

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD SAN
FRANCISCO BAY REGION

MEETING DATE: October 14, 2020

ITEM: 5

SUBJECT: Executive Officer's Report

**Executive Officer’s Report
October 7, 2020**

2

Executive Officer’s Report October 14, 2020

Items in this Report (Author[s])

Sewer Collection Systems and Sea Level Rise (Jessica Watkins) 3

Former Almaden Air Force Base Receives Regulatory Closure (Max Shahbazian) 7

Investigating PFAS Pathways in Municipal Wastewater..... 8

October 2020 Enforcement Actions (Brian Thompson and Jessica Watkins) 10

401 Water Quality Certification Applications Received (Abigail Smith) 11

Sewer Collection Systems and Sea Level Rise (Jessica Watkins)

Many of our Region's 136 sanitary sewer collection systems are vulnerable to sea level rise from climate change because they are adjacent to shorelines or tidal inland waters (see Figure 1). Sea level rise will cause more frequent flooding and rising groundwater levels, which can inundate pipes and pump stations, causing damage, corrosion, and reduced conveyance and pumping capacity, and ultimately inhibiting treatment plant efficiency. Coastal erosion resulting from sea level rise also threatens wastewater infrastructure.

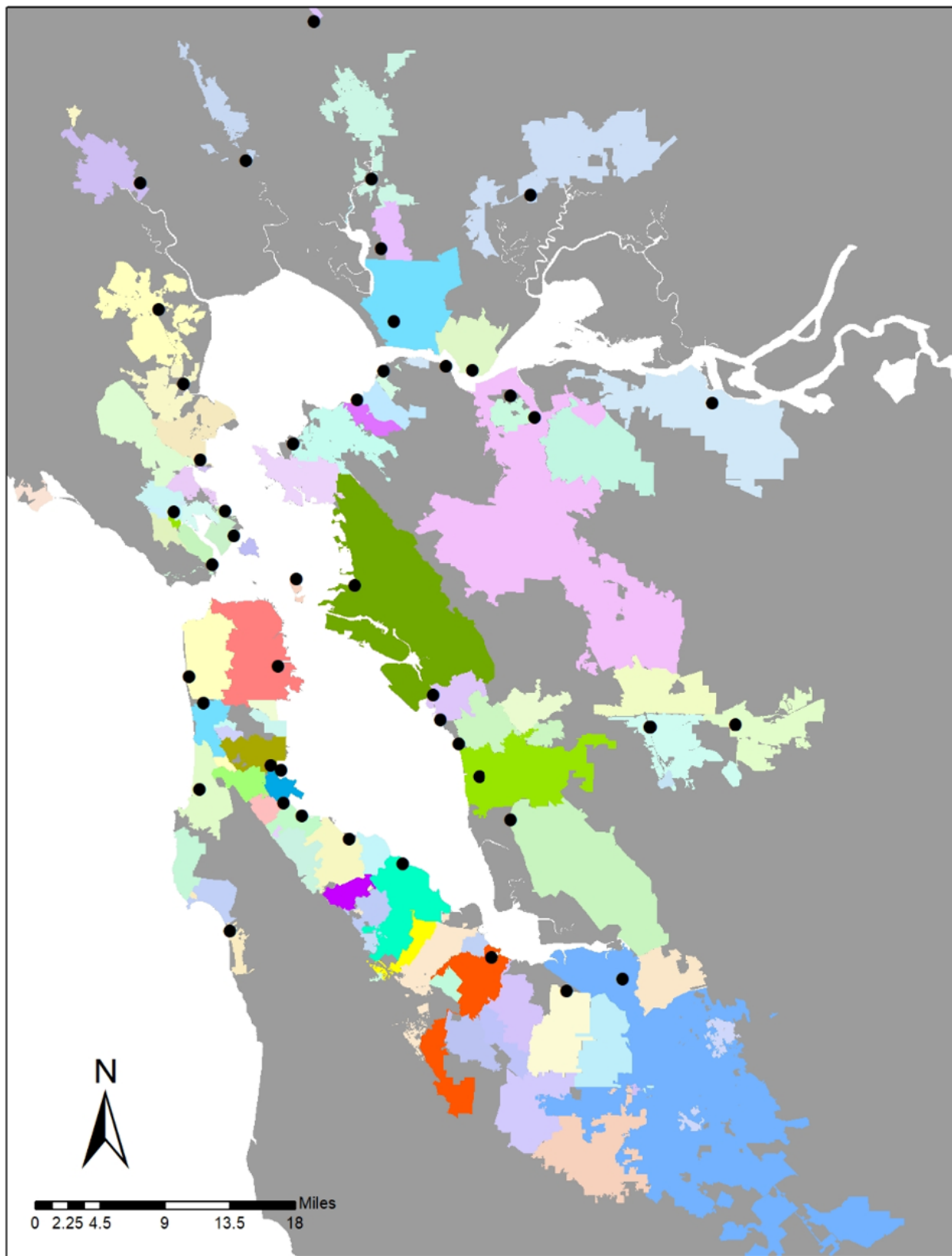
Problems will worsen as sea levels rise. In May 2020, the California Coastal Commission adopted *Sea Level Rise Principles*—endorsed by the California Environmental Protection Agency and State Water Resources Control Board—indicating there is a significant risk of up to 1.0 feet of sea level rise by 2030 and 7.6 feet by 2100. The report recommends using a minimum sea level rise target of 3.5 feet by 2050. These estimates apply a safety factor of 2 to the California Ocean Protection Council values published in 2018 partly because those values do not account for storm surges, tides, or other discrete weather events. Figure 2 shows estimated San Francisco Bay shoreline inundation with 4 feet of sea level rise, overlaid on the collection systems.

Many climate change mitigation and adaptation initiatives to protect collection systems are being tackled at the regional or county level because sewer infrastructure is typically collocated with critical drinking water and transportation infrastructure; however, collection system agencies must also take meaningful actions, including (1) rehabilitating, repairing, and replacing sewer infrastructure to keep out floodwaters and rising groundwater; (2) repairing or flood-proofing vulnerable pump stations; (3) managing retreat; (4) constructing barriers to protect assets; and (5) committing to multi-benefit, nature-based solutions like horizontal levees. Possible solutions are site-specific and depend on available space and resources. Here are a couple examples:

- East Bay Dischargers Authority is leading the “First Mile” Horizontal Levee Project to construct a full-scale horizontal levee based on the successful Oro Loma Horizontal Levee Demonstration Project. This nature-based approach will provide flood protection from sea level rise to protect wastewater infrastructure.
- San Francisco International Airport plans to invest almost \$600 million to build an 8-mile-long sea wall around the airport that will protect its sanitary and industrial wastewater collection systems and wastewater treatment plants.

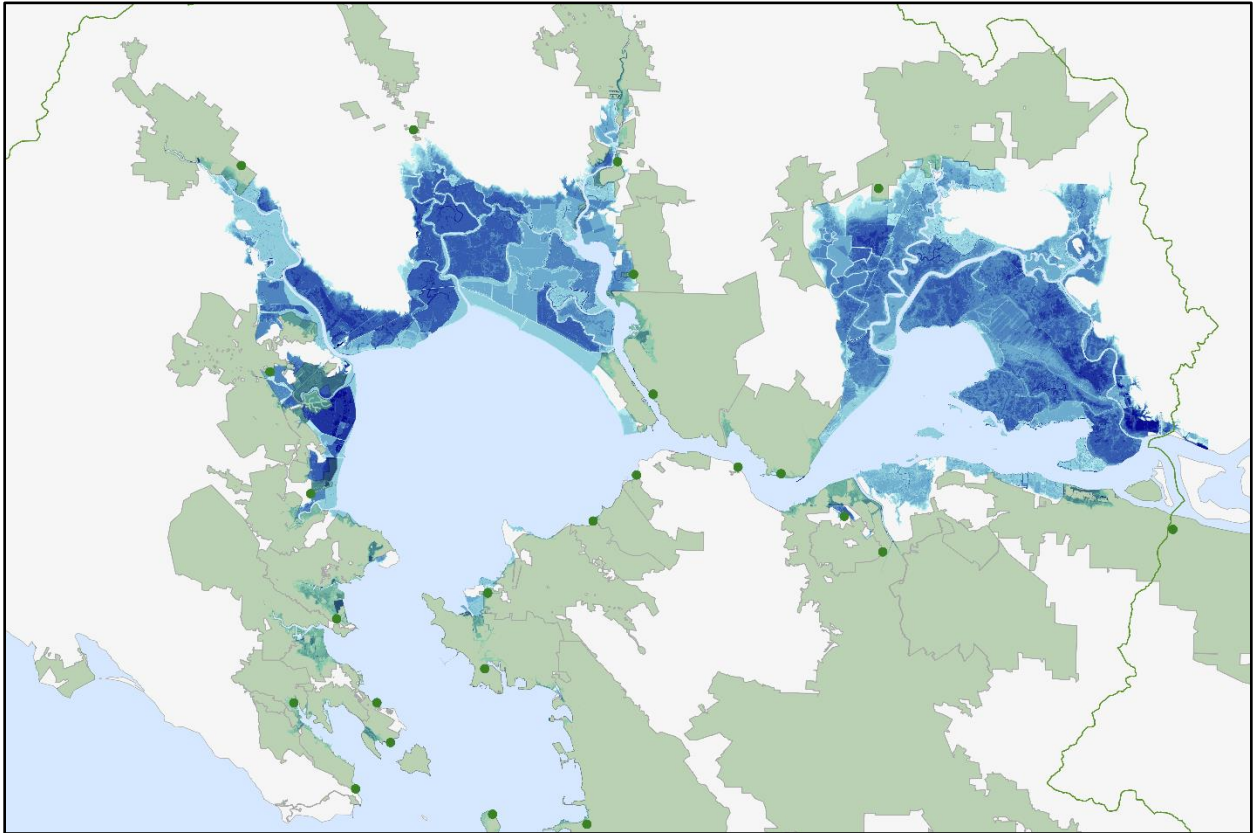
We will continue to collaborate with regional partners to ensure appropriate planning for sea level rise adaptation. As described in the May 2020 Executive Officer Report, we play key roles in Bay Adapt, an initiative to establish regional agreement on actions to protect against rising sea levels. We are also actively engaged in other partnerships in support of State Water Resources Control Board's 2017 Comprehensive Response to Climate Change Resolution. Regarding collection systems specifically, we are working with the Bay Area Clean Water Agencies to ensure that wastewater agencies adequately assess and address climate change vulnerabilities. We will also continue to help State Water Board staff update and reissue waste discharge requirements for collection systems that we expect will contain new requirements that address climate change.

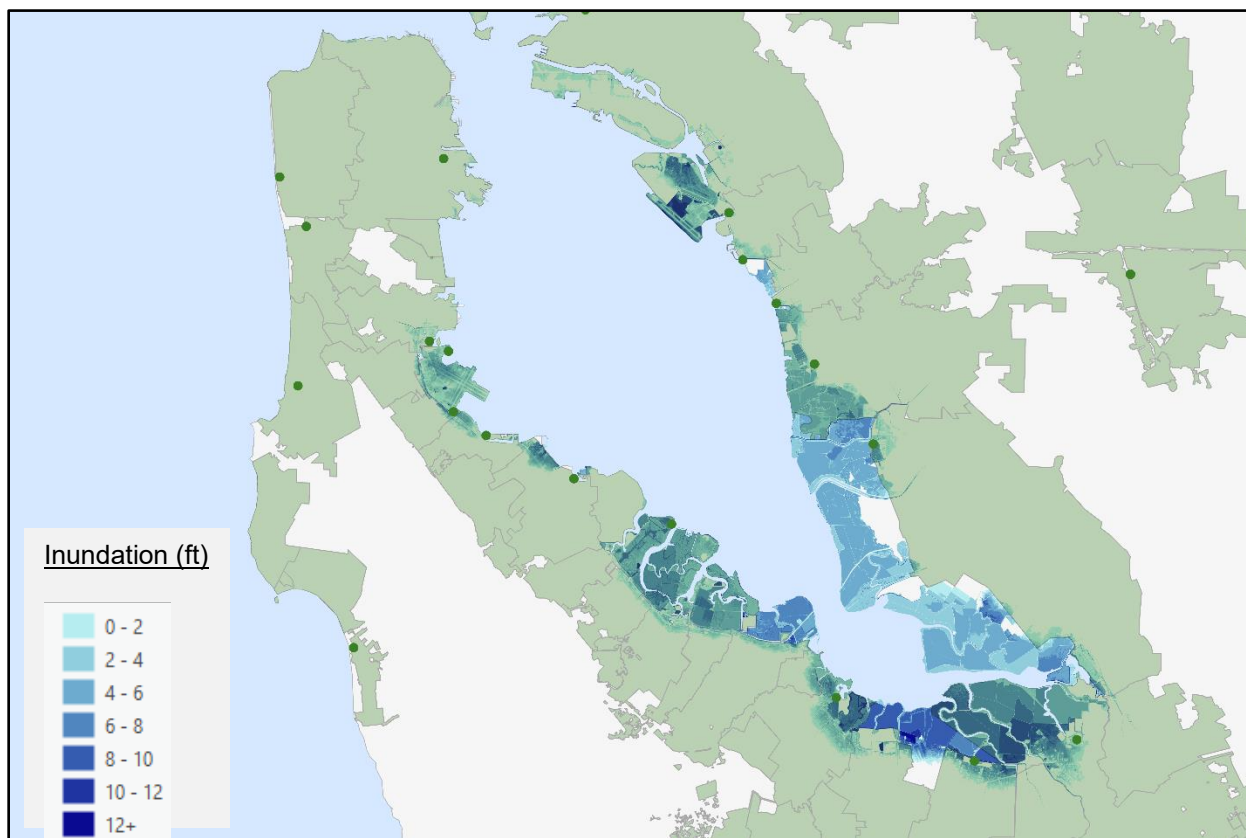
Figure 1: Collection Systems and Wastewater Treatment Plants



Source: Map created by Matias Tejero-Leon (Regional Water Board) and Jaron Kaplan (San Francisco Estuary Institute).

**Figure 2: Estimated San Francisco Bay Inundation with 4 Feet of Sea Level Rise
Overlaid on Collection Systems and Wastewater Treatment Plants**

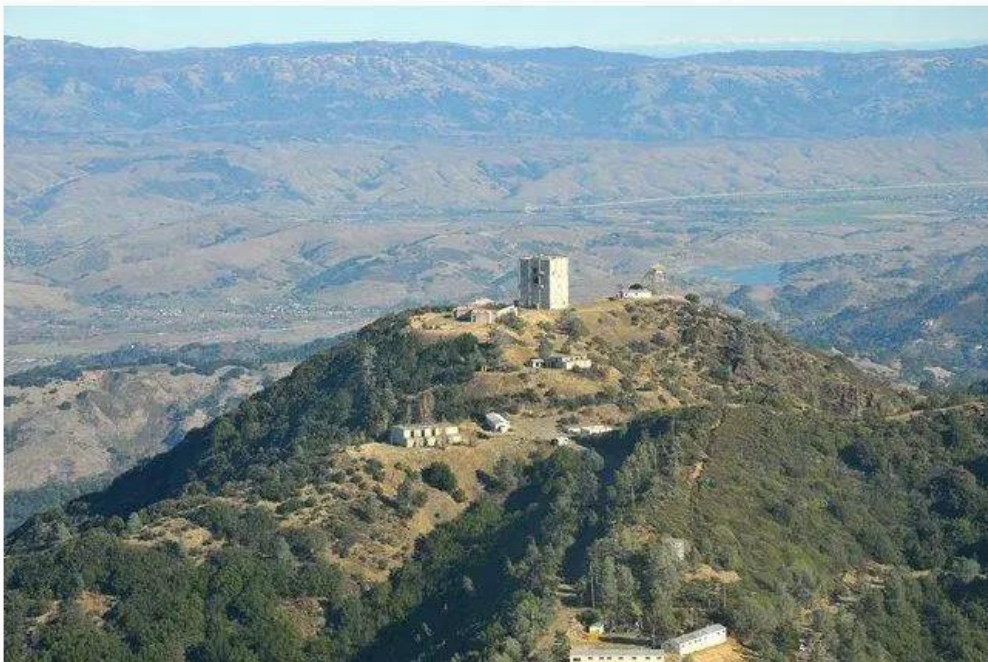




Sources: Inundation estimates from San Francisco Bay Conservation and Development Commission's (BCDC's) Adapting to Rising Tides (ART) Bay Shoreline Flood Explorer. Estimates do not include Pacific coast inundation. Map created by Matias Tejero-Leon (Regional Water Board) and Jaron Kaplan (San Francisco Estuary Institute).

Former Almaden Air Force Base Receives Regulatory Closure (Max Shahbazian)

I am pleased to share that we have moved forward with the complete and unrestricted regulatory closure of the Almaden Air Force Base (Base) located on top of Mount Umunhum in Los Gatos, Santa Clara County. This 48-acre site was used historically as a ground-to-air transmitter/receiver that included an operations area, a cantonment area (military garrison), and a housing area. These areas had approximately 85 buildings and sheds to support the military activities. All but one of the buildings have been razed. Much of the site is now part of the Midpeninsula Regional Open Space District, and a smaller portion that includes the transmitter is privately owned by a radio station. This regulatory closure included the evaluation of 7 USTs, 8 ASTs, 6 pipelines, 18 transformers, and one catchment basin that collected storm water runoff from the adjacent road and parking lot. The regulatory closure was facilitated by the very deep groundwater (none encountered to 50 ft) and the ability to excavate all the contaminated soil above screening standards.



The old radar tower from the former Almaden Air Force Station atop Mount Umunhum in December, 2010. (Photo: Frank Sweeney)

Investigating PFAS Pathways in Municipal Wastewater

There is a statewide effort to identify sources of per- and polyfluoroalkyl substances (PFAS). To address PFAS in publicly owned treatment works (POTWs), which discharge treated municipal wastewater, the State Water Board issued a 13267 order on July 9, 2020, to nearly all POTWs in the State requiring them to monitor and report PFAS concentrations in their influent, effluent, and biosolids. That order excluded Bay Area POTWs with the understanding that they would work with the San Francisco Estuary Institute to develop a regional POTW monitoring study that includes a question-based design, data management, interpretation, and synthesis. This study will help in understanding the presence of PFAS in POTWs, the extent they are treated, and how they are conveyed to the environment through surface water discharges and biosolids applications.

POTWs receive PFAS from industrial, commercial, and residential sources that include, for example, metal finishing operations, insecticide applications, fuel additives, aqueous film forming foams, and water-resistant coatings for food contact paper, clothes, carpets, and textiles. POTWs with typical secondary and advanced secondary treatment systems remove some of the PFAS, but some of them end up in biosolids. While advanced PFAS removal treatments exist, they are not cost effective to implement at a POTW scale.

Since 2004, the San Francisco Bay Regional Monitoring Program (RMP) has conducted several studies to assess presence of PFAS in Bay water, sediment, and biota. Based on early assessments, we determined PFOS posed a threat to birds and harbor seals, but we have subsequently observed declining levels of PFOS, presumably due to phase out of its use. In 2017, we made a cautious determination that PFOA and long-chain perfluoro-carboxylates also pose a threat to birds and harbor seals. We continue to monitor for trends of these and other PFAS in Bay water, sediment, and biota.

The RMP has also analyzed for and found PFAS in eight representative POTWs that discharge to the Bay. These earlier studies showed that airports, which use firefighting foams, can be significant PFAS sources. Under our guidance, the San Francisco Estuary Institute and the Bay Area Clean Water Agencies have begun a new regional monitoring study to investigate PFAS in Bay Area POTWs. The study will reflect the knowledge gained through the initial studies and be designed to answer specific management questions. Rather than monitoring at every POTW, the study will analyze PFAS in a targeted manner at representative POTWs. We will reduce the likelihood of data quality issues that can arise with new analytic methods and low detection limits by using a single high quality laboratory. Lastly, the study will include data analysis which goes beyond the Statewide data collection effort. The regional effort will achieve and exceed the goals of the statewide effort.

The regional study will be a two-phased effort. Starting in October 2020, the study will measure PFAS concentrations in wastewater influent, effluent, and biosolids at representative POTWs, focusing on study design, coordination of sample collection, data quality assurance, and reporting. The targeted POTWs will represent the various sizes, treatment systems, sewersheds (e.g., population, types of industries in service area). This targeted approach will answer questions such as how PFAS removal varies

between secondary and advanced treatment systems and whether different types of service areas exhibit different PFAS patterns. The answers to these and other questions will inform data collection and analysis for the second phase in next year.

We are optimistic that this effort will inform future management decisions related to treatment and source control. Since end-of-pipe treatment is likely impractical, we expect this process will support the need to engage in aggressive and creative pollution prevention strategies.

October 2020 Enforcement Actions (Brian Thompson and Jessica Watkins)

There were no proposed or settled enforcement actions since September's report.

401 Water Quality Certification Applications Received (Abigail Smith)

The table below lists those applications received for Clean Water Act section 401 water quality certification from Aug 7 through September 10, 2020. A check mark in the right-hand column indicates a project with work that may be in BCDC jurisdiction.

Project Name	City/Location	County	May have BCDC Jurisdiction
Barnhill Marina Pile Augmentation Reinforcement	Alameda	Alameda	✓
Richmond Country Club Residential Development	Richmond	Contra Costa	✓
Terminal Four Wharf Warehouse, and Piling Removal	Richmond	Contra Costa	✓
PGE Intake Steel Plate Dam Maintenance	Rodeo	Contra Costa	✓
Marin Terrace Development	Mill Valley	Marin	✓
Vine Trail St. Helena to Calistoga Trail Section And Crossings	Saint Helena and Calistoga	Napa	
Alma Dock Replacement	San Francisco	San Francisco	✓
El Zanjon Creek Restoration San Bruno Recreation Center	San Bruno	San Mateo	
Portola Road Bridge Replacement	Woodside	San Mateo	
Anderson Dam Seismic Retrofit Project Drilling Program Plan 7	Morgan Hill	Santa Clara	
Sunnyvale WPCP Emergency Repairs	Sunnyvale	Santa Clara	✓
U.S. Coast Guard Station Vallejo Maintenance Dredging	Vallejo	Solano	✓
Riparian Restoration at the Maxwell Farms Regional Park	Sonoma	Sonoma	