OneShoreline
Building Solutions for a Changing Climate

Board of Directors Meeting

San Mateo County Flood and Sea Level Rise Resiliency District

AGENDA October 27, 2025 4:00 PM

1. **Roll Call**

2. **Public Comment** Persons wishing to address the Board on District-related matters not on this Agenda, as well as items listed under Action to Approve the Consent Agenda, may speak for up to two minutes; comments on Agenda items shall be heard during that item for up to two minutes.

3. **Action to Set the Agenda and Approve the Consent Agenda**

   A. Approve the Minutes of the September 22, 2025 District Board meeting

4. **Regular Business**

   A. Presentations by OneShoreline's 2025 Summer Fellows: Stanford PhD student Monique Santoso and Master's student Noelle Villanueva, and Middlebury Institute of International Studies Master's student Nate Buchanan

   B. Authorize the CEO to execute an Agreement with Jacobs Engineering Group Inc. for the San Bruno Creek Resilience Project for an amount not to exceed $1,465,000, and authorize a $55,000 contingency controlled by OneShoreline

   C. Adopt Resolution No. 2025-10-27 to accept a grant of up to $2,033,726 from the California Ocean Protection Council for OneShoreline to complete the *San Mateo County Southern Bayside Cities Shoreline Resilience Plan* for East Palo Alto, Menlo Park, Redwood City, San Carlos, and Belmont in compliance with Bay Conservation and Development Commission (BCDC) Regional Shoreline Adaptation Plan guidelines for local jurisdictions

5. **Chair's Report** *

6. **CEO's Report** *

7. **Board Member Reports and Items for a Future Agenda** *

8. **Adjournment**

Agenda Item 4A: Presentations by OneShoreline's 2025 Summer Fellows, graduate students Monique Santoso, Nate Buchanan, and Noelle Villanueva

As in previous summers, OneShoreline hosted two Stanford University graduate students through a fellowship program of the Haas Center for Public Service. OneShoreline also hosted a graduate student from the Middlebury Institute of International Studies for the first time.

Monique Santoso

- 3rd year PhD candidate in Communication (Stanford)
- Research on best practices for communicating flood early warnings
- Developed a draft communication protocol for OneShoreline's flood early warning system

Nate Buchanan

- Master's student in Environmental Policy Management (Middlebury)
- Supported the Millbrae and Burlingame Shoreline Resilience Project
- Reviewed city plans and policies throughout San Mateo County related to flooding and sea level rise

Noelle Villanueva

- Master's student in Sustainability (Stanford)
- Created ArcGIS StoryMaps for OneShoreline projects in San Bruno and Brisbane
- Conducted preliminary research for OneShoreline's new project on insurance solutions

Monique, Noelle, and Nate will briefly present their work and answer questions.

Early Warning Systems

Monique Santoso
Ph.D. Candidate
Stanford Department of Communication
October 27, 2025

Stanford School of Humanities & Sciences

OneShoreline
Building Solutions for a Changing Climate

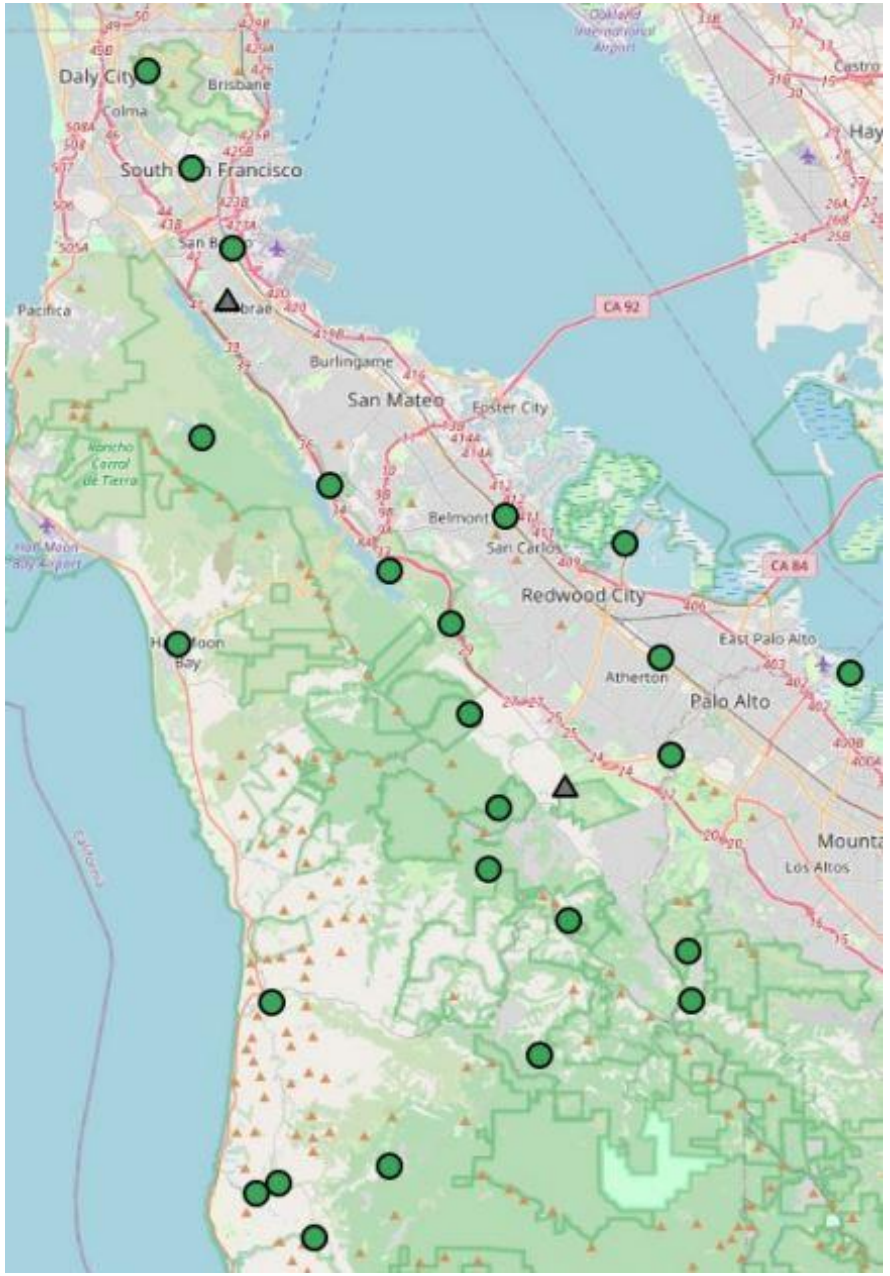
About Monique

- **Bachelor's Degree:** Environmental Science and Psychology, Middlebury College, VT
  - **Honors Thesis:** The Role of Perspective-Taking and Value Orientations in Communicating Environmental Policy
- **PhD Candidate:** Human-Computer Interaction, Communication, Stanford University, CA
  - **PhD Minor:** Management Science and Engineering
- **Research Focus:** Emerging technologies for community-centered risk communication through computational social science methods

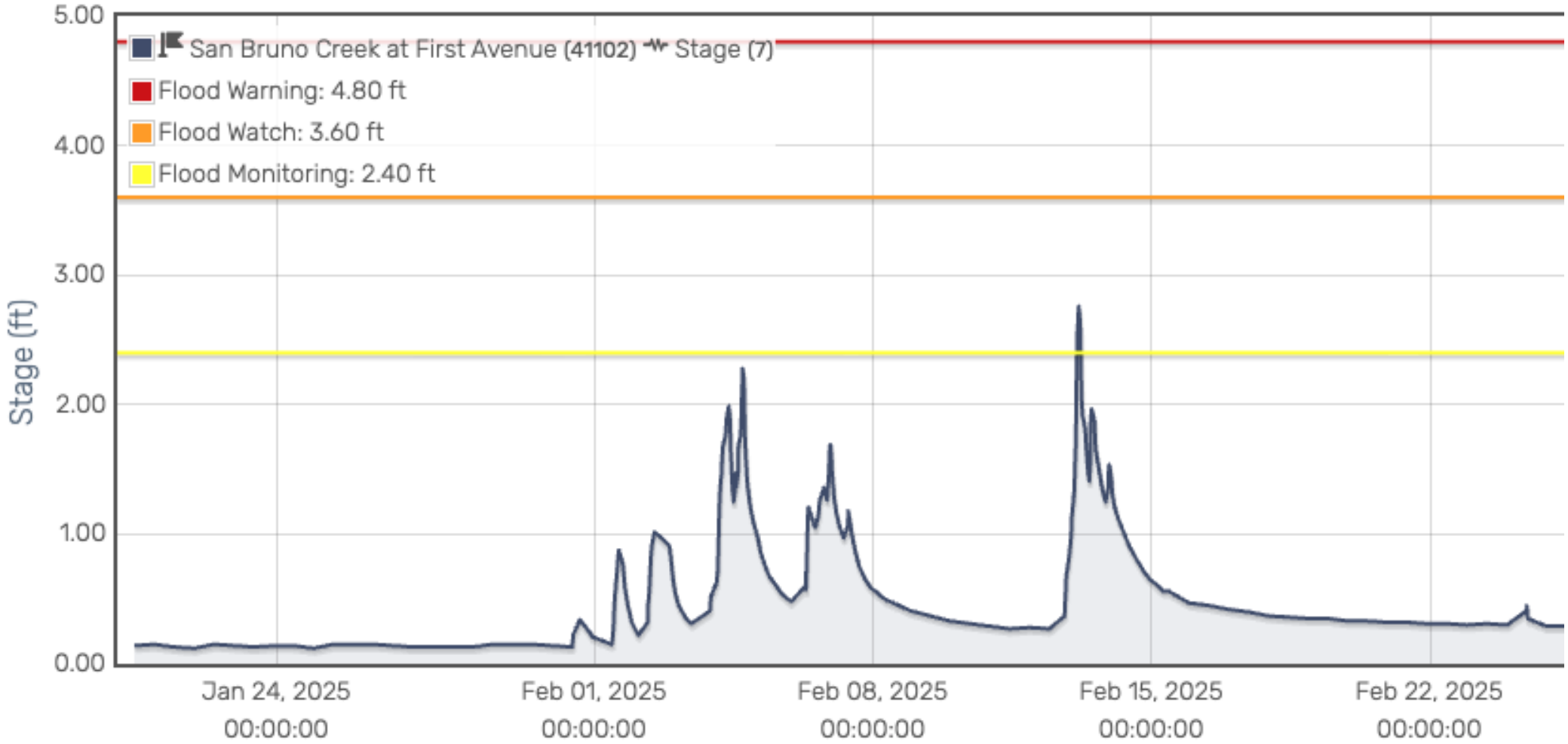
Location of Stream, Rain and Tide Gauges

- OneShoreline **operates, maintains, and is expanding a Flood Early Warning System**.

- It has a countywide network of **33 stream, rain, and tide gauges connected online** that alerts agencies and the public to flooding in real time and collects data to inform the planning of projects.



Flood Early Warning System Dashboards



Core Framework for Early Warning Systems

Drawing from the World Meteorological Organization, the UN Disaster Risk Reduction, International Federal of the Red Cross, and the World Health Organization (AEM Webinar, 2025), the core framework for emergency alert systems that provide early warnings in case of natural disasters is:

1. **Risk Knowledge:** Understanding who and what is at risk.
2. **Monitoring and Forecasting:** Using real-time data and predictive models to assess risk.
3. **Dissemination and Communication:** Delivering clear, coordinated messages.
4. **Response Capabilities:** Ensuring public and related agencies readiness to respond.
5. **Evaluation and Improvement:** Assessing the system after every event for system upgrades.

Image by: World Meteorological Organization

Key Priorities for Early Warning Systems (Kuller et al., 2021)

1. Clear, Actionable Messages
2. Redundant, Multi-Channel Communication
3. Reach Vulnerable Populations
4. Implementation and Operations
5. Technology Integration
6. Community Education and Trust Building
7. Continuous Evaluation

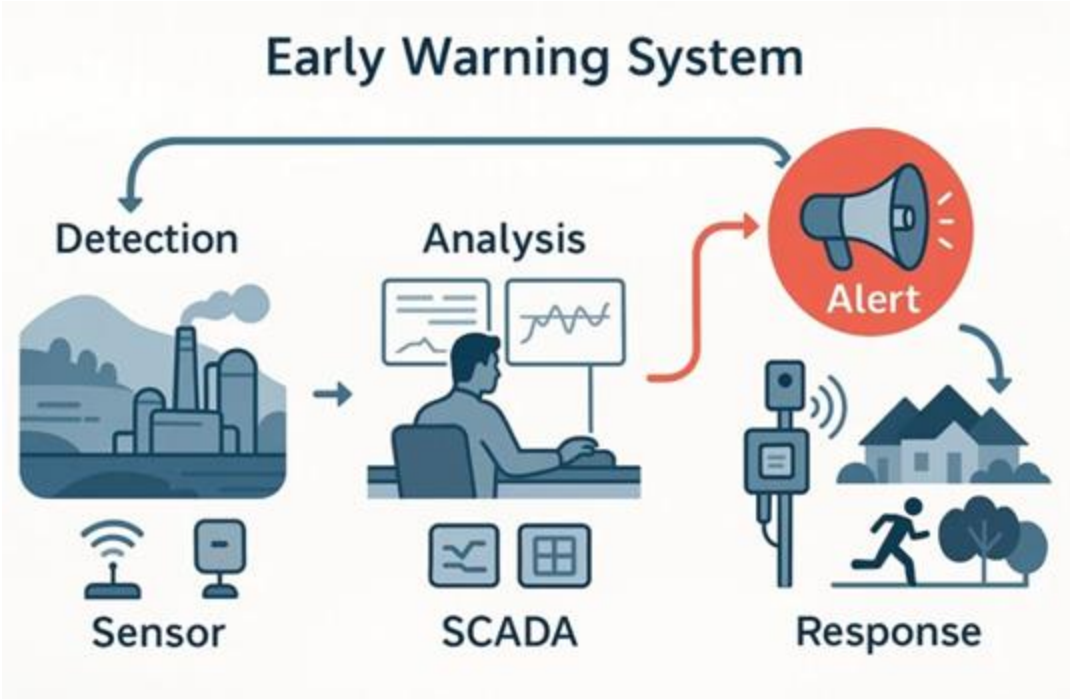
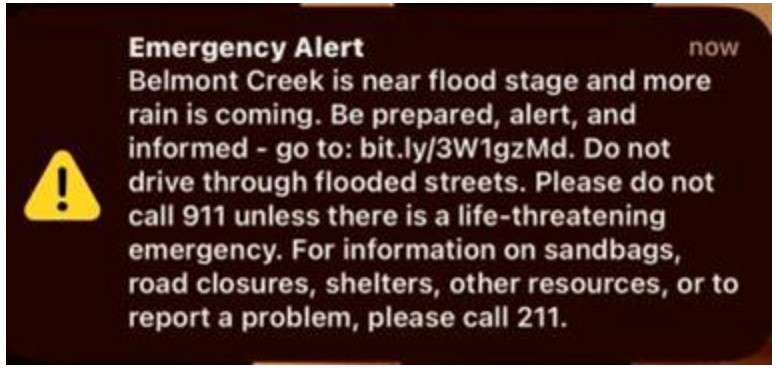
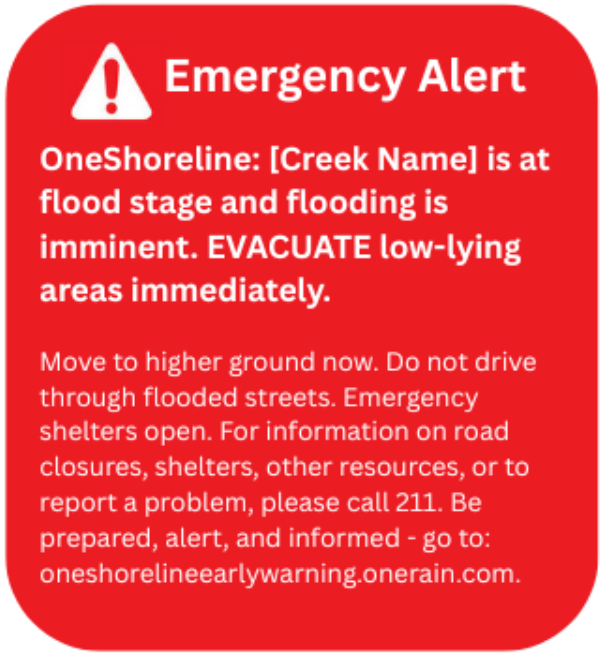


Image by: Lafcarr Project & Designs

Message Framework

- Research consistently demonstrates optimal message structures as follows: **Source, Hazard, Location, Time, Guidance** (Bean et al., 2015; Sutton & Kuligowski, 2019).
- Face-to-face warnings significantly enhance preparedness compared to mass media approaches,
- Utilize **FEMA's Message Design Dashboard 2.0** for research-based template creation.





Next Steps for OneShoreline to Consider

1. Coordinate with the fire, police, and public works departments of cities with flood-prone creeks
    - Confirm communication channels
    - Solicit user feedback

2. Evaluate system performance after every event for continuous improvement as **system maintenance is most likely to fail during flooding events when it's needed most**

3. Refine flood early warning communications to the general public
    - Partner with cities and community groups
    - Evaluate the impact of communications on communities' flood preparedness

Questions?

Fishermen at Anza Fisherman's Park, Burlingame, CA

POLICY ANALYSIS PROJECT: LOCAL CLIMATE ADAPTATION IN SAN MATEO COUNTY

ONESHORELINE SUMMER FELLOWSHIP 2025

Presentation By :

Nate Buchanan

Date :

10/27/2025

BACKGROUND: NATE BUCHANAN

Oyster reef pilot project with Dr. Chela Zabin of SERC, Brisbane, CA

- **Bachelor's Degree: Haverford College**
  - Political Science; Environmental Science
- **Undergraduate Thesis:** *Managed Retreat in the United States: Obstacles and Opportunities*
- **Master's Candidate: Middlebury Institute**
  - Environmental Policy Management; Coastal and Ocean Resource Management
- **OneShoreline**
  - Flood Resilience Fellow: Projects in Millbrae, Burlingame, San Bruno, and Brisbane

Policy Analysis Project: Local Sea Level Rise Adaptation Preparedness

Tracking climate adaptation planning in bayside and inland cities in San Mateo County

City of Burlingame Shoreline Bird Sanctuary, Burlingame, CA

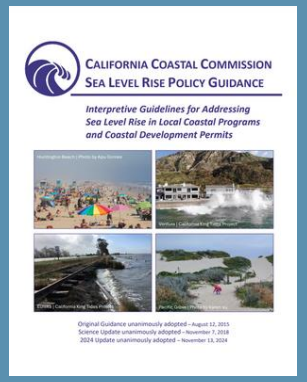
PROJECT PURPOSE

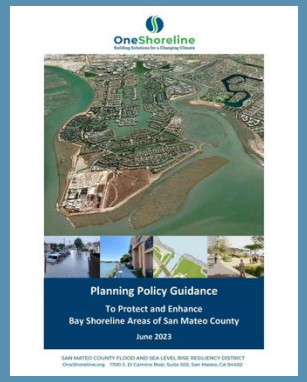
Goal: Conduct a comprehensive survey and analysis of sea level rise and climate-induced flood adaptation policy within the municipalities of San Mateo County.

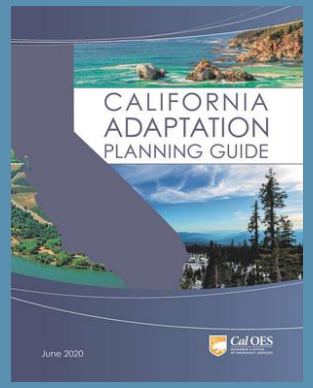
- Identify adaptation planning patterns among SMC cities
- Highlight exemplar cases of local flood adaptation planning
- Track progress and pinpoint areas for continued growth

METHODOLOGY

1 Reviewed Climate Adaptation Guidance







2 Developed Assessment Criteria

1.1 **Use of best available SLR science** and SLR mentioned in concrete policy or goal

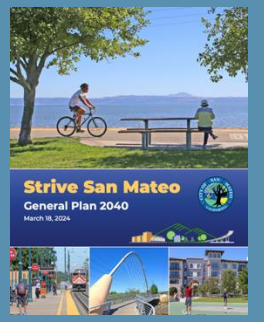
1.2 **Climate change precipitation** mentioned in flood planning policy or goal

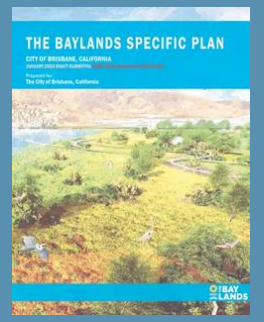
1.3 **Regional collaboration** and coordination for climate adaptation in policy or goal

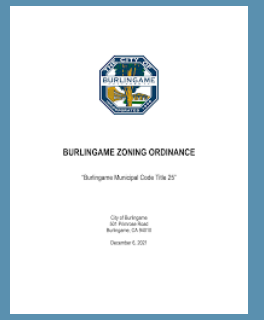
1.4 Call for **Climate Adaptation Plan** or equivalent in policy or goal

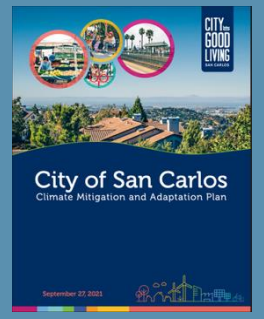
1.5 Call for climate **zoning ordinance update** in policy or goal

3 Analyzed Documents and Completed Data Input







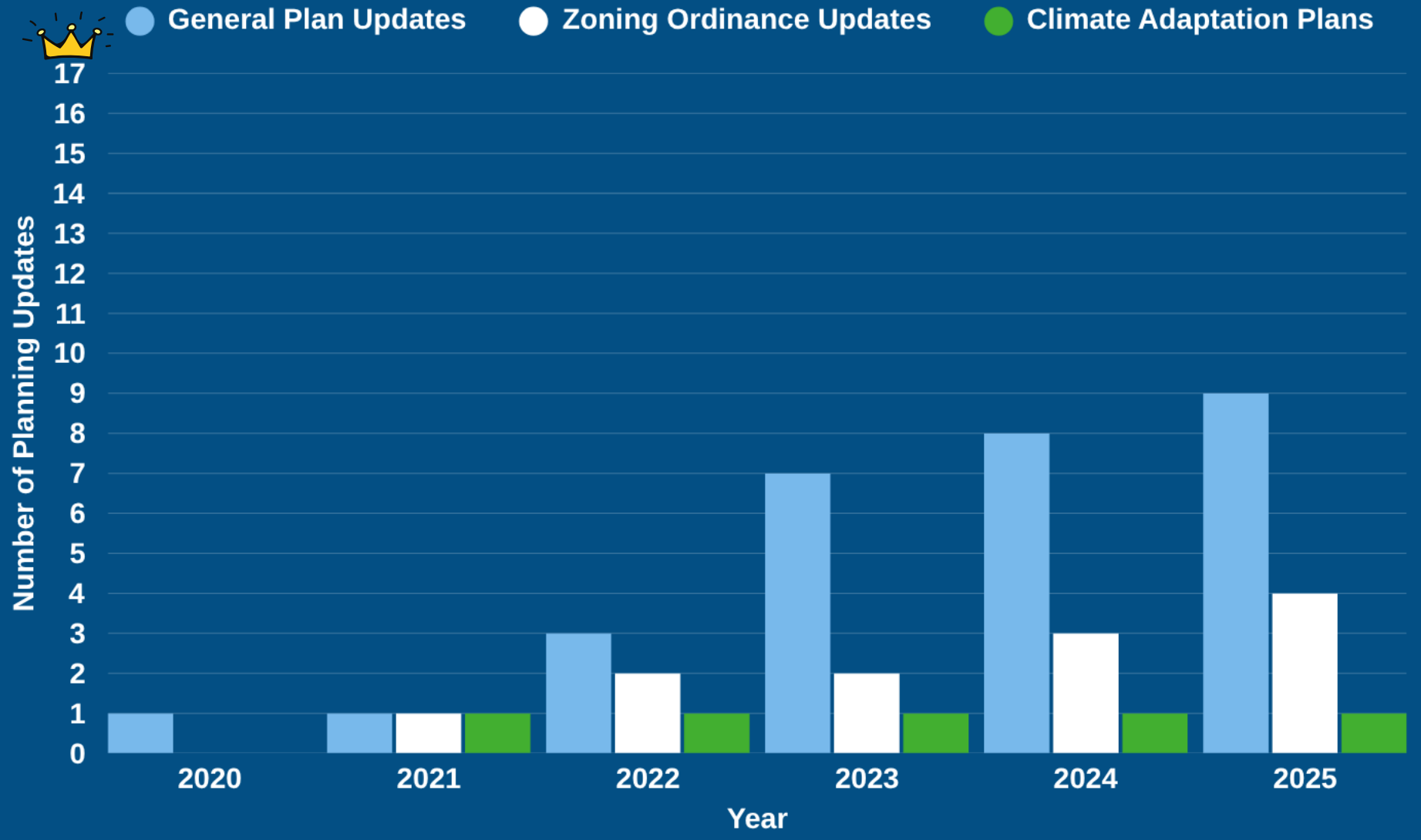


144 Total Planning Documents

HIGH LEVEL FINDINGS

General Plan Findings	• **9 cities** have GPs with updated safety elements, use of best climate science, and calls for regional collaboration, CAAPs, and zoning ordinance updates • **2 cities** have incorporated two to three adaptation measures • **6 cities** incorporated one or none of the adaptation measures in their GPs • **Bayside cities** tend to be **advanced in** climate flood planning progress while **inland creekside cities** have more work to do
Specific Plan Findings	• **Lindenville (South SF)** and **Ravenswood District (East Palto Alto) reflect stellar examples** of SLR adaptation in Specific Plans • Brisbane addresses SLR in the **Baylands Specific Plan**
Other Findings	• South San Francisco, Redwood City, and Burlingame **Zoning Ordinances reflect innovative strategies** to minimize flood hazard exposure • **Limited climate adaptation plans** represent a substantial planning gap; ◦ **RSAPs** will help close that gap in coming years

Adoption of Climate Flood Adaptation Updates in City Planning Documents Over Time



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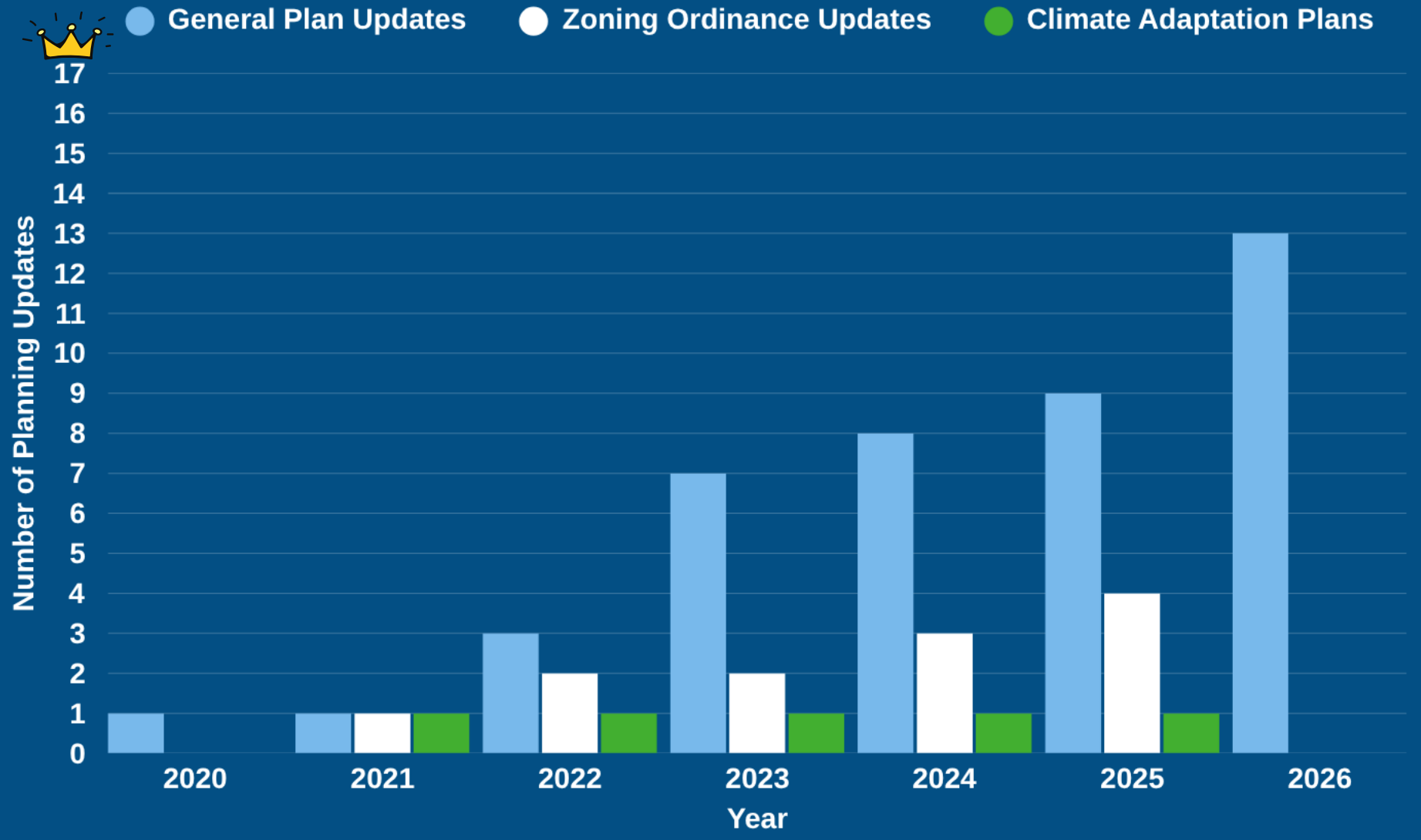


Sunset at Bayfront Park, Millbrae, CA

CONCLUSION

QUESTIONS

OneShoreline Fellowship Presentation

October 27, 2025

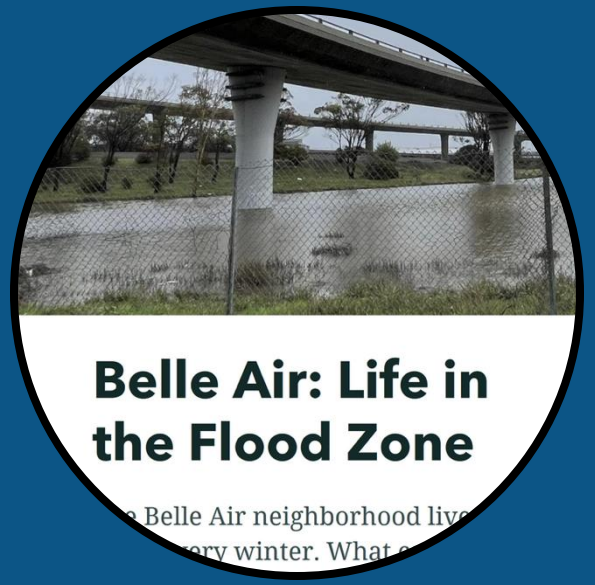
Noelle Villanueva, M.A., Sustainability

Background

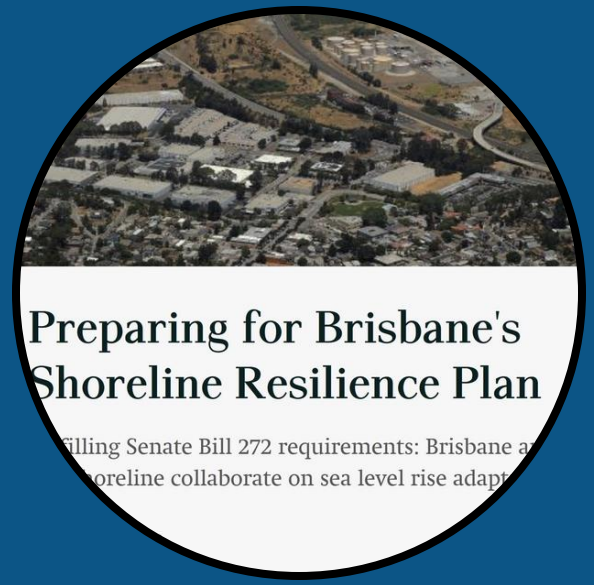
- **Education: Stanford University**
  - **Science, Technology, and Society, B.S.**
  - **Sustainability, M.A.**
- **Area of focus:**
  - **Science communication and environmental justice for front line communities**

Noelle Villanueva

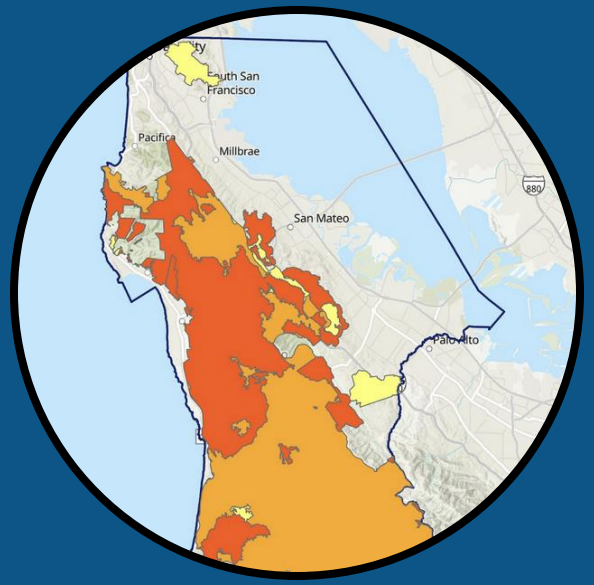
Projects



Belle Air StoryMap

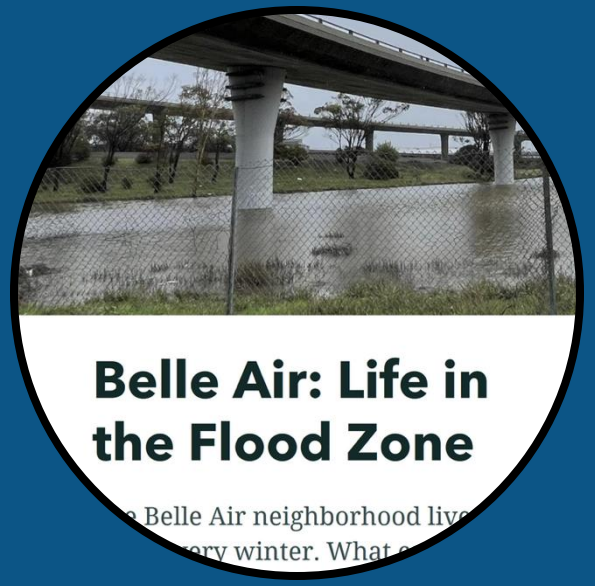


Brisbane StoryMap



Insurance Risks Research

Projects



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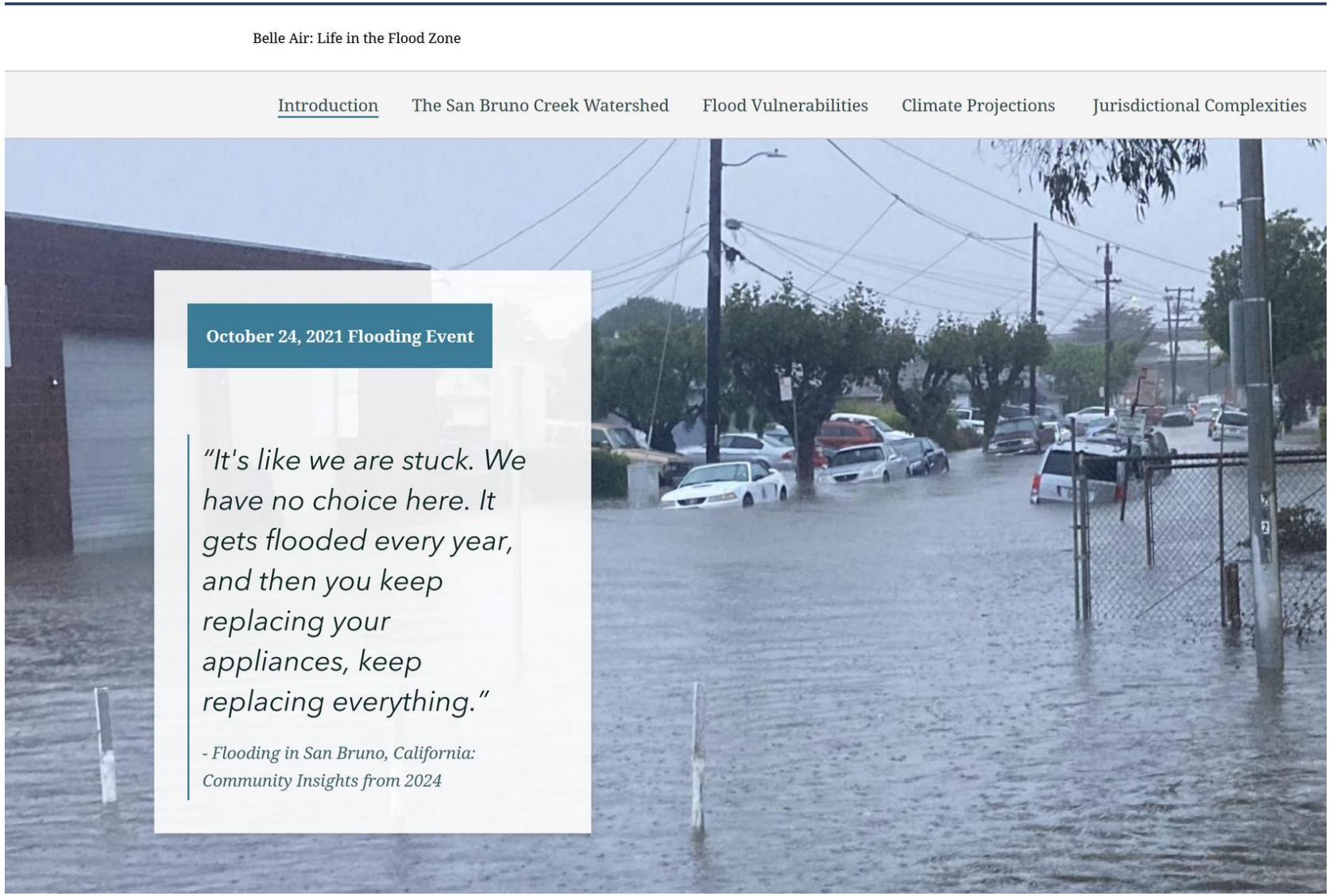


Highlighting Community Voices and Past Flooding Events

Belle Air StoryMap

Flood Management Infrastructure

San Bruno Creek, also known as San Bruno Channel in its lower reaches, serves as a primary drainage conduit for the City of San Bruno and neighboring jurisdictions, conveying urban watershed runoff to San Francisco Bay.

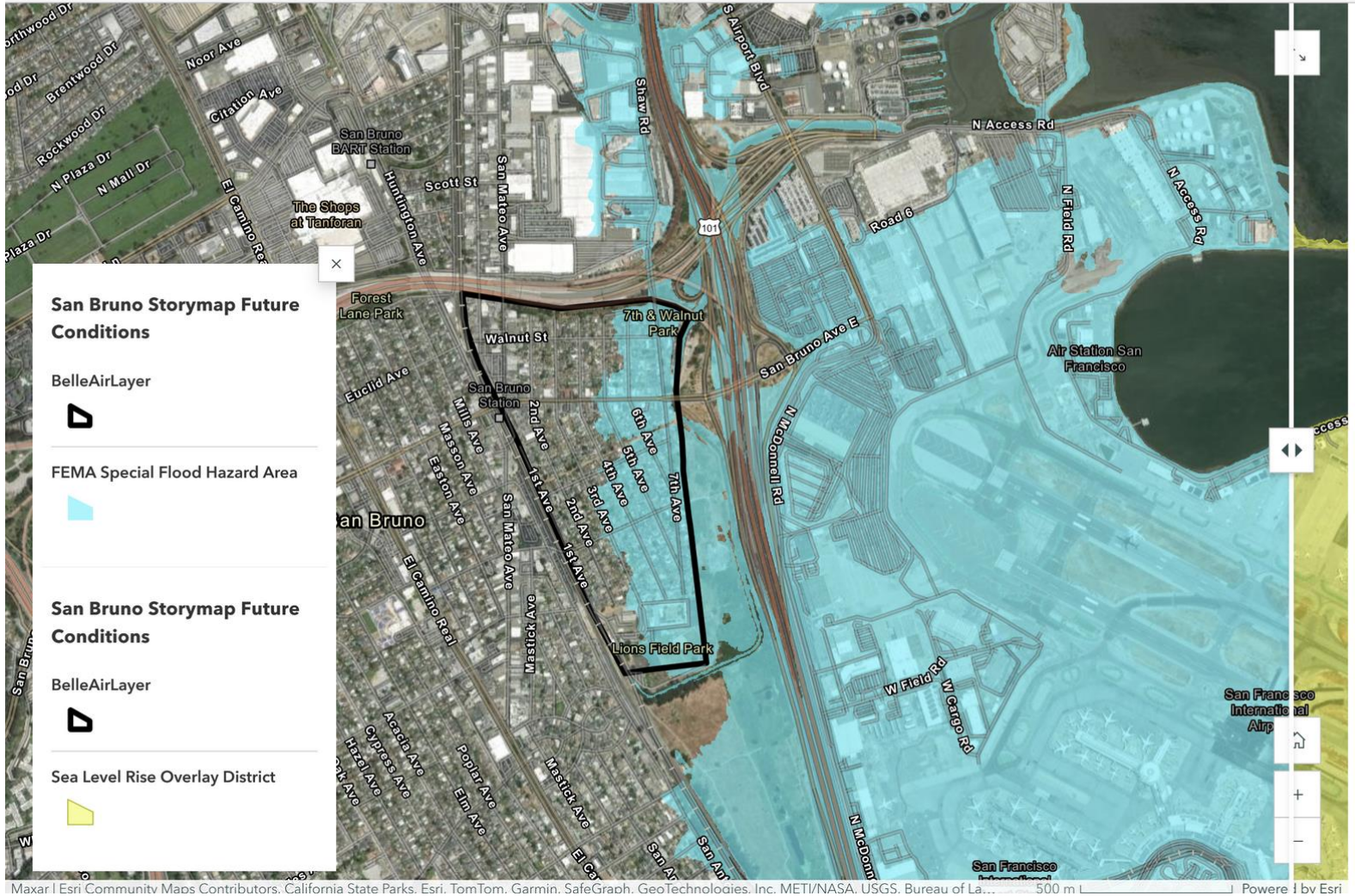
The creek includes two major open, earthen channel segments: Cupid Row Canal, which extends from the Caltrain tracks to San Bruno Avenue, and the North Channel, which continues downstream through culverts beneath U.S. Highway 101 to a tide gate structure at the Bay. The tide gate structure, constructed by the airport in 1948 and now owned by OneShoreline, consists of four 5-foot-diameter pipes with flap gates that regulate tidal inflow and stormwater outflow.

Tide gate at the mouth of San Bruno Creek

Two pump stations, Walnut and Angus, constructed by the former San Mateo County Flood Control District and now owned and operated by OneShoreline, provide critical drainage by lifting stormwater from low-lying areas into the North Channel and Cupid Row Canal, respectively.

Current Flood Infrastructure and Future Needs in Belle Air

Belle Air StoryMap



FEMA's Special Flood Hazard Area

The light blue layer on the left shows the Special Flood Hazard Area (SFHA) designated by FEMA. This area is also called the "100-year floodplain," meaning that in any given year it has a 1% chance of flooding.

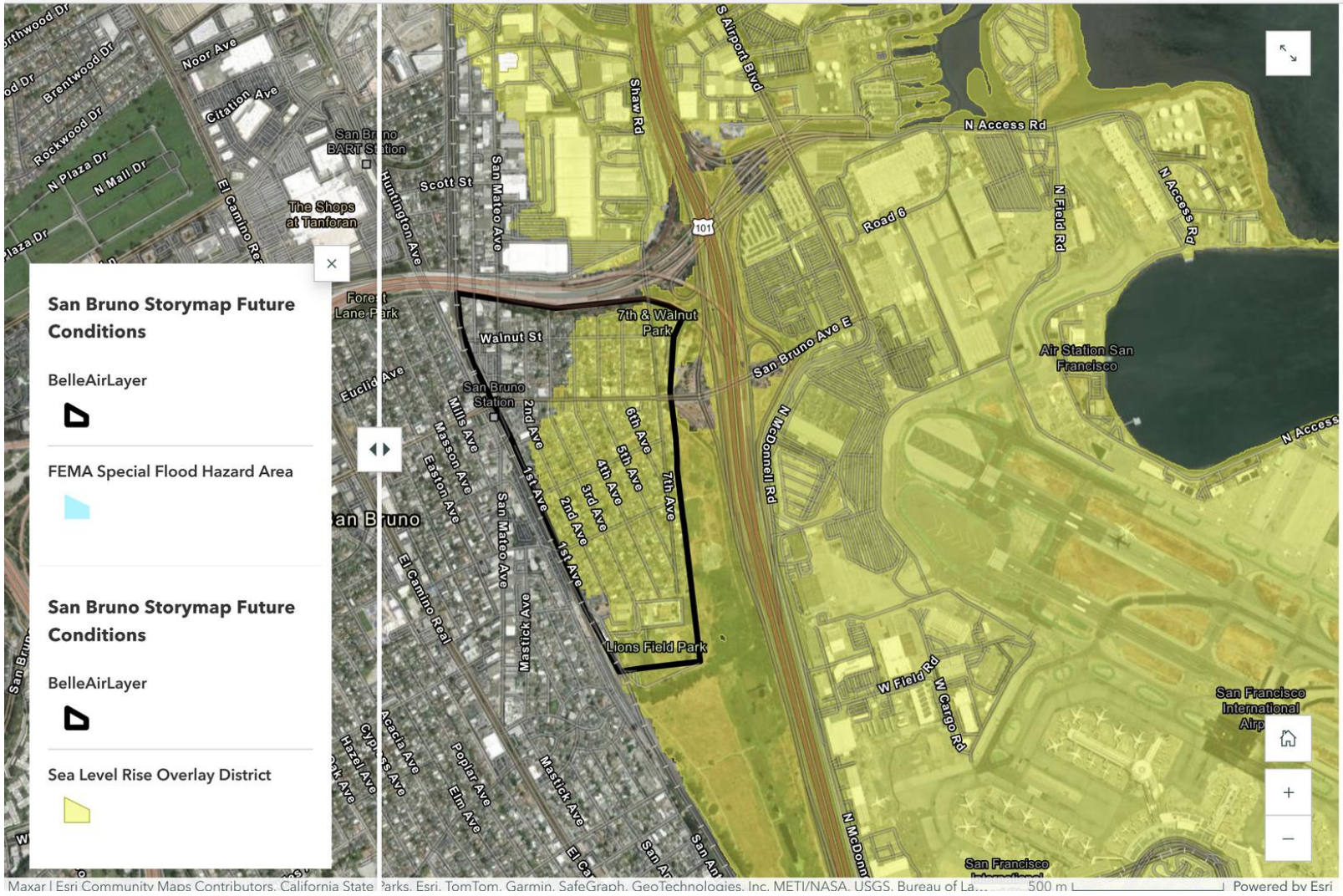
Within the SFHA, all homeowners with federally-backed mortgages on their homes are required to purchase flood insurance through the National Flood Insurance Program.

FEMA's flood map shows where homes are most at risk of flooding in San Bruno under historic climate conditions. It does not factor in future sea level rise or increased rainfall due to climate change.

The extent of the special hazard area reaches all the way to 3rd Avenue, while flooding is unevenly spread throug neighborhood.

A Deep Dive into FEMA's Flood Hazard Area and Future Sea Level Rise

Belle Air StoryMap



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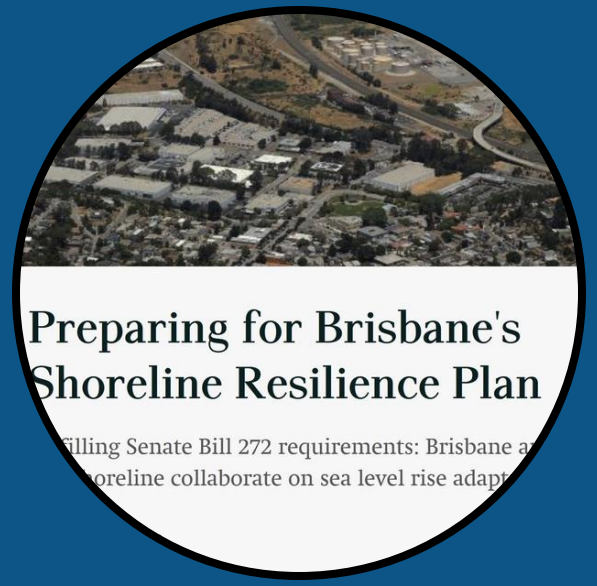
A Deep Dive into FEMA's Flood Hazard Area and Future Sea Level Rise

Projects



Brisbane StoryMap

Brisbane StoryMap

Introduction | The RSAP Process | Brisbane's Climate Vulnerabili... | Nature-Based Solutions for Bri... | Brisbane's Vulnerable Communit... | OneShoreline's Work

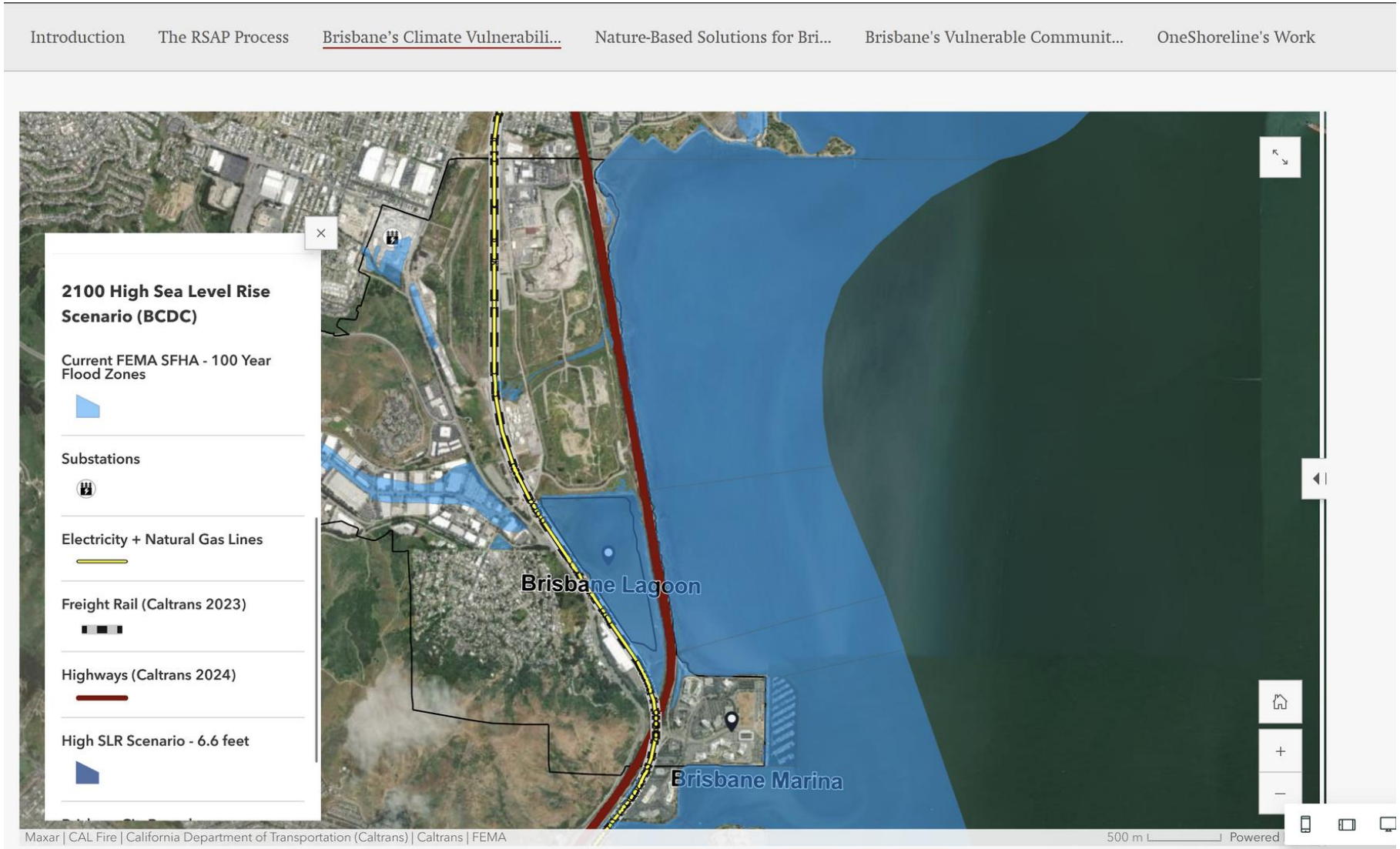
SFEI Shoreline Adaptation Atlas

The map on the right shows all the possible nature based solutions that could be suitable for Brisbane's environment. These solutions were determined by the San Francisco Estuary Institute in their San Francisco Bay Shoreline Adaptation Atlas, which was developed in collaboration with SPUR in 2019.

Scroll through and learn about these possibilities. If you're a Brisbane resident, we invite you to join one of our future RSAP public meetings to let us know which one you'd like to see in Brisbane's future.

Exploring Possibilities for Nature Based Solutions

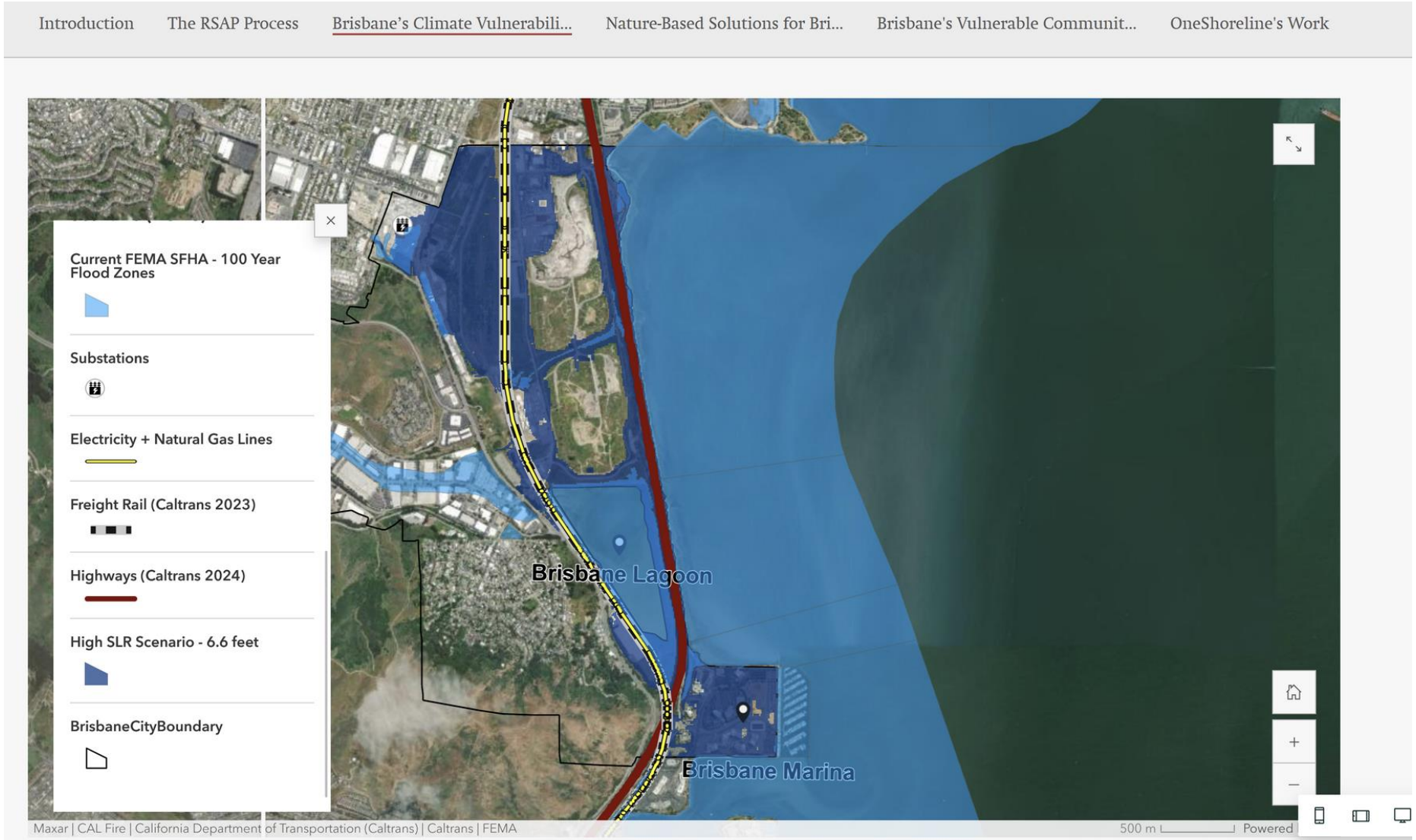
Brisbane StoryMap



Compare the extent of the current FEMA Special Flood Hazard Area (left) with the extent of coastal flooding from 6.6 feet of sea level rise (right)

Mapping Current FEMA SFHA and Future 6.6 Feet SLR Scenario

Brisbane StoryMap



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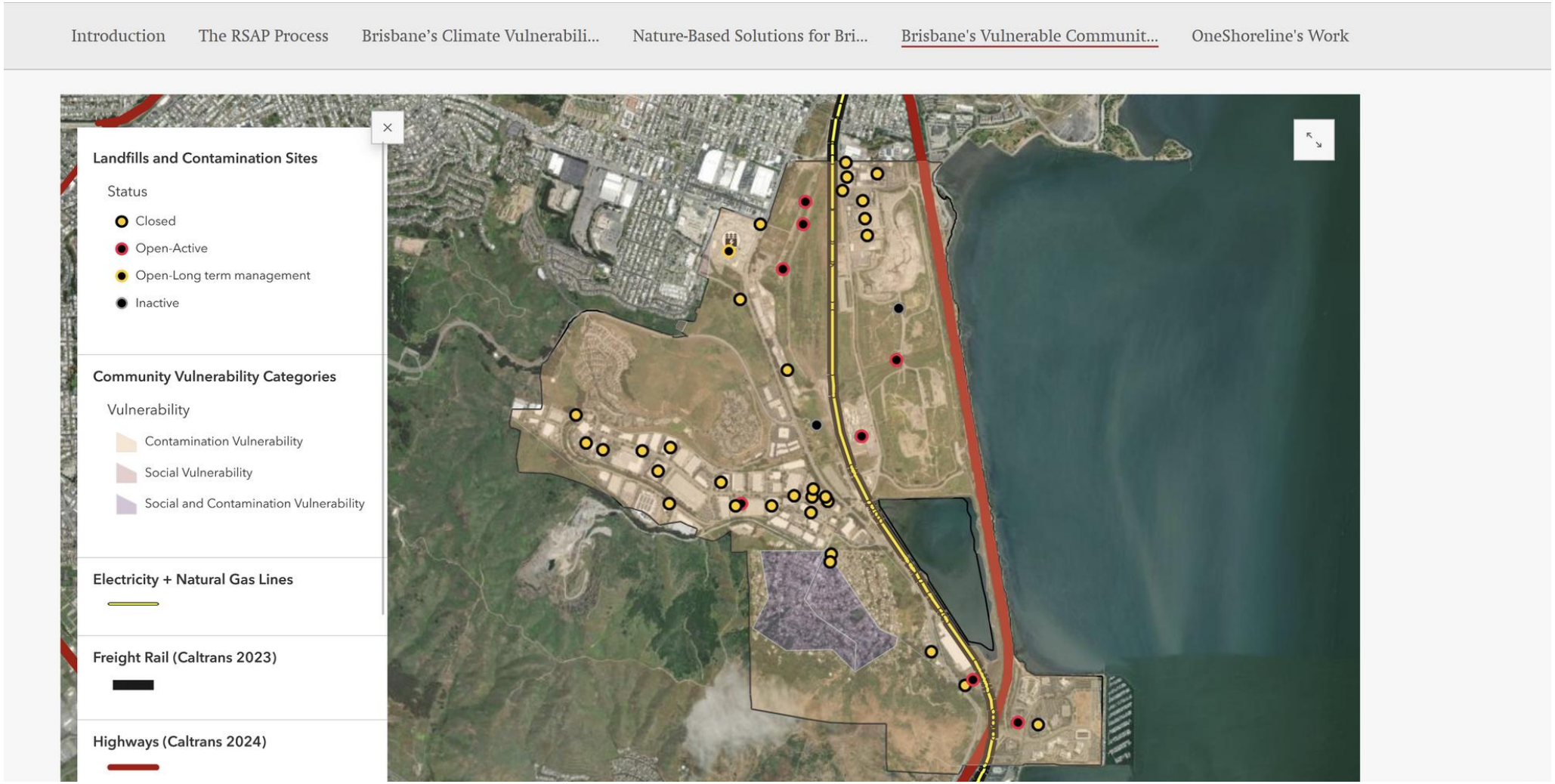
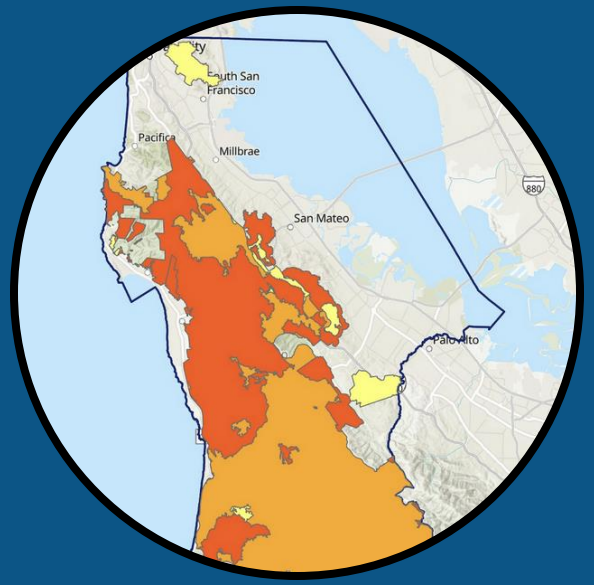


Brisbane's Past Development and Sites of Future Contamination

Projects

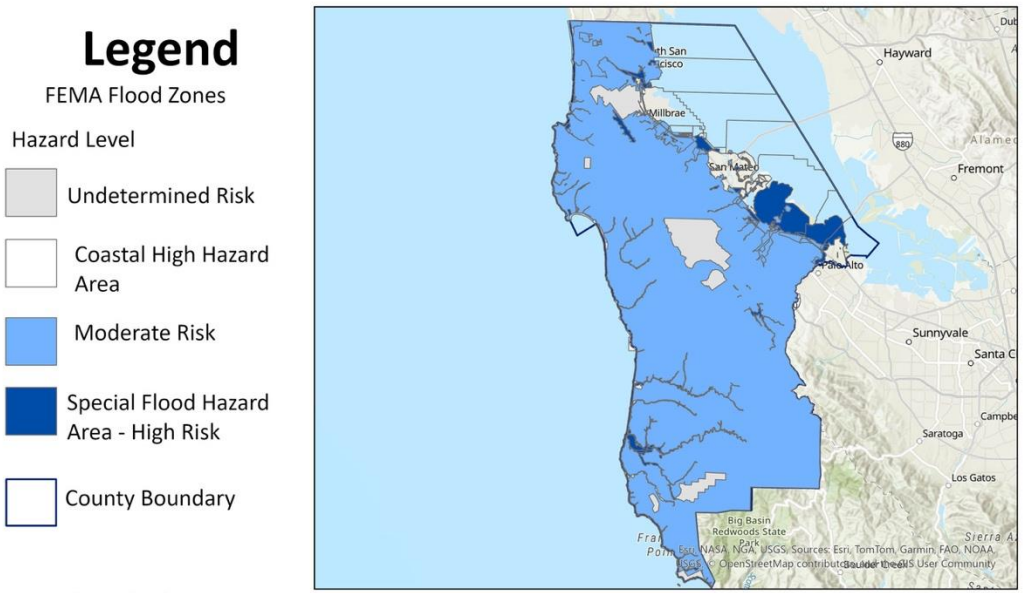


Insurance Risks Research

Insurance Risks Research

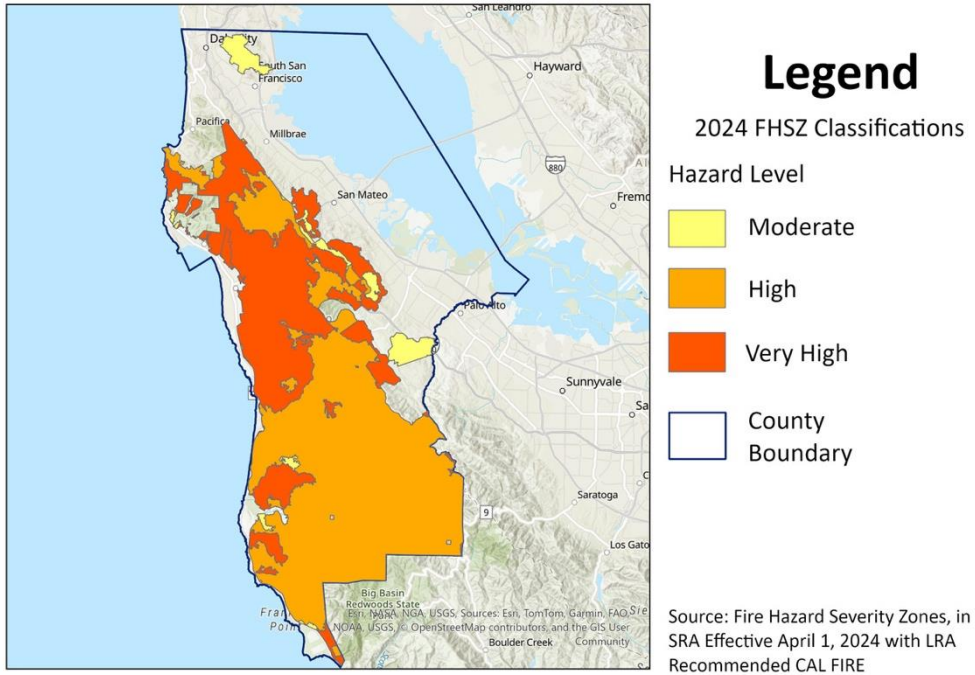
- Performed research to support OneShoreline's partnership with Insurance for Good
- Identify areas of high flood and wildfire risks in San Mateo County
- Provided input on polling questions to gauge constituent interest in new initiatives that address insurance risks

San Mateo County FEMA Flood Zones 2016



Source: FEMA Flood Zones San Mateo County GIS Open Data 2016
Classifications: FEMA Flood Hazard Boundary Map (FHBM)

2024 San Mateo County Fire Hazard Severity Zones



Source: Fire Hazard Severity Zones, in SRA Effective April 1, 2024 with LRA Recommended CAL FIRE

How does flood and wildfire risk impact San Mateo County?

Lessons Learned

- Storymaps are a powerful tool to communicate climate risks and inspire action
- Patience, Collaboration, and Comprises are essential to work effectively in multi-jurisdictional spaces
- My work with OneShoreline exposed me to more environmental organizations and government agencies around the Bay that are creating impactful change
- My work with OneShoreline also inspired my future collaboration with a Philippine gov agency to feature their projects in local communities

Stanford
Haas Center
for Public Service
The Hub of Cardinal Service

OneShoreline
Building Solutions for a Changing Climate

Stanford
University

THANK YOU!

Questions?

Noelle Villanueva, noellev@stanford.edu

Agenda Item 4B: Agreement with Jacobs Engineering Group Inc. to complete the San Bruno Creek Resilience Plan

On January 1, 2020, OneShoreline assumed the assets and liabilities of the former County Flood Control District, including along San Bruno Creek 1960's era pump stations and levee banks, and a 1948 tide gate, that face multiple challenges:

- Aging, difficult to maintain infrastructure subjected to more extreme storms and tides than designed for,
- Minimal in-channel debris removal over years, and
- Multi-agency ownership of infrastructure, multiple jurisdictions, and access constraints.

In 2024, OneShoreline secured a $897,500 FEMA Grant for the San Bruno Creek Resilience Project.

Agenda Item 4B

SCOPE OF WORK

Two-year effort will develop a technically sound, stakeholder- and community-informed flood resilience plan and advance a priority initial project to 30% design, CEQA documentation, and grant readiness.

- Project management
- Data collection and analysis
- Alternatives analysis
- Concept design of the initial project
- Regulatory strategy and draft CEQA document
- Cost-benefit analysis and grant application
- Community & stakeholder engagement
- Optional Services

RECOMMENDED BOARD ACTION: Authorize the CEO to execute an Agreement with Jacobs Engineering Group Inc. for an amount not to exceed $1,465,000, and authorize a $55,000 contingency controlled by OneShoreline

PUBLIC PROCUREMENT PROCESS

- RFP released July 23, 2025 and closed September 5, 2025
- Seven proposals received, and two teams interviewed
- Jacobs team ranked highest by review panel

PROPOSED TEAM and TASKS

- Jacobs (PM, data collection, alternatives analysis, concept design, CEQA, cost benefit analysis, plan dev.)
- Lotus Water (hydrol. & hydraul. modeling, concept eval)
- Swaim (bio. resources, including SF Garter Snake)

Task	Cost
2.0 – Project Management	$120,000
4.0 – Data Collection	$200,000
6.0 – Alternatives Analysis and CEQA	$550,000
7.0 – 30% Design	$500,000
8.0 – Benefit Cost Analysis	$40,000
Optional Tasks	$55,000
Agreement Amount	**$1,465,000**
Contingency (~4%)	$55,000
TOTAL	**$1,520,000**

Agenda Item 4C: Adopt Resolution No. 2025-10-27 to accept a $2,033,726 grant from the California Ocean Protection Council (OPC) for OneShoreline to complete a San Mateo County Southern Bayside Cities Shoreline Resilience Plan in compliance with BCDC's RSAP guidelines

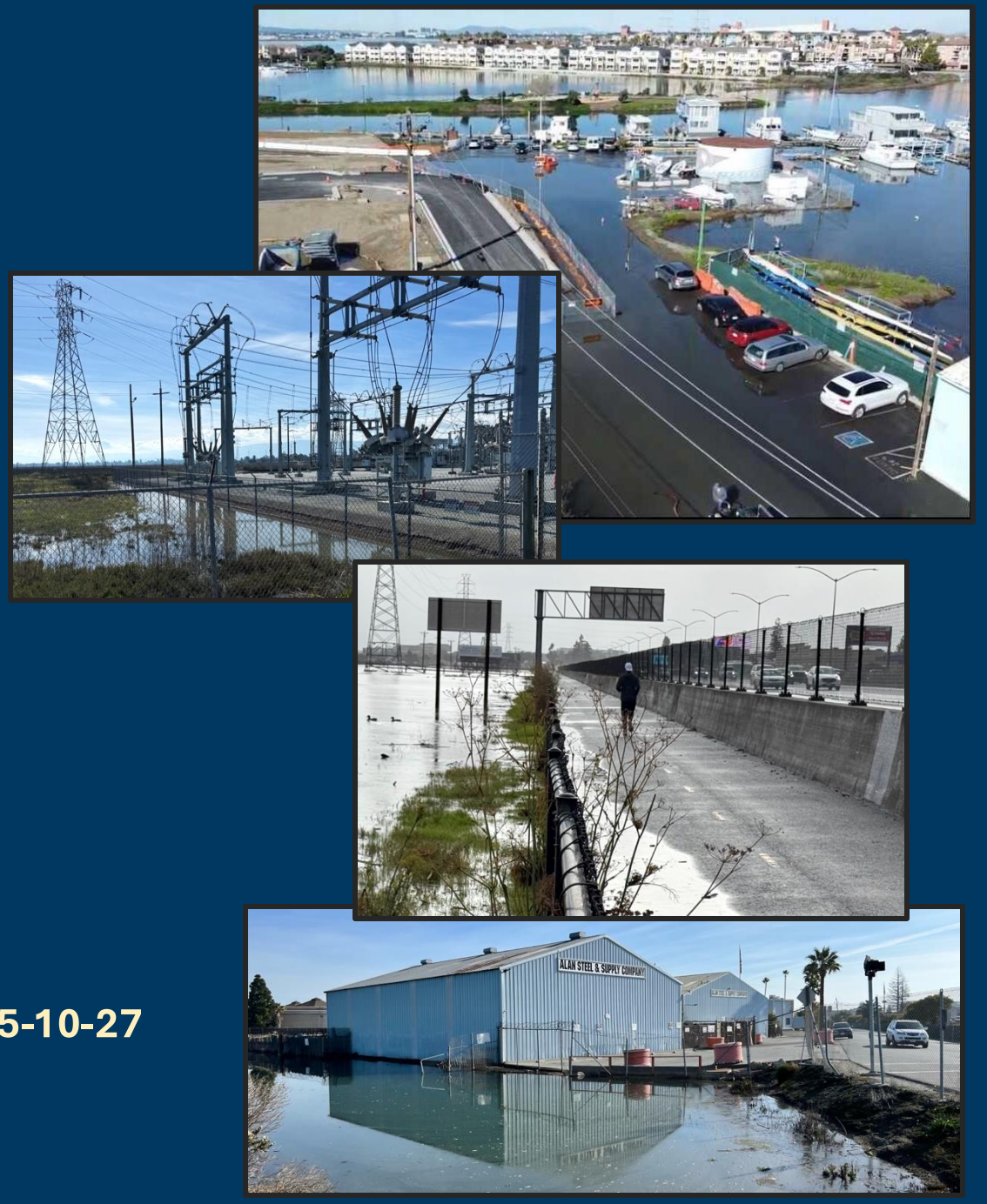
In July 2025, OneShoreline applied to OPC's Senate Bill 1 Sea Level Rise Adaptation Planning Grant Program for funds to develop the *San Mateo County Southern Bayside Cities Shoreline Resilience Plan* in compliance with BCDC's Regional Shoreline Adaptation Plan (RSAP). OPC approved the grant award on September 30, 2025.

Geographic extent	Belmont, San Carlos, Redwood City, Menlo Park, East Palo Alto
OPC Grant	$2,033,726
Local Match	$73,050 in OneShoreline staff time (Measure K) $569,000 in staff time from 5 cities
Project Duration	3 years
Project Partners	Cities of Belmont, San Carlos, Redwood City, Menlo Park, East Palo Alto; Nuestra Casa

Agenda Item 4C

The grant will fund these RSAP-required activities:

- **Update existing conditions and vulnerability assessments**
- **Develop targeted adaptation strategies and pathways for the 2050 & 2100**
- **Engage key stakeholders and the general public**
- **Identify priority projects, land use policies, a funding strategy, and implementation plan**
- **Present final plan for approval by 5 City Councils**



RECOMMENDED BOARD ACTION: Adopt Resolution No. 2025-10-27 to accept a $2,033,726 OPC grant for the San Mateo County Southern Bayside Cities Shoreline Resilience Plan

Agenda Item 6 CEO's Report

Coastal Cleanup Day

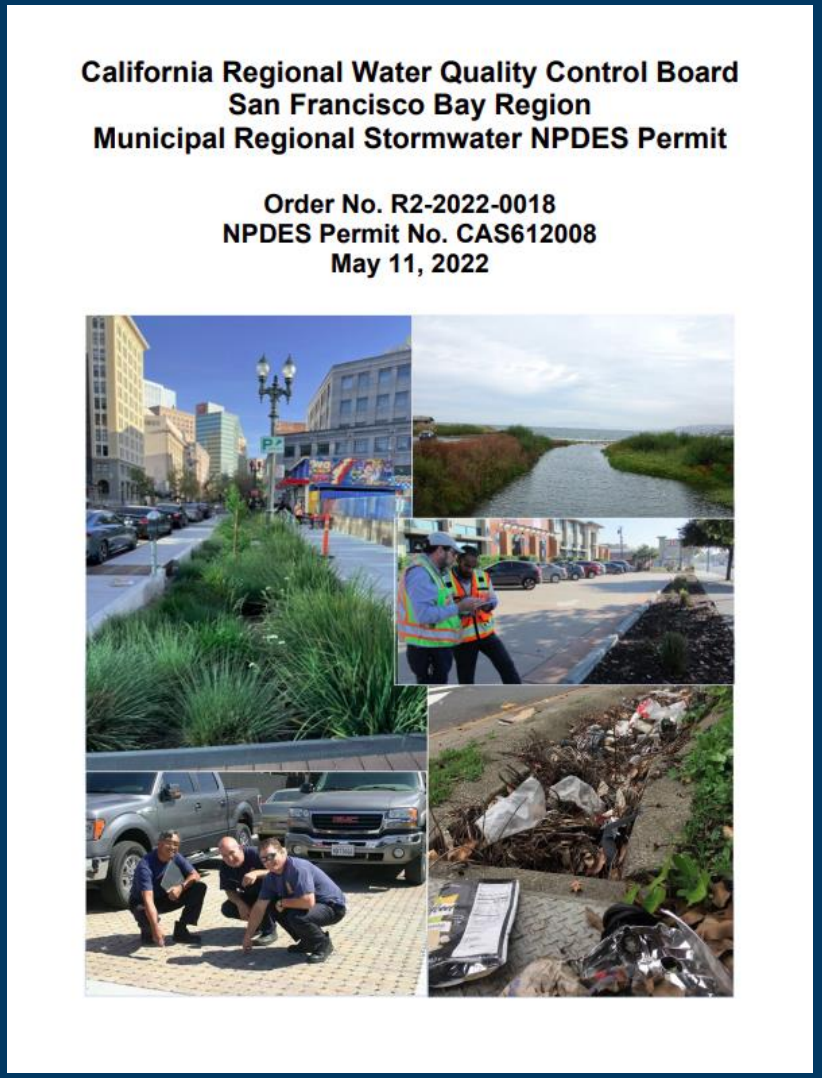
OneShoreline partnered with South San Francisco and Town of Colma

- **93 participants**
- **1,030 pounds trash collected**
- **Engagement on OneShoreline Colma Creek Watershed Plan and Resilience Projects**

Agenda Item 6 CEO's Report

SF Bay Municipal Regional Stormwater Permit (MRP) Annual Report

- The Clean Water Act requires National Pollutant Discharge Elimination System (NPDES) permits for stormwater discharges, and OneShoreline is one of 22 permittees working under the San Mateo Countywide Water Pollution Prevention Program administered by C/CAG in compliance with the NPDES Permit, known locally as the Municipal Regional Permit.
- Managed by C/CAG, the San Mateo Countywide Water Pollution Prevention Program supports permittees, including OneShoreline, on the required annual reports that were due Sept. 30.
- OneShoreline is a primary contact for the public to report illegal discharges into waters where we own land and assets: including Colma Creek, San Bruno Creek, and San Francisquito Creek
- Permit requirements and community engagement are also opportunities to highlight our wider efforts and partnerships



Agenda Item 6 CEO's Report

San Bruno Creek Maintenance Sediment Removal

- On Sept. 22, 2025, the Board authorized the CEO to execute an agreement with a contractor to remove sediment in San Bruno Creek as authorized by recently-acquired 5-year routine maintenance permits for four flood-prone creeks.
- Between Oct. 15-22, OneShoreline's contractor removed approximately 350 cubic yards of sediment; this activity was observed by biological, archeological, and tribal monitors.
- The permits allow one more sediment removal in the next 5 years.

Upcoming Board meetings:

November 17, 2025 at 4:00 PM

December 15, 2025 at 4:00 PM

OneShoreline
Building Solutions for a Changing Climate