U.S. Department of the Interior Bureau of Reclamation

WaterSMART Cooperative Watershed Management Program Phase I

Funding Opportunity Number R23AS00362

Walnut Creek Watershed Restoration Plan

View of Walnut Creek (Contra Costa County) from the Iron Horse Regional Trail in Concord, California. Photo by Mx Granger (2024)

Walnut Creek Watershed Council (Applicant)
c/o Contra Costa Resource Conservation District
2001 Clayton Road, Ste. 200
Concord, CA 94520

Bob Simmons (Project Manager)
President, Walnut Creek Watershed Council
bobsimmons2866@gmail.com / 925.932.8591

Contra Costa Resource Conservation District (Fiscal Agent)
Lisa Damerel, Watershed Conservation Manager
Ldamerel@ccrcd.org / 925.690.4150

Table of Contents: **Technical Proposal**

Executive Summary 2
Evaluation Criteria 7
A. Watershed Group Diversity and Geographic Scope 7
A1. Watershed Group Diversity 7
A2. Geographic Scope 10
B. Developing Strategies to Address Critical Watershed Needs 11
B1. Critical Watershed Needs or Issues 11
B2. Project Benefits 17
C. Readiness to Proceed 22
D. Presidential and Department of the Interior Priorities 22
D1. Climate Change 22
D2. Benefits to Disadvantaged, Underserved, and Tribal Communities 24
Citations 25

Executive Summary

Date: August 31, 2024

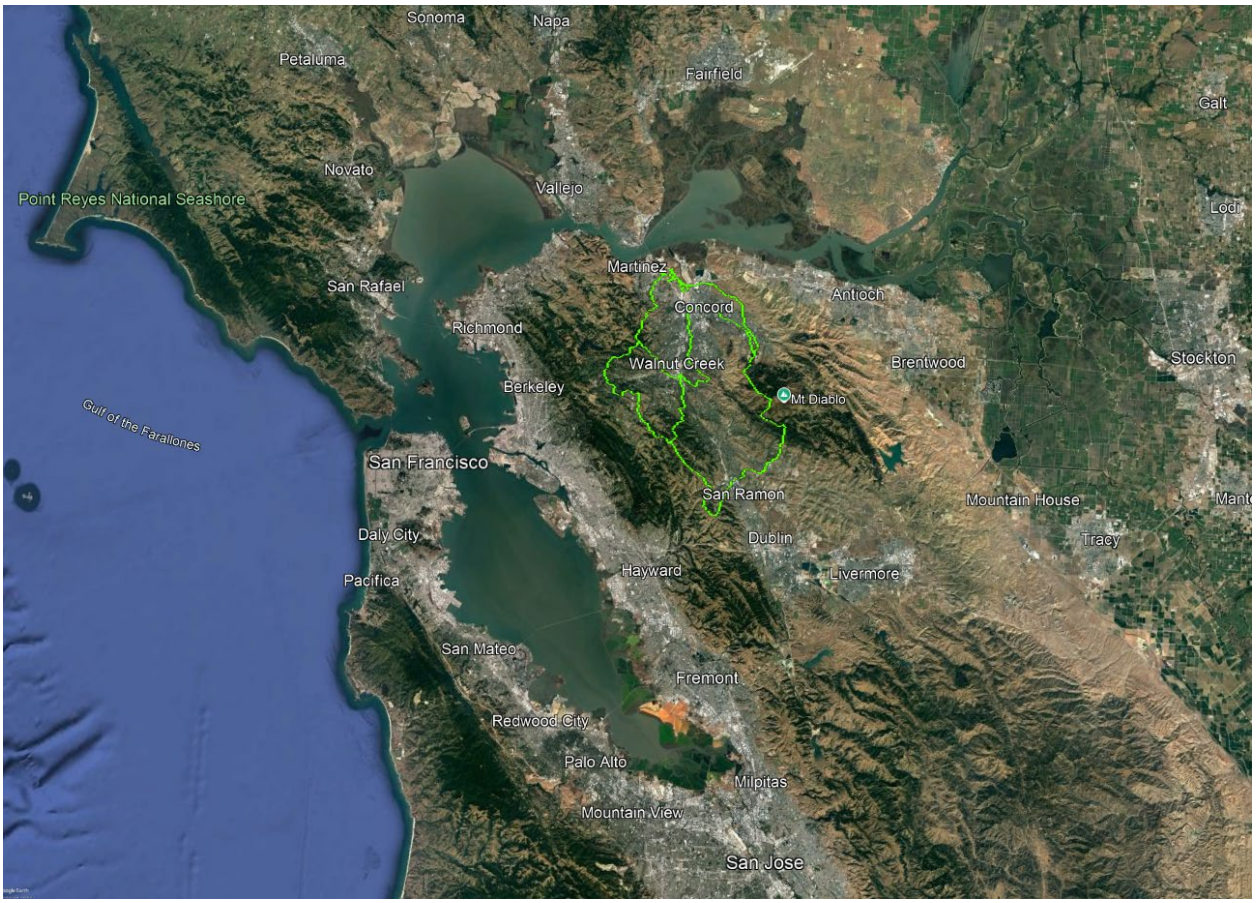
Applicant Name: Walnut Creek Watershed Council

City, County, and State: City of Concord, Contra Costa County, California

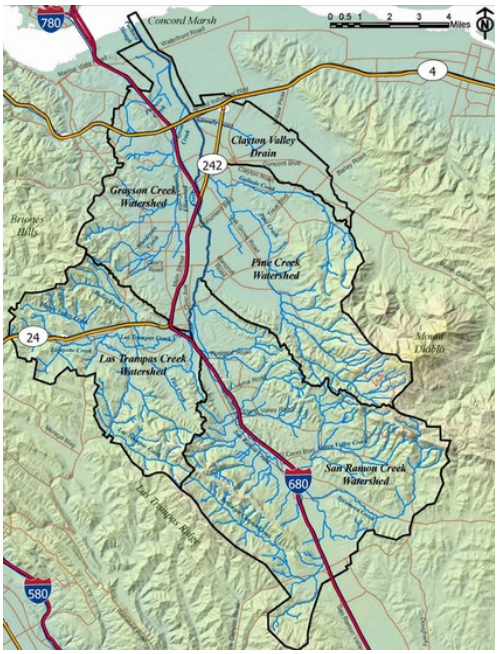
Project Summary: The Walnut Creek Watershed Council (***Council***), an Existing Watershed Group, seeks funding to engage stakeholders to complete a community-supported Watershed Restoration Plan (***WRP***) for the Walnut Creek Watershed in the San Francisco Bay Region. Due to the size and complexity of the watershed, along with the large number of diverse stakeholders, the Council has begun working with partners to conduct an extensive outreach and engagement plan to identify and prioritize restoration opportunities in each sub-watershed. Drawing on stakeholder input, previously conducted studies, inventories of existing conditions, recommendations, and analysis of opportunities and constraints, the Council will collaboratively develop the WRP in response to critical needs. The resulting plan will alleviate impacts of key issues of concern by establishing a vision and actionable objectives to design and implement nature-based, multi-benefit creek restoration projects that enhance fish and wildlife habitat, water quality, and climate resilience while increasing equitable access, recreational, and educational opportunities for the public to connect with nature while maintaining and improving the sustainability of flood protection.

Timeline: Proposed Watershed Restoration Planning activities will occur within the three-year grant period which is assumed to commence upon the anticipated award date of September 30, 2025 and be completed by September 30, 2028.

Non-Federal Lands: Proposed planning efforts are not focused on a Federal facility and do not involve Federal land.



Project Location



The Walnut Creek Watershed is located in central Contra Costa County, California, approximately 25 miles northeast of San Francisco. The watershed is in the southern portion of Suisun Bay (HUC 18 05 00 01) within the San Francisco Bay Area hydrologic region. Approximately 146 square miles or 96,389 acres in size, the USGS Hydrologic Unit Code (HUC) of the watershed in which the Council operates is #18 05 00 01 02. The WRP will encompass the following HUC 12 drainages: Walnut Creek HUC #18 05 00 01 02 04 (22,507 acres), San Ramon Creek HUC #18 05 00 01 02 01 (32,844 acres), Pine Creek HUC #18 05 00 01 02 03 (19,967 acres), and Las Trampas Creek HUC #18 05 00 01 02 02 (17,069 acres). Grayson Creek and Pacheco Creek are also part of the watershed, but not identified as a HUC. As part of the watershed restoration planning process, the Council will explore the feasibility of including the Mount Diablo Creek watershed HUC #18 05 00 01 03 (58,880 acres) which originally joined Walnut Creek until it was diverted in the early 20th century, so that the plan area may encompass the entire southern portion of the Suisun Bay WBD Hydrologic Unit. Refer to *Figure A1-1 Project Location Map* and *Figure A2-2 Walnut Creek Sub-Watersheds* in Appendix A.

Applicant Category

The Walnut Creek Watershed Council (***Council***) is a nonprofit organization that supports a healthy and sustainable Walnut Creek Watershed. Council is a tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code seeking WaterSmart Grant funding as an Existing Watershed Group to expand and strengthen stakeholder relationships in order to complete a community-supported Watershed Restoration Plan that provides a framework for planning, design, and implementation of future projects.

The Council was initiated in 2011 when members began meeting informally, organized as a voluntary, non-regulatory stakeholder group in 2013 and incorporated in 2021 with a collective mission to support community efforts, scientific studies, public education, and restoration projects that protect and enhance beneficial uses and resources in the entire watershed. The Council was established to facilitate information sharing and promote collaboration among the stakeholders including the Contra Costa County Flood Control and Water Conservation District (***FCD***), the Contra Costa Resource Conservation District (***RCD***), five community creek stewardship groups (***CSGs***), and other stakeholders to advance its mission.

While there have been several restoration projects[1] undertaken in the watershed, there has never been an overall, coordinated Watershed Restoration Plan with inclusive stakeholder input. The proposed plan would be the **first** watershed-wide restoration plan developed for the Walnut Creek watershed. Examples of ongoing restoration projects include the *Arundo* Removal and Replacement Project (led by the Council) and Lower Walnut Creek Restoration Project (led by FCD). The success of these projects demonstrates the capacity of the Council and its partners to undertake restoration projects at multiple scales.

The Council is currently laying the groundwork for the Walnut Creek Watershed Restoration Plan (***WRP***) in collaboration with the FCD, gathering information and conducting outreach to identify restoration opportunities in and near creeks and wetlands to improve natural habitats for fish and wildlife, improve water quality, reduce flood risk, and minimize maintenance. Residents and stakeholders have participated in finding, defining, vetting, and prioritizing restoration opportunities to establish the framework for a practical Plan that will help guide restoration activities in the watershed for the next 20 years. This preliminary work with the FCD is an essential component of the Plan proposed in this grant application.

Eligibility of the Applicant

The Council (the Applicant) is an Existing Watershed Group and a legally incorporated non-profit organization working in collaboration with Community Stewardship Groups, local governmental entities, and other stakeholders. The Council is a watershed group as defined in Section 6001(6) of the Cooperative Watershed Management Act as a "grassroots, non-regulatory entity that addresses water availability and quality issues within the watershed, is capable of promoting the sustainable use of water resources in the watershed, makes decisions on a consensus basis, represents a diverse group of stakeholders." It is uniquely qualified to complete proposed planning activities. Also, the Council is located in California, one of the states eligible for funding.

---

[1] The Council's Achievements Reports provide additional information on the Council's general history and activities and are available at https://www.wcwatershed.org/reports.html.

Project Description

The Council proposes to prepare a Watershed Restoration Plan (***WRP***) for the Walnut Creek Watershed. The WRP would be the first plan to address restoration and enhancement of the entire watershed.

Significant foundational work has already been done to prepare a WRP. In 2022, the Council initiated discussions with FCD, RCD, and CSGs regarding development of a watershed restoration plan. The Council received initial funding from the San Francisco Regional Water Quality Control Board (***RWQCB***) and FCD to engage with local community stakeholders to identify potential creek enhancement and restoration sites in the Walnut Creek watershed. After a two-year process of research, outreach, and consultation, the Council's initial identification of high- and medium-priority restoration and enhancement sites will be completed in December 2024. The WaterSmart grant would provide the Council with essential resources to build upon the significant work that has already been done, complete the WRP, and develop concept level project designs for selected priority sites.

The overall goals of the WRP are to educate and engage community stakeholders in the process of envisioning a healthy watershed, addressing key challenges, identifying and prioritizing opportunities for restoring and enhancing the watershed, and meeting state and local requirements for watershed plans.

The WRP will establish an overarching vision, set goals and objectives, and propose an action plan for near-term and long-term implementation of site-specific projects and programs. It will involve diverse stakeholders, describe the condition of the entire watershed in general terms (including current challenges and constraints to accomplishing the objective of a healthy watershed), and identify opportunities to (1) advance watershed-wide restoration projects (e.g., removing invasive species, planting native species, promoting stormwater infiltration, and reducing erosion), (2) achieve multiple public benefit goals including addressing equity and social justice issues, and (3) restore habitat for native fish and wildlife species, with attention to creek corridors that connect habitats throughout the watershed with Suisun Bay.

The WRP will incorporate topics relevant to the sub-watersheds, which may include: (1) review of identified restoration opportunities and development of fundable, actionable restoration projects; (2) review of bioassessments, inventories, and habitat conservation plans to identify opportunities for fish, wildlife, and native plant habitat restoration or enhancement; (3) identification of barriers to fish passage and fish survival; (4) identification of sources of pollutants and excessive sediment; (5) identification of invasive plants that should be removed from the riparian corridors and replaced with natives; (6) relevant technical analyses (e.g., identification of areas of historical flooding and the currently mapped 100-year floodplains, identification of areas of active channel erosion, bank instability, and sediment deposition; and designation of creek reaches based on hydrology and land use); and (7) identification of measures to increase community awareness and appreciation of local creeks and watersheds.

The following is a detailed discussion of the activities the Council proposes to undertake under **Task Area B: Watershed Restoration Planning**.

Watershed Restoration Planning. The Council will engage a professional environmental planning consultant to form a collaborative Design Team to complete the WRP, building on initial visioning, mapping, outreach, project identification and prioritization currently underway. The Design Team will work with stakeholders to establish an overarching restoration plan with

broad goals and specific objectives as a framework for integrating multi-benefit, nature-based adaptations for aquatic and terrestrial resources as well as human health, safety, recreation, and public access. (Refer to *Figure C-1 Consultant Scope of Work* in Appendix E.)

Identification and Prioritization of Projects. Leveraging current efforts, the Design Team will utilize WaterSMART funding to review and analyze the more than 80 restoration and enhancement opportunities identified so far in the Restoration Opportunity Tracker (2024). The consultant will collaborate with stakeholders to develop concept level design diagrams for the highest priority projects based on prioritization criteria developed in consultation with the CSGs and other key stakeholders.

Monitoring, Mapping and Other Technical Analysis. The Design Team will identify data gaps and conduct monitoring, measurement and field work needed to understand current conditions, opportunities and constraints to support the broader WRP effort and inform site-specific project designs. For example, the Council has mapped the presence of *Arundo donax* in the watershed, and is working to eradicate it. Further vegetation mapping is needed in both the central watershed area and in the upper watersheds areas to pinpoint locations, measure the extent of patches of invasive species, determine associated risks of flooding, erosion issues, or fire, and develop an effective strategy for eradication.

Outreach and Engagement. In 2024, the Council and CSGs initiated outreach to more than 250 stakeholders, including public agencies, tribal groups, and nonprofit and community-based organizations. During the grant period, the Design Team will continue outreach and engagement with diverse stakeholders to identify and prioritize projects that would improve the entire watershed. This task includes: 1) Working with watershed groups, landowners, Federal agencies, state, regional, and local governments to determine how the watershed could be improved; 2) Supporting CSGs to leverage outreach and engagement events, and integrate environmental stewardship and outdoor education whenever possible; 3) Strengthening relationships with tribal and underserved communities; and 4) Providing substantive input into and feedback on regional planning documents. The Council supports the integration of high-priority projects onto the EcoAtlas platform, which is a key tool utilized by the San Francisco Regional Water Quality Control Board (***RWQCB)*** and other California agencies to track aquatic resources.

Concept Level Project Design. As described in detail in *Figure C-1 Consultant Scope of Work* in Appendix C, the Design Team will conduct site visits at accessible properties to assess potential restoration and enhancement opportunities as well as constraints at those sites. The sub-consultant will review and prioritize the list of potential sites based on feasibility, ranking of likely costs, and understanding of the permit requirements and expectations of permit agencies. Findings will be documented and reviewed by the Council.

The consultants will develop concept level designs and cost estimates for multiple restoration sites, sufficient in detail to support future funding applications for final design and implementation. They will complete a site analysis and geomorphic assessment to understand channel size and flow indicator information, existing infrastructure, site access, and other existing constraints.

The consultants will evaluate these concept designs to understand the required environmental compliance documentation, including required technical studies, compliance with the California Environmental Quality Act (CEQA), and regulatory permitting needs. Some restoration projects that restore, rehabilitate, or enhance natural resources may qualify for a CEQA Categorical Exemption, under Section 15333, Small Habitat Restoration Projects as long as they meet certain

requirements, but the applicability of this exemption is unknown at this time. The projects' environmental compliance needs will be summarized in a memorandum.

Capacity-Building. The Council is a volunteer-led organization and recognizes that significant, sustained, professional effort will be required to complete the tasks in this grant application. Accordingly, the Council will contract-hire a part-time Project Director to oversee grant-funded activities and the process for three years. Duties may include: Working with consultants to ensure tasks and deliverables are on track; Coordinating ongoing outreach and engagement; Strengthening stakeholder relationships; Recruiting and coordinating volunteers; Scheduling and managing events and activities; Providing technical assistance to the Creek Stewardship Groups (CSG); Managing the BOR grant budget in coordination with RCD (the Council's fiscal agent), tracking deadlines and deliverables, and preparing grant reports and documentation as required; Pursuing funding opportunities and developing grant applications; and Managing online maps and data.

Project Management and Administration. The budget reflects standard administrative costs (10%) including those related to fiscal agency by the RCD.

Evaluation Criteria

A. Watershed Group Diversity and Geographic Scope

A1. Watershed Group Diversity

A1.1 Description of affected Stakeholder Groups:

The Council is a volunteer-led 501(c)(3) organization that supports a healthy and sustainable Walnut Creek Watershed. Our mission is to support community efforts, scientific studies, public education, and restoration projects that protect and enhance beneficial uses and resources in the entire watershed. We envision a Walnut Creek Watershed where the creeks are visible and thriving natural assets that join our communities into a unified whole. The Council's board includes community representatives from CSGs in each of the five sub-watersheds. The Council promotes collaboration among a diverse array of stakeholders including: community creek stewardship groups, government agencies, municipal partners, public institutions, non-governmental organizations, environmental groups, community groups, and tribal representatives. The Council has invested in outreach and engagement to 250+ stakeholder groups to increase awareness, enlist support and develop partners to initiate and sustain a long-range WRP. (*WCWC website* 2023)

A1.2 Entities and organizations already participating in the watershed group

Community Creek Stewardship Groups: There are five, all-volunteer community stewardship groups who collaborate to advance the mission of the Council and engage with their local communities to achieve a shared vision for the watershed.

- **Friends of Concord Creeks** is dedicated to stewarding waterways and natural spaces throughout the City of Concord. This includes Walnut Creek, Pine Creek, Galindo Creek, Clayton Drain, and Mount Diablo Creek. The FCC works to keep their creeks free of trash, monitor water quality, remove invasive species from streambanks and re-plant with native plants.
- **Friends of San Ramon Creek** (FOSRC) focuses on creek health in the San Ramon Creek watershed with an array of projects and programs. This sub-watershed includes San Ramon

Creek, Indian Creek, Sans Crainte Creek, Green Valley Creek, Bollinger Canyon Creek, Sycamore Creek, and San Catanio Creek. Many FOSRC members are leading *Arundo donax* removal efforts.

- **Friends of the Creeks** (FOC) As members of the Walnut Creek Watershed Council, FOC joined the watershed-wide focus on *Arundo* in 2018. *Arundo* is the single worst weed in California creeks, and this invasive species chokes waterways, causing localized flooding and loss of native habitat. This group maps *Arundo* in the watershed, educates the public (especially landowners along creeks) about *Arundo* and why they should remove it, and leads stewardship activities to remove *Arundo* and restore waterways by revegetating riparian areas with native plants that will stabilize the banks and provide wildlife habitat. The group has worked extensively to establish relationships and provide training for landowners on Pine Creek.
- **Friends of Pleasant Hill Creeks** (FOPC) is a nonprofit organization of Pleasant Hill residents whose mission is to engage community members in protecting, restoring, and enjoying creeks and adjoining open space. Creeks in Pleasant Hill include Grayson Creek and Murderer's Creek. Since 2017, FOPC has engaged hundreds of volunteers in creek cleanups, water quality monitoring, wildlife surveys, and other stewardship activities. FOPC is a project of Social and Environmental Entrepreneurs, a 501(c)(3) nonprofit organization.
- The **Lafayette Creeks Committee** encourages beautification of Lafayette's more than 16-miles of creeks and improves residents' awareness of creek maintenance and pollution prevention policies. The committee helps the City's staff ensure compliance with public education requirements under its Storm Water Permit.

Recently, a new group, **Friends of Tice Creek**, has been formed. This group is based in Rossmoor, a senior community.

Government Agency Stakeholders and Public Institutions. The Council works in partnership with a broad network of government agencies, public institutions, non-governmental organizations and other stakeholders to plan and implement local projects that help to achieve regional goals and the State goal of conserving 30% of California's lands and coastal waters by 2030 – known as 30x30. The affected stakeholders listed below are located in the Walnut Creek watershed, the County, or the broader regional watershed that drains to the San Francisco Bay and share common goals to protect and improve the quantity and quality of water.

- **Federal Agencies**: U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS)
- **State Agencies**: California Department of Fish and Wildlife (CDFW); Department of Water Resources (DWR) San Francisco Bay Regional Water Quality Control Board
- **Contra Costa County**: Resource Conservation District, Flood Control and Water Conservation District[2], Board of Supervisors, Clean Water Program, Health Coordinated Outreach Referral, Engagement (C.O.R.E.) program, Department of Conservation & Development, Fire Protection District, Fish and Wildlife Committee, Central Contra Costa

[2] The Contra Costa County Flood Control & Water Conservation District provides financial support that enables the Contra Costa Resource Conservation District to provide staffing and event coordination for the Walnut Creek Watershed Council.

Sanitary District, Libraries, Mosquito and Vector Control, Public Works Department, Sustainability Commission, and the (2) Water Districts

- **Local Governments**: City of Concord, City of Lafayette, City of Martinez, City of Orinda, City of Pleasant Hill, City of San Ramon, City of Walnut Creek, Town of Danville, and the Town of Moraga
- **Public Institutions and Higher Learning**: California State University-East Bay (Concord Campus), Diablo Valley College, University of California, Cooperative Extension, University of California, Berkeley River Lab, Saint Mary's College
- **Regional Parks and Utilities**: East Bay Municipal Utility District, East Bay Regional Park District, Pleasant Hill Recreation and Park District, Walnut Creek Open Space Division of the City of Walnut Creek.

Non-Governmental Organizations (NGO): The following NGOs are also affected stakeholders whom the Council has reached out to and invited to collaborate on the development of an effective WRP to strengthen climate resilience, protect water quality, and ensure environmental, social, aesthetic and economic benefits throughout the community: American Rivers, California Native Plant Society, California Urban Streams Partnership, California Watershed Network, Contra Costa Watershed Forum, Diablo Fly Fishermen, Greenbelt Alliance, John Muir Land Trust, Mount Diablo Bird Alliance, Outside the Box 925, The Restoration Trust, River Otter Ecology Project's, Salmonid Restoration Federation, San Francisco Bay Joint Venture, San Francisco Estuary Institute, San Francisco Estuary Partnership, Save Mount Diablo, Sustainable Contra Costa, Sustainable Lafayette, Together Bay Area, Trout Unlimited, The Watershed Project, Worth A Dam.

Multiple stakeholders have submitted letters of support for this application (See Appendix E, *Compliance and Support*).

A1.3 Planned Outreach and Engagement to achieve full stakeholder diversity

The Council and its partners are fully committed to stakeholder diversity and representation and will strive to develop a community-supported plan through ongoing outreach and engagement, particularly with underrepresented groups. In 2024, the Council reached out to more than 250 stakeholder groups via email as well as the general public via media (e.g., local e-newsletters and articles), hosted two well-attended interactive webinars, and supported in-person community outreach meetings and presentations in each of the five subwatersheds. In addition, the Council met with multiple stakeholders individually, coordinated site visits, and distributed an online survey. The Council will continue outreach, stewardship events, partnership activities, public meetings, newsletters, educational publications and marketing materials, site visits, and recruitment of new members and partners. Both the Council and FCD have dedicated web pages to share information and updates about the WRP.

Native Peoples: The lands of this watershed have been and continue to be shaped by the headwaters originating on Mount Diablo, the mountain known to the Ohlone peoples as Tuyshtak or "dawn of time." The area is rich in cultural history—for many generations, the land was a focal point for California tribes living along the creeks in close harmony with a healthy watershed. The Council has great respect for the indigenous people who stewarded this land and continue to steward it today. Accordingly, the Council wishes to partner with tribal members and local tribal organizations to engage in meaningful ways to protect, restore, and connect with this sacred landscape. To build these partnerships, the Council has performed initial outreach to the following: Wilton Rancheria, Guidiville Rancheria of California, Chicken Ranch Rancheria Me-

Wuk Indians of California, Cachil Dehe Band of Wintun Indians of the Colusa Indian Community, North Valley Yokuts Tribe, Sogorea Te' Land Trust (Confederated Villages of Lisjan Nation), Indian Canyon Mutsun Band of Costanoan, Nashville-Enterprise Miwok-Maidu-Nishinam Tribe, Wuksachi Indian Tribe/Eshom Valley Band, Amah Mutsun Tribal Band of Mission San Juan Bautista, Muwekma Ohlone Tribe, and Cafe Ohlone. Sogorea Te' Land Trust has already expressed interest in learning more about the WRP, and the Council is planning to coordinate a joint field trip to some potential restoration sites.

Expand the age range, ethnic, economic, and social diversity: While many one-time events (such as creek cleanups, invasive plant removal and planting of natives) attract diverse families and students, seniors comprise the largest percentage of volunteers engaged in ongoing creek stewardship activities. The Council is working to encourage and develop the next generation of leaders from diverse communities. The 2023 Contra Costa Watershed Symposium focused on intergenerational leadership and initiatives to expand the age range, ethnic, economic, and social diversity of active participants who understand, support, appreciate and actively engage in watershed activities for greater sustainability, continued community support, and public investments in restoration. The Council anticipates that development and implementation of the WRP will be vitally important to engaging diverse volunteers in restoration activities.

Other Stakeholders: More generally, the Council has identified additional groups for targeted outreach in partnership with the County, including members of the public affected by the quantity or quality of water within the watershed and private landowners.

A1.4 Description of the structure of the watershed group

The membership process is informal and inclusive; the RCD sends out notices of Council meetings to everyone on the mailing list. The Council Board is made up of representatives from each sub-watershed group (the CSGs). Decisions are made by majority vote, but the Council usually arrives at unanimous decisions and achieves consensus as the result of in-depth discussions. Board members serve as President (Bob Simmons), Vice President (Dick Heron), Secretary (Lesley Hunt), and Treasurer (Ron Hufft) with the support of the RCD (Fiscal Agent) for most administrative duties.

A2. Geographic Scope

Geographic diversity

Approximately 146 square miles or 96,389 acres in size, the Walnut Creek Watershed is geographically diverse, with 309 miles of creek channels accounting for almost a quarter of all mapped creek channels in Contra Costa County. The watershed is characterized by both natural and highly urbanized landscapes including protected natural lands (Mt. Diablo State Park, East Bay Regional Park District lands, and Walnut Creek Open Space), agricultural and grazed lands, suburbs, and highly modified urban creeks. Due to steep slopes and land protection efforts, the upper watersheds along the perimeter of the Walnut Creek Watershed generally remain undeveloped open space. The valleys of the watershed are densely urbanized and populated, with over 350,000 inhabitants. Nine cities (Martinez, Pleasant Hill, Concord, Walnut Creek, Lafayette, Orinda, Moraga, Danville, and San Ramon) are wholly or partly in the watershed. (Refer to *Figure A1-1 Project Location Map* in Appendix A.)

Figure A2-2 Walnut Creek Watershed and Subwatersheds is a map illustrating the geographic boundaries of the area in which the watershed group will work, which is the entire Walnut Creek Watershed, including the boundaries of the Creek Stewardship Groups, the primary stakeholders

for each sub-watershed. *Figure A2-3 Cities and Communities within the Walnut Creek Watershed and Sub-watersheds* illustrates local municipalities who are stakeholders. *Figures A2-8 and A2-9 Protected Open Space and Regional Trails in the Walnut Creek Watershed* illustrate regional parks, trails, and open spaces who are stakeholders. *Figure A2-10 Contra Costa County Flood Control Zones* show the extent of County Flood Control Zone 3B, the Walnut Creek Watershed, and *Figure A2-11 Flood Control Rights-of-Way* indicates the narrow extent of the FCD's channel segments along the creek in the Walnut Creek Watershed.

At present, all of the restoration sites under consideration are located in the central reaches of the watershed where the CSG volunteers live and where they are most familiar with the sites. One of the major benefits of the proposed grant is the opportunity to study the upper parts of the tributaries to Walnut Creek and coordinate with large stakeholders including regional parks to develop strategies and prioritize projects with watershed scale impacts, such as reducing sedimentation, improving hydrologic function, expanding habitat connectivity, restoring habitat for wildlife, and addressing vectors for invasive species.

The final recommendation in the *Walnut Creek Watershed Inventory* (RDG, 2013) was to include the Mount Diablo Creek Watershed into the Council's planning efforts. Mount Diablo Creek is immediately northeast of the Walnut Creek Watershed, adjacent to the Concord, Pine, and Galindo Creek sub-watersheds. The creek originally flowed into the Clayton Valley Drain to join Walnut Creek before it was diverted eastward, though it still drains to Suisun Bay. By broadening the geographic scope to include the Diablo Valley, the Council could include several great opportunities for creek, steelhead, and upland restoration along Mount Diablo Creek. Currently, there is no active watershed group in that area, but many of the stakeholders, municipalities, and agencies involved would be the same ones involved in the Walnut Creek Watershed. BOR WaterSMART funding would be used to support serious consideration of inclusion of this adjacent sub-watershed.

B. Developing Strategies to Address Critical Watershed Needs

B1. Critical Watershed Needs or Issues

Following years of intensive preparation, the Council and stakeholder groups are ready to address critical issues and needs in the Walnut Creek Watershed described below.

#1. Need for a comprehensive community-supported, watershed- wide restoration plan.

A range of critical issues pose immediate challenges from the headwaters to the mouth of the watershed (FCD 2009). Addressing these issues will require a long-term, multi-objective approach on a watershed basis with community-based planning due to a range of challenges in addressing creek issues that require stakeholder buy-in:

- **Jurisdictional boundaries.** The watershed encompasses numerous jurisdictional boundaries. Nine cities are wholly or partly in the watershed. Other lands include regional parks, unincorporated areas, planned communities, and creek channels that are operated by the FCD.
- **Form and function.** Since straightened concrete channels efficiently convey floodwaters downstream in a narrow right of way, and meandering creeks need a broad floodplain, there are significant property constraints that impact the design alternatives in heavily urbanized reaches of the creek that will require creative thinking and close collaboration with private landowners and developers.

- **Potentially conflicting interests**. Finding solutions that meet the concerns of the environmental and regulatory community for habitat restoration and preservation, the neighborhood for aesthetics, and property owners for flood protection will require careful consideration and collaborative planning. The WRP will help identify solutions and potential win-win approaches.
- **Long-term planning challenges**. Planning for future generations and changing climate conditions is particularly challenging given turnover in agencies and organizations, uncertainty in budget funding cycles, and availability of future financial support.
- **Unified vision**. Outreach, engagement, and collaboration is needed to strengthen relationships and establish an inclusive vision of restoring the creeks and specific project sites in the sub-watersheds into multi-benefit resources community and healthy habitats for wildlife.
- **Funding**. A plan and coordinated funding strategies are needed to fund improvements, maintenance, adaptive management, and stewardship.
- **Climate change**. Climate change will result in increased stormwater runoff, increased flooding, and higher water surface elevation at the creek's mouth, resulting in more properties in the floodplain. The county's general plan, climate action plan, green infrastructure plan, and city planning documents support comprehensive, watershed-based planning to preserve, protect and enhance riparian corridors as natural infrastructure that provides essential environmental services. Climate change is expected to increase water temperatures, adding stress to aquatic wildlife.

#2. Critical need to address declining ecological resilience by protecting water quantity and quality and enhancing or reconnect habitat through creek restoration.

Today, declining ecological resilience–including aquatic and riparian ecosystem degradation, habitat loss and fragmentation, endangered species concerns, and water quality impairments–is of great concern in the Walnut Creek watershed, sections of which have been highly urbanized following a century of engineering focused on development, efficient flood control, and water conveyance.

The *Walnut Creek Watershed Inventory* (RDG, 2013) states that there are three species of anadromous fish of particular concern: fall-run Chinook salmon *(Oncorhynchus tshawytscha)*, federally-threatened coho salmon *(Oncorhynchus kisutch),* and federally-threatened steelhead trout *(Oncorhynchus mykiss).* There are site-specific challenges where threatened species face fish passage barriers, elevated stream temperatures, drought, erosion, poor water quality, invasive species competition, and predation. CSGs are working hard to improve aquatic habitat by removing invasive species and revegetating riparian areas, however a comprehensive WRP and significant funding are needed to develop detailed design and engineering plans for specific sites to remove barriers for fish passage, improve connectivity and create high-quality habitat. Based on the *Restoration Project Tracker* currently under development, the Council is in a position to advance the identified priority sites, perform site analysis, examine opportunities and constraints, and match mitigation sites for near-term project implementation. There is also a need to examine water supply and water quality, as it relates to fish survival due to low summer flows and high water temperatures.

Refer to the maps in Appendix B: *Figure B1-1 Bioassessment Rankings in the Walnut Creek Watershed; Figure B1-2 Historical Status of Oncorhynchus mykiss in streams of Contra Costa*

County and Figure B1-3 Current Status of Oncorhynchus mykiss in Streams of Contra Costa County; and *Figure B1-4 Vegetation Habitat Types in the Walnut Creek Watershed.*

While many creek channels remain in natural condition, in highly urbanized reaches of the watershed, riparian corridors are degraded, channelized, and culverted with severely impaired habitat and impacted water quality. The WRP will respond to this critical issue with goals and objectives aimed at expanding and improving riparian habitat and water quality. (RDG 2013)

- Improve riparian conditions to support aquatic resources and improve fish survival. For example, steelhead require a year-round source of water or cool, deep pools to survive in the watershed over the summer, so both water flow and shade cover to reduce temperatures is critical.
- Remove barriers for improved fish passage. See Appendix B Figure B1-6 and Figure B1-7 Key Infrastructure in the Walnut Creek Watershed.
- Eradicate invasive plant species that limit habitat quality, including *Arundo donax* (Giant Reed) and *Carduus pycnocephalus* (Italian thistle). See Appendix B *Figure B1-8 Walnut Creek Watershed Arundo survey*.
- Reduce sedimentation and absorb stormwater by planting native grasses, shrubs and trees to revegetate upland slopes, floodplains and creek banks in riparian areas.
- Improve habitat connectivity wherever possible to reduce habitat fragmentation.
- Create continuous corridors and connections for larger, contiguous habitat patches.
- Support native landscapes and water-smart gardens on public and private property, including green schoolyards, community-based organizations, public parks, businesses and residential properties. Help educate volunteers about climate-ready, water-smart plant species to support habitat and conserve water.
- Protect existing aquatic resources, enhance existing wetlands, and create new wetlands, especially since seasonal wetlands are considered scarce in the central county area.

#3. Need to improve equity and access to green spaces to help address health disparities.

According to the Contra Costa County Climate Action Plan (CCC 2015), "a number of studies have drawn links between green space and community and individual health outcomes. In general, researchers have identified statistically significant associations between green spaces and health. The links between green space and physical activity, and to corresponding improvements in health, are relatively clear and well established. Green space is also thought to increase perceptions of safety, attractiveness, and calm, and most studies find positive, self-reported mental health benefits from access to open space such as increased relaxation, attention, energy, and feelings of well-being. [Though] there is less evidence for physiological effects such as reduced blood pressure or lower cortisol levels, green spaces may also improve health outcomes by mitigating the harmful effects of noise, heat, and air and water pollution. In particular, research suggests that green space can help cool urban heat islands, a role that will increase in importance as the climate continues to change."

Fortunately, 43 square miles (29%) of the Walnut Creek Watershed consists of lands zoned for parks and recreation or open space. Eighty-six miles (28%) of creek channels flow through parks or open space. Public open spaces provide access to over a quarter of both the watershed area and the total channel length in the watershed. Regional trails provide additional opportunities for users to explore and understand the watershed. The eight largest publicly-owned open spaces are: Briones Regional Park, Diablo Foothills Regional Park, Lafayette Reservoir, Las Trampas Regional Wilderness, Lime Ridge Open Space, Mount Diablo State Park, Shell Ridge Recreation

Area, and Sycamore Valley Open Space. Refer to the map in Appendix A, *Figure A2-9 Protected Open Space and Regional Trails in the Walnut Creek Watershed*.

Importantly, these large open space assets are difficult to access without a car or the ability to drive, and they are miles away from the most disadvantaged communities whose residents would benefit from greater access to them. In order to improve equity and access to green spaces and creek corridors to help address health disparities in the watershed, parks, creek sites, and natural resources within a 10-minute walk to residential areas in low-income communities are needed. Healthy, connected creek corridors help meet this need.

#4. Need to address drought impacts and wildfire risk.

Though California's natural landscapes have evolved to be extremely resilient to disturbance including fire, earthquake, erosion, and flooding, highly-urbanized watersheds are increasingly vulnerable to catastrophic events. According to the Vulnerability Assessment[3] (CCC 2023), "Less precipitation [due to climate change] could lower water levels or decrease water quality at streams and lakes, which can affect both natural habitats and recreation activities." Prolonged drought and extreme weather events are stressors that weaken the natural defenses of trees, plants, and animals leaving them susceptible to pests and disease. Dead or dying plants in hot, dry landscapes are more flammable, increasing risk of catastrophic fire near city centers and residential areas and poor air quality due to smoke from fires in the region.

The Council has recognized *Arundo* as one of the main threats to the health of our watershed. Eradicating this plant from the watershed will be a multi-year effort that involves locating and removing stands of *Arundo* on public and private property, and where feasible, replacing the *Arundo* with suitable native plants. *Arundo* can grow four inches a day and up to a total height of thirty feet! Arundo consumes prodigious amounts of water and spreads aggressively—these qualities make it easy for *Arundo* to outcompete native plants for resources and space. The plant provides little food or habitat for insects, birds, and other beneficial wildlife. *Arundo*'s encroachment on waterways can lead to flooding during the rainy season, diminished water quantity and flow during the dry season, and increased fire hazard. Refer to *Figure B1-9 Baseflow of Creeks in Contra Costa County with a Mid-Century Drought (2019-2046).*

#5. Need to provide flood protection while converting aging infrastructure with effective nature-based solutions.

The Council has been working in close partnership with FCD to develop solutions to address localized flooding along the creek corridors, and the WRP is an opportunity to reduce flooding and stormwater impacts effectively with multi-benefit green infrastructure and community-supported restoration projects that also improve habitat and create meaningful green spaces within communities as well as slowing, spreading, and absorbing stormwater to reduce flooding. The Vulnerability Assessment (CCC 2023) states: "Although climate change is expected to increase the frequency and intensity of droughts, scientists also project that it will increase the frequency and intensity of floods within Contra Costa County, although precipitation levels are not expected to change very much. Up to half of California's precipitation comes from a

[3] Contra Costa County is embarking on Envision Contra Costa 2040, an update to the Contra Costa County General Plan, Climate Action Plan, and Zoning Code. As part of this, the County prepared a vulnerability assessment, a detailed analysis of how a changing climate can harm the various elements of the county, including people, physical structures, ecosystems and natural resources, community services, and other community assets.

relatively small number of intense winter storms, which are expected to become more intense with climate change." The FEMA Flood Hazard Map shows 100-year and 500-year flood hazard zones in the lower Walnut Creek watershed.

Over 70% of the channels (by length) in the watershed are natural, meaning they have no obvious reinforcements. Nearly 16% of the creeks are concrete channels and an additional small percentage are rip-rapped. Another 12% are constructed earth channels. Over 11% of the channels are in culverts underground, providing significant daylighting opportunities. With nearly 100 miles of reinforced channels, there are many built features and modifications in the watershed that greatly limit habitat values. For a description of Key Watershed Infrastructure including concrete channels, underground culverts, drop structures and detention basins, and information about the channels of the watershed, see *Figure B1-5 Bank or Channel Types in the Walnut Creek Watershed; Figure B1-6 and B1-7 Key Features of the Walnut Creek Watershed.*

The FCD faces multiple management challenges in the Walnut Creek Watershed. Those challenges, as reported by the FCD, are listed below (FCD 2009.).

- **Sediment management and loss of channel capacity**: Due to sediment accumulation and deposition in the watershed, particularly in Lower Walnut Creek, channels have lost their design capacity to convey floods.
- **Aging infrastructure**: Much of the flood control infrastructure in the watershed is around 50-years old. Facilities are generally well-built, but elements are showing signs of aging. For example, the bottom of the San Ramon bypass is no longer smooth and has worn down to an aggregate surface. Hairline cracks are forming in the concrete channels of Pine, Galindo, and Grayson Creeks. Trees outside of concrete channels are growing and their roots are pressing against the walls. No plan exists for funding and replacing aging structures. When they are replaced, citizens may expect new flood control structures to be designed and built differently, but the corridor widths will be severely limited.
- **Funding**: The FCD is not a utility like water or wastewater and cannot set rates for its customers. Its funding rate is frozen by Prop 13 at 1978 base rates. This funding stream covers current maintenance costs but no source exists for replacement costs.
- **Army Corps requirements for maintenance**: The Army Corps sets requirements for facility maintenance which are increasingly difficult to achieve. Part of the challenge of meeting the mandatory maintenance established by the Army Corps is also meeting the mitigation requirements set by other permitting agencies. The FCD finds these requirements difficult to achieve and at times prohibitive.
- **Levee certification/FEMA**: Because they lack sufficient freeboard, none of the levees in the Walnut Creek Watershed are FEMA certified. Partnering with the Corps and FEMA assists with funding but requires a difficult planning process.
- **Invasive species**: Zebra mussel, *Arundo donax* (giant reed), and other invasive species are increasingly found in the Walnut Creek Watershed, threatening native species and complicating resource management. These invasive species are often out-competing native species and reducing the quality of available habitat.
- **Easement/license holders exceeding rights**: A number of users and agencies hold easements or licenses on flood control property. Increasingly, these license or easement holders are exceeding the rights explicit in their agreements. This can complicate flood control management, maintenance, and operations.
- **Creek and channel safety**: High flows, especially those in concrete channels, pose a threat to anyone entering the channels. The FCD has examined a creek restoration alternative to

improve creek safety by replacing concrete channels with naturalized creeks and found that it would cost $1.3 billion and require the removal of hundreds of homes.

- **Right-of-way encroachment**: Private pools, decks, gardens, and fences have all encroached on flood control access easements. Cities fail to enforce easements or to contact the FCD when issuing building permits that encroach on easements. As a result, the FCD must remove impediments from easements or work around them.
- **Sea level rise**: The existing flood control system was largely designed when little was known about changing sea-level elevations. As sea-level rises, the channels effectively lose capacity and the threat of flooding, particularly in the lower watershed, increases.
- **Homelessness/Trash/Pollutants**: Homeless encampments, trash in the channels, and pollutants of concern impair water quality and complicate management.
- **Lack of public knowledge about the flood control system**: Floods are infrequent and customers in the watershed generally don't know that they're protected by the FCD system. Given the complexity of the system, very few people, including resource professionals and creek enthusiasts, understand it fully.

FCD staff are fully involved in the WRP process, and FCD and Council are jointly explore ways in which the WRP can help identify solutions to some of the above challenges.

#6. Need to cool rising temperatures, a threat to aquatic resources and human communities.

Urban temperatures are increasing, especially in highly-urbanized watershed areas, threatening human health, safety, habitat, and water resources. The Vulnerability Assessment states that "the number of days residents experience extreme heat in Eastern Contra Costa County is expected to increase dramatically due to climate change by mid century….Extreme heat can cause heat-related illnesses, such as heat cramps, heat exhaustion, and heat stroke…and can harm animals and plants that are not adapted to these conditions." And that "higher temperatures can increase surface ozone concentrations and negative health outcomes including reduced lung function, pneumonia, asthma, cardiovascular diseases, and premature death." The WRP will include opportunities for urban greening to cool urban temperatures, especially in disadvantaged communities where temperatures are markedly elevated. Refer to *Figure B1-10 Frequency of Extreme Heat Days in Concord and Richmond (DAC's)*.

Many of the restoration projects envisioned by the Council will help cool urban temperatures and protect habitat, providing multiple benefits to stakeholders. For example, planting riparian corridors helps cool stream temperatures and improve habitat, and CSGs can help to protect existing trees and support tree planting to provide greater tree canopy cover throughout the watershed.

#7. Need funding for development of shovel-ready project design, permitting, implementation, monitoring, and stewardship.

Even though there is broad support to convert aging, single-purpose flood control infrastructure with creek restoration and multi-benefit green spaces, the FCD cites lack of funding as a significant hurdle. Based on preliminary information, it is certain that final design and implementation of major site-specific restoration projects will require millions of dollars in funding for engineering, design, implementation, and stewardship. Having an action plan with identified and prioritized projects will facilitate progress toward achieving the broader vision for a healthy, interconnected, functional watershed that provides social, environmental and economic benefits to the entire community. The WRP will support future grant funding applications and direct mitigation funding.

Partly due to increased interest in creek restoration and fish passage and a request from the Council, the FCD has initiated a Section 1135 request to the U.S. Army Corps of Engineers to look at alternatives to drop structure #1, which is a barrier to fish passage. A decision from the USACE on whether to initiate this study is expected in January 2025.

B2. Project Benefits

The Council and stakeholders believe that restoring the Walnut Creek Watershed will be critical to addressing the above-described watershed issues and will offer significant benefits to everyone in our community. This information below details how the WRP will address identified needs, summarizes next steps, and describes the anticipated benefits to stakeholders. Quantitative and qualitative support was developed utilizing numerous *References and Resources in the list uploaded as an attachment.*

#1. Need for a comprehensive, coordinated, community-supported, watershed-wide restoration plan.

Next steps: The Council proposes to develop a community-supported, data-based WRP to understand existing conditions, coordinate actions at the watershed level, prioritize projects, understand opportunities and constraints, identify mitigation sites, develop design plans, leverage funding and investments, and implement local projects that improve watershed health and function. Engaging stakeholders to develop this plan is a critical first step because the watershed is large and complex with a myriad of jurisdictional boundaries and management objectives, but with a shared interest in strengthening climate resilience, protecting water quality, and ensuring water supply for generations to come.

Expected outcomes and anticipated benefits: (1) Coordinated regional planning efforts and integrated multi-benefit projects. (2) Identification and prioritization of site-specific projects, facilitates engineering and design development to advance implementation at the site level. (3) Improved equity and climate resilience.

Stakeholders who benefit: Local governments, public institutions, non-governmental organizations (NGOs), Community Stewardship Groups (CSGs), and watershed residents, particularly urban and disadvantaged creekside residents.

#2. Critical need to address declining ecological resilience by protecting water quantity and quality and enhancing or reconnecting habitat through creek restoration.

Next steps: The Council's outreach and engagement activities with stakeholders to date have already brought attention to fish passage barriers and opportunities to restore and enhance riparian corridors for anadromous fish. Regulatory agencies, land owners and water managers are showing interest in nature-based solutions that support aquatic ecosystem restoration. Addressing this issue is a critical next step; in other Bay Area watersheds, site-scale urban greening and restoration efforts allowed community residents to understand and appreciate the social, environmental and economic benefits to be gained, facilitating support of future projects and interconnected corridors for improved watershed health at the landscape scale.

Expected outcomes and anticipated benefits. The Council has worked to locate and remove invasive plant species which displace native habitat, clog the channel and withdraw copious amounts of water from the stream. Removal of invasive species is helping improve ecosystem function, helping with hydrology and the natural cleansing process. Re-establishing tree canopy cover in the riparian corridor is helping to cool stream temperatures.

Stakeholders who benefit: Improved habitat and ecosystem function benefits aquatic resources, fish and wildlife. Conservation organizations, state and regional agencies including CDFW, FCD, local governments, CSGs, and watershed residents, particularly those who can visit restoration sites.

#3. Need to improve equity and access to green spaces to help address health disparities.

Next steps: Rising temperatures, increased emissions, and drought are detrimental to air quality and cause health impacts particularly for vulnerable community members and residents of disadvantaged communities located near major transportation routes where carbon emissions and particulate matter are most concentrated.

Expected outcomes and anticipated benefits. If high-quality green spaces were within a 10-minute walk of residents, young people and seniors who do not drive or people who do not have access to a car could still connect with nature and experience direct health and wellness benefits. This outcome would catalyze future engagement, stewardship, knowledge, and increased support in future restoration projects.

Stakeholders who benefit: Disadvantaged community members, seniors and children, people living in housing or apartments without access to private yards or parks. Through restoration, riparian corridors can form public greenways offering more benefits to more people, including access to nature and open space.

#4. Need to address drought impacts and wildfire risk.

Next steps: Bay Area residents are intensely aware of drought and wildfire impacts due to recent historic droughts and water conservation efforts as well as recent catastrophic wildfires that impacted many Californians. Water supply and conservation is top of mind for state and local governments and funding for multi-benefit projects and investments in watershed restoration, infrastructure, and climate adaptations is a regional priority. Now is the time to prioritize restoration efforts, conserve water, and avoid wildfire.

Expected outcomes and anticipated benefits. Multi-benefit urban greening and restoration projects reduce dust from drought, cool urban temperatures, and conserve water to maintain healthy, resilient ecosystems and reduce wildfire risk. Healthy creeks serve as "fire breaks."

Stakeholders who benefit: Dust from drought and smoke from wildfire are regional air quality issues, and sensitive populations benefit from improved air quality as well as reduced fire risks.

#5. Need to continue to provide flood protection while converting aging infrastructure with more effective, less expensive, nature-based solutions.

Next steps: With increased frequency and intensity of storms, exemplified by historic periods of drought followed by recent atmospheric river events, there is an urgent need to protect residents from flooding today while adapting to future conditions in a way that is sustainable and provides multiple benefits. Per its original mandate, the FCD will continue to provide the best service to the cities, the county, and their residents, for the needs of today and of the future. Per a 50-year plan adopted by Contra Costa County in 2009 (described further below), FCD supports the vision of transforming aging flood infrastructure into an opportunity to restore creek corridors for multiple benefits. The FCD is on board with integrating climate adaptations as part of infrastructure replacement, however this will require a long-term, multi-objective approach on a watershed basis with community-based planning. The Council has been working in collaboration with the FCD and a range of stakeholders to identify potential project opportunities, constraints,

and costs to implement more natural flood protection. A community-supported WRP is needed to coordinate project selection, prioritization, design, implementation, funding and stewardship to make this approach feasible**.**

Expected outcomes and anticipated benefits. (1) WaterSMART funding to support the development of a WRP would lead to a community-supported plan to convert aging flood control channels and culverts into more effective, less expensive, nature-based solutions that provide essential environmental services with robust flood control co-benefits. (2) Revegetating upland areas to reduce erosion will help improve water quality and habitat while addressing localized flooding caused by sedimentation downstream. (3) Eradicating invasive species such as *Arundo donax* which block water flow and prevent native vegetation from establishing will help alleviate flooding and improve stream habitat. (4) The WRP could help institutionalize nature-based solutions by incorporating lessons learned from recent shoreline adaptation projects in the Lower Walnut Creek Watershed.

Stakeholders who benefit: Contra Costa Flood Control District (FCD); local governments and residents of flood-prone communities; and CSGs.

#6. Need to cool rising temperatures, a threat to aquatic resources and human communities.

Next steps: Urban greening will deliver relief from rising urban temperatures. American Forests uses landcover data and the California Urban Tree Canopy Inventory to assign a Tree Equity Score. *Figures B1-13a and B1-13b* in Appendix B show that census blocks in the lower watershed (shown in orange) are warmer than areas with adequate tree canopy cover (shown in green). In Concord, where the current tree canopy cover is 7%, the heat disparity map shows that it is currently +3.6 degrees hotter in the lower, more urbanized watershed. With rising temperatures, residents in under-treed neighborhoods will suffer the greatest health related heat impacts. Shade trees also help conserve energy and reduce electricity demand caused by residents turning up their air conditioning.

Expected outcomes and anticipated benefits. The recommended tree canopy goal is 30% and tree planting is a high priority. Some of the neighborhoods in the mid to upper watershed, such as Pleasant Hill have a 40% tree canopy cover and are -5.6 degrees cooler. Tree planting is even more critical as temperatures rise. If all of the stakeholders work together to aggressively implement urban greening, tree planting, restoration, and revegetation, it would be possible to achieve a 30% tree canopy target.

Greater tree canopy in riparian areas also cools stream temperatures, and cooler stream temperatures are essential for anadromous fish.

The WRP will promote the use of green infrastructure to reduce heat sinks such as removing pavement and increasing permeable surfaces. Lower temperatures in neighborhoods with poor tree canopy cover will provide health benefits including the reduced the risk of heat-related death and illness in people with comorbidities, children and seniors. Urban greening also helps to improve neighborhood walkability and active lifestyles which promote health and strengthen social cohesion. Street trees, parks trees, and riparian forests also sequester carbon to help improve air quality, reducing rates of asthma and trips to the emergency room.

Stakeholders who benefit: Tree Equity maps by American Forests indicate poor tree canopy and high temperatures in disadvantaged communities near the freeways and in heavily urbanized, downstream sections of the watershed. These residents will directly benefit from a healthy urban forest and more green spaces in which to escape intense heat.

#7. Need for funding for sustainable project design, implementation, and long-term stewardship.

Next steps: The FCD is open to a new approach to replacement of aging flood control infrastructure with multi-benefit, nature-based solutions, however funding is a significant barrier. After California Proposition 13 was passed in 1978, the tax rate was locked in and the total property tax collected was reduced to 1% of assessed value. Though in 1978 some flood control zones had a reasonable tax rate based upon projects that were underway, other flood control zones had reduced tax rates because the zone had a surplus or there were no pending projects. In the Walnut Creek watershed, this resulted in a $35 annual investment per residential parcel, which is insufficient funding for adequate maintenance of existing flood control channels or design, construction, and long term stewardship of natural creek channels.

Expected outcomes and anticipated benefits. Because the watershed is endowed with a generous network of creek channels, restored creek segments could provide greater equity access to green spaces for more residents while also providing essential environmental services to absorb stormwater, reduce flooding, recharge water supply, and protect water quality.

As single-purpose flood control infrastructure built in the 1950s ages and needs to be replaced, the FCD will consider the multiple benefits of replacing outdated conveyance features with nature-based solutions including creek enhancement and floodplain restoration. "A 50-year Plan from Channels to Creeks" (FCD 2009) recognizes the following benefits of this paradigm shift:

- **Broad public support**. Since regulatory agencies and public sentiment support nature-based systems rather than artificial concrete systems, planning future facilities that meet modern expectations will guarantee a broad level of support for these investments in a safer, more resilient future.
- **Grant funding.** The FCD expects that there will be opportunities for grant funds to construct elements of a more natural system and probably fewer (or maybe zero) opportunities for grant funds to replace concrete structures with similar hardscape. Since then, State funding for urban greening has been at an all-time high, and federal funding from the Bipartisan Infrastructure Law is helping to address key infrastructure, safety, and environmental justice challenges.
- **Increased public awareness**. The proposed approach to WRP with diverse stakeholder support will serve as an opportunity to engage residents and build their understanding of related issues such as flood protection, adaptive management, stewardship, natural creek system function and form, etc. The FCD notes that an increased public awareness of stormwater issues leads to increased understanding and support for funding.
- **Community design**. By engaging community members in the planning and design process and developing community-supported plans, parks, trails and stream restoration projects may be integrated into the fabric of the community, increasing enjoyment of nature in the city, sustainability, and neighborhood livability. These plans can then become part of the general plan or specific plan and can lead to partial funding through development fees or redevelopment revenue. This results in environmental, social and economic benefits.
- **Life cycle costs.** Much of the flood control infrastructure constructed in the 1950s is in need of repair or replacement today. Many of these concrete channels tend to have high initial construction costs, very low ongoing maintenance costs, and high replacement costs. Natural channels may require increased right-of-way width and generally higher ongoing maintenance, but the initial design and construction and later replacement costs are

comparatively low. Therefore, over time, the costs for natural channels will be much less compared to the costs of multiple life cycles for concrete channels, and with a range of co-benefits.

- **Water quality and conservation.** Open creeks in natural channels provide essential environmental services of filtering water, cleansing it, holding it longer in the watershed, and recharging the water supply. This helps to meet NPDES permit requirements and enhance aquatic habitat.
- **Aesthetics.** Natural channels are a visual amenity and a community asset for recreation, play, and passive enjoyment. The cool shade, green foliage, and the sounds of birds and flowing water, for example, are shown to be calming and restorative for mental and physical well-being.
- **Employment.** Since the FCD is viewed as a visionary and progressive flood control district, and values environmental protection, Staff report greater career satisfaction and improved recruitment and retention rates.

Community members will gain tangible benefits from a WRP and resulting nature-based solutions including the following from "A 50-year Plan from Channels to Creeks" (FCD 2009):

- **Quality of life**. Unlike a concrete channel or culvert, a natural stream system is a green space filled with life that engages residents every day, especially when integrated with parks, trails, green schoolyards, community gardens, and street trees. Neighborhoods with green spaces—those with greater tree canopy cover, parks, gardens, and open space—are safer, more sustainable, and have higher property values.
- **Community amenity**. Unlike a concrete channel, a natural creek is an amenity and an attraction that provides a wonderful creative placemaking opportunity that is authentic and diverse. The Council envisions thriving urban areas that have integrated creeks and natural amenities for aesthetic, social, environmental, and economic advantages.
- **Habitat**. A healthy, connected riparian corridor provides much needed habitat for native plants and animals, fish, birds, and pollinator species essential for a diverse ecosystem. While creek restoration projects may focus on aquatic and riparian habitat such as fish passage, barrier and invasive species removal, and cooling stream temperatures, the WRP will provide a framework for creating corridors and connecting habitat patches for greater functionality and resilience at the watershed level.
- **Water quality**. A more natural system will provide opportunities for cleansing and filtering storm run-off, particularly during low flow events, to reduce pollutants in the stormwater.
- **Health and wellness**. Studies have shown that neighborhoods where residents live within a 10-minute walk of an accessible green space get more exercise. Walking outdoors helps regulate stress, restore mental well-being, and encourage healthier, more active lifestyles. Access to high-quality green spaces helps relieve place-based stressors such as traffic, noise, air pollution, and heat. Re-establishing natural creeks in an urban setting will increase opportunities for children to interact with nature, explore, learn, and experience natural elements first hand.
- **Community involvement**. Creek sites provide an opportunity for citizens to get involved in creek related activities, such as clean-ups, water quality monitoring, and fish surveys, or for youth groups to help actively manage portions of the creek by, for example, removing invasive species, or by developing watershed plans. Participating in stewardship activities helps build social bonds and decrease feelings of isolation, increase citizen involvement and increase their sense of Community.

- **Green jobs**. In recent decades, the Bay Area has experienced a groundswell of concern for the environment, leadership in hands-on environmental education and participation in stewardship, urban greening projects, and environmental careers. Many cities and counties have a need for a skilled workforce to restore, manage, and maintain public and private green spaces including parks, open spaces, and riparian corridors. Examples include re-vegetation and soil bioengineering project work, water quality monitoring, and erosion prevention on private property and stream stewardship training for private property owners. Funding opportunities and training programs for "green jobs" is available to help support economic sustainability.

Stakeholders who benefit: FCD, cities, NGOs, and residents will benefit from investments in planning and implementation of these significant climate adaptation projects.

C. Readiness to Proceed

The Council is ready to proceed with proposed activities upon entering into a financial assistance agreement, and is able to complete the proposed activities within the three-year timeframe as shown in the preliminary project schedule included in *Figure C-1 Consultant Scope and Fee Proposal.* No new policies or administrative actions are required to implement the Watershed Restoration Planning grant activities proposed. Letters of support from key stakeholders are included with this application to demonstrate project readiness.

D. Presidential and Department of the Interior Priorities

D1. Climate Change

Protect vulnerable community members. The Council recognizes the need to build resilience in communities vulnerable to climate hazards. The county's general plan update, *Envision Contra Costa 2040* (CCC 2023), outlines key climate hazards and vulnerabilities, and establishes broad goals and objectives to identify and address current needs and adapt to future conditions for greater social, economic, and environmental resiliency. However, a WRP is a needed strategy for further coordinating local, nature-based solutions that help to protect and restore habitat, absorb and filter stormwater, cool urban temperatures, improve air quality, and connect people with green spaces in meaningful ways. The Council has already invested in identification, prioritization, collaboration, design, implementation and stewardship of site-level projects.

The Climate Action Plan (CCC 2023) is the County's strategic approach to reduce greenhouse gas (GHG) emissions from sources throughout the unincorporated areas. The WRP will directly support the sustainability goals of local governments by facilitating the implementation of green interventions to address critical climate issues:

- **Resilient communities and natural infrastructure**: Increase resilience to climate hazards and foster community health by sequestering carbon and addressing the impacts of heat islands. The Greenbelt Alliance has identified this as a "Bay Area Resilience Hot Spot" because Concord is facing wildfire risks in addition to the impacts of extreme heat. On an average heat day, Contra Costa County has 532 excess emergency room visits with 223 heat days between 2009 and 2018 (UCLA Heat Maps). Those numbers are expected to rise as climate change causes more extreme weather events.
- **Reduce water use and increase drought resilience**: Use less water and prepare communities for drought by monitoring water use, promoting water conservation, and managing groundwater resources sustainably according to the East Contra Costa Groundwater Sustainability Plan.
- **Support active transportation, public access and connected trail systems** for a cleaner transportation network that provides walking, biking, transit, and infrastructure for electric vehicles.
- **Improve climate equity with greater access to high-quality green spaces**, increased walkability and more trees and green infrastructure, including riparian corridors, parks and open space. Mitigate environmental factors resulting in health disparities, promote safe and livable communities. Collaborate with stakeholders to develop an inclusive process.
- **Model Leadership** for how local governments and community-supported organizations can take action in climate issues by implementing restoration and urban greening projects.

Next steps: The county is finishing the General Plan update for unincorporated areas and local governments are working to comply with permitting requirements and climate action plans, so it is critical to integrate goals and objectives related to watershed health and resilience to protect vulnerable communities.

Expected outcomes and anticipated benefits: By planning and implementing multi-benefit projects in response to place-based stressors, we can adapt neighborhoods into climate-ready, livable communities while protecting residents from climate hazards, such as flooding in vulnerable and disadvantaged communities in flood prone areas with higher summer temperatures.

Sea Level Rise. The Council sees the need to coordinate shoreline adaptations for sea level rise to protect downstream communities and habitats. While sea level rise will impact the low lying areas along the shoreline at the mouth of the creek, natural ecosystems will be disrupted by higher tide levels and intrusion of saltwater into freshwater systems. Development near wetlands is likely to prevent inland migration, and when characteristics of these wetlands are altered or lost, so will the habitat they provide and associated plants and animals. Fortunately, the FCD recently completed Lower Walnut Creek Restoration Project re-evaluated the antiquated design and maintenance practices of the Lower Walnut Creek flood control channel, and implemented a sustainable, interconnected system of tidal and seasonal wetlands, open waters, and uplands. Therefore, the proposed WRP will incorporate the Lower Walnut Creek Restoration Project and build on that effort, but the focus of the WRP will be on the reaches upstream of those most impacted by sea level rise.

Expected outcomes and anticipated benefits. Integrating the Lower Walnut Creek Restoration Project and incorporating lessons learned from regional shoreline adaptation projects into the WRP will benefit shoreline residents. Increased public access and recreation opportunities will

be preserved as a result of planning for Sea Level Rise initiated by the Contra Costa County Adapting to Rising Tides Project (BCDC 2017).

D2. Benefits to Disadvantaged, Underserved, and Tribal Communities

Based on the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool, *Figures D2.1 - D2.7* in Appendix D indicate *Disadvantaged Community* Census Tracts* in the project area within Contra Costa County, California. The tracts listed below are considered disadvantaged because they meet one burden threshold AND the associated socioeconomic threshold.

- Census tract #06013338101 (Population: 5,352)
- Census tract #06013336202 (Population: 6,222)
- Census tract #06013336201 (Population: 4,056)
- Census tract #06013336102 (Population: 7,319)
- Census tract #06013336101 (Population: 5,236)
- Census tract #06013328000 (Population: 2,340)

The goal of the proposed WRP planning effort includes a range of objectives that aim to improve health and safety by strengthening resiliency to climate change with nature-based solutions that will cool urban temperatures, connect people with green spaces, absorb stormwater, and protect human health and natural resources, air and water quality. Environmental justice is a direct result of this goal. Below is a list of burdens that may be addressed in the WRP and a few examples of positive outcomes for community members.

Flood risk (Projected risk to properties from projected floods, from tides, rain, riverine and storm surges within 30 years.) Restoration and urban greening activities such as Low Impact Design (LID), Green Stormwater Infrastructure (GSI), rain gardens, and tree planting will help slow, spread, and infiltrate rainwater and reconnect the hydrology of the watershed to lower flood risk and increase water supply.

PM2.5 in the air (Level of inhalable particles, 2.5 micrometers or smaller.) Planting trees will provide shade to cool urban temperatures, capture CO2 and particulate matter to improve air quality for human health.

Linguistic isolation (Share of households where no one over age 14 speaks English very well.) Stewardship activities help alleviate linguistic isolation by introducing neighborhood residents and volunteers and strengthening social bonds with shared experiences to improve their local environment for the benefit of everyone.

High school education (Percent of people ages 25 years or older whose high school education is less than a high school diploma <20 %). Educating creekside property owners about key issues about living near creeks helps both the residents facing immediate challenges such as localized flooding or invasive weeds and improve overall watershed health, air and water quality.

Low income (People in households where income is less than or equal to twice the federal poverty level, not including students enrolled in higher education.) AND Low median income (Comparison of median income in the tract to median incomes in the area.) Workforce development programs related to environmental stewardship and restoration work help give people exposure to meaningful career opportunities, technical skills and experience that could result in advancement and placement in higher paying jobs and increase median incomes.

Housing cost (Share of households making less than 80% of the area median family income and spending more than 30% of income on housing.) The WRP aims to improve livability and walkability without exacerbating gentrification and increased housing costs.

Traffic proximity and volume (Count of vehicles at major roads within 500 meters.) Improving walkability to support active transportation and reduce the need for single occupancy vehicles, lower traffic volume, pollution, and noise.

Wastewater discharge (Modeled toxic concentrations at parts of streams within 500 meters.) Urban greening and creek restoration help filter stormwater and improve water quality.

Lack of green space (Amount of land, not including crop land, that is covered with artificial materials like concrete or pavement.) Restoring creeks, integrating them into neighborhoods, and creating green corridors and implementing multi-benefit urban greening–including green schoolyards, new parks, green alleys, and community gardens–would improve community health, equity, and public access to green spaces where people can connect with nature and natural processes. Restoring riparian habitats and planting native plants and gardens will expand and enhance habitat and biodiversity.

Proximity to hazardous waste facilities (Count of hazardous waste facilities within 5 kilometers.) The WRP will not address this issue directly.

Census Tracts #06013328000, #06013336104, #06013336103, and # 06013336202 were identified as Severely Disadvantaged Communities (SDAC) and Disadvantaged Communities (DAC) by the California Department of Water Resources (DWR) DAC Mapping Tool making those areas eligible for state Proposition 1 and other state grants.

Citations

Contra Costa County (CCC). 2023. Envision Contra Costa 2040. https://envisioncontracosta2040.org/. Documents: Draft General Plan Update, Climate Action Plan 2024 Update, Envision Contra Costa 2040 Briefing Book, Vulnerability Assessment, Policy Framing Paper: Climate Resilience.

Contra Costa County Flood Control and Water Conservation District (FCD). 2009. "The 50 Year Plan – From Channels to Creeks." https://www.contracosta.ca.gov/DocumentCenter/View/6853/50---Year-Plan-3-20-09-BOS-compressed-PDF?bidId=

Contra Costa Clean Water Program website. https://cccleanwater.org/residents-community/watersheds/

Contra Costa Watershed Forum. 2003. Contra Costa County Watershed Atlas. https://cccleanwater.org/wp-content/uploads/2024/04/Watershed-Atlas.pdf

University of California, Berkeley River Lab. 2021. Concrete Channels to Restored Riparian Greenways for Walnut Creek (multiple documents). https://berkeleyriverlab.org/news/50yp/

Restoration Design Group (RDG). 2013. *Walnut Creek Watershed Inventory*. https://www.wcwatershed.org/uploads/5/3/0/8/53085609/walnutcr_watershed_inventory_web.pdf

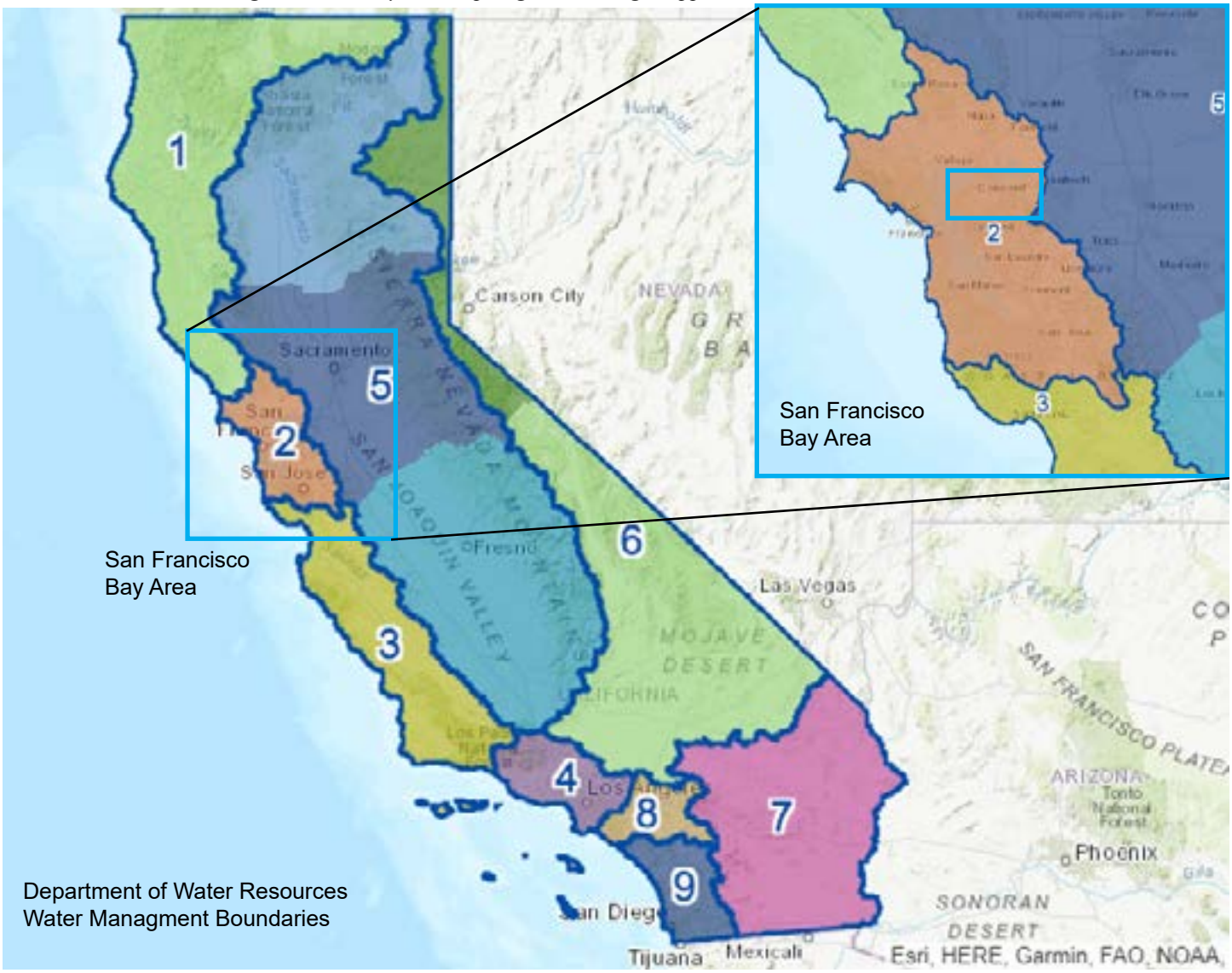
San Francisco Bay Conservation and Development Commission (BCDC). (2017). Adapting to Rising Tides. https://www.adaptingtorisingtides.org/ (See also, Adapting to Rising Tides: Contra Costa County Assessment and Adaptation Project Final Report at https://www.adaptingtorisingtides.org/wp-content/uploads/2017/03/Contra-Costa-ART-Project-Report_Final.pdf)

San Francisco Estuary Institute-Aquatic Science Center. 2016. Resilient Landscape Vision for Lower Walnut Creek: Baseline Information & Management Strategies.

Walnut Creek Watershed Council (WCWC). 2023. Walnut Creek Watershed Council website. https://www.wcwatershed.org/

Figure A1-1 Project Location Map

Source: DWR Water Managment Boundary Tool https://gis.water.ca.gov/app/boundaries/



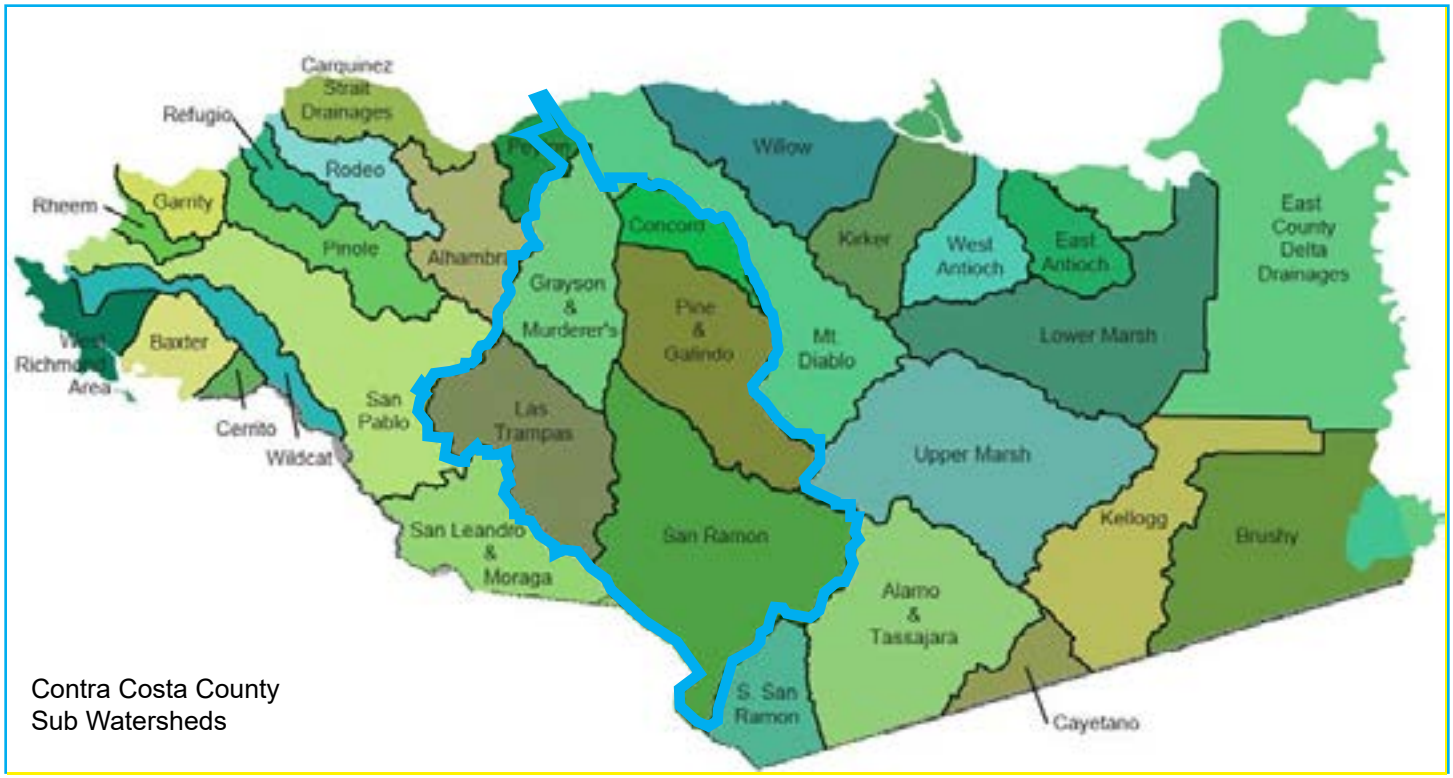


Figure A2-2 Walnut Creek Watershed and Sub-watersheds
Source: Walnut Creek Watershed Inventory (RDG 2013)

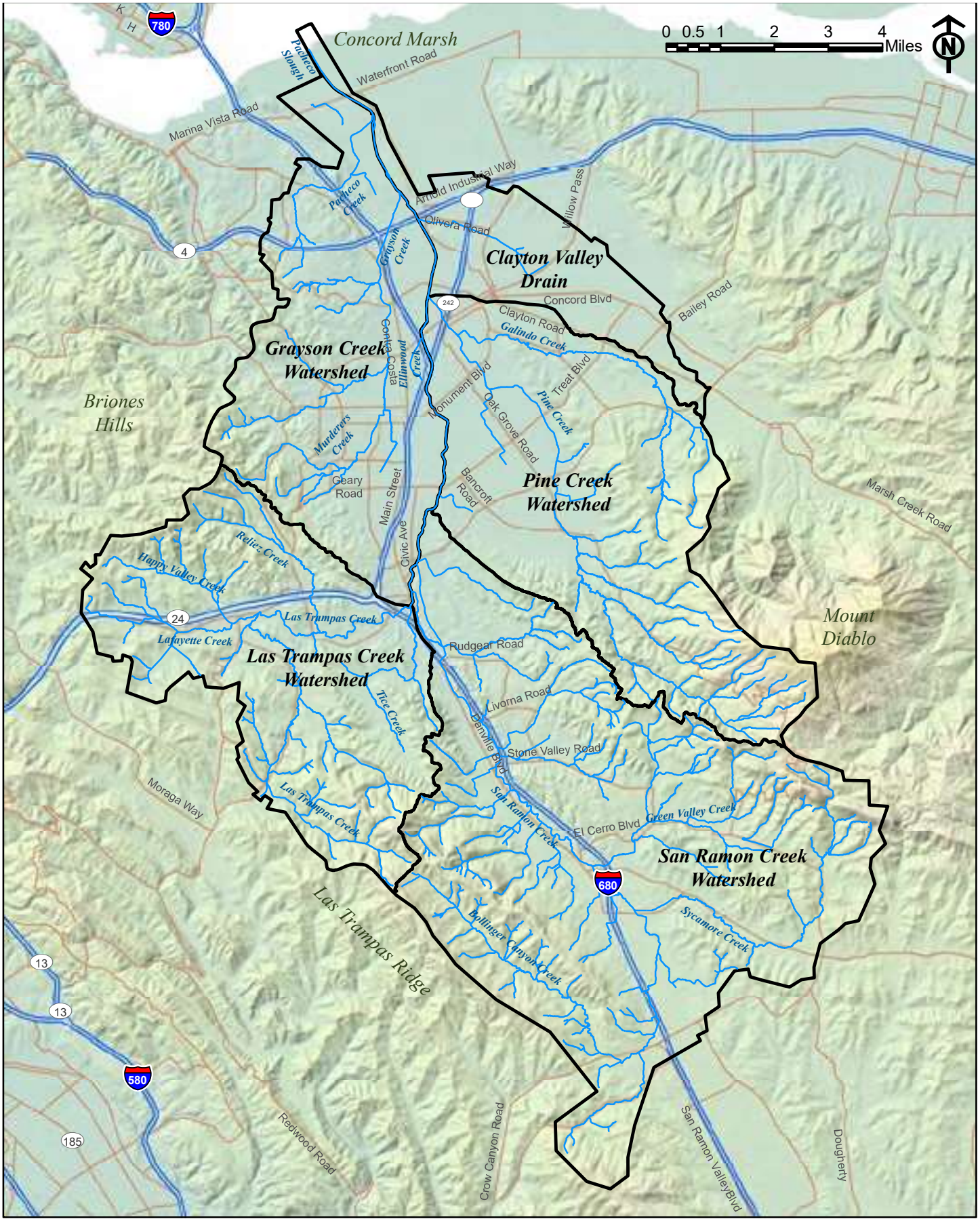


Figure A2-3 Cities and Communities within the Walnut Creek Watershed and sub-watersheds
Source: Walnut Creek Watershed Inventory (RDG 2013)

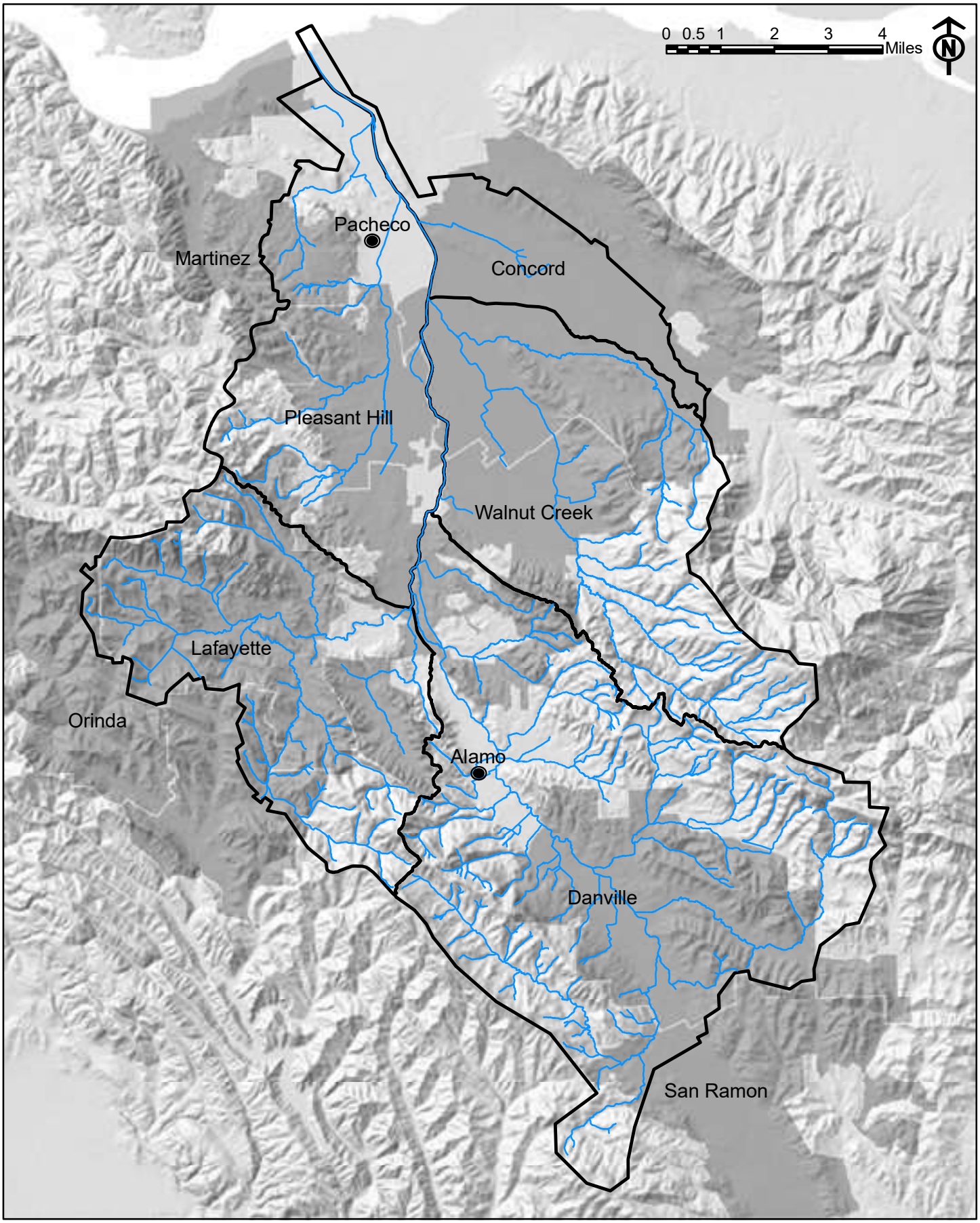


Figure A2-8 Parks, Trails and Open Space in the Walnut Creek Watershed
Source: Walnut Creek Watershed Inventory (RDG 2013)

Parks and Open Space and Regional Trails

Forty-three square miles (29%) of the Walnut Creek Watershed consists of lands zoned for parks and recreation or open space. The eight largest publicly owned open spaces (Figure 6) are:

- Briones Regional Park
- Diablo Foothills Regional Park
- Lafayette Reservoir
- Las Trampas Regional Wilderness
- Lime Ridge Open Space
- Mount Diablo State Park
- Shell Ridge Recreation Area
- Sycamore Valley Open Space

Eighty-six miles (28%) of creek channels flow through parks or open space. Details by subwatershed are given in Table 2 below.

The Iron Horse Trail

Table 2. Length and Percentage of Stream Channel in Parks or Open Space by Subwatershed

	Length in Parks or Open Space (miles)	Total Length of Channel in Watershed (miles)*	Percentage in Parks or Open Space
Clayton Valley Drain	0.8	3.35	24%
Pine Creek Watershed	27.5	59.96	46%
San Ramon Creek Watershed	41.7	136.7	31%
Las Trampas Creek Watershed	11.75	64.1	18%
Grayson Creek Watershed	4.5	25.4	18%
TOTAL	**86.25**	**309**	**28%**

**Total stream miles as reported in Contra Costa County Watershed Atlas*

Public open spaces provide access to over a quarter of both the watershed area and the total channel length in the watershed. Regional trails provide additional opportunities for users to explore and understand the watershed. Figure 6 shows existing and proposed regional (Class I) trails in the watershed. In particular, the Iron Horse Trail runs

Figure A2-9 Protected Open Space and Regional Trails in the Walnut Creek Watershed
Source: Walnut Creek Watershed Inventory (RDG 2013)

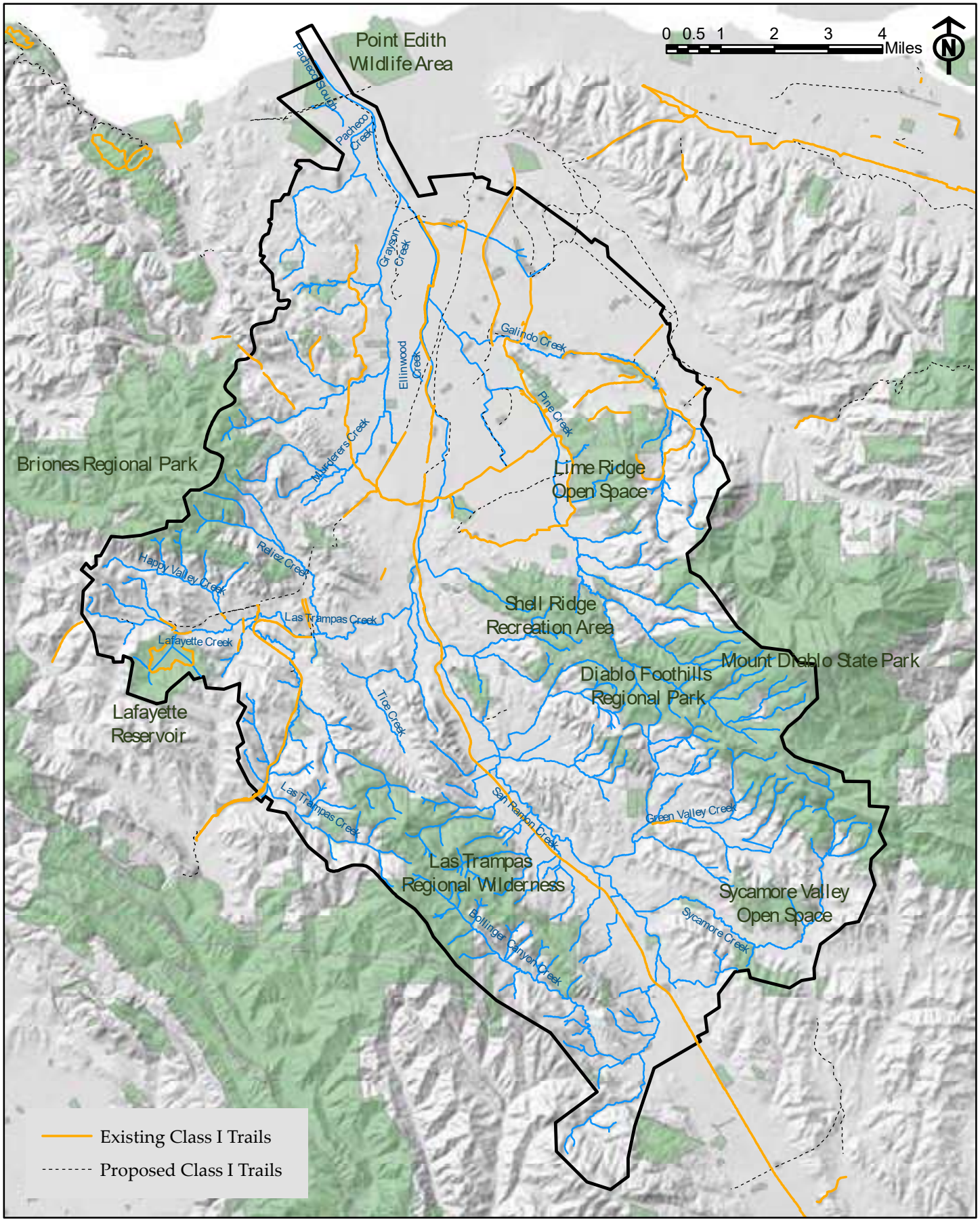
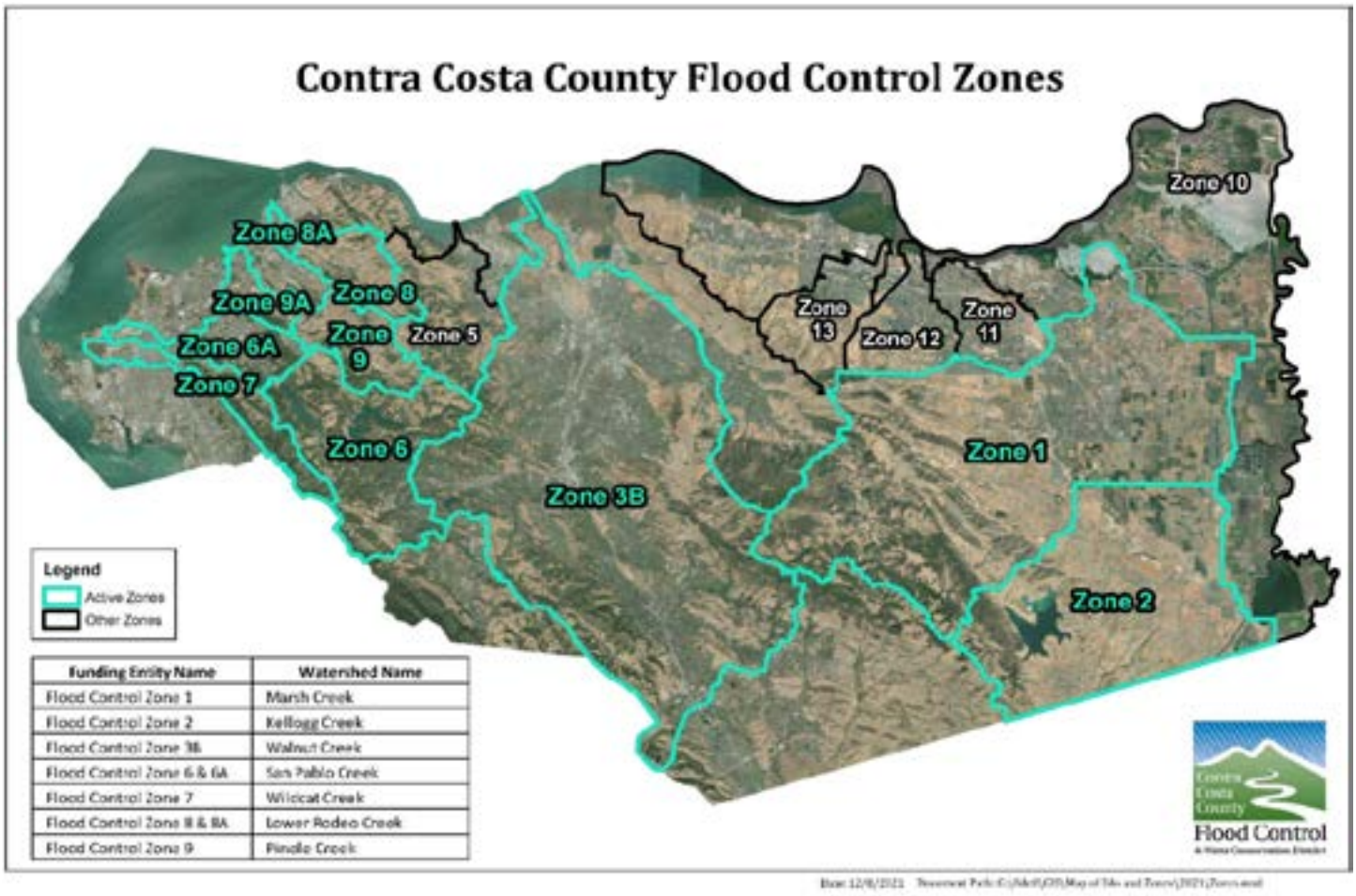


Figure A2-10 Contra Costa County Flood Control Zones
Source: CCC Flood Control Zones Summary document. (12/08/2021)
https://www.contracosta.ca.gov/DocumentCenter/View/73557/FC-Zones-Summary



Funding Entity Name	Watershed Name
Flood Control Zone 1	Marsh Creek
Flood Control Zone 2	Kellogg Creek
Flood Control Zone 3B	Walnut Creek
Flood Control Zone 6 & 6A	San Pablo Creek
Flood Control Zone 7	Wildcat Creek
Flood Control Zone 8 & 8A	Lower Rodeo Creek
Flood Control Zone 9	Pinole Creek

Walnut Creek – Zone 3B

Flood Control Zone 3B was formed in the early 1950s to provide funding for construction and maintenance of regional drainage infrastructure in the Walnut Creek watershed. It initially provided, from a portion of the ad valorem property tax, local matching funding for many joint District / Army Corps of Engineers projects extending from the mouth of the creek up to the upstream limits of the City of Walnut Creek.

Consisting of over 22 miles of flood protection improvements, the system consists of parts of: Walnut Creek, Pacheco Creek, Grayson Creek, Clayton Valley Drain, Pine Creek, Galindo Creek, San Ramon Creek, Tice Creek, Las Trampas Creek, and San Ramon Bypass Channel.

At nearly 150 square miles, Flood Control Zone 3B (the Walnut Creek watershed) is the largest in Contra Costa County, and is one of the largest in the Bay Area. The watershed handles drainage for more than 300,000 residents in Concord, Pleasant Hill, Walnut Creek, Alamo, Lafayette, and Danville.

The District recently completed a project in Zone 3B, the Lower Walnut Creek Restoration (LWC) Project. This project will restore and enhance coastal wetlands and adjacent habitats along the southern shoreline of Suisun Bay and from the mouth of Walnut Creek at Suisun Bay upstream along Walnut Creek and Pacheco Creek, improving habitat quality, diversity, and connectivity along 4 miles of creek channel, over approximately 303 acres in total.
To learn more about the LWC Project, visit the project website at http://www.lowerwalnutcreek.org/

Figure A2- 11 Flood Control Rights-of-Way in Walnut Creek Watershed
Source: Walnut Creek Watershed Inventory (RDG 2013)

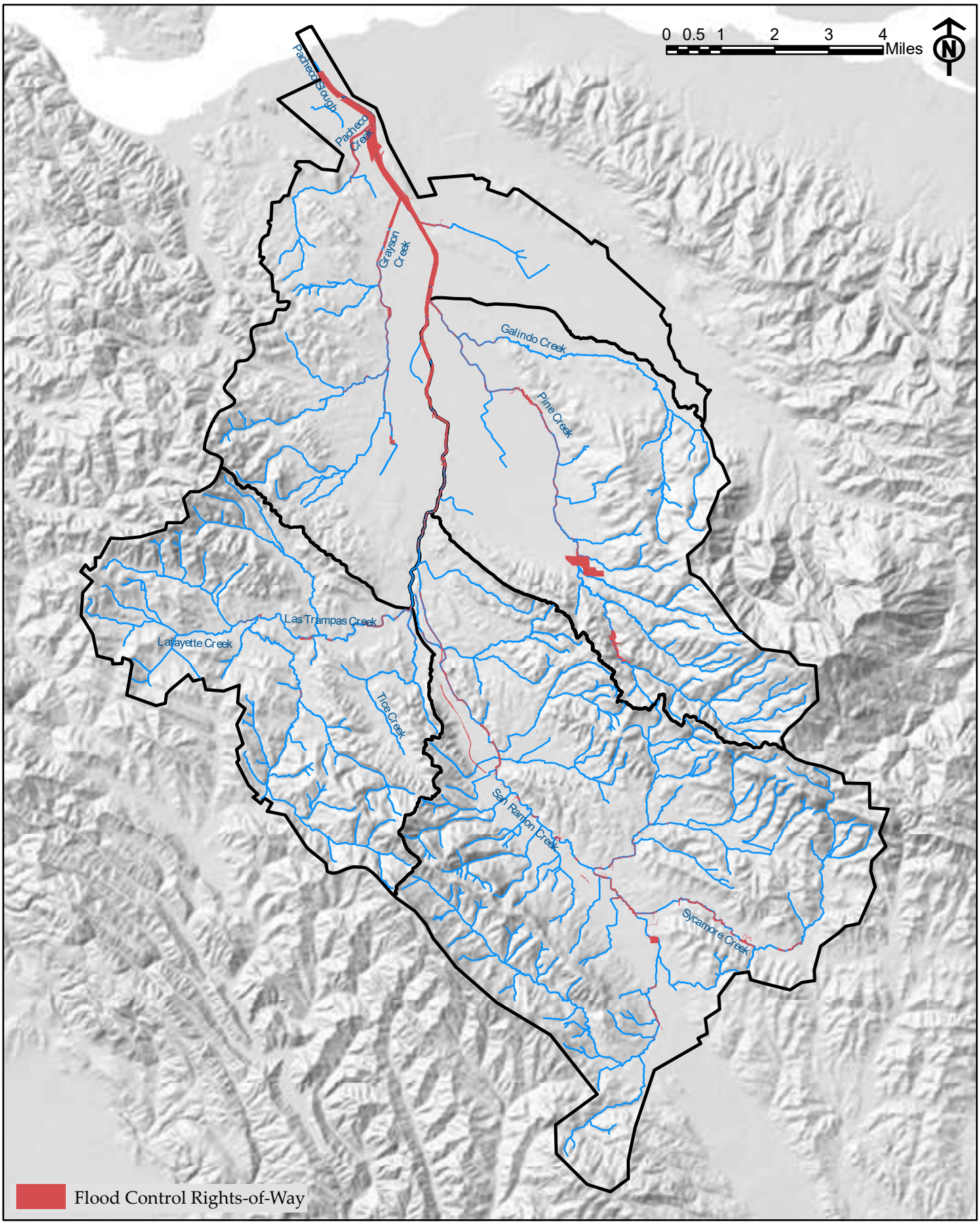


Figure B1-1 Bioassessment Rankings in the Walnut Creek Watershed
Source: Walnut Creek Watershed Inventory (RDG 2013)

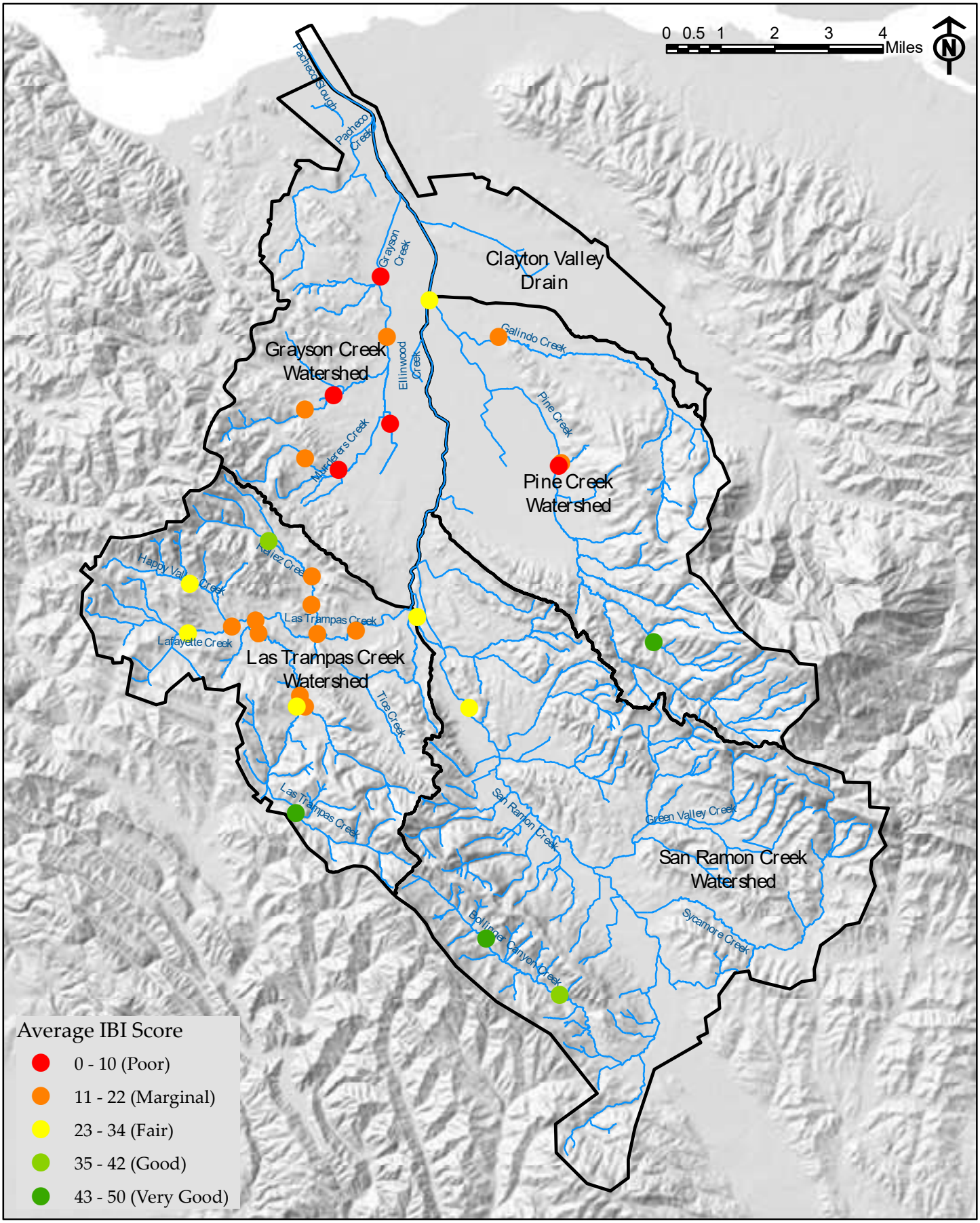


Figure B1-2 Historical Status of *Oncorhynchus mykiss* in streams of Contra Costa County
Source: Walnut Creek Watershed Inventory (RDG 2013)

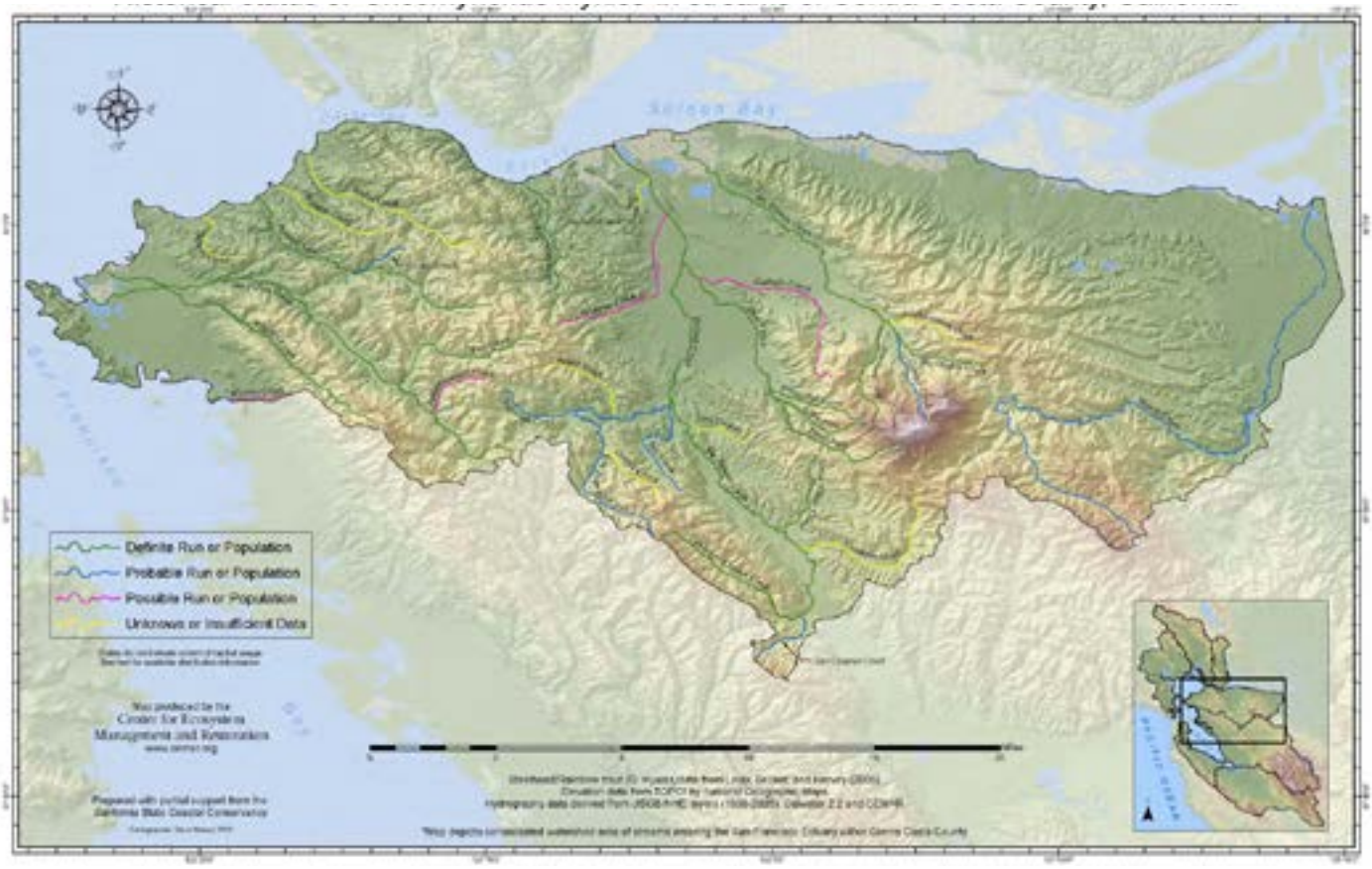


Figure B1-3 Current Status of *Oncorhynchus mykiss* in Streams of Contra Costa County
Source: Walnut Creek Watershed Inventory (RDG 2013)

Figure B1-4 Vegetation Habitat Types in the Walnut Creek Watershed
Source: Walnut Creek Watershed Inventory (RDG 2013)

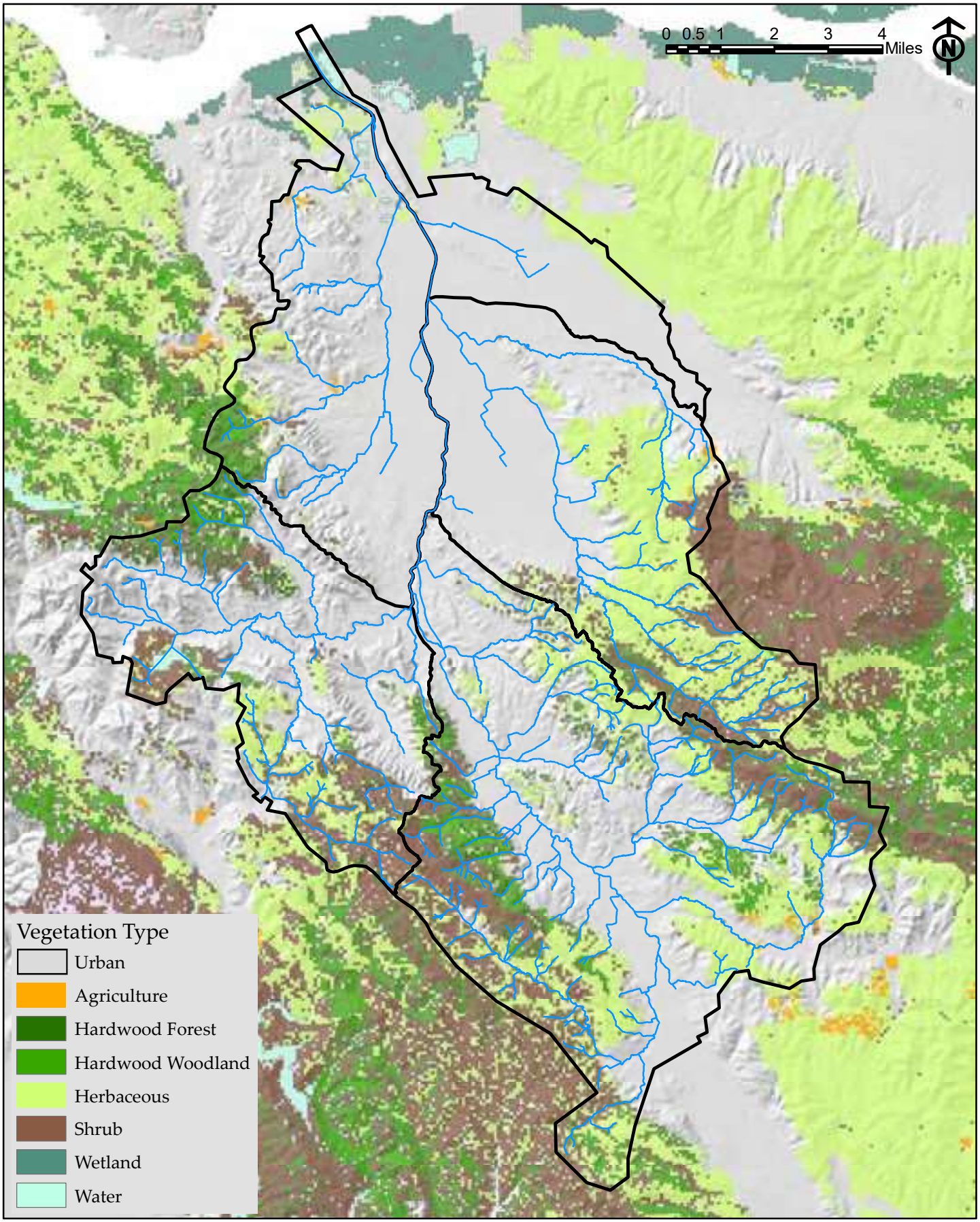


Figure B1-5 Bank or Channel Types in the Walnut Creek Watershed
Source: Walnut Creek Watershed Inventory (RDG 2013)

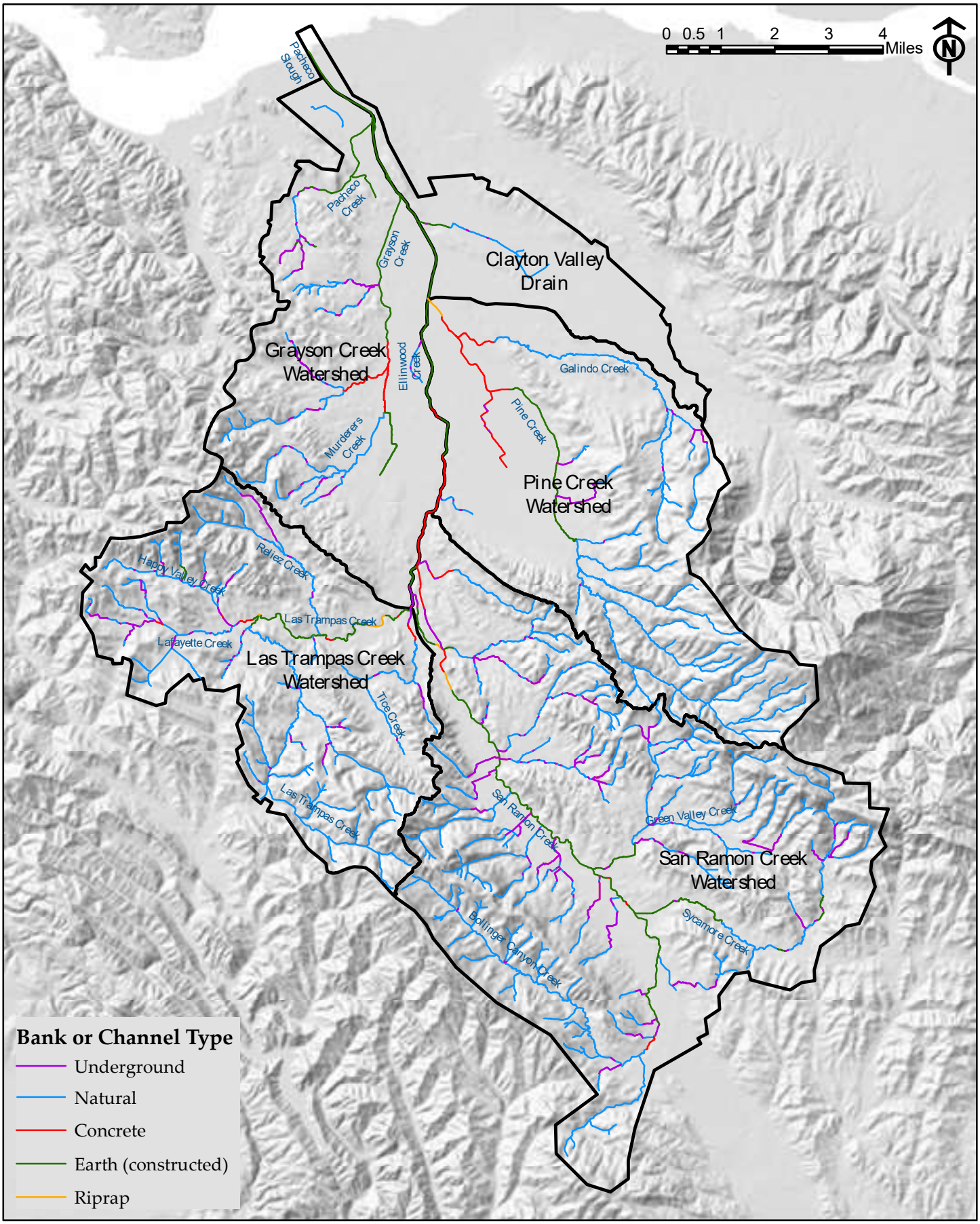


Figure B1-6 Key Infrastructure in the Walnut Creek Watershed
Source: Walnut Creek Watershed Inventory (RDG 2013)

Key Watershed Infrastructure

With nearly 100 miles of reinforced channels, there are many built features and modifications in the watershed. Figure 5 locates some of the most significant.

Drop Structures

Twenty concrete drop structures stabilize channels in the Walnut Creek Watershed. The most frequently discussed are Drop Structures #1 and #2 on Walnut Creek. The 12-foot tall Drop Structure #1 straddles Walnut Creek upstream of Willow Pass Road and downstream of Highway 242. Drop Structure #1 is generally recognized as the upstream extent of salmonid migration in the watershed, though some salmonids are able to pass it at high flows. The 14-foot tall Drop Structure #2 is on Walnut Creek just downstream of Bancroft Road. Just upstream of the confluence with San Ramon Creek sits a 15-foot drop structure on Las Trampas Creek.

Detention Basins/Reservoirs

The 325-acre-foot Kubicek Detention Basin detains floodwaters on Pine Creek half a mile upstream of North Gate Road adjacent to Northgate High School. Farther upstream in the Diablo Foothills Regional Park, the 312-acre-foot Upper Pine Creek Basin also detains floodwaters on Pine Creek. Both these basins were constructed by the SCS and are owned and operated by the CCCFCD.

The East Bay Municipal Utility District operates the 4,000 acre-foot Lafayette Reservoir to provide standby water supply. The reservoir has not been used for water supply for over 40 years. In-flow into the reservoir is limited to runoff from the surrounding watershed. It sits within a 925-acre open space operated by EBMUD.

The Rossmoor Detention Basin is a recently expanded detention basin on Tice Creek in the City of Walnut Creek. The 55-acre facility operated by the Flood Control District alleviates flooding downstream in Tice and Walnut Creeks. Other detention basins, such as Viano Basin on Pacheco Creek, detail floodwaters throughout the watershed.

Figure B1-7 Key Features of the Walnut Creek Watershed
Source: Walnut Creek Watershed Inventory (RDG 2013)

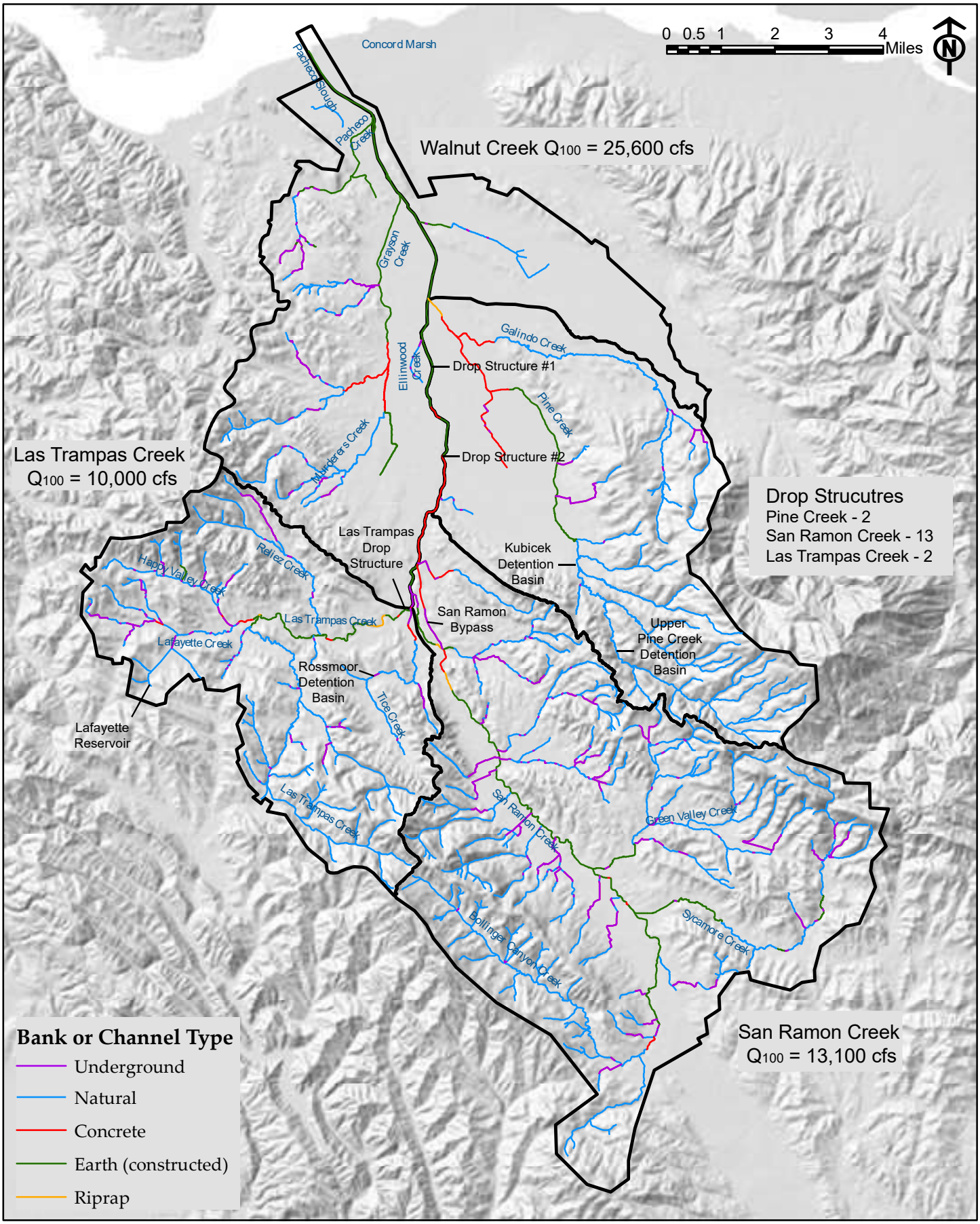
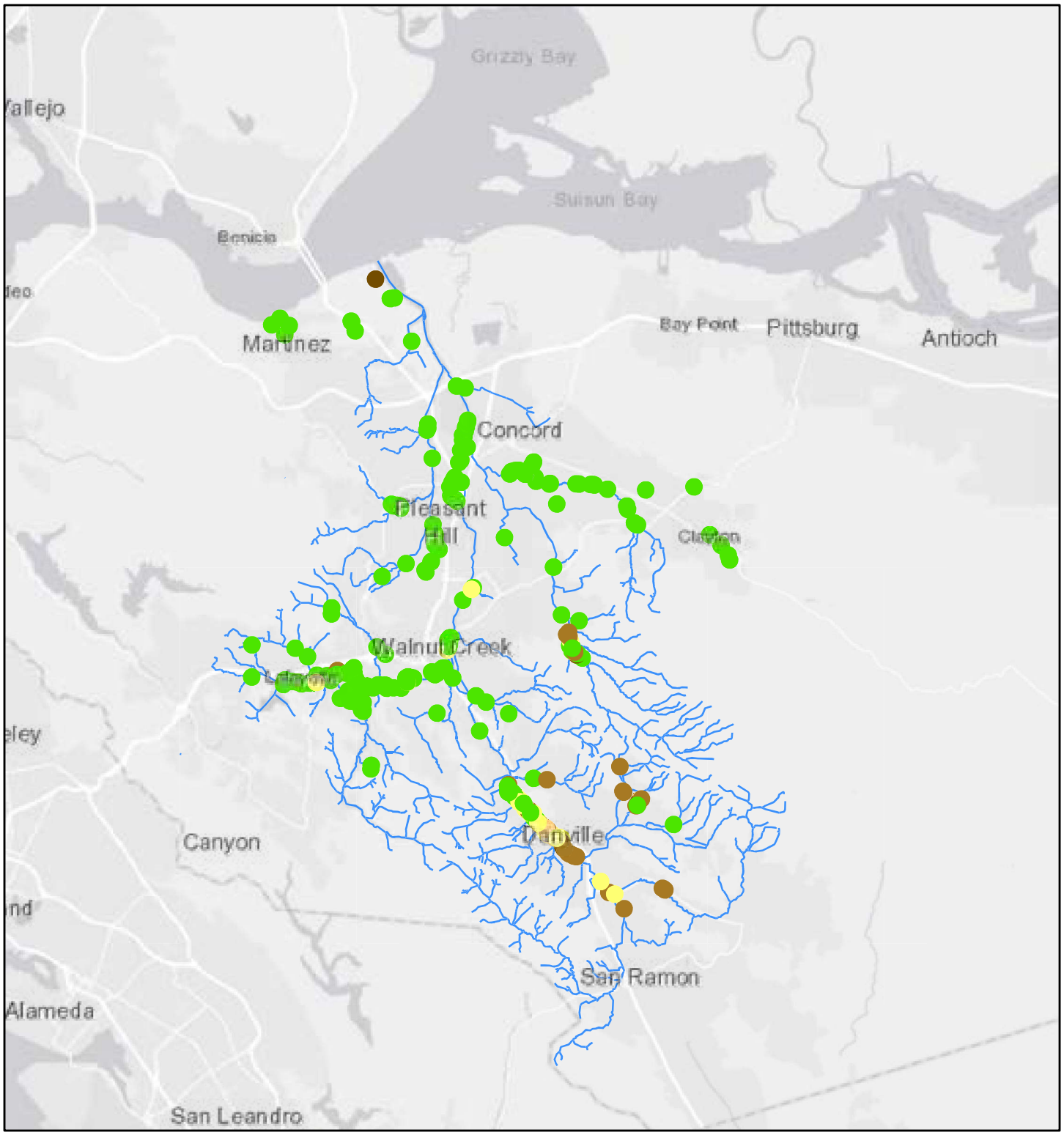


Figure B1-8 Walnut Creek Watershed Arundo Survey

Source: https://www.wcwatershed.org/arundo-map.html onling mapping tool accessed 06.13.2024



6/13/2024, 7:35:19 AM

1:288,895

Creeks

0 2 4 8 mi

0 3 6 12 km

Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS

Figure B1-9 Baseflow of Creeks in Contra Costa County with a Mid-Century Drought (2019-2046) *Source: Envision Contra Costa 2040, Vulnerability Assessment / Hazards of Concern / Drought*
Image link: https://www.arcgis.com/sharing/rest/content/items/c349194f217d4388b7532094566e93f1/resources/Baseflow%20of%20Creeks__1565826564472__w1920.jpg

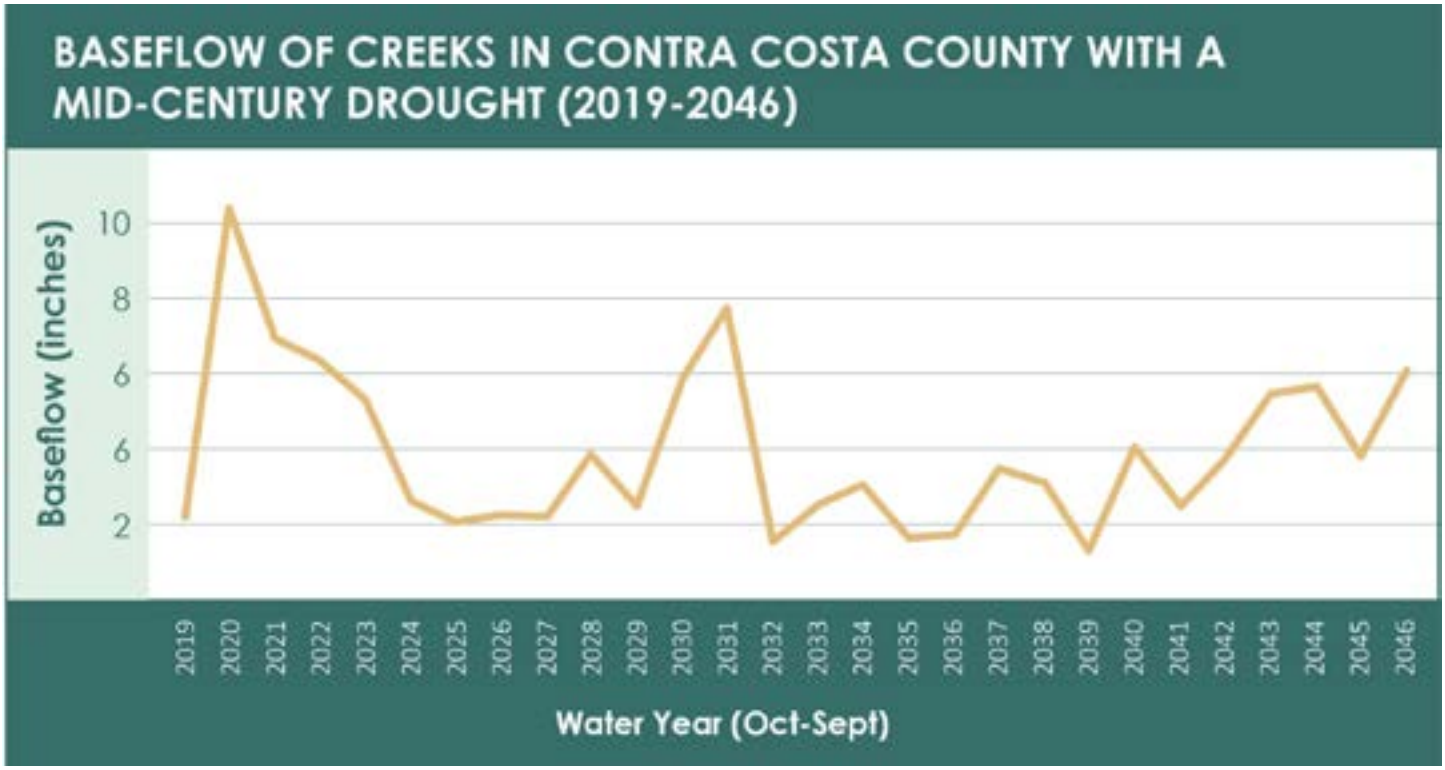


Figure B1-10 Frequency of Extreme Heat Days in Concord and Richmnond (DAC's)
Source: Envision Contra Costa 2040, Vulnerability Assessment / Hazards of Concern / Extreme Heat
Image link: https://www.arcgis.com/sharing/rest/content/items/c349194f217d4388b7532094566e93f1/resources/Frequency%20of%20Extreme__1565827991157__w1920.jpg

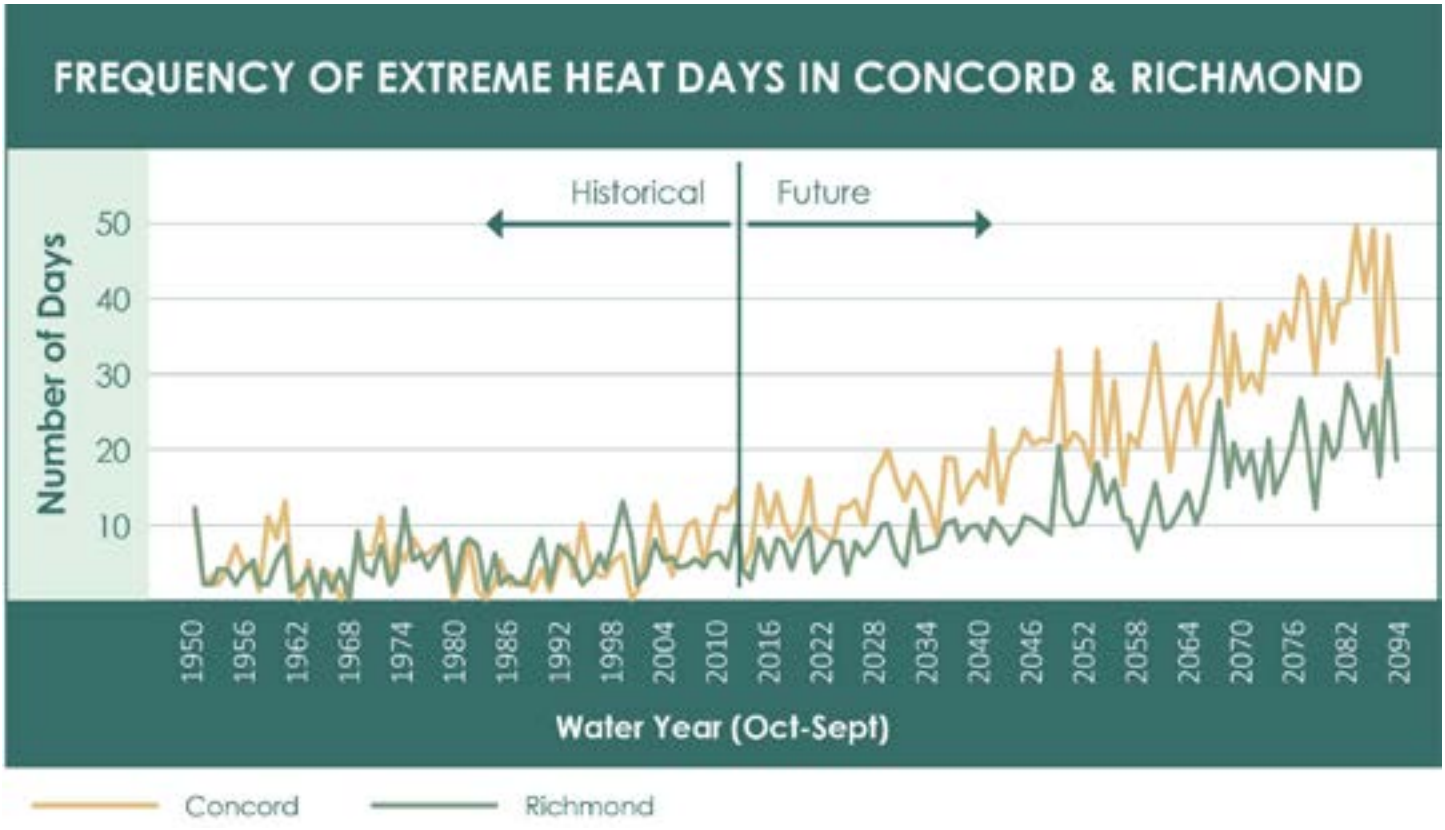


Figure B1-11 FEMA Flood Hazard Zones and Vulnerable Communities

Source: https://www.adaptingtorisingtides.org/maps-and-data/

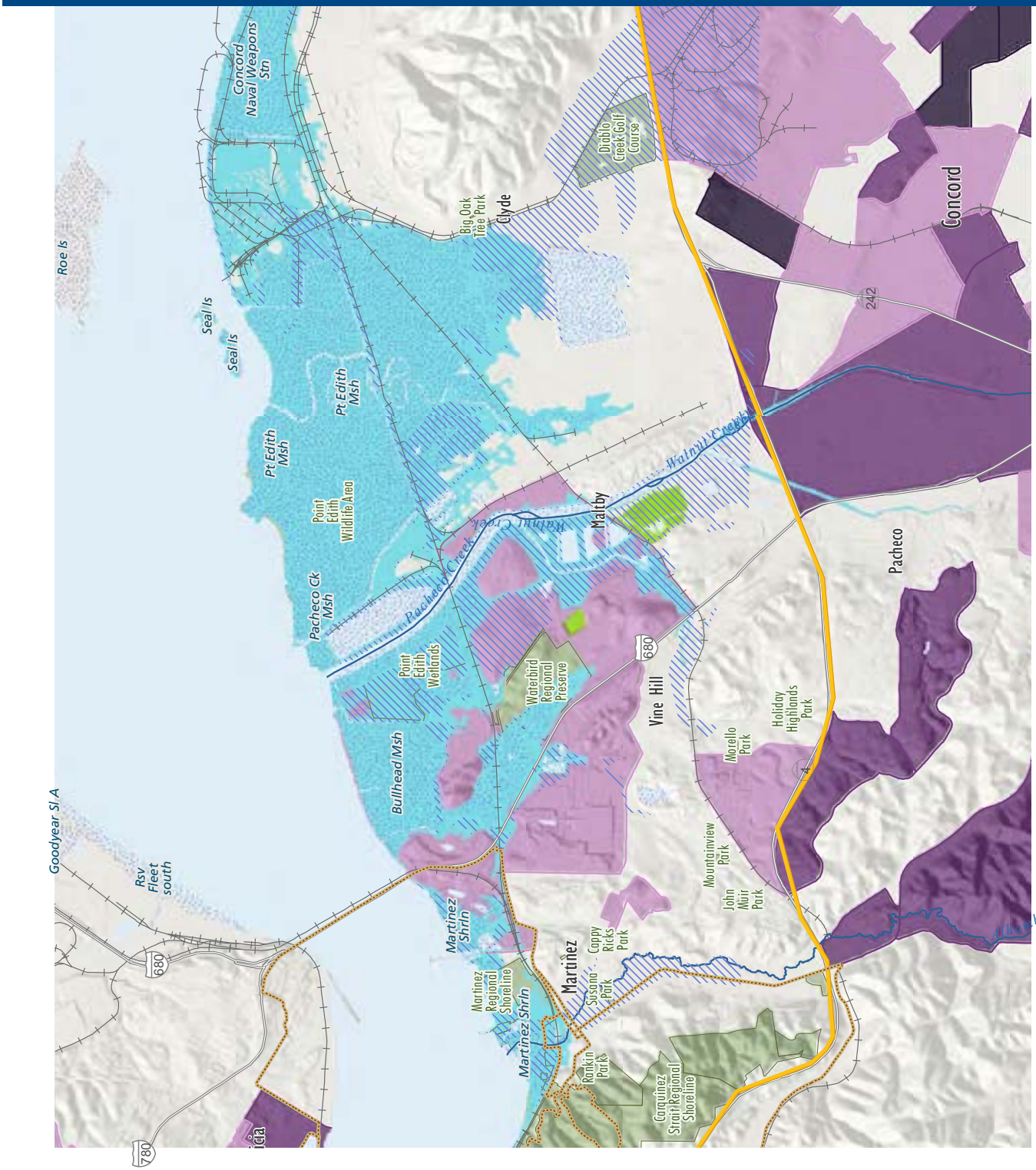


Figure B1-12a American Forests Tree Equity Score
Source: https://www.treeequityscore.org/map#10.96/37.9303/-122.0646

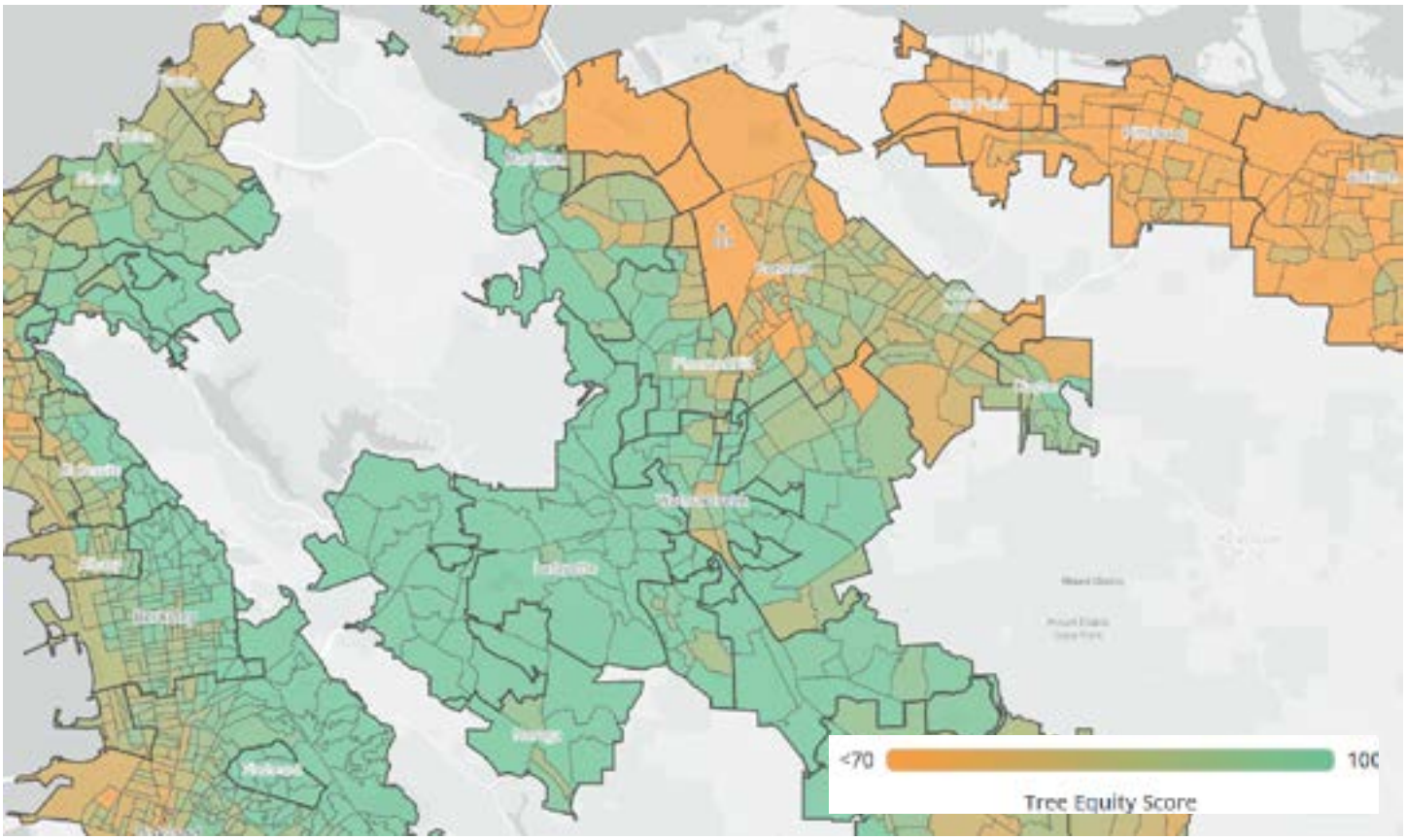
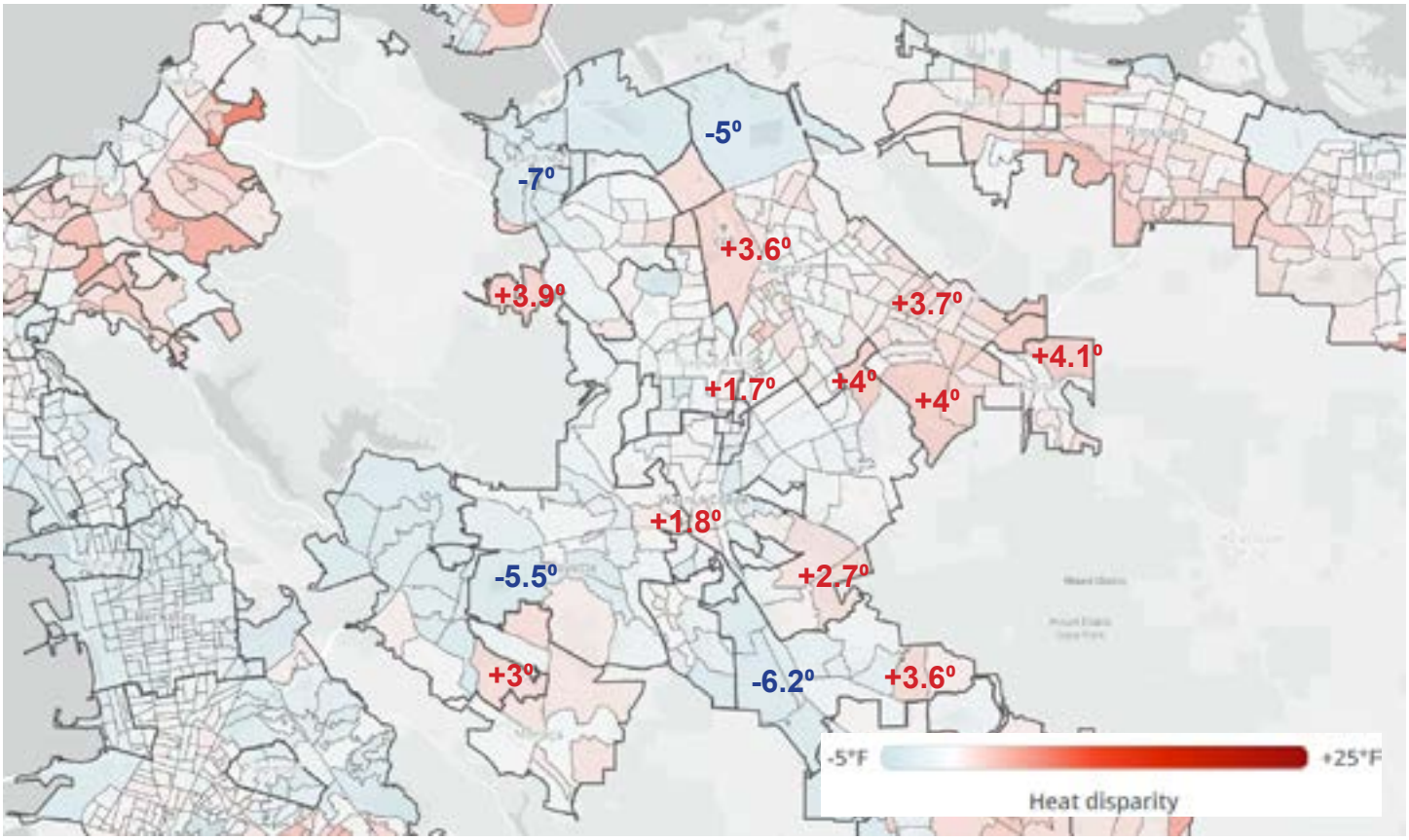


Figure B1-12b American Forests Tree Equity Score - Heat Disparity Map
Source: https://www.treeequityscore.org/map#10.96/37.9303/-122.0646



To: Bob Simmons, President, Walnut Creek Watershed Council

Cc: Lisa Damerel, Watershed Conservation Manager, Contra Costa Resource Conservation District

From: Ken Schwarz, Managing Principal, Montrose Environmental

Date: August 18, 2024

Subject: **Proposal for Walnut Creek Watershed Restoration Plan to Support WaterSMART Grant Application**

The Walnut Creek Watershed Council (Council) requested a proposal for environmental planning services to complete a comprehensive Watershed Restoration Plan (WRP) for the Walnut Creek Watershed in Contra Costa County. Montrose Environmental (Montrose) is currently developing a Watershed Plan for the Contra Costa County Flood Control and Water Conservation District (FCD or District), and assisting the Council with prioritization of potential restoration sites. The Council requested this proposal to include with the Bureau of Reclamation WaterSMART Cooperative Watershed Management Program (CWMP) Grant Application to fully detail the firm qualifications, approach, scope of work, specific tasks, deliverables, budget, and project schedule.

1.0 Firm Qualifications

Montrose Environmental

Montrose is a multidisciplinary environmental consulting firm that specializes in creek and watershed technical studies, regulatory permitting, CEQA and NEPA compliance, and environmental studies for public infrastructure, maintenance, conservation, and restoration projects. Our Bay Area team focuses on helping our local public agencies with their resource planning and management needs, facility maintenance, and capital improvements programs. We specialize in projects involving creeks, watersheds, and aquatic environments. We are known for our success in developing stream maintenance, watershed, and restoration programs that achieve permitting success and CEQA compliance.

We have technical expertise in environmental planning, hydrology, geomorphology, water quality, biological resources, cultural resources, stormwater, wetlands, air quality, and greenhouse gas/climate change evaluations, among other topics. We are known for producing clearly written and legally defensible environmental reports, plans, and documents that help advance our clients' goals. We use our technical experience, regulatory expertise, and exceptional communication and project management skills to successfully develop projects and programs. We are recognized leaders in environmentally sensitive approaches to policy development and resource management. We work with a wide array of watershed stakeholders across socio-economic conditions and have successfully worked with many tribes throughout the Bay Area and Northern California, listening carefully to their needs and requests for projects.

Founded in 2012, Montrose is the parent company of its consulting arm, Montrose Environmental Solutions, Inc., a C Corporation. Horizon Water and Environment (Horizon) was founded in 2008 and acquired by Montrose in 2021 and continues to serve its Bay Area and Northern California clients. Montrose would manage this project from its Oakland office with over 25 environmental consultants available to support.

Restoration Design Group (RDG)

Restoration Design Group Inc. (RDG) is a full-service civil engineering, landscape architecture, and environmental planning firm staffed by five landscape architects, three civil engineers/engineering specialists, and two planners/project managers. RDG has been in business since 2003, specializing in urban creek restoration, habitat, and public access projects.

RDG's areas of expertise include:

- Wetland, creek, and upland habitat restoration design
- Landscape architecture
- Environmental planning
- Open Space planning and design
- Wildland and Class I trail planning/design
- Landscape design
- Civil engineering
- Hydrology/hydraulic studies
- Geomorphology studies
- Regulatory permitting and reporting
- Construction documentation and support
- Mountain-top restoration
- Public facilitation

The Council is most familiar with RDG through their work on the Walnut Creek Watershed Inventory and participation as a non-member in council and committee meetings. RDG has also provided similar services for clients such as the FCD, the Contra Costa Resource Conservation District (CCRCD), the East Bay Regional Park District, the John Muir Land Trust, the East Contra Costa County Habitat Conservancy, the City of Lafayette, and other private and public entities in the watershed as well as state and regional agencies.

2.0 Approach

Montrose's Watershed Planning Approach

Our approach to watershed planning and management begins by first understanding the fundamental physical hydrologic, geomorphic, and hydraulic processes driving the system. From that basis, we then consider the biological processes which are influenced by and interact with those physical factors. The interplay of these processes results in habitat patterns and trends across the watershed. Upon this foundation, we then evaluate where and how the watershed has been managed, impacted, or perhaps has remained unmodified in locations, to guide where there are opportunities to improve habitat conditions and where there are constraints that would limit the ability to improve conditions. The goal is to develop sustainable approaches and projects that align with the governing physical and biological system, such that enhancement, restoration, or habitat creation projects will be self-sustaining and successful in the long-term. A changing climate must also be considered as a long-term factor in developing sustainable projects and outcomes.

The approach described above will also guide our work in developing a successful Walnut Creek WRP. We will work closely with the Council, the CCRCD, the FCD, creek stewardship groups and stakeholders to evaluate project opportunities across the watershed and contributing sub-watershed planning areas. We will develop evaluation criteria to assess the projects likelihood for success. Importantly, the project evaluation process will be collaborative and iterative with watershed stakeholders. In working with watershed stakeholders, we will be guided by the following tenets:

- Careful listening, attention, and honest communication to all stakeholders;
- Search for practical solutions that are innovative, creative, and also simple to implement where possible;
- Maintain scientific and professional quality standards for analysis and evaluation;
- Develop clearly written and understandable documents; and
- Keep the process organized and well managed.

RDG's Design Approach

RDG adopts a comprehensive and community-centered approach to creek restoration design development. RDG's process began with writing the Walnut Creek Watershed Inventory in (2009), an in-depth assessment of the existing ecological, hydrological, and geomorphological conditions of the creek, watershed, and the surrounding environment. When the Council selects priority project locations, RDG will perform detailed site analysis and apply its understanding of Contra Costa creeks, the regulatory framework, and managing agencies to develop concept designs and cost estimates for the Watershed Council to review and approve. RDG places a

strong emphasis on understanding the historical context of the creek, its natural flow patterns, and the impact of urbanization on its health and functionality.

With this foundational knowledge, RDG develops restoration plans that aim to enhance ecological integrity, improve water quality, and increase habitat diversity while also addressing urban infrastructure needs. RDG's designs incorporate riparian vegetation, channel repairs, and floodplain reconnections to enhance natural creek processes. RDG is committed to sustainable and resilient solutions that not only restore the ecological balance of the creek but also provide recreational, educational, and aesthetic benefits to the community. Through adaptive management and continuous monitoring, RDG ensures that the restoration efforts are effective and can be adjusted as needed to respond to changing conditions and new scientific insights.

3.0 Scope of Work

Montrose prepared this scope of work to support the Council with watershed restoration planning and project design for the Walnut Creek watershed. These services are further described below, including assumptions which frame our approach and level of effort.

Task 1 Watershed Restoration Planning

Task 1.1 Complete a Watershed Restoration Plan

Montrose will coordinate closely with the Council and the CCRCD to develop the Walnut Creek WRP. The WRP will describe the watershed's existing conditions and specific issues facing the watershed (e.g., erosion, habitat loss, fish passage barriers); identify goals and objectives for restoring the watershed; identify high and medium priority restoration and enhancement opportunities within the watershed; describe methods for monitoring and tracking the progress of restoration efforts; and provide an estimated cost associated with the identified restoration opportunities. The WRP will engage with local community stakeholders and agencies to identify potential restoration opportunities in the watershed, described in more detail under Task 1.4 below. The WRP will meet the requirements of the Regional Water Quality Control Board's (RWQCB's) Water Quality Certification mitigation requirements issued to the FCD for the Walnut and Grayson Creeks Desilting Project in January 2022 (Place ID 877432).

Montrose will develop an initial draft WRP and submit it to the Council and the CCRCD for one (1) round of review. Montrose will revise the draft WRP based on the Council and the CCRCD comments and submit a subsequent draft WRP for another round of review and comment by the Council and the CCRCD. Montrose will revise the draft WRP based on CCRCD and Council comments and submit a third draft WRP to the FCD for review and comment. Montrose will revise the WRP based on FCD comments and prepare the fourth draft WRP for review and comment by the FCD, CCRCD, and Council. It is assumed that at this stage, no substantial comments would be received and edits would mainly involve minor revisions. Montrose will then finalize all edits and prepare the Final WRP (5th version).

Note that the WRP will be complementary to the Watershed Plan that the FCD is developing in parallel to the WRP process.

Task 1.1 Deliverables: Draft (including 1st, 2nd, 3rd, and 4th drafts) and Final WRP
Task 1.1 Meetings: Up to eight (8) meetings to support the development of the WRP and the review process.
Task 1.1 Assumptions: This task assumes that a single set of consolidated comments will be provided to Montrose by the Council, CCRCD, and the FCD for each relevant review cycle. No substantial revisions will be required between development of the 4th Draft WRP and Final WRP.

Task 1.2 Project Selection Criteria and Watershed Project Prioritization

The project selection criteria will assess the opportunity for habitat improvement, as well as the viability/feasibility of restoration opportunities identified on available properties within the Walnut Creek

watershed. Montrose is currently working with the Council to develop the project selection criteria as part of the Walnut Creek Watershed Plan. Montrose will revisit and refine these criteria with the Council, if WaterSMART funding is obtained as part of the proposed scope of work.

Each restoration and enhancement opportunity (or project) within the watershed will be evaluated per the project selection criteria. Scoring for each project will be based on the project's alignment with the selection criteria. The scoring for each project will be totaled and will then determine the project's prioritization (e.g., a high scoring project would have higher priority than a lower scoring project). Montrose will meet with the Council and sub-watershed representatives and creeks stewards to review the scoring and prioritization approach for several projects. A list of medium and high priority projects will be provided to the Council for review. Medium and high priority projects will also be included in the WRP as described above under Task 1.1.

Task 1.2 Deliverables: Project selection criteria table; Medium and high priority project list
Task 1.2 Meetings: Up to three (3) meetings to discuss the project selection criteria and associated project prioritization list, and select final projects.

Task 1.3 Monitoring, Mapping, and Other Technical Analyses

Montrose will review the planning studies and relevant resources document related to the development of a WRP as described in the Request for Proposal (RFP). This background information will help Montrose understand if additional monitoring activities, technical analyses, or mapping are needed to provide additional information about the existing watershed conditions to support development of the WRP, including but not limited to, water quality studies, vegetation and wildlife surveys, and modeling. Montrose will identify known (at that time) data gaps and summarize the findings in a brief memorandum.

If it is determined that additional studies or mapping are needed, Montrose will coordinate with the Council and provide a separate scope and cost estimate to support that work.

Task 1.3 Deliverables: Data Gaps Memorandum
Task 1.3 Meetings: One (1) meeting with the Council to discuss any known data gaps.

Task 1.4 Stakeholder Engagement

As part of the development of the WRP described under Task 1.1 above, Montrose will support the Council at stakeholder outreach meetings. The purpose of these meetings is to obtain feedback on how the watershed can be improved and identify potential restoration and enhancement opportunities within each sub-watershed. These meetings may be with local watershed groups, community stewardship groups, stakeholders, landowners, federal and state agencies, and state and local governments. This task assumes Montrose attendance at up to eight (8) stakeholder outreach meetings.

Task 1.4 Meetings: Up to eight (8) stakeholder outreach meetings

Task 2 Watershed Project Design

Task 2.1 Site Analysis

Montrose will conduct site visits at accessible properties to assess potential restoration and enhancement opportunities at those sites. The site visits will also determine if there are any site-specific constraints that need to be considered during the project design. Montrose will visit up to 10 sites and will coordinate with FCD staff for access to the FCD-owned sites.

RDG will provide support to Montrose's site analysis of potential restoration projects in the watershed. RDG will review materials collected by Montrose, including photos, maps, documents, and data, of each site. RDG will contribute its understanding of Contra Costa County creeks, the constraints of the FCD (if applicable), Army Corps of Engineers (if applicable), CDFW or other agency or organization that may own or manage the potential

restoration sites. RDG will review and prioritize the list of potential sites based on feasibility, ranking of likely costs, and understanding of the permit requirements and expectations of permit agencies.

Montrose will document the findings of the site visits in a brief memorandum.

Task 2.1 Deliverables: Site Visits Memorandum
Task 2.1 Meetings: Up to ten (10) site visits
Task 2.1 Assumptions: RDG will not visit any of the potential sites until the priority sites are selected for further design in Task 2.2.

Task 2.2 Conceptual Level Diagrams and Basis of Design

RDG will develop concept designs, preliminary basis of designs documents, and cost estimates at the concept level for up to three potential restoration sites. The objective will be to provide sufficient detail to support grant applications for full design and implementation of any of the three potential projects. RDG will visit each site to complete a geomorphic assessment, collect channel size and flow indicator information, and understand existing infrastructure, site access, and other existing constraints. RDG will use existing County LiDAR supplemented by creek surveys as the base plan for the concept designs. RDG will develop a draft and final concept design package for up to three sites that includes one plan view concept design figure (using LiDAR and/or aerial photos as the base); one cross section diagram; justification of the design (preliminary basis of design) including results from RDG's creek surveys; and a concept-level cost estimate.

RDG will participate in one meeting with the Council and Montrose to review the concept design package and will update the draft based on written comments provided by the Council.

Task 2.2 Deliverables: Draft and Final Concept Design Package (or a Basis of Design Report)
Task 2.2 Meetings: One (1) meeting with the Council and Montrose to review the concept design package
Task 2.2 Assumptions: This task assumes that a single set of consolidated comments will be provided to RDG. All unclear and contradictory comments will be resolved prior to the submittal to RDG. This task does not include securing any encroachment or other permits or permissions necessary to access the sites and it is assumed that access will be arranged by others. This task also does not include bioassessments, geotechnical investigations, topographic surveys, structural engineering, or site cultural investigations.

Task 2.3 Environmental Compliance Review

Once the conceptual level designs are completed for up to three potential restoration sites as described under Task 2.2 above, Montrose will evaluate the potential sites to understand the required environmental compliance documentation, including required technical studies, compliance with the California Environmental Quality Act (CEQA), and regulatory permitting needs. Some restoration projects that restore, rehabilitate, or enhance natural resources may qualify for a CEQA Categorical Exemption, under Section 15333, Small Habitat Restoration Projects as long as they meet certain requirements, but the applicability of this exemption is unknown at this time. The projects' environmental compliance needs will be summarized in a memorandum.

Task 2.3 Deliverables: Environmental Compliance Needs Memorandum

Task 3 Project Management

Montrose will provide project management support to coordinate project activities and communicate regularly with the Council project manager. Tasks will include tracking the project budget and staff labor, overseeing staff assignments, and supervising overall contract performance.

Montrose will conduct monthly meetings with the Council project manager up to the level of effort identified in this task. Montrose's project manager will prepare and distribute meeting agendas and summary meeting notes focusing on action items. It is envisioned that these project coordination meetings will be conducted on

Microsoft Teams. This task also includes time to prepare monthly invoices, including progress on grant-related activities.

Task 3 Deliverables: Monthly invoices; Meeting agenda and summary meeting notes via email, as needed
Task 3 Meetings: As-needed online meetings with the Council (up to a level of effort identified in this task)

4.0 Project Budget

Montrose understands that the project budget is limited to $155,000 for this scope of work. Please refer to **Table 1** below for a summary of the estimated cost per task.

Table 1 Cost Summary Table

Task	Estimated Cost
Task 1 Watershed Restoration Planning	**$58,622**
1.1 Complete a Watershed Restoration Plan	$36,202
1.2 Project Selection Criteria & Watershed Project Prioritization	$6,720
1.3 Monitoring, Mapping, and Other Technical Analyses	$5,356
1.4 Stakeholder Engagement	$10,344
Task 2 Watershed Project Design	**$86,498**
2.1 Site Analyses	$26,884
2.2 Conceptual Level Diagrams	$54,726
2.3 Environmental Compliance	$4,888
Task 3 Project Management	**$9,880**
TOTAL	**$155,000**

5.0 Project Schedule

The estimated project schedule for the tasks described above is shown in **Table 2**. This estimated schedule assumes a review time of two weeks for the Council, CCRCD, or the FCD. The schedule below assumes these tasks would be authorized and initiated by September 30, 2025 and continue through 2028 (the three year grant period).

Table 2 Project Schedule

Task	Duration or Completion Date
Notice to Proceed	September 3, 2025
Task 1 Watershed Restoration Planning	
1.1 Complete a Watershed Restoration Plan	
1st Draft WRP	Winter 2026
2nd Draft WRP	Spring 2026
3rd Draft WRP	Summer 2026
Final WRP	Fall 2026
1.2 Project Selection Criteria and Watershed Project Prioritization	Fall 2026
1.3 Monitoring, Mapping, and Other Technical Analyses	Fall 2026 /Winter 2027
1.4 Stakeholder Engagement	Fall 2026/Winter 2027
Task 2 Watershed Project Design	
2.1 Site Analyses	Winter/Spring 2027
2.2 Conceptual Level Diagrams	Spring/Summer 2027
2.3 Environmental Compliance Review	Summer/Fall 2027
Task 3 Project Management	
Project Management	Ongoing

Figure D2.1 Climate & Economic Justice Screening Tool
Source: https://screeningtool.geoplatform.gov

Map Key

Watershed Boundary

Disadvantaged Communities

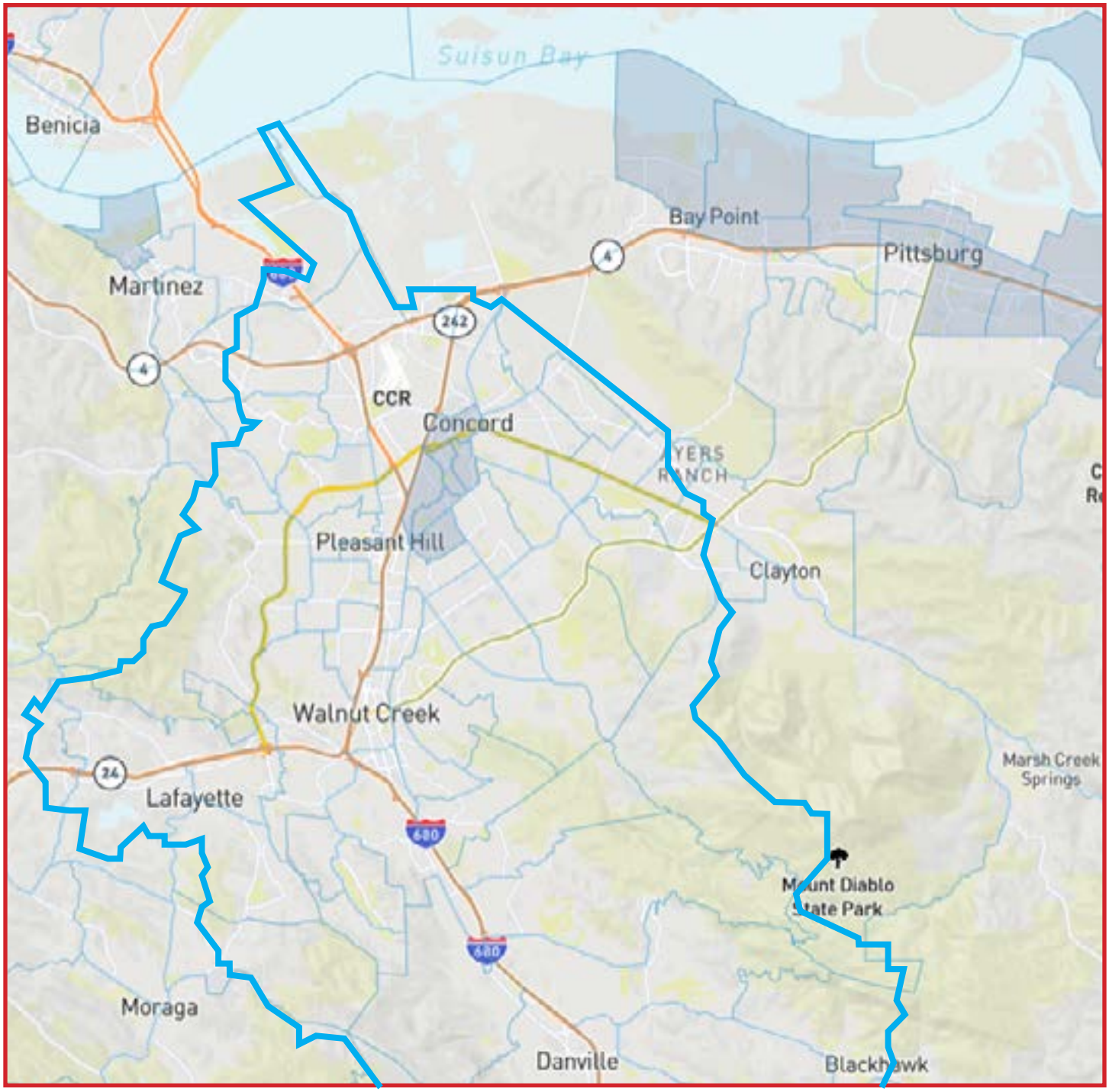
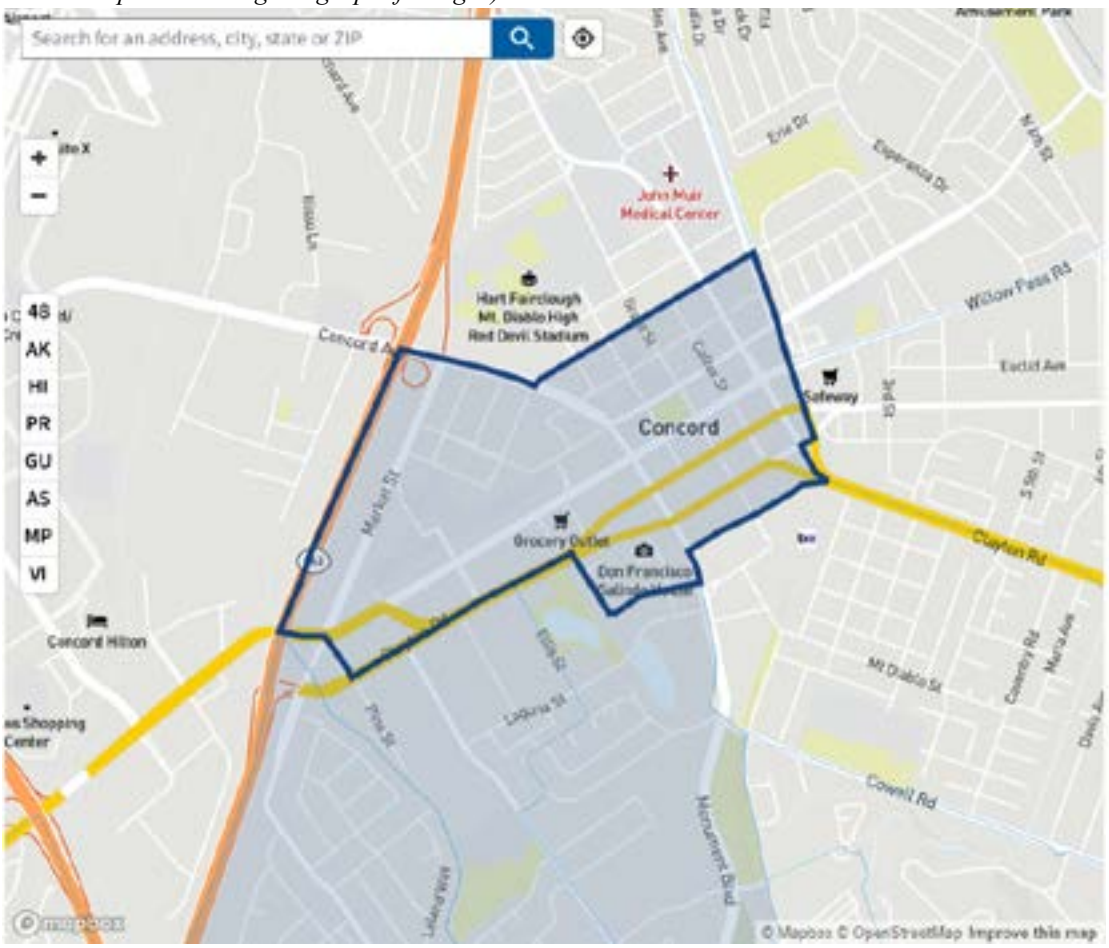


Figure D2.2 and D2.3 Climate & Economic Justice Screening Tool

Source: https://screeningtool.geoplatform.gov)



Tract information
Number: 06013328000
County: Contra Costa County
State: California
Population: 2,340

Tract demographics

Race / Ethnicity (Hide)

White	50%
Black or African American	4%
American Indian and Alaska Native	0%
Asian	21%
Native Hawaiian or Pacific Islander	0%
Other	0%
Two or more races	7%
Hispanic or Latino	20%

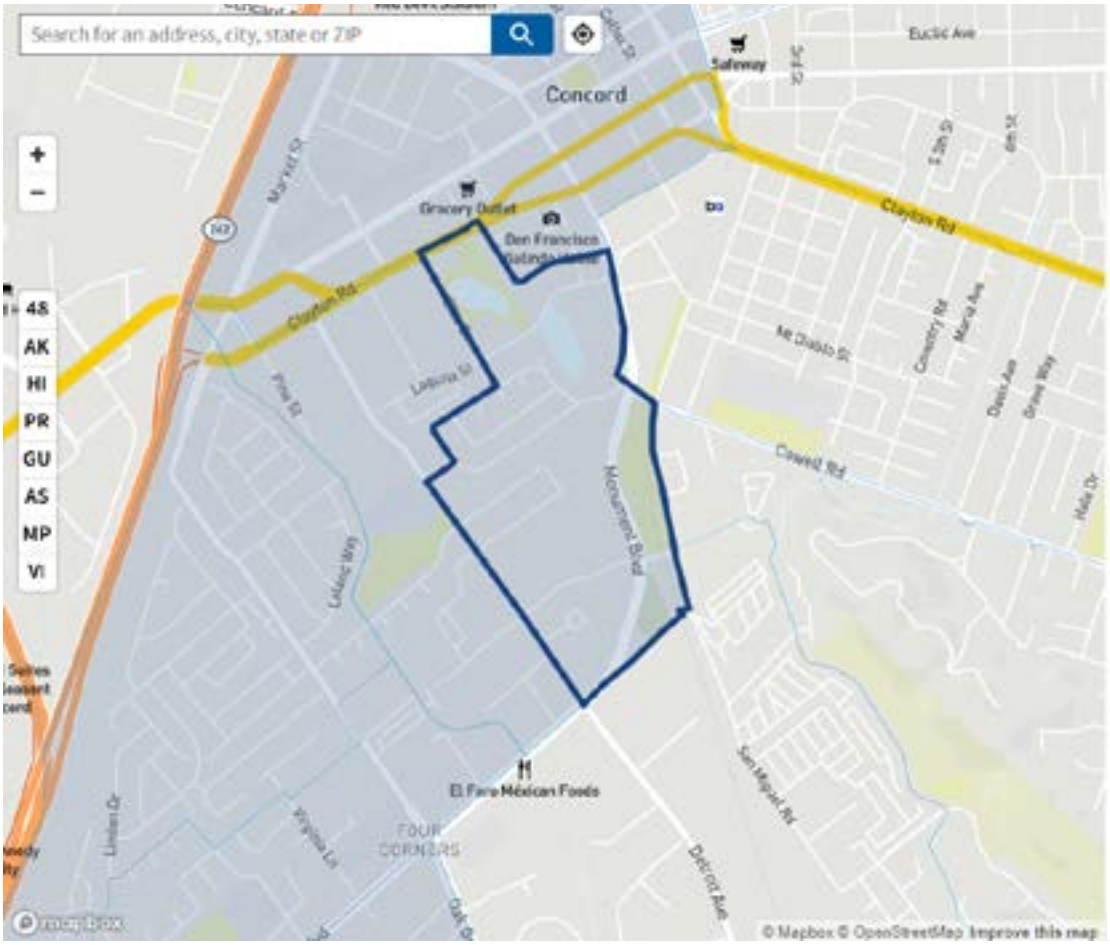
Age (Hide)

Children under 10	2%
Ages 10-64	69%
Elderly over 65	27%

Identified as disadvantaged?

YES

This tract is considered disadvantaged because it meets more than 1 burden threshold **AND** the associated socioeconomic threshold.



Tract information
Number: 06013336101
County: Contra Costa County
State: California
Population: 5,236

Tract demographics

Race / Ethnicity (Hide)

White	19%
Black or African American	4%
American Indian and Alaska Native	2%
Asian	14%
Native Hawaiian or Pacific Islander	7%
Other	33%
Two or more races	3%
Hispanic or Latino	56%

Age (Hide)

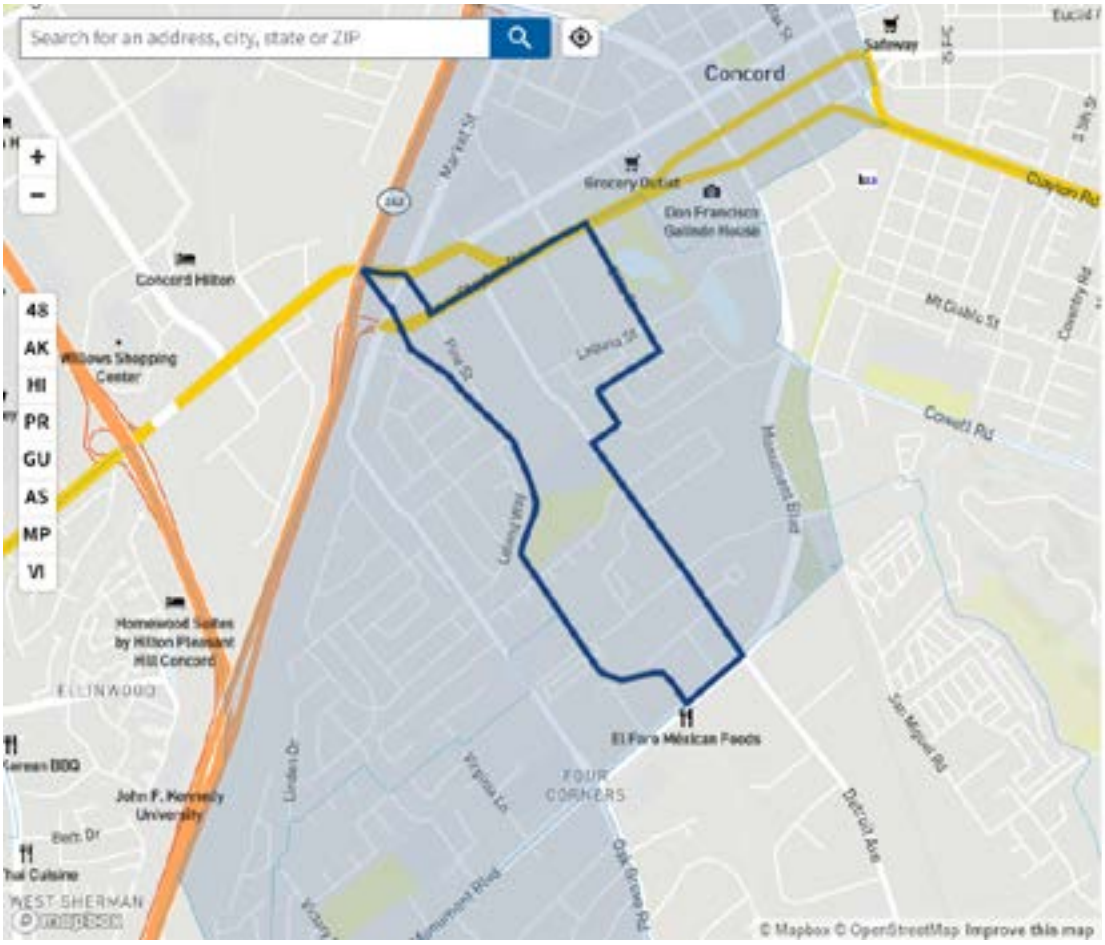
Children under 10	11%
Ages 10-64	82%
Elderly over 65	5%

Identified as disadvantaged?

YES

This tract is considered disadvantaged because it meets more than 1 burden threshold **AND** the associated socioeconomic threshold.

Figure D2.4 and D2.5 Climate & Economic Justice Screening Tool
source: https://screeningtool.geoplatform.gov



Tract information
Number: 06013336102
County: Contra Costa County
State: California
Population: 7,319

Tract demographics

Race / Ethnicity (Hide)

White	19%
Black or African American	9%
American Indian and Alaska Native	0%
Asian	13%
Native Hawaiian or Pacific Islander	0%
Other	30%
Two or more races	10%
Hispanic or Latino	51%

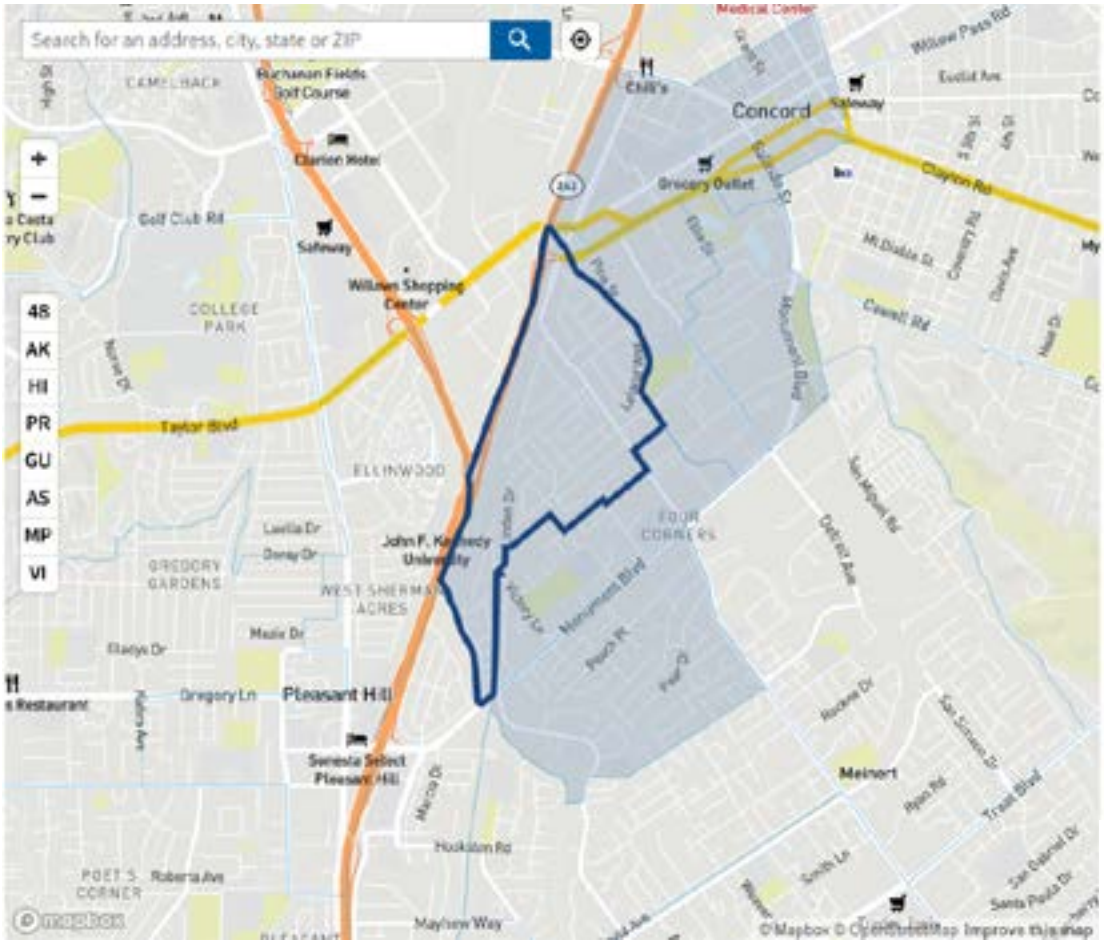
Age (Hide)

Children under 10	10%
Ages 10 - 64	75%
Elderly over 65	7%

Identified as disadvantaged?

YES

This tract is considered disadvantaged because it meets more than 1 burden threshold **AND** the associated socioeconomic threshold.



Tract information
Number: 06013336201
County: Contra Costa County
State: California
Population: 4,056

Tract demographics

Race / Ethnicity (Hide)

White	23%
Black or African American	5%
American Indian and Alaska Native	0%
Asian	17%
Native Hawaiian or Pacific Islander	0%
Other	25%
Two or more races	6%
Hispanic or Latino	48%

Age (Hide)

Children under 10	14%
Ages 10 - 64	69%
Elderly over 65	15%

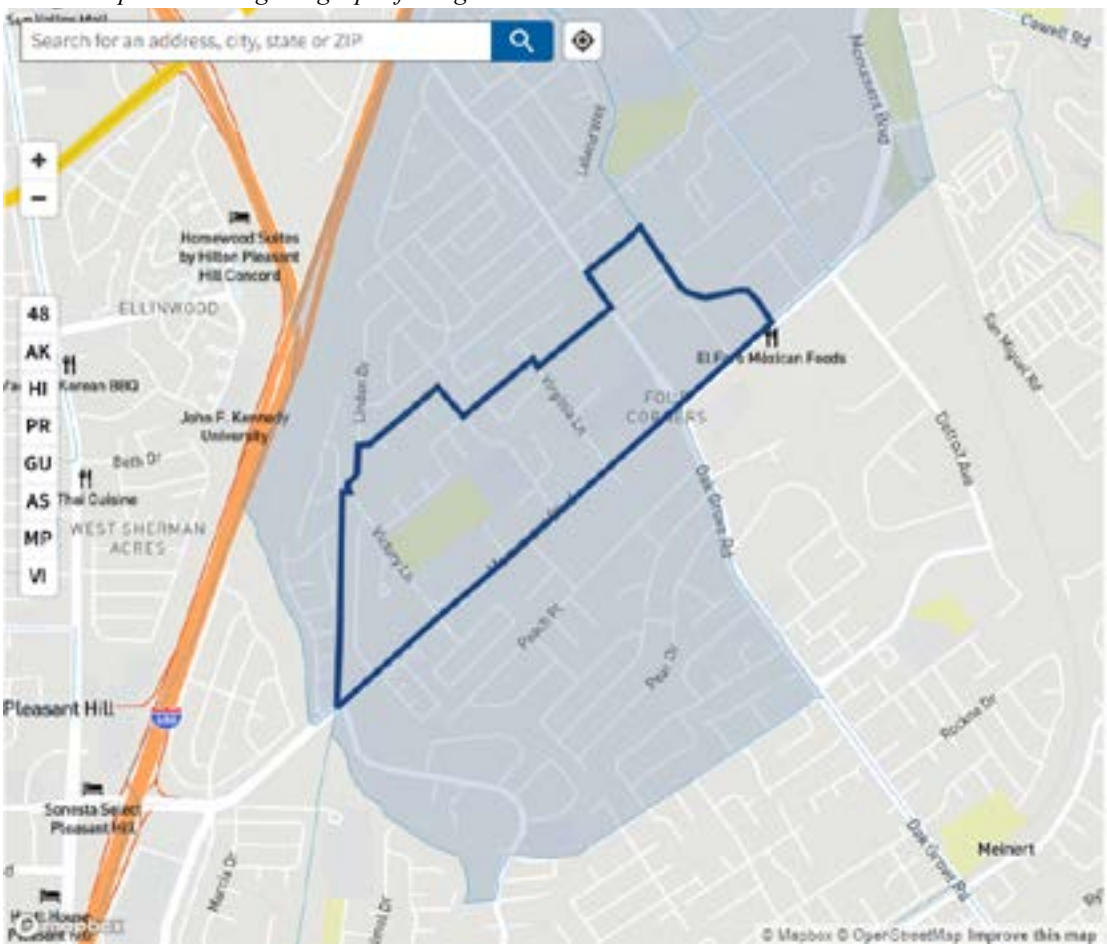
Identified as disadvantaged?

YES

This tract is considered disadvantaged because it meets 1 burden threshold **AND** the associated socioeconomic threshold.

Figure D2.6 and D2.7 Climate and Economic Justice Screeing Tool

Source: https://screeningtool.geoplatform.gov



Tract information
Number: 06013336202
County: Contra Costa County
State: California
Population: 6,222

Tract demographics

Race / Ethnicity (Hide)

White	12%
Black or African American	2%
American Indian and Alaska Native	0%
Asian	11%
Native Hawaiian or Pacific Islander	0%
Other	45%
Two or more races	4%
Hispanic or Latino	71%

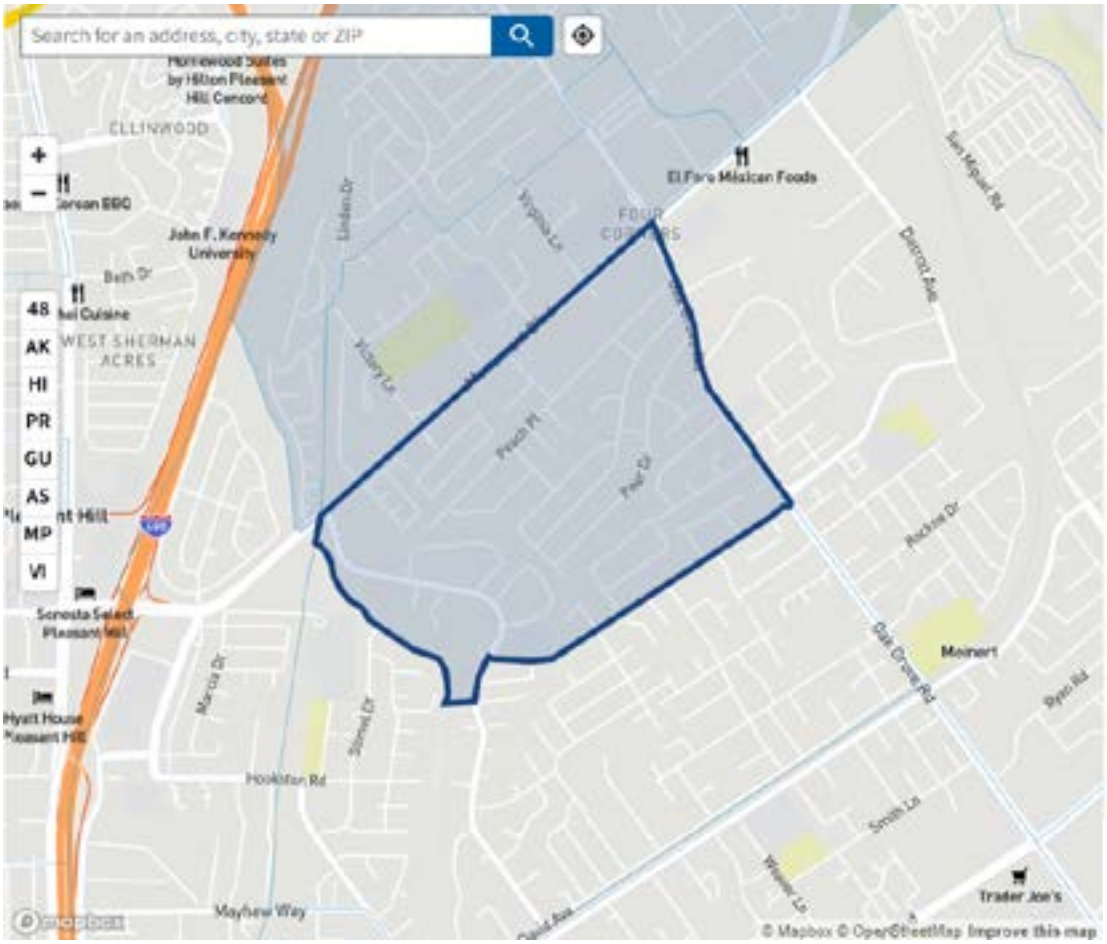
Age (Hide)

Children under 10	11%
Ages 10 - 64	75%
Elderly over 65	3%

Identified as disadvantaged?

YES

This tract is considered disadvantaged because it meets more than 1 burden threshold **AND** the associated socioeconomic threshold.



Tract information
Number: 06013338101
County: Contra Costa County
State: California
Population: 5,352

Tract demographics

Race / Ethnicity (Hide)

White	41%
Black or African American	3%
American Indian and Alaska Native	0%
Asian	9%
Native Hawaiian or Pacific Islander	0%
Other	26%
Two or more races	4%
Hispanic or Latino	43%

Age (Hide)

Children under 10	11%
Ages 10 - 64	76%
Elderly over 65	12%

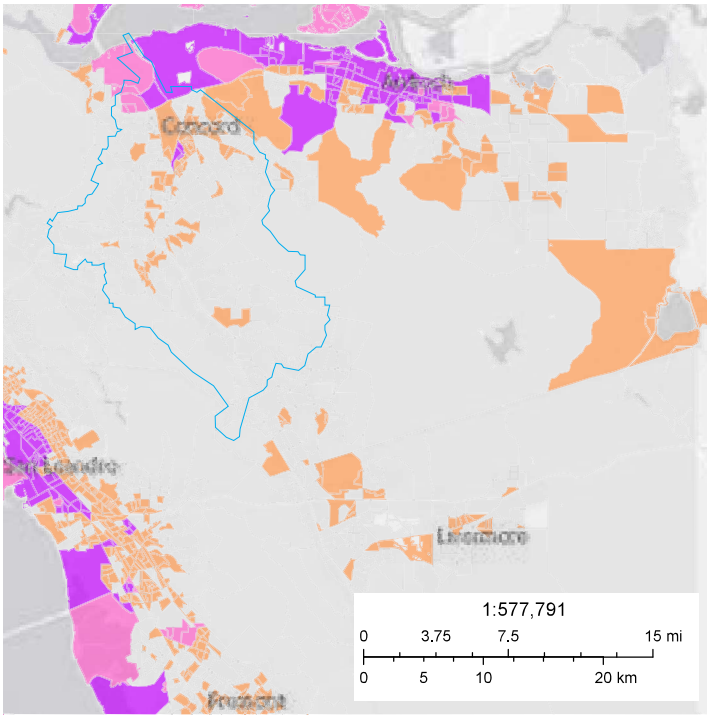
Identified as disadvantaged?

YES

This tract is considered disadvantaged because it meets 1 burden threshold **AND** the associated socioeconomic threshold.

Figure D2.8 BCDC Community Vulnerability (2023)

Source: SF Bay Conservation and Development Commission Open Data Portal https://data-bcdc.opendata.arcgis.com/

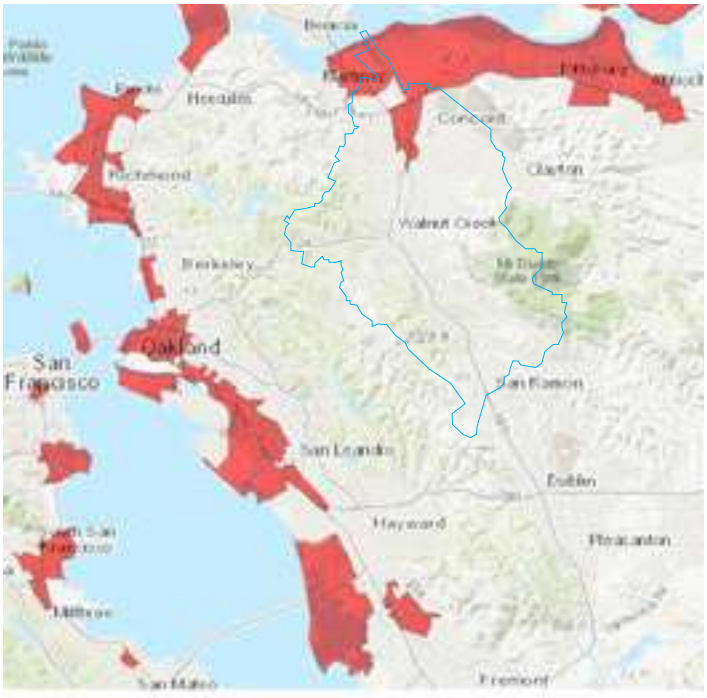


BCDC Community Vulnerability (2023)

- Social & Contamination
- Social
- Contamination
- Low

Figure D2.9 CalEnviroscreen 4.0 SB 535 Disadvantaged Communities (2022)

Source: California Environmental Protection Agency https://oehha.ca.gov/calenviroscreen/sb535

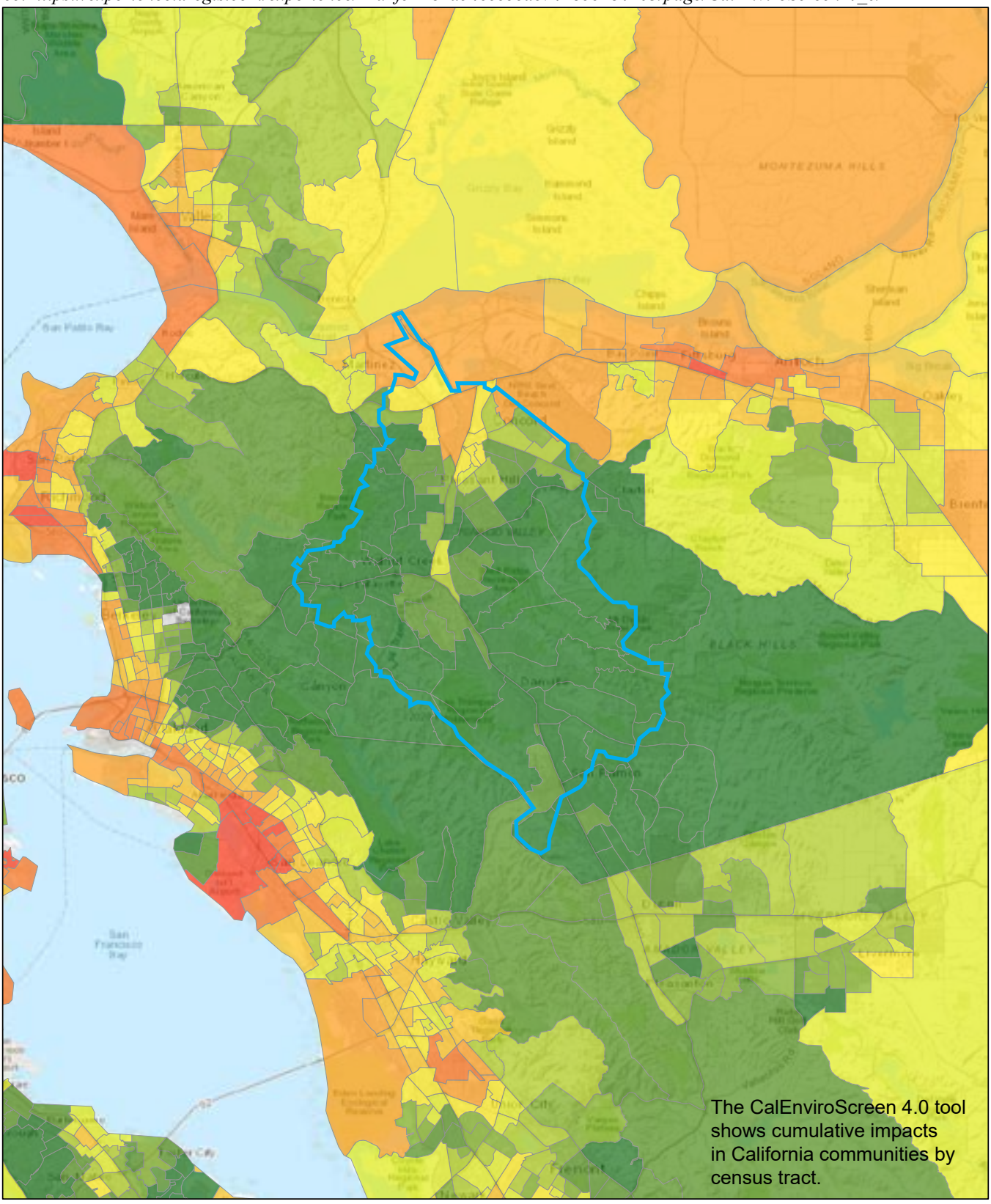


CalEnviroscreen 4.0
SB 535 Disadvantaged Communities (2022)

- SB 535 Disadvantaged Communities (2022)
- Tribal Area Additions (2023 and 2024)

California Climate Investments are funds (Greenhouse Gas Reduction Fund and appropriated by the Legislature) from the proceeds of the State's Cap-and-Trade Program specifically targeted for investment in disadvantaged communities in California. These funds must be used for programs that further reduce emissions of greenhouse gases.

Figure D2.10 CalEnviroScreen 3.0 *from the CA Office of Environmental Health Hazard Assessment (OEHHA)*
Source: https://experience.arcgis.com/experience/11d2f52282a54ceebcac7428e6184203/page/CalEnviroScreen-4_0/



References and Resources List

Arbegast, Newton, and Griffith. 1993. "Walnut Creek Channel Recreation and Revegetation Project." Prepared for the East Bay Regional Park District.

Bay Area Municipal Stormwater Collaborative (BAMSC). 2024. (rep.). Bay Area Municipal Stormwater Collaborative (BAMSC) Regional Bioassessment Report Water Years 2012 - 2022. Retrieved May 10, 2024, from https://www.flowstobay.org/wp-content/uploads/2024/04/FINAL-BAMSC-Bioassessment-Report-3.31.24-1.pdf

Bowler, et al. 2010. "A Systemic Review of Evidence for the Added Benefits to Health of Exposure to Natural Environments." BMC Public Health 10: 456. http://www.biomedcentral.com/1471-2458/10/456

Cain, J., and R. Walkling. 2005. Mount Diablo Creek Watershed Inventory Final Report. Pre- pared by the Natural Heritage Institute for the Contra Costa Resource Conservation District.

CCCCDD. 2006. "Data from the Creeks – An Overview of the Contra Costa County Volunteer Creek Monitoring Program 2001 to 2005." Contra Costa County Community Development Department.

CCCFCD, 2006. "The 50 Year Plan – From Channels to Creeks." Adopted by the Contra Costa County Flood Control and Water Conservation District Board of Supervisors. March 31.

CCCFCD, 2007. "Corrective Action Plan. Version 1.1." Appendix C."

CCCFCD. 2012a. "Grayson Creek and Murderer's Creek Project." Contra Costa County Flood Control and Water Conservation District. http://ca-contracostacounty.civicplus.com/DocumentView.aspx?DID=788 . (Accessed November 17, 2012).

CCCFCD. 2021. Flood Control Zones. https://www.contracosta.ca.gov/8475/Flood-Control-Zones (Accessed May 27, 2024).

CCCPW. 2012. "A Brief History of Lower Walnut Creek." Contra Costa County Public Works. http://www.co.contra-costa.ca.us/index.aspx?NID=2605 . (Accessed December 13, 2012).

CCSCD. 1966. "The Walnut Creek Watershed Story." Contra Costa Soil Conservation District.

Department of Transport Local Government and Regions. 2002. Green spaces, better places: final report of the Urban Green Spaces Taskforce: Department of Transport Local Government and Regions. http://www.hiaconnect.edu.au/files/Guide_to_HIA_of_Greenspace.pdf

Detjens, P. R. 2012. "Walnut Creek – History, Issues, and Challenges." Presentation on behalf of Contra Costa County Flood Control and Water Conservation District. September.

East Bay Regional Park District Land Use Plans. 2013. https://www.ebparks.org/sites/default/files/master_plan_2013_final.pdf

Environmental Protection Agency. 2008. Reducing Urban Heat Islands: Compendium of Strategies: Trees and Vegetation. http://www.epa.gov/hiri/resources/compendium.htm

Glover, S. 2009. Contra Costa County Breeding Bird Atlas. Mount Diablo Audubon Society. Walnut Creek, California.

San Francisco Bay Area Wetlands Ecosystem Goals Project. 1999. Baylands Ecosystem Habitat Goals.

Gudde, E. 1998. California Place Names: The Origin and Etymology of Current Geographical Names. Revised and Enlarged by William Bright. Fourth Ed. University of California Press. Berkeley, California.

Hale. 2012. "Steelhead and Rainbow Trout." Preprint.

Hulanski, F. J. 1917. The History of Contra Costa County. Elms Publishing Company. Berkeley, California. https://lccn.loc.gov/a18000352.

Jones & Stokes. 2006. Aquatic Resources Inventory, Classification, and Function for East Contra Costa County HCP/NCCP Inventory Area. October. (J&S 01478.01.) Oakland, CA. https://www.cocohcp.org/DocumentCenter/View/926/Appendix-J-Aquatic-Resources-Inventory-Classification-and-Function-for-East-Contra-Costa-County-HCP-NCPP-Inventory-Area-PDF .

Jones & Stokes. 2006. East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan. October. (J&S 01478.01.) San Jose, CA. https://www.cocohcp.org/DocumentCenter/View/1411/ECCC-HCP-NCCP---Vol-1-PDF-565-MB?bidId=

Jones and Stokes. 2004. "Final Data Summary Report for Baseline Surveys of Anadromous Fish Habitat in Lower Walnut Creek, Contra Costa County, California," Prepared for the US Army Corps of Engineers in coordination with Contra Costa County Public Works Department.

Jones and Stokes. 2005. "Lower Walnut Creek Project - Revised Salmonid Habitat Suitability and Fish Passage Assessment on Upper Walnut Creek and Tributaries (Final)." Prepared for the US Army Corps of Engineers in coordination with Contra Costa County Public Works Department.

Jones and Stokes. 2006. "Lower Walnut Creek Project - Preliminary Results of Water Year 2006 Chinook Salmon Carcass Survey." Prepared for the US Army Corps of Engineers in coordination with Contra Costa County Public Works Department.

Jones and Stokes. 2007. “Salmonid Habitat Assessment on Upper Pine Creek and Tributaries, Contra Costa County, California.” Prepared for the US Army Corps of Engineers in co- ordination with Contra Costa County Public Works Department.
Keller Mitchell Caronna. 1994. San Ramon Creek Greenbelt and Parkway Study. Volume 1 - Existing Conditions.
Lee, Andrew and Maheswaren, Ravi. 2011. “The Health Benefits of Urban Green Spaces: A Review of the Evidence.” Journal of Public Health 22(2):212-222. http://jpubhealth.oxfordjournals.org/content/33/2/212.full .
Leidy, R.A., G.S. Becker, B.N. Harvey. 2005. “Historical distribution and current status of steelhead/rainbow trout (Oncorhynchus mykiss) in streams of the San Francisco Estuary, California.” Center for Ecosystem Management and Restoration. Oakland, California. http://www.cemar.org/estuarystream-sreport/contracosta.html
MDIA, 2012. “History of Mount Diablo.” Mount Diablo Interpretive Association. http://www.mdia.org/site/park-information/history-of-mdia .
MDIA. 2010. “Common Mammals of Mount Diablo.” Mount Diablo Interpretive Association. http://mdia.org/site/docs/nature/wild- life/mammals-mount-diablo.pdf .
Milliken, Randall. 1995. A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area 1769-1910. Ballena Press Publication. Menlo Park, California.
Munro-Fraser, J.P. 1882. History of Contra Costa County, California including its Geography, Geology, Topography, Climatography, and Description. W.A. Slocum & Co. San Francisco, California.
National Audubon Society. 2008. “Important Bird Areas in the U.S.” http://www.audubon.org/bird/iba12/2008 .
NMFS. 2012a. “Chinook Salmon (Oncorhynchus tshawytscha).“ NOAA Fisheries Office of Protected Resources. http://www.nmfs.noaa.gov/pr/species/fish/chinooksalmon.htm .
NMFS. 2012b. “Coho Salmon (Oncorhynchus kisutch).” NOAA Fisheries Office of Protected Resources. http://www.nmfs.noaa.gov/pr/species/fish/cohosalmon.htm .
Philp, T. 2012. “Floodplain fatties:” A Promising Start for Salmon.” San Francisco Chronicle. May 23.
PWA. 2004. “Pacheco Marsh Restoration Plan – Final Report.” Prepared for the Muir Heritage Land Trust and Contra Costa County.
Roberts & Associates. 1993. “Creeks Restoration and Trails Master Plan – City of Walnut Creek, California.” Prepared by John North- more Roberts & Associates for the City of Walnut Creek.
Ruby, A. 2012. “Summary of BMI Monitoring – 2001-2011, Walnut Creek Watershed” Presentation to the WCWC.
San Francisco Estuary Institute (SFEI). 2016. Resilient Landscape Vision for Lower Walnut Creek: Baseline Information & Management Strategies. https://www.sfei.org/sites/default/files/biblio_files/Resilient%20Landscape%20Vision%20for%20Lower%20Walnut%20Creek.pdf
Town of Danville. 2006. Parks, Recreation, and Arts Strategic Plan. Community Services Department.
U.S. Fish and Wildlife Service. 1995. Working Paper on Restoration Needs: Habitat Restoration Actions to Double Natural Production of Anadromous Fish in the Central Valley of California. Vol. 2. Prepared for the U.S. Fish and Wildlife Service under the direction of the Anadromous Fish Restoration Program Core Group.
USACE. 2011. “Pleasant Hill Web Report. Grayson and Murderer’s Creek Feasibility Study.” Army Corps of Engineers and Contra Costa Flood Control District. http://ca-contracostacounty.civicplus.com/DocumentView.aspx?DID=788 .
USGS. 1897. Topographic Sheet, California, Concord Quadrangle.
Walnut Creek Watershed Council. 2023. Walnut Creek Watershed Council website. https://www.wcwatershed.org/
Washington Department of Fish and Wildlife (WDFW). 2012a. “Chinook (King) Salmon Identification and Information.”. http://wdfw.wa.gov/fishing/salmon/chinook.html.
Washington Department of Fish and Wildlife (WDFW). 2012b. “Steelhead Identification and Information.” http://wdfw.wa.gov/fishing/ salmon/steelhead.html

Watershed Resources

This section includes watershed restoration planning resources relevant to the entire Walnut Creek watershed or multiple sub-watersheds.

Maps and Atlases

California Wetlands Monitoring Workgroup. California EcoAtlas. URL. Includes interactive, detailed maps of aquatic resources. Streams, wetlands, riparian areas, and special habitats such as eelgrass are available as data layers. EcoAtlas is also a tracking tool for restoration project activity and provides detailed information and boundaries for restoration and mitigation projects across California. [Note: SFEI description of EcoAtlas]
Contra Costa Watershed Forum. 2003. Contra Costa County Watershed Atlas. PDF.
Cornell Lab of Ornithology. eBird Hotspots (Contra Costa County). URL.

Natali, Jennifer, et al. 2021. Contra Costa County's Fifty Year Plan Walnut Creek Watershed Opportunity Analysis: Realizing the Social + Ecological Potential of Creeks in Walnut Creek Watershed. University of California, Berkeley River Lab for Contra Costa County Flood Control and Water Conservation District. PDF.
Oakland Museum of California. Guide to San Francisco Bay Area Creeks. URL.
River Otter Ecology Project. Bay Area River Otter Sightings Map. URL.
Walnut Creek Watershed Council Arundo Removal and Replacement Team. Walnut Creek Watershed Arundo Survey. URL.
State of California. 30x30 California: CA Nature. URL. See Executive Order N-82-20.
[NTD: Add Wildcat Restoration Project Map as example: https://www.wcspcouncil.org/map/]

Planning Documents

Contra Costa County. 2015. Climate Action Plan. PDF. Update: URL.
Contra Costa County. General Plan (Current). URL. Update - Envision Contra Costa 2040: URL.
Contra Costa Clean Water Program. 2019. Contra Costa Watersheds Stormwater Resource Plan: Greening the Community for Healthy Watersheds. PDF
Contra Costa Clean Water Program. Green Infrastructure Plans (2019-2020). URL.
Contra Costa County Flood Control and Water Conservation District. 2009. The 50 Year Plan: From Channels to Creeks. Adopted by the Contra Costa Flood Control and Water Conservation District Board of Supervisors March 31, 2009. PDF
Contra Costa County Flood Control and Water Conservation District. 2021. Flood Control Capital Improvement Plan 2021 Update. PDF. URL.
Contra Costa County Public Works Department. 2020. Routine Maintenance Program Manual. PDF. ["This Manual describes routine maintenance activities conducted at the County's and District's flood control channels and other facilities including creeks, culverts, bridges, and basins. The Manual also describes natural resources at the maintained facilities and provides guidance and practices to avoid and minimize potential environmental impacts during maintenance."] [Related document: Initial Study / Mitigated Negative Declaration. PDF.]
Contra Costa Transportation Authority. 2018. Contra Costa Countywide Bicycle and Pedestrian Plan. PDF.
East Bay Regional Park District. 2013 Master Plan. URL.
Natali, Jennifer, et al. 2021. Contra Costa County's Fifty Year Plan Walnut Creek Watershed Opportunity Analysis: Realizing the Social + Ecological Potential of Creeks in Walnut Creek Watershed. University of California, Berkeley River Lab for Contra Costa County Flood Control and Water Conservation District. PDF.
Walkling, Rich. 2013. Walnut Creek Watershed Inventory. Restoration Design Group and Walnut Creek Watershed Council members. PDF.
San Francisco Bay Conservation and Development Commission (BCDC). 2017. "Contra Costa County Adapting to Rising Tides Project". Retrieved June 12, 2024 from https://www.adaptingtorisingtides.org/project/contra-costa-county-adapting-to-rising-tides-project/
San Francisco Bay Regional Water Quality Control Board. Watershed Management. URL.
San Francisco Bay Regional Water Quality Control Board. Protecting Streams and Wetlands. URL.
State of California. 2022. Pathways to 30x30 California: Accelerating Conservation of California's Nature. PDF.
State Water Resources Control Board. 2019 (Adopted). 2021 (Revised). State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. PDF. Note definition of "Watershed Plan" (p. 17).
University of California, Berkeley River Lab. Concrete Channels to Restored Riparian Greenways for Walnut Creek (multiple documents). https://berkeleyriverlab.org/news/50yp/

Environmental Studies and Reports

California Governor's Office of Planning and Research. CEQANet Web Portal. URL. Clearinghouse that enables search of CEQA documents by County, Document Type, Issue (Biological Resources, Wetland/Riparian, etc.)
California Water Boards - San Francisco Bay Region 2, Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin (including amendments and updates). URL.
Contra Costa Clean Water Program. 2021. Urban Creeks Monitoring Report: Water Year 2020. PDF.
Hale, James / Friends of the Creeks. 1996. Wildlife in the Creeks. URL.
Hanson, Charles H. 2014. Fish Passage Assessment - Lower Walnut Creek and Lower Grayson Creek, Contra Costa County. September 2014. PDF.
PRBO Conservation Science and the San Francisco Bay Joint Venture. 2011. The State of the Birds San Francisco Bay 2011. PDF.
Walnut Creek Watershed Council. 2013. Achievement Report. PDF.
Walnut Creek Watershed Council. 2014. Achievement Report. PDF.
Walnut Creek Watershed Council. 2015. Achievement Report. PDF.

Walnut Creek Watershed Council. 2016. Achievement Report. PDF.
Walnut Creek Watershed Council. 2017. Achievement Report. PDF.
Walnut Creek Watershed Council. 2018. Achievement Report. PDF.
Walnut Creek Watershed Council. 2019. Achievement Report. PDF.
Walnut Creek Watershed Council and The Restoration Trust. 2020. Arundo Removal and Replacement Team 2019 Monitoring Report. CDFW File #1600-2018-0287-R3. Date issued July 2020. PDF.
The Watershed Project. Water Quality in Contra Costa County. URL.
Concord Area Watershed
City of Concord. 2030 General Plan. URL.
City of Concord. 2019. Green Infrastructure Plan. PDF.
City of Concord. Stormwater Management. URL.
Grayson Creek Watershed
City of Martinez. Revised Draft General Plan 2035. URL.
City of Martinez. Green Infrastructure Plan. URL.
City of Pleasant Hill. Bicycle and Pedestrian Master Plan. [Link not found.]
City of Pleasant Hill. General Plan (Current). URL. Update: General Plan 2040: URL.
City of Pleasant Hill. 2019. Green Infrastructure Plan. PDF.
City of Pleasant Hill. A New Library for Pleasant Hill (includes partial restoration of a section of the East Fork of Grayson Creek). URL.
Friends of Pleasant Hill Creeks / Mt. Diablo Audubon Society. Grayson Creek Bird Survey (2017-2022).
· Grayson Creek at Oak Park Blvd (90 species as of May 2022) (eBird list)
· Grayson Creek at Chilpancingo Blvd. (87 species as of May 2022) (eBird list)
Hanson, Charles H. 2014. Fish Passage Assessment - Lower Walnut Creek and Lower Grayson Creek, Contra Costa County. September 2014. PDF.
Pleasant Hill Recreation and Park District. 2020. Parks, Facilities and Recreation Master Plan. PDF.
Las Trampas Creek Watershed
City of Lafayette. General Plan. URL.
City of Lafayette. 2017. Downtown Creeks Preservation, Restoration, and Development Plan. PDF. Adopted by the City of Lafayette on October 23, 2017.
City of Lafayette Creeks Committee. [2022?]. Definition of riparian lands from the Lafayette Creeks Committee (via Jeff Gilman): "Riparian lands" means lands that occur along a watercourse and are delineated by the existence of plant species that differ from adjacent upland vegetation, because more surface or subsurface water is supplied to plants by their proximity to the associated watercourse. Typical examples include floodplains and creek banks. Riparian lands occur along natural watercourses, as well as along constructed water bodies such as ditches, canals and ponds.
City of Lafayette. 2019. Green Infrastructure Plan. PDF.
City of Orinda. General Plan & Housing Element. URL.
City of Orinda. 2019. Green Infrastructure Plan. PDF. URL.
Town of Moraga. 2019. Green Infrastructure Plan. PDF.
Town of Moraga. Planning Documents (includes General Plan). URL.
Pine Creek Watershed
City of Concord. 2030 General Plan. URL.
City of Concord. 2019. Green Infrastructure Plan. PDF.
City of Concord. Stormwater Management. URL.
San Ramon Creek Watershed
City of San Ramon. General Plan 2035. URL.
City of San Ramon. 2019. Green Infrastructure Plan. PDF.
City of San Ramon. Stormwater. URL.
City of Walnut Creek. 1993. Creeks Restoration and Trails Master Plan. PDF.
City of Walnut Creek. General Plan 2025. URL.
City of Walnut Creek. 2019. Green Infrastructure Plan. PDF.
Town of Danville. 2030 General Plan. URL.
Town of Danville. 2019. Green Infrastructure Plan. PDF.
Walnut Creek Watershed – Main Stem
Contra Costa Public Works. Lower Walnut Creek Restoration Project. URL. See also Reports and Documents
Hanson, Charles H. 2014. Fish Passage Assessment - Lower Walnut Creek and Lower Grayson Creek, Contra Costa County. September 2014. PDF.

San Francisco Estuary Institute-Aquatic Science Center. 2016. Resilient Landscape Vision for Lower Walnut Creek: Baseline Information & Management Strategies. URL.
CDFG. 2012. "Wild Pig Management Program." California Department of Fish and Game. http://www.dfg.ca.gov/wildlife/hunting/pig/
Detjens, P. R. 2012. "Walnut Creek – History, Is- sues, and Challenges." Presentation on behalf of Contra Costa County Flood Control and Water Conservation District.
EBPRD. 2012a. "Las Trampas Regional Wilder- ness." East Bay Regional Park District. http://www.ebparks.org/parks/las_trampas
EBPRD, 2012b. "Briones Regional Park." East Bay Regional Park District. http://www.ebparks.org/Assets/_Nav_Categories/Parks/ Maps/Briones+text.pdf
Fages, P. 1772. "A Historical, Political, and Natu- ral Description of California." University of Oregon Web de Anza. http://anza.uoregon. edu/fages/default.html
Font, P. 1776. "Diary of Pedro Font." University of Oregon Web de Anza. http://anza.uoregon.edu/font76.html
Friends of the Creeks. 2012. "About Friends of the Creek." http://www.friendsofthecreeks.org/articles/about_foc.shtml
Froese, Rainer, and Daniel Pauly, eds. 2006. *"Oncorhynchus mykiss"* in FishBase. February 2006 version.

Contra Costa County
Flood Control
& Water Conservation District

Warren Lai,
ex officio Chief Engineer
Allison Knapp,
Deputy Chief Engineer

August 12, 2024

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Robin Graber, Program Coordinator
Mail Code: 86-6300
P.O. Box 25007
Denver, CO 80225

RE: Letter of Support for the Walnut Creek Watershed Restoration Plan
WaterSMART Cooperative Watershed Management Program Phase I
NOFO number R23AS00362

Dear Ms. Graber:

The Contra Costa County Flood Control and Water Conservation District (Flood Control District) is pleased to offer our strong support for the Walnut Creek Watershed Council's (Council) application to the Bureau of Reclamation's WaterSMART program for the development of a Watershed Restoration Plan. If awarded, this grant will allow the Council to expand and formalize their public and inclusive process to develop a plan to protect and preserve habitats, riparian vegetation, wildlife corridors, stormwater quality and storage, and recreational opportunities in the Walnut Creek Watershed.

The Walnut Creek Watershed is approximately 150 square miles, encompasses parts of nine cities and towns, and flows into the San Francisco Bay-Delta estuary system. It is the largest watershed in Contra Costa County. This watershed has been significantly modified over the past 75 years through urban/suburban development, and the Council's watershed plan will include specific projects, submitted by Council members and members of the public and vetted by the Council, to address ongoing habitat degradation and other related issues.

The Flood Control District has been an active member and fiscal supporter of the Council since its inception over ten years ago. The Council actively coordinates with five local "Friends of Creeks" groups (a sixth group is currently being formed with Council support). We have been especially pleased to partner with the Council over many years because the Council provides an inclusive, invested forum for public discourse on flood protection, erosion, stewardship, and other watershed issues that are critical to our mission.

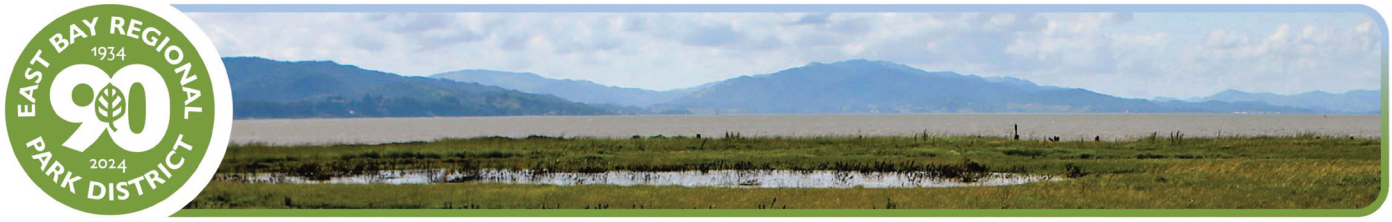
I urge you to give this proposal your careful consideration and to fully fund their request. Please feel free to contact me at (925) 313-2390 or tim.jensen@pw.cccounty.us if you have any questions.

Sincerely,

Tim Jensen
Assistant Chief Engineer
Contra Costa County Flood Control
& Water Conservation District

TJ:SD:cw
G:\fldctl\Watershed Planning - Engineering\Zone 3B - Walnut San Ramon\2023 Watershed Plan started Jan 2023\WCCouncil\WCWCsGrantApp-SMART2024\CCCFloodDistrict_LoS_BOR WaterSMART_2024.docx
By e-mail

c: Sara Duckler, Flood Control



2950 PERALTA OAKS COURT • OAKLAND • CA • 94605-0381 • T: 1-888-EBPARKS • F: 510-569-4319 • TRS RELAY: 711 • EBPARKS.ORG

August 13, 2024

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Robin Graber, Program Coordinator
Mail Code: 86-6300
P.O. Box 25007
Denver, CO 80225

Subject: **Letter of Support for the Walnut Creek Watershed Restoration Plan**
WaterSMART Cooperative Watershed Management Program Phase I
NOFO number R23AS00362

Dear Ms. Graber,

I am writing to express support for the Walnut Creek Watershed Council's grant application for the Bureau of Reclamation's WaterSMART Cooperative Watershed Management Program for the development of a comprehensive, coordinated Walnut Creek Watershed Restoration Plan.

East Bay Regional Park District (Park District) is the largest park district in the country. The Park District is actively engaged in watershed restoration efforts. In its service, the Park District is focused on environmental education, land stewardship, restoration, and preservation efforts. As a local agency, the Park District looks forward to working collaboratively with the Council to develop a watershed restoration plan with inclusive goals and actionable objectives that will enhance the creeks and wetlands in the watershed. The Park District is excited about the potential for a coordinated watershed restoration plan to help meet critical needs for fish and wildlife and provide long term benefits to residents in the broader community. This is a critically important time to focus attention on how we can best respond to climate change in this, the largest watershed in Contra Costa County.

We urge you to give the Walnut Creek Watershed Council's proposal careful consideration and to fully fund their request. We are happy to answer any questions you may have about our organization or our interest in working with the Walnut Creek Watershed Council to develop a comprehensive, coordinated Walnut Creek Watershed Restoration Plan.

Thank you for your consideration.

Sincerely,

Sabrina Landreth (Aug 21, 2024 17:24 PDT)

Sabrina Landreth
General Manager, East Bay Regional Park District

Pleasant Hill Community
GREEN AWARD WINNER

Friends of Pleasant Hill Creeks

August 12, 2024

Bureau of Reclamation
Water Resources and Planning Office
ATTN: Ms. Robin Graber, Program Coordinator
Mail Code: 86-6300
P.O. Box 25007
Denver, CO 80225

Subject: Letter of Support for the Walnut Creek Watershed Restoration Plan
WaterSMART Cooperative Watershed Management Program Phase I
NOFO number R23AS00362

Dear Ms. Graber,

Friends of Pleasant Hill Creeks is pleased to submit this letter in support of the Walnut Creek Watershed Council's application for funding for the development of a Watershed Restoration Plan.

Friends of Pleasant Hill Creeks is a community-based nonprofit organization working to protect and restore creeks in the Grayson Creek Watershed, which is a tributary subwatershed of the Walnut Creek Watershed in Contra Costa County, CA. Since 2017, volunteers have participated in creek cleanups, wildlife surveys, water quality monitoring, native plant restoration, and educational activities in our community. As a community stakeholder, our organization looks forward to working collaboratively to develop an overarching vision with inclusive goals and actionable objectives that advance our efforts toward a healthy, sustainable, and climate-resilient watershed.

We have worked closely with the Walnut Creek Watershed Council for eight years on multiple projects in the watershed. We anticipate that the Watershed Restoration Plan will help to meet critical needs and provide long term benefits to our members as well as residents in the broader community. For example, one of the issues that is a priority to our organization is enhancement of water quality and habitat for native wildlife. Another priority is expanding equitable public access to the benefits of healthy creeks and open space via trails, parks, and opportunities to connect with nature. With a coordinated plan, we can address these important needs.

Thank you for your consideration of the Walnut Creek Watershed Council's grant application. Please feel free to contact us at pleasanthillcreeks@gmail.com with any questions.

Thank you very much for your time and consideration.

Sincerely,

Heather Rosmarin

Heather Rosmarin
Co-Founder, Friends of Pleasant Hill Creeks (www.pleasanthillcreeks.org)
A Project of Social and Environmental Entrepreneurs (SEE), a non-profit 501(c)(3) public charity
25A Crescent Drive #245, Pleasant Hill, CA 94523