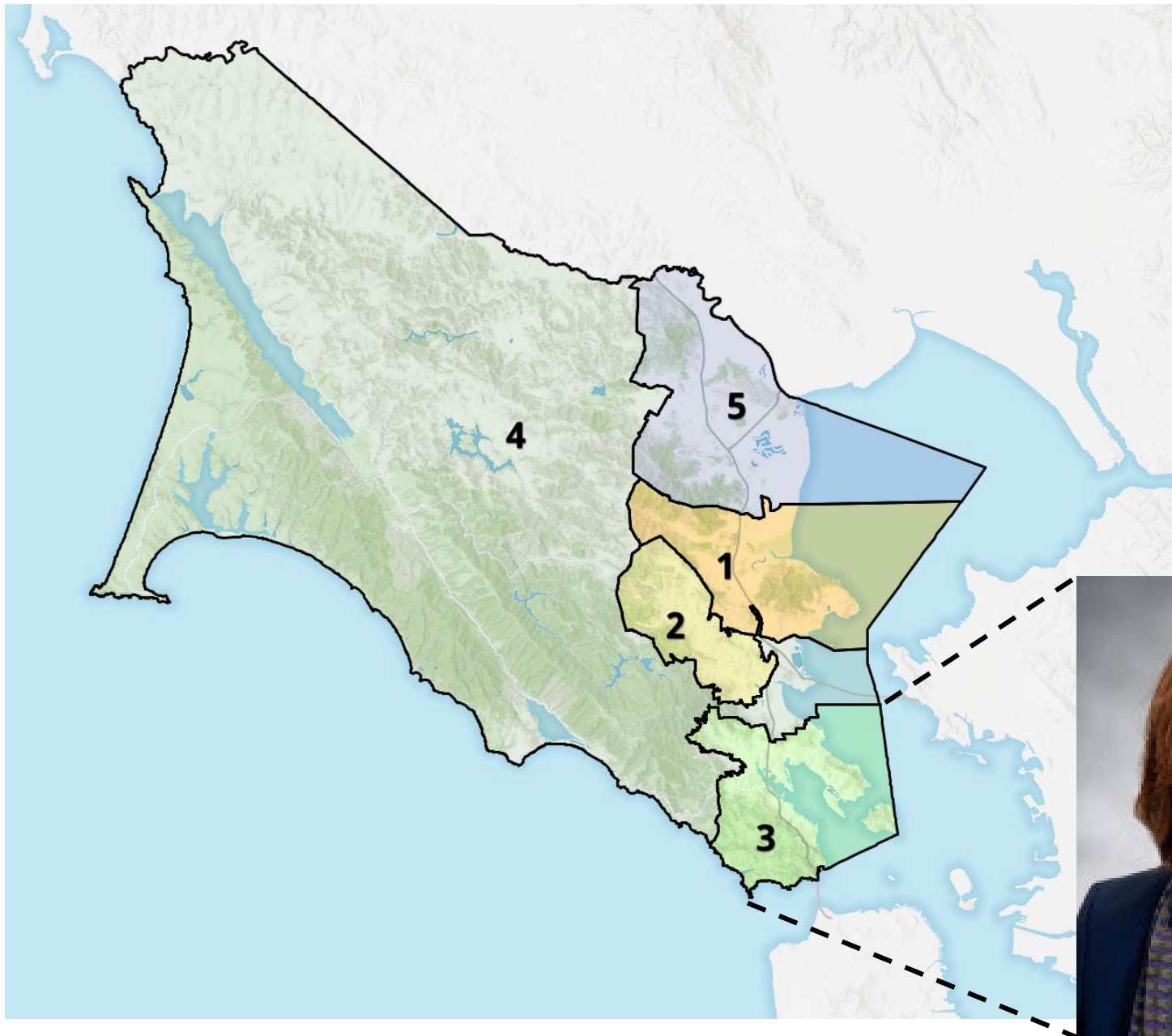
- Introduction
- Watersheds
- Flood Zones
- Projects
- Climate Change & Sea Level Rise



# Introduction

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Judd Goodman, P.E.  
Senior Civil Engineer  
Marin County Flood Control District



**Stephanie Moulton-Peters**  
District 3

The total population: 52,300  
Cities/Towns population: 32,760  
Unincorporated population: 19,540

[District 3 Homepage](#)



# Flood Control District Mission

- Reduce flood risk to life and property
- Enhance creeks, wetlands and bays
- Plan, design, construct, operate, and maintain the District's flood infrastructure
- Work with citizen groups and other County teams, municipalities, and local/regional agencies.



# How Residents Can Help

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- Inspect and clear your driveway culvert and drainage
- Reduce debris that reaches the street
- Place green waste in the compost
- Do your part before the rain



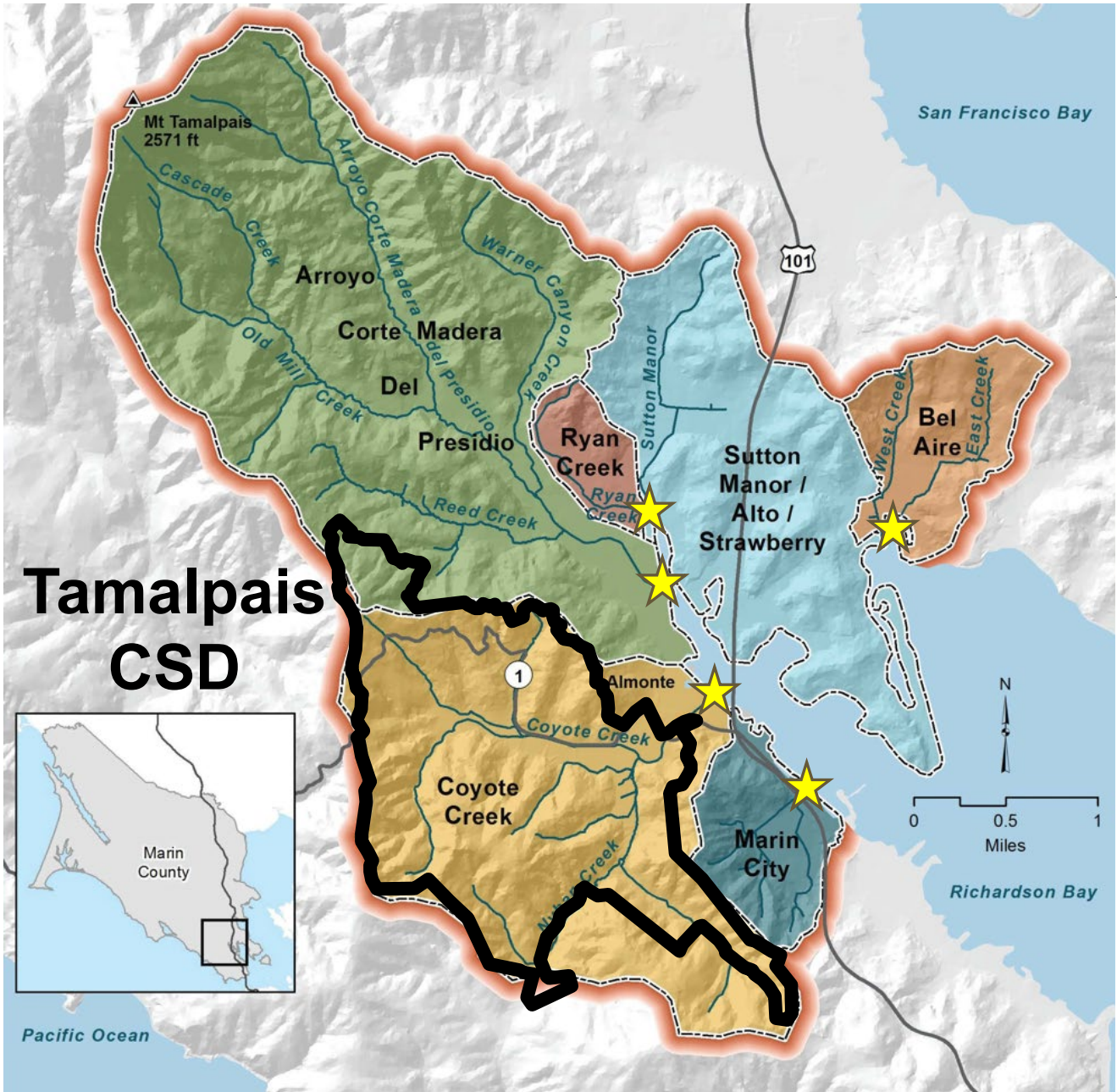
# Watersheds

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# Southern Marin Watersheds

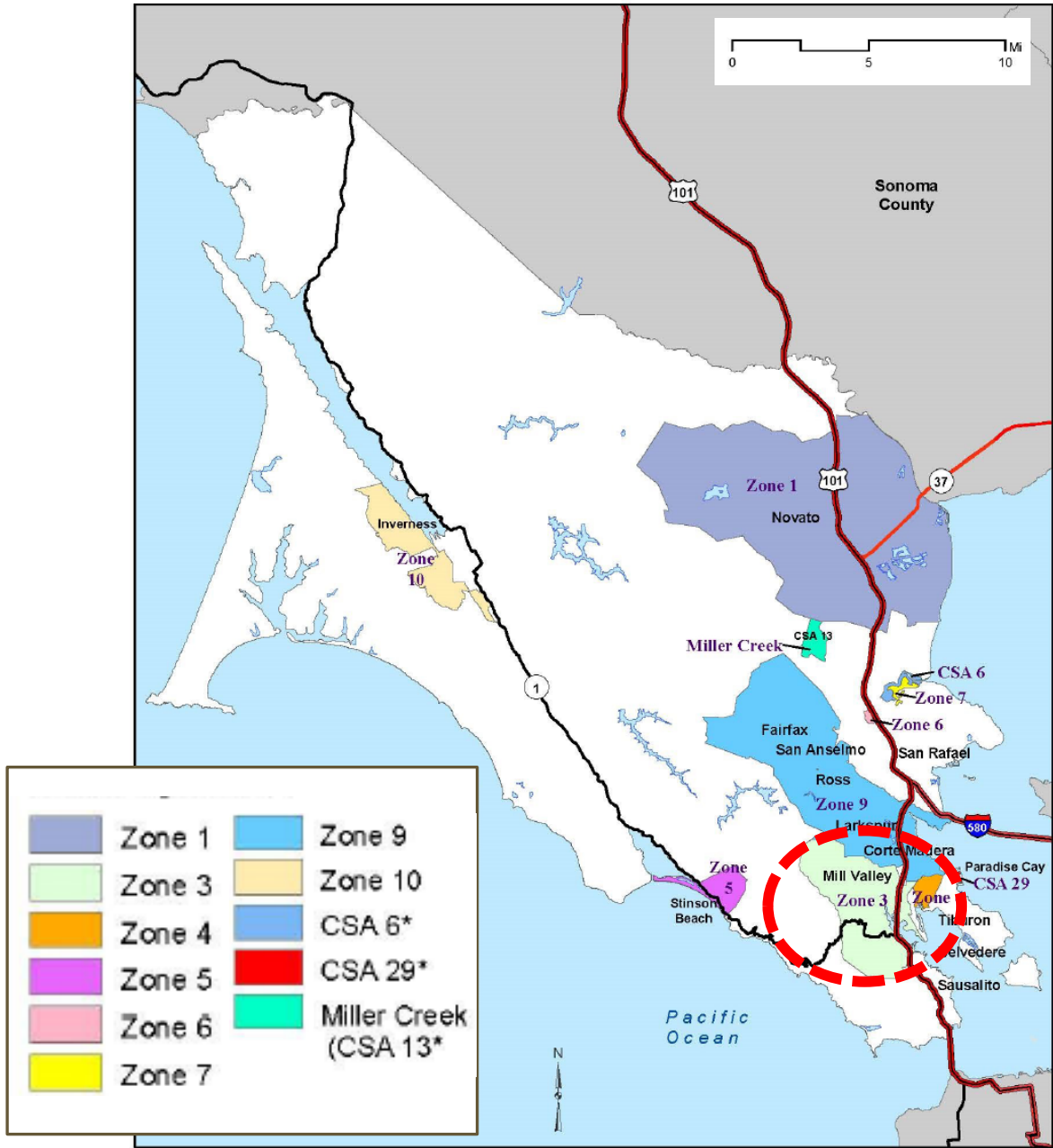


- Marin City
- Coyote Creek
- Arroyo Corte Madera del Presidio
- Ryan Creek
- Sutton Manor/Alto/Strawberry
- Bel Aire

# Flood Zones

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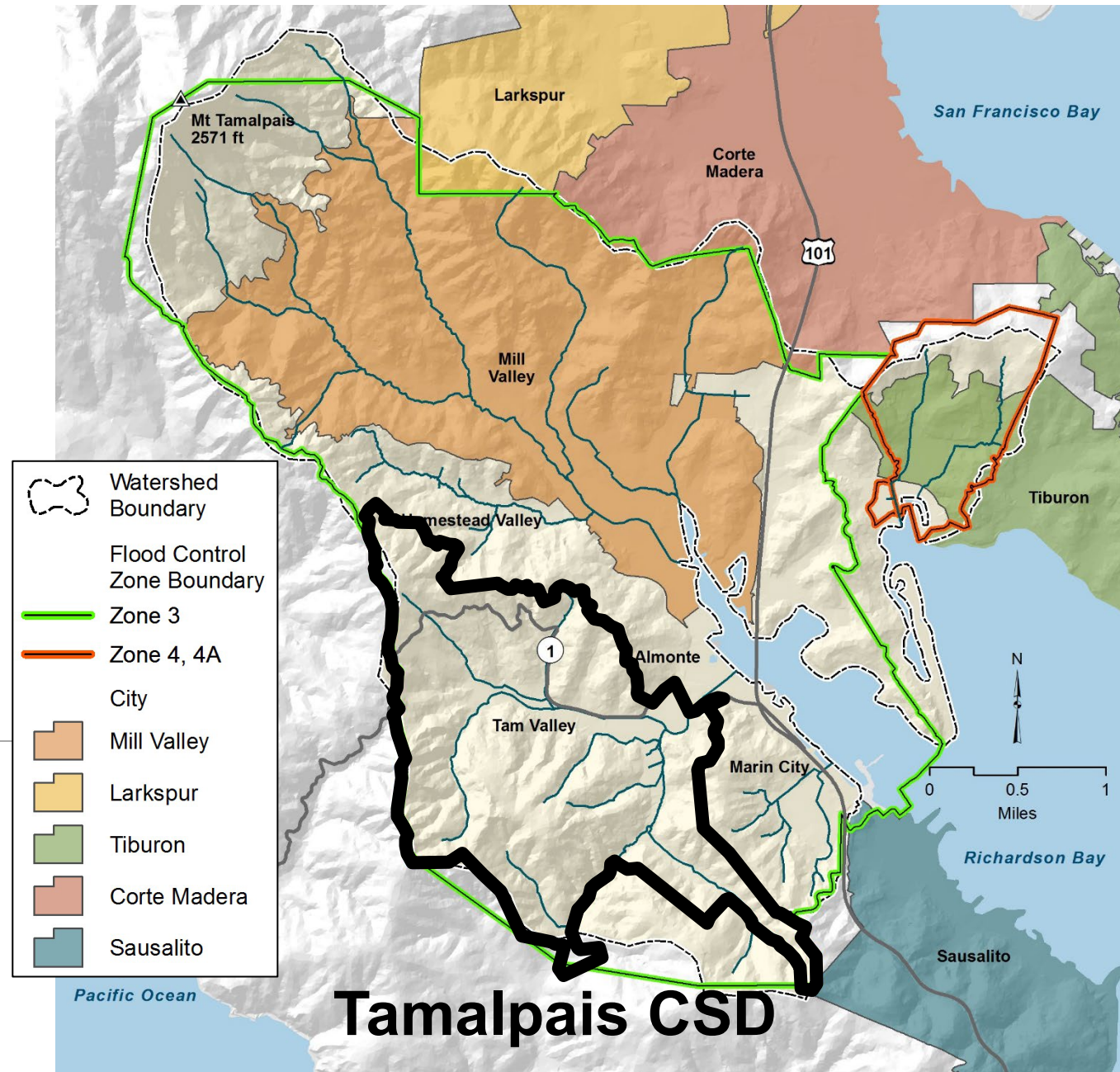




Zone Name	# Parcels	Sq Miles	Miles of Earthen Levees*	# Pumps	# Pump Stations Nearing End of Useful Life
FCZ 1 - Novato	21,000	78.56	9.17	8	2
FCZ 3 - Richardson Bay	12,000	13.34	1.18	13	1
FCZ 4 - Bel Aire Tiburon	800	0.85	0.15	8	1
FCZ 5 - Stinson Beach	900	2.28	0	0	NA
FCZ 6 - Rafael Meadows	400	0.16	0	0	NA
FCZ 7 - Santa Venetia	900	0.42	2	14	4
FCZ 9 - Corte Madera	21,000	29.14	1.06	0	NA
FCZ 10 - Inverness	1,215	6.48	0	0	NA



# Flood Zone 3





# Projects

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# Project Types

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- Maintenance
- Capital Improvements
- Studies






# Maintenance

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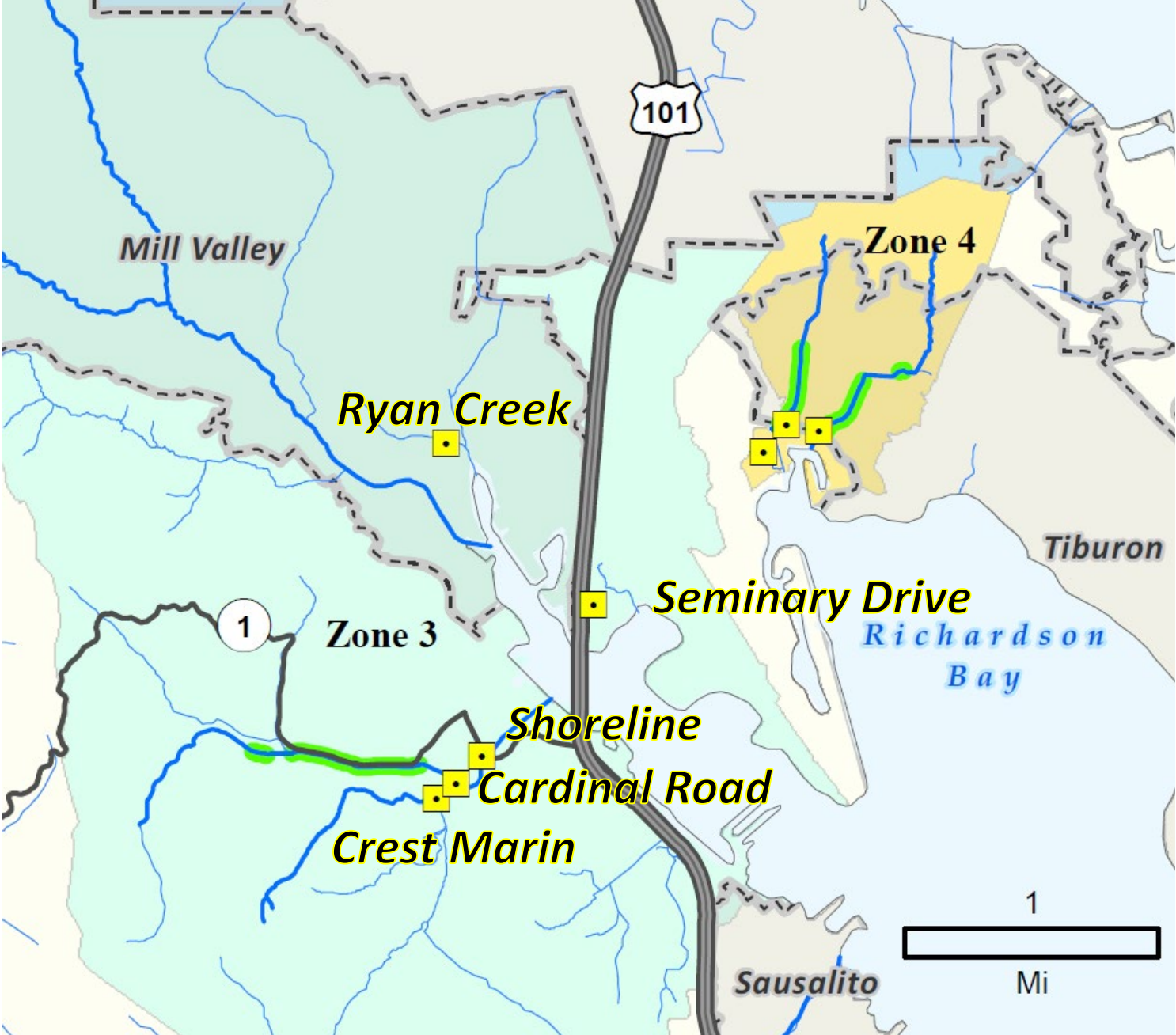


**Marin County Flood Control and  
Water Conservation District  
Work Plan, FY 2023-2024**

**Sheet 2 - South**

-  Pump Maintenance
-  Creek and Levee Maintenance
-  City & Town Boundaries

Marin County Flood Control & Water Conservation District, 05-2023





# Pump Station Maintenance

- **Regular maintenance** for all pump stations occurs **annually**
- **Major maintenance** on **6 year** interval:
  - Crest Marin PS
  - Seminary Drive PS

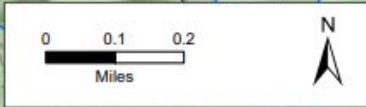
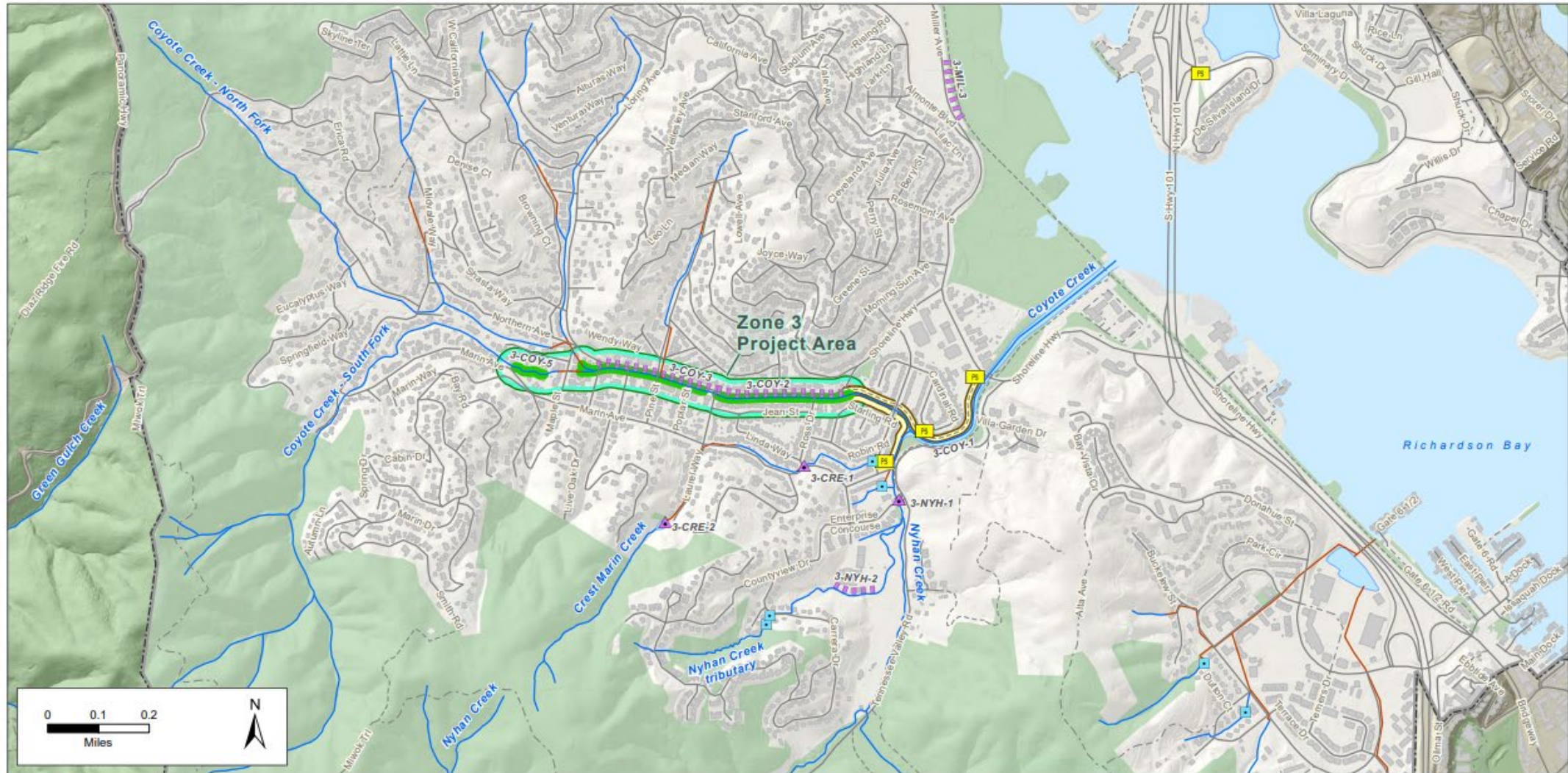


# Creek and Levee Maintenance

- **Vegetation**
- **Levees**
- **Tide gates**
- **Coyote Creek Inspection**
- **Sediment removal**







### Flood Control Zone 3 - South

### MAP 12

Marin County Flood Control and Water Conservation District - June 2021



- Creek Maintenance**
- █ Vegetation
  - ▲ Sediment

- Stream**
- Channel
  - Culvert

- Trash Rack
- Pump Station
- Levee Maintenance

- Building Footprint
- Public Land
- Flood Control Zone 3 Administrative Boundary





# Capital Improvements

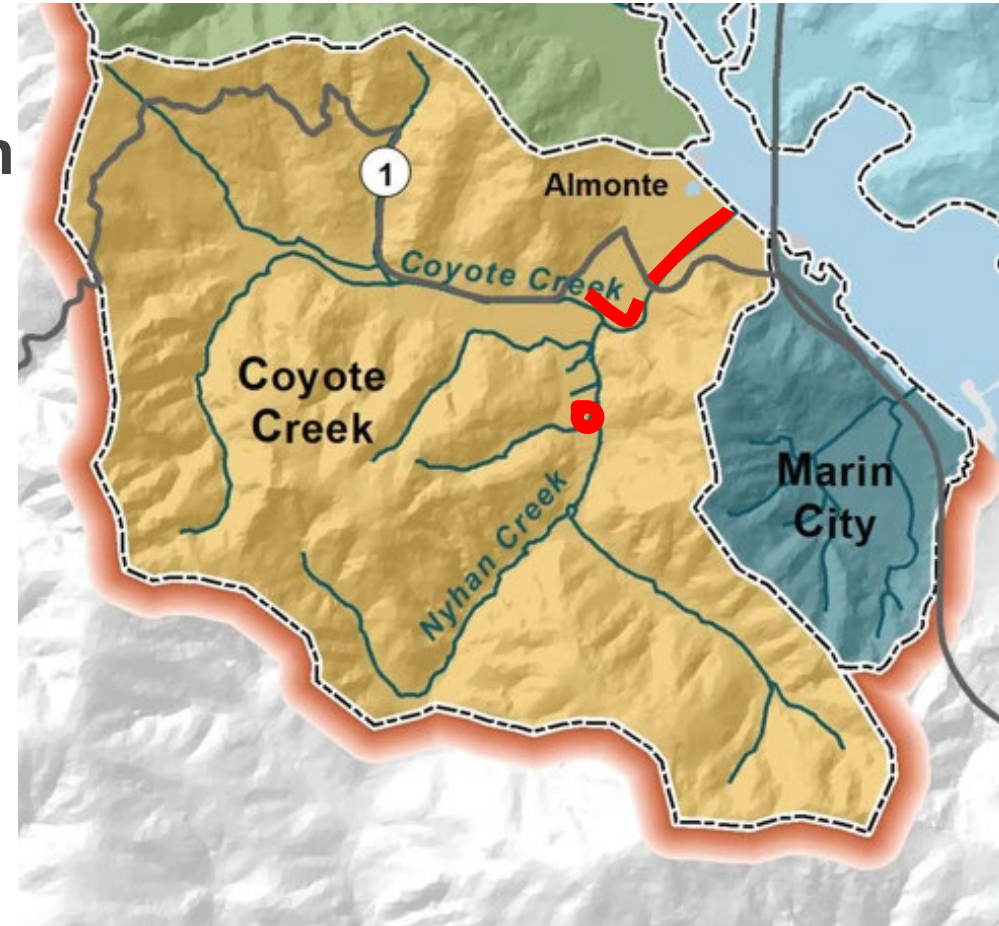
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# Capital Improvement Plan

## Zone 3

- **Crest Marin Pump Station Rehabilitation**
- **Cardinal Levee Seepage Mitigation**
- **Coyote Creek to Bothin Marsh Dredge**
- Marin City Pond Pump Station
- Marin City Pond Dredge



# Crest Marin Pump Station Rehabilitation

## Description

- Built in 1978, end of design life
- Drains low-lying neighborhood and creek

## Schedule

- Design & Permitting = late 2024
- Construction = 2027

## Cost

- \$4.6 Million





# Cardinal Levee Seepage Mitigation

## Description

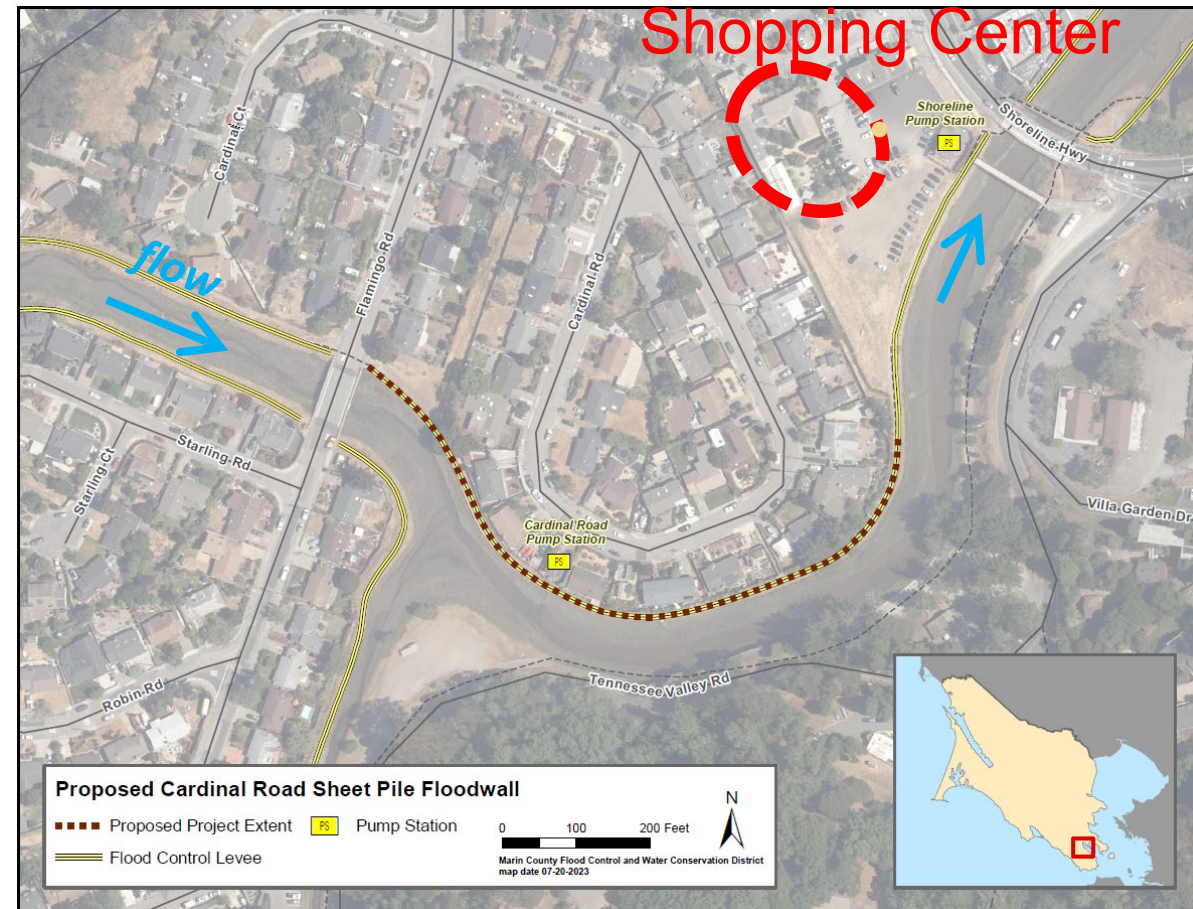
- Replace 1,100 ft of levee on Coyote Creek
- Seepage due to rodents

## Schedule

- Design & Permitting = late 2024
- Construction = 2026

## Cost

- \$3.3 Million



# Coyote Creek to Bothin Marsh Dredge

## Description

- Limited creek dredging to increase freeboard
- Raise marsh for Sea Level Rise
- Collaboration with Marin Parks and One Tam



## Schedule

- On Hold  
pending funding

## Cost

- \$3 Million



# Studies

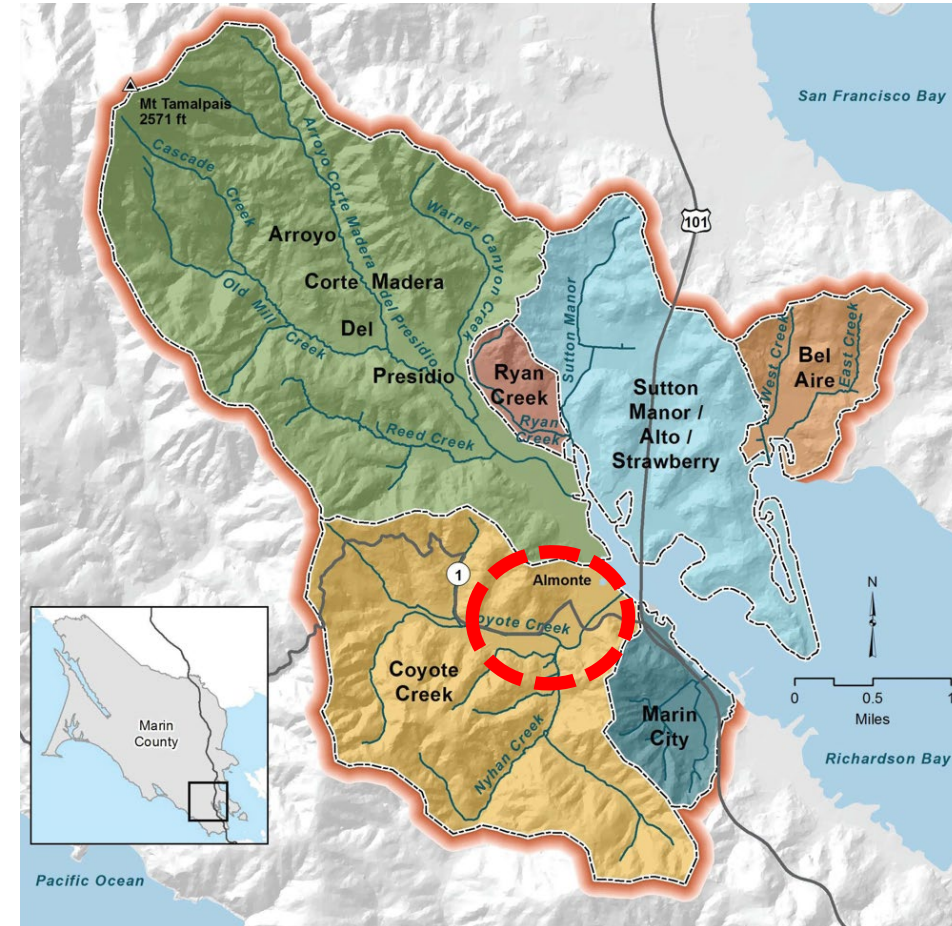
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# Studies & Master Plans

## Zone 3

- **Tamalpais Valley Interior Drainage Study**
- **Marin City Stormwater Plan**
- **Manzanita Area Flood Reduction Study**
- **Hydrology & Hydraulics Manual**





# Tamalpais Valley Interior Drainage Study

## Description

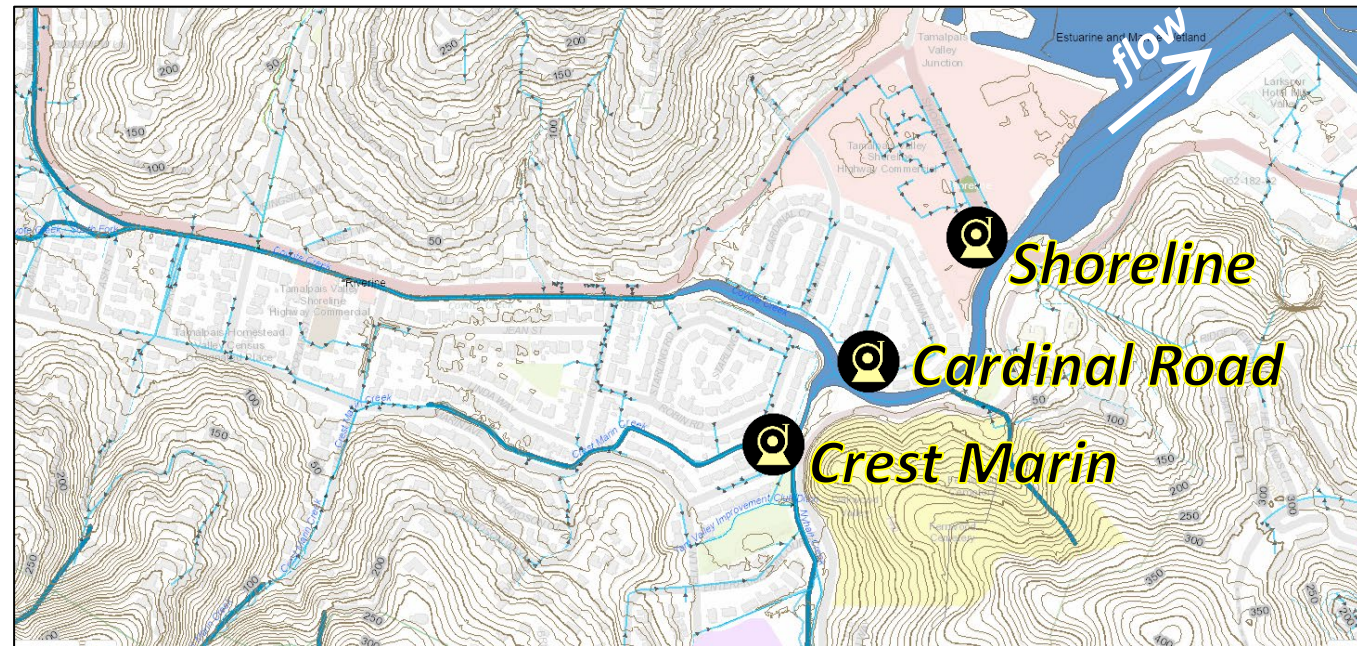
- Reduce flood risk in low lying neighborhoods
- Improve delivery of runoff to 3 pump stations
- Evaluate pump station sizing and operations

## Schedule

- Summer 2024

## Cost

- Flood Control Staff Time



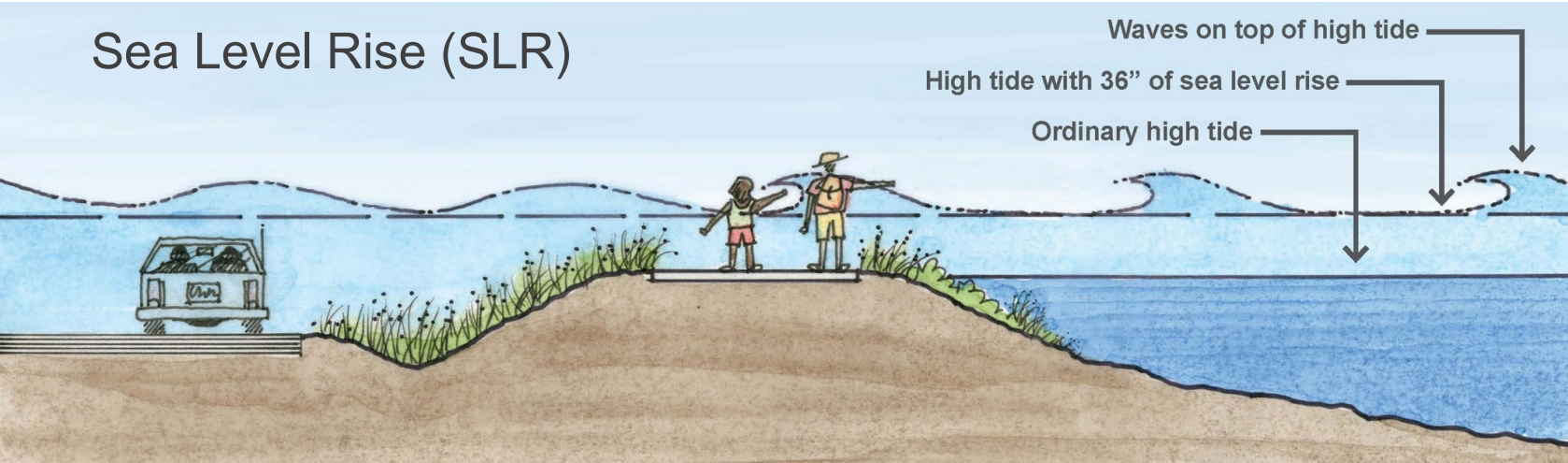
# Climate Change & Sea Level Rise

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# Climate Change Effects



Rainfall Intensity

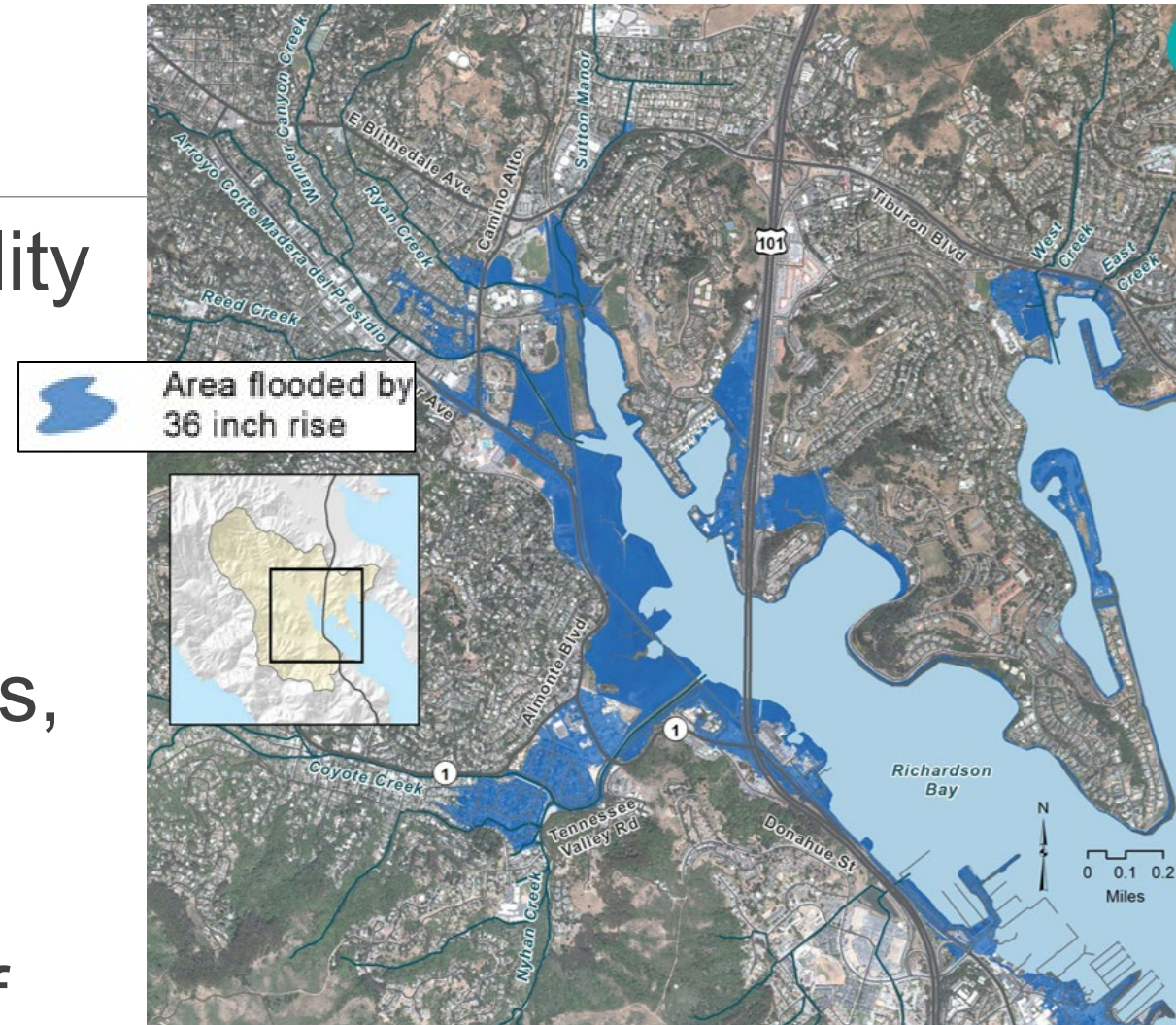


Wildfire



# SLR Planning

- Marin Shoreline Vulnerability Assessment
- Developing Governance structure
- Considered in flood studies, but not yet driving new infrastructure
- Transportation Authority of Marin SLR Study



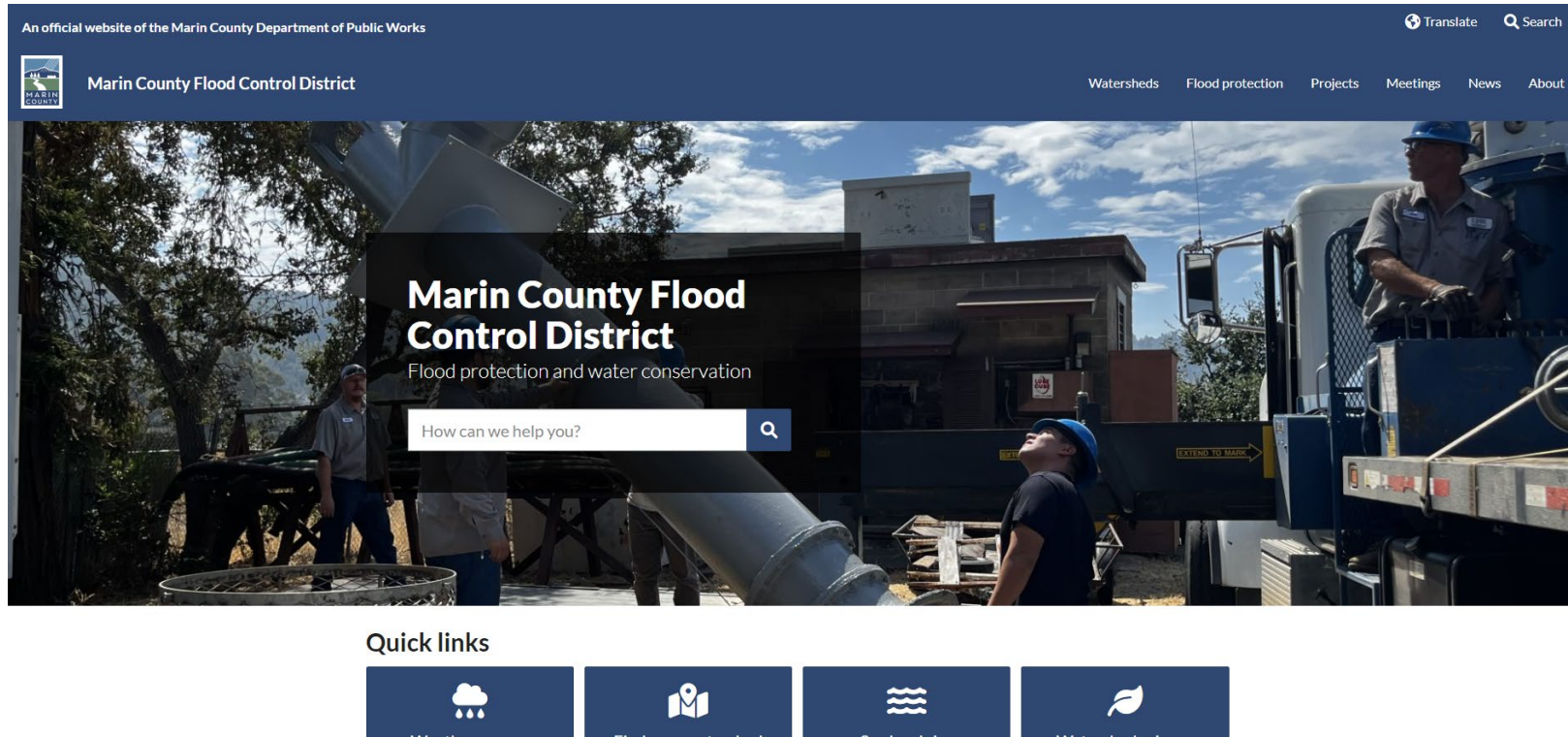


- Caltrans project
- Enhance access
- Address recurring flooding and sea level rise
- State Route 1, US-101, Manzanita Park & Ride lot
- Seeking funds
- Draft Environmental Document = 2027





# Thank You!



Visit [marinflooddistrict.org](http://marinflooddistrict.org)



# Question & Answer

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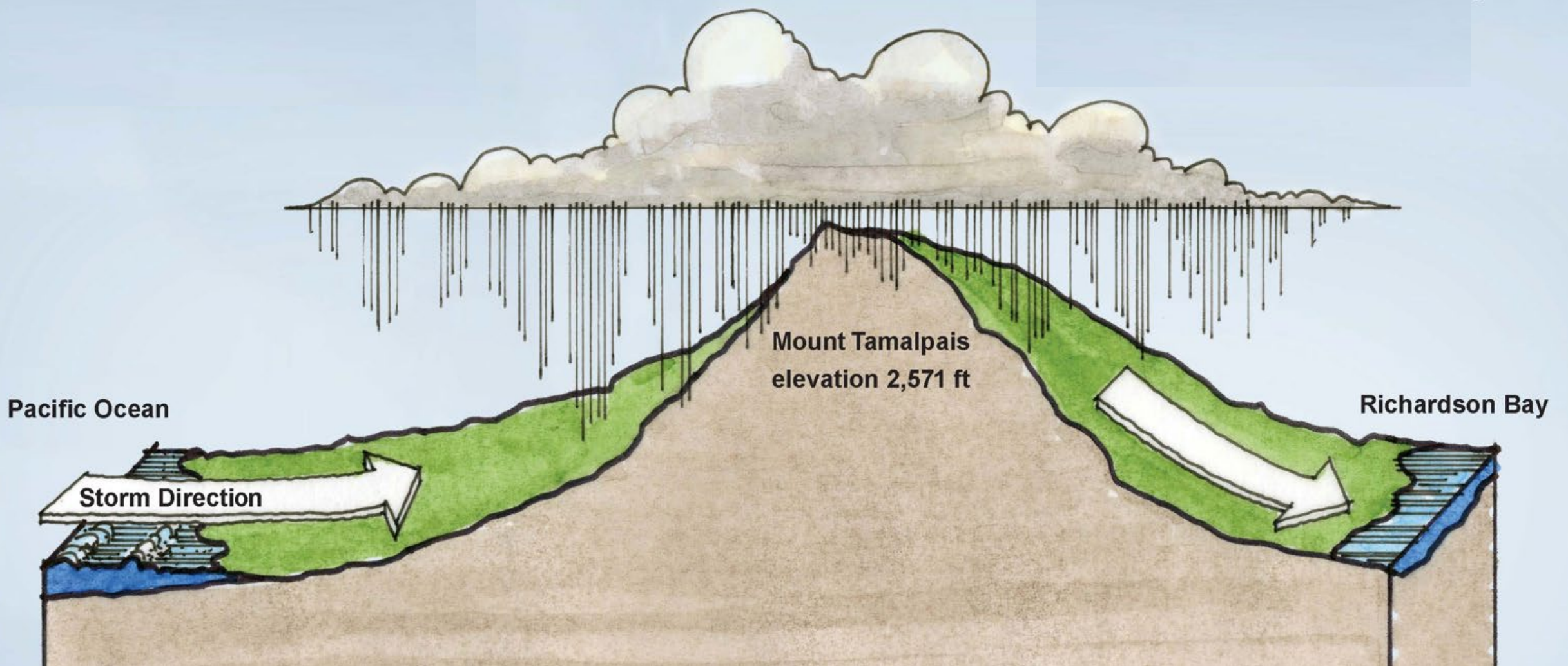


# Power Pole @ Crest Marin Pump Station

- Current temporary pole is infeasible
- Large generator will increase footprint
- No room for service truck
- Permanent pole would interfere with utilities
- Seeking safe permanent tower location with PG&E

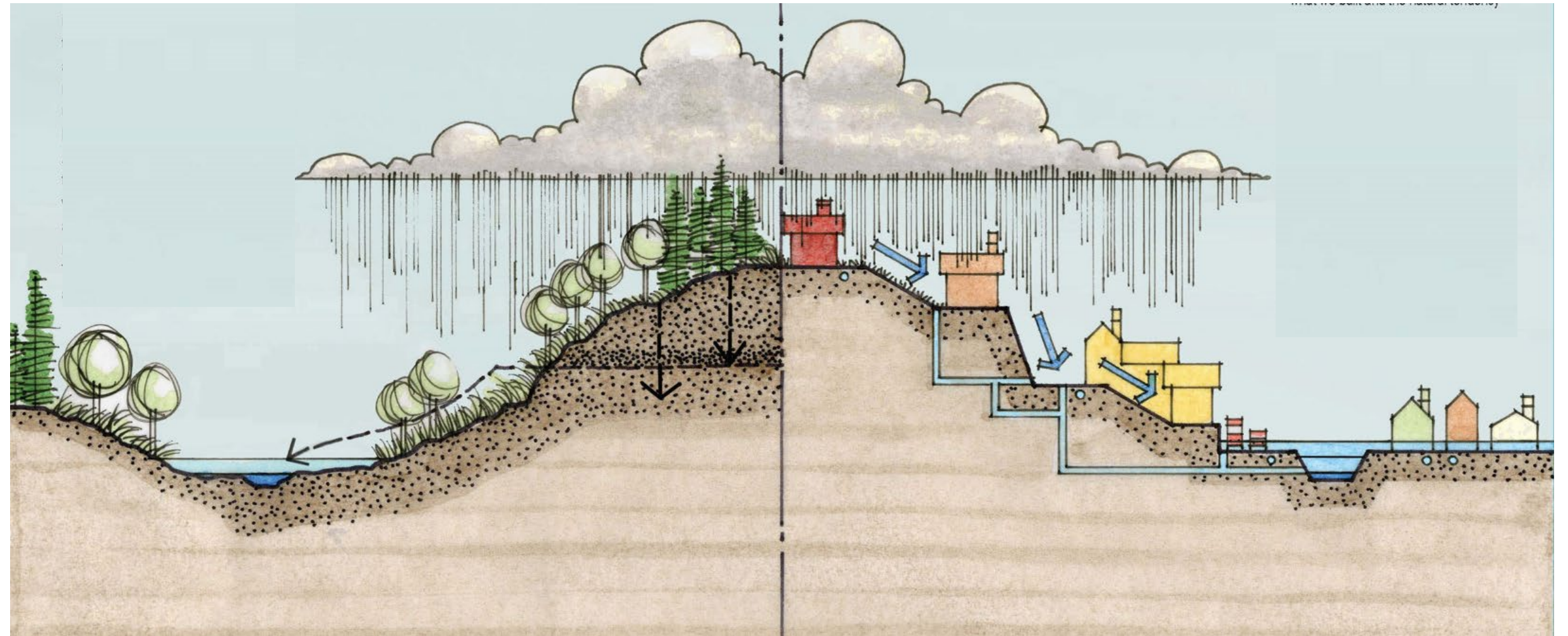


# Precipitation



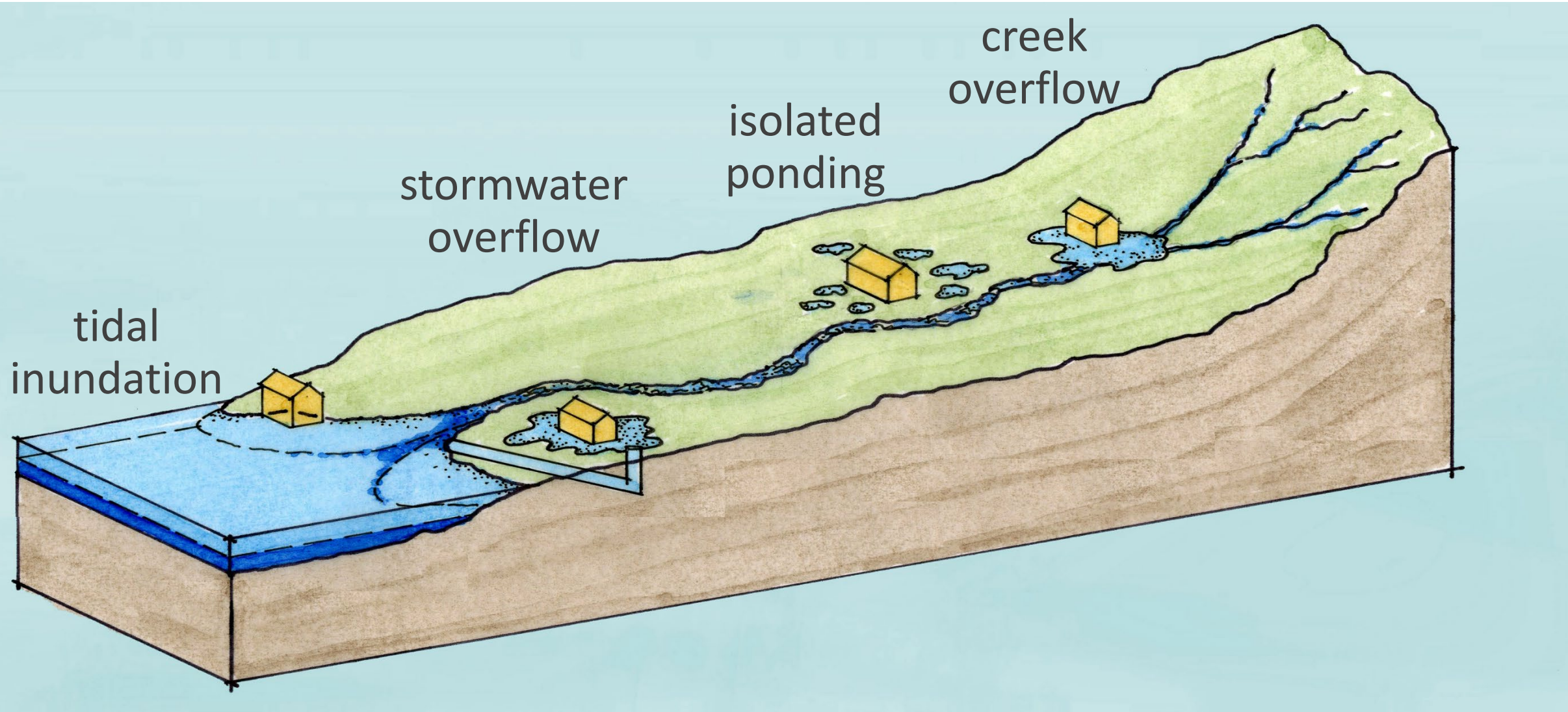


# Runoff





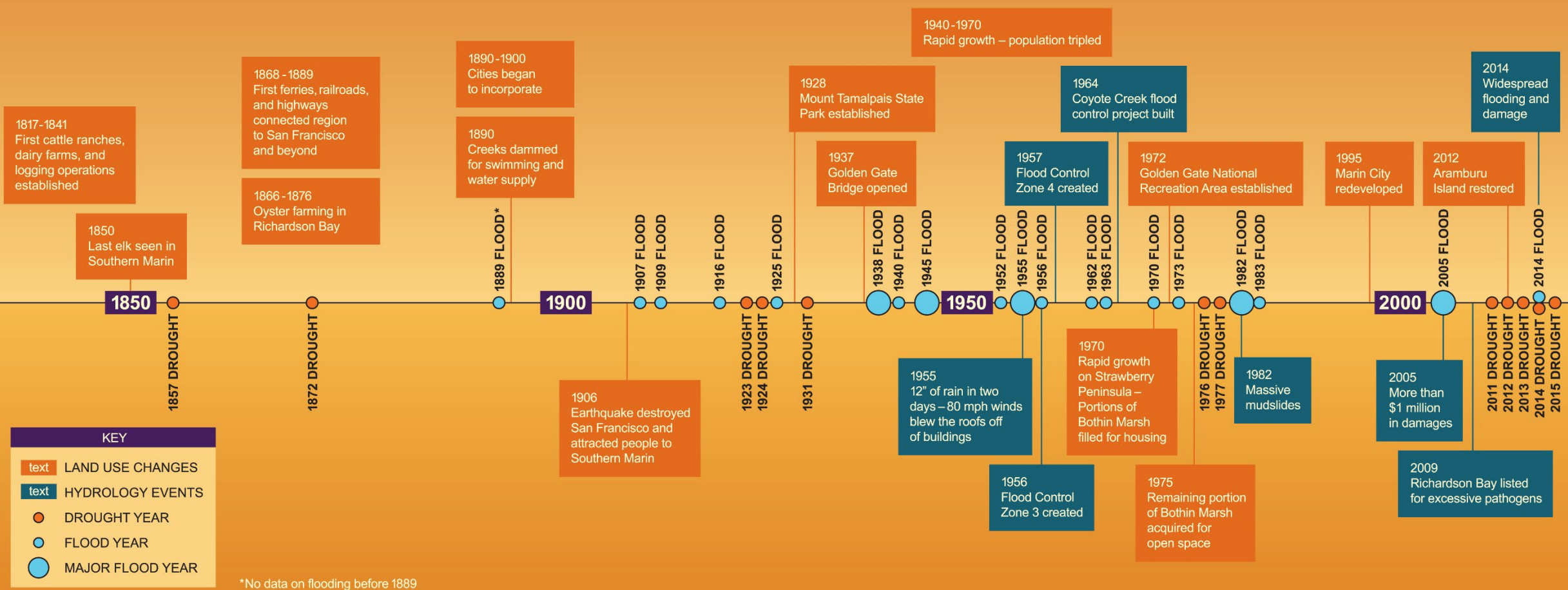
# Flooding





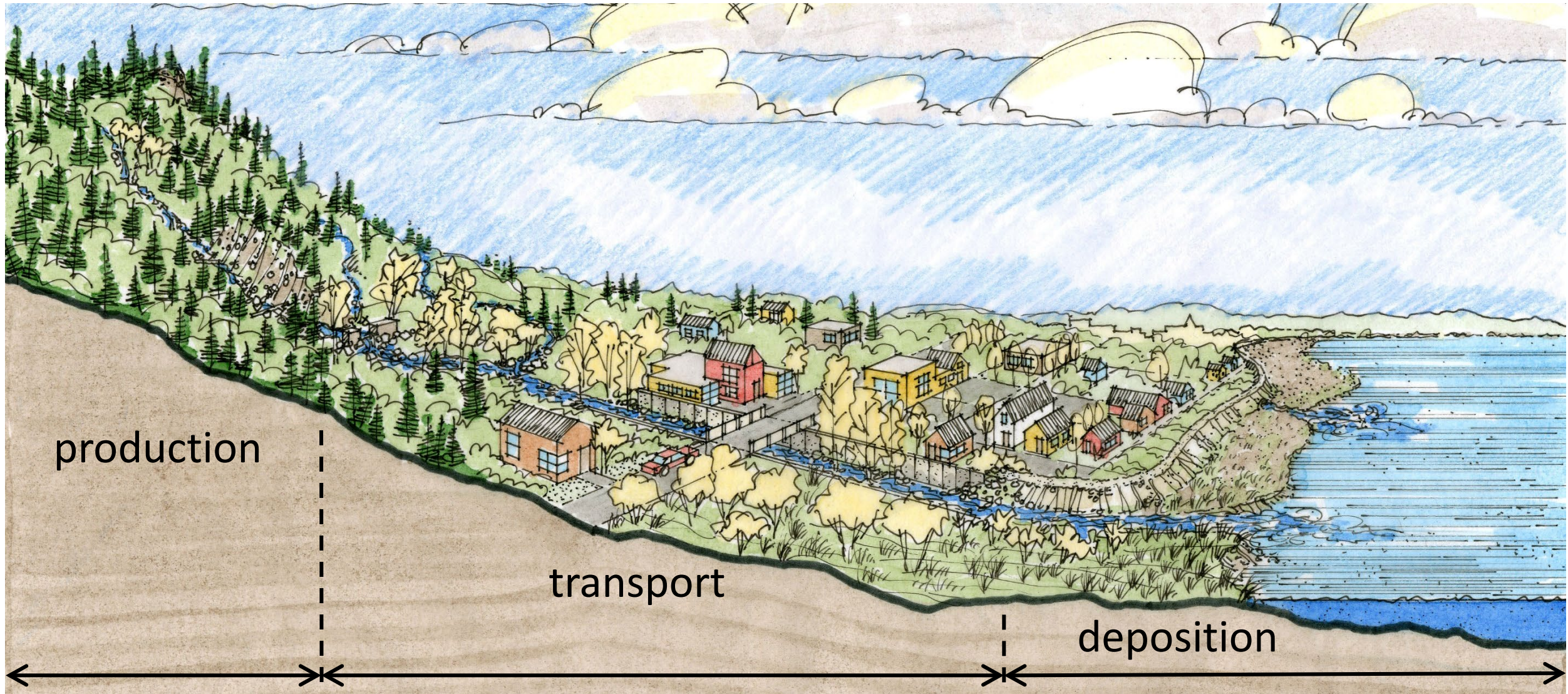


# Timeline





# Sediment







# Marin City Pond Pump Station

## Description

- Outlet for entire watershed
- New Pump Station (50 cfs)
- Improve entrance/exit of City

## Schedule

- Design & Permitting = April 2025
- Construction = Summer 2026

## Cost

- ~\$10 Million

