

City of San Pablo

Green Infrastructure Plan



CITY OF SAN PABLO
City of New Directions



San Pablo
All-America City
NATIONAL CIVIC LEAGUE
2014

Approved May 2019

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The City of San Pablo would like to give a special thanks to the following:

Marvin Soriano, City of San Pablo IT Administrator, for the cover and chapter page photos

Contra Costa Clean Water Program

Contra Costa County Permittees

Geosyntec Consultants

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Acronyms and Abbreviations

ADA	Americans with Disabilities Act
AGOL	ArcGIS Online
BASMAA	Bay Area Stormwater Management Agencies Association
Caltrans	California Department of Transportation
CASQA	California Stormwater Quality Association
CCCWP	Contra Costa Clean Water Program
CIP	Capital Improvement Program
CCW SWRP	<i>Contra Costa Watersheds Stormwater Resource Plan</i>
CNRA	California Natural Resources Agency
CTC	California Transportation Commission
C&ED	Community & Economic Development Department
EDC	Economic Development Corporation
GI	Green Infrastructure
GIS	Geographic Information System
LIDI	Low Impact Development Institute
MRP	Municipal Regional Stormwater Permit
MS4	Municipal Separate Storm Sewer System
MTC/ABAG	Metropolitan Transportation Commission/Association of Bay Area Governments
MUTCD	Manual on Uniform Traffic Control Devices
NPDES	National Pollutant Discharge Elimination System
PCBs	Polychlorinated Biphenyls
PW	Public Works Department
RAA	Reasonable Assurance Analysis
(Re)development	Redevelopment and new development
ROW	Right-of-way
RWQCB	Regional Water Quality Control Board
SPMC	<i>San Pablo Municipal Code</i>
SWRCB	State Water Resources Control Board
SWGPP	Storm Water Grant Program
TMDL	Total Maximum Daily Load
TOD	Transit Oriented Development
WIC	Women Infants and Children
WLA	Waste Load Allocation

1 Introduction and Overview

1.1 Regulatory Mandate

The City of San Pablo (City) is one of 76 local governmental entities subject to the requirements of the California Regional Water Quality Control Board (RWQCB) for the San Francisco Bay Region's Municipal Regional Stormwater Permit (MRP). The MRP was originally issued in 2009¹ and was last reissued in November 2015². The MRP mandates implementation of a comprehensive program of stormwater control measures and actions designed to limit contributions of urban runoff pollutants to the San Francisco Bay watershed.

MRP Provision C.3.j.i. requires the City to prepare a Green Infrastructure Plan, to be submitted with its Annual Report to the RWQCB, due September 30, 2019.

Green Infrastructure (GI) refers to the construction and retrofit of storm drainage systems to reduce runoff volumes, disperse runoff to vegetated areas, harvest and use runoff where feasible, promote infiltration and evapotranspiration, and use bioretention and other natural systems to detain and treat runoff before it reaches nearby bodies of water. GI facilities include, but are not limited to: bioretention facilities, raingardens, pervious pavers, infiltration basins, green roofs, and rainwater harvesting systems. GI can be incorporated into construction on new and previously developed parcels, as well as new and rebuilt streets, and other infrastructure within the public right-of-way (ROW).

Water quality in the San Francisco Bay (the Bay) has been identified as impaired by mercury and polychlorinated biphenyls (PCBs), sources of which include urban stormwater. By reducing and treating stormwater flows, GI reduces the quantity of these pollutants entering the Bay and promotes the overall health of Bay ecosystems.

MRP Provisions³ C.11 and C.12 require Contra Costa Permittees (Contra Costa County and its 19 cities and towns) to reduce estimated PCBs loading by 23 grams/year (g/yr) and estimated mercury loading by nine

¹ California RWQCB San Francisco Bay Region MRP Order No. R2-2009-0074, National Pollutant Discharge Elimination System (NPDES) Permit No. CAS612008.

² California RWQCB San Francisco Bay Region MRP Order No. R2-2015-0049, NPDES Permit No. CAS612008.

³ All MRP Provisions that are specifically referenced within this document, e.g. Chapter 3 (C.3), are assumed to be referencing the MRP, as approved in 2015.

(9) g/yr using GI by June 30, 2020. Regionally, Permittees must also project the load reductions achieved via GI by 2020, 2030, and 2040, showing that collectively, by 2040 PCBs will be reduced by three (3) kilograms/year (kg/yr) and mercury by ten (10) kg/year. See Appendix 2 for further background on mercury and PCBs in the Bay. PCBs and mercury load reductions will be informed by this *GI Plan*; however, the actual estimates for load reductions will be provided in 2020 as part of the reporting requirement in MRP Provisions C.11.c/C.12.c and C.11.d/C.12.d, see Appendix 5 for more details.

1.2 San Pablo Context

1.2.1 Planning Context

It is important to note that there are several neighborhoods that have “San Pablo, California” mailing addresses, but are not part of the incorporated City and are not addressed in the City’s *GI Plan*. These include the census areas of Bayview, El Sobrante, Montalvin, North Richmond, Rollingwood, and Tara Hills. See Appendix 3 for a map of the City boundary.

Municipal Geography

The City of San Pablo encompasses a total of 2.6 square miles⁴ in the northern part of the East San Francisco Bay Area in Contra Costa County. The City is traversed by three (3) creeks: Rheem Creek, San Pablo Creek, and Wildcat Creek. All three (3) creeks originate in the Berkeley Hills, to the southeast of the City, and flow to the San Pablo Bay, to the west of the City. San Pablo is predominantly flat, as the majority of the City falls within a sedimentary plain, with some steeply sloped areas in the northern and southeastern regions of the City.

San Pablo’s municipal geography dictates what GI facilities can be implemented and where such implementation is appropriate. Due to the Class D (clayey) soils found in the flat areas of the City, water infiltration is limited, thus certain types of GI facilities are not well suited (e.g. dry wells) and underdrains are required in most GI facilities. Moreover, GI facilities are generally not well suited to be developed in the steep hillsides found in the northern and southeastern regions of the City, since water infiltration may exacerbate erosion concerns and hillside stability. For GI construction purposes, two key zones have been identified: a “Geotechnically Sensitive” zone and a “City Review” zone. See the maps

⁴ United States Census Bureau.

in Appendix 3 for zone boundaries and applicable restrictions. These zones were identified through a combination of slope profile analysis and past slides (i.e., 1958, 1983, and 2011).

Demographics

San Pablo is an ethnically and culturally diverse community. As of 2017, the City had a population of 30,720 people⁵. Over 60% of the overall population are Hispanic and over 50% speak English “less than ‘very well,’” with Spanish being the preferred language. As a low-income, state-identified disadvantaged community, the City relies on grants to fund the majority of its sustainability and capital improvements.

Economic & Social Trends

The median household income in San Pablo is approximately \$47,000, in comparison to a median household income of about \$93,000 across the San Francisco-Oakland-Hayward metropolitan area. Over 60% of San Pablo housing units are renter-occupied, leading to a high resident turnover rate. Additionally, most residents have a mean travel time to work of 35 minutes and over 20% of the population commute over 60 minutes to arrive at their place of work.

Low homeownership rates, high resident turnover, and a significant commute burden pose barriers to community involvement. The City hosts several seasonal and annual events for its residents in order to share important resources and foster community unity. Additional methods of City outreach to community members include the City’s website, Facebook page, weekly e-Newsletters, quarterly *El Portal* magazine, and project-specific public meetings.

The San Pablo Economic Development Corporation (EDC) plays a strong role in supporting the workforce readiness of residents and the success of local businesses. The mission of the San Pablo EDC is to develop, diversify, and stabilize the local economy, as San Pablo’s population and land value increase. Local investment in the “greening” of San Pablo will support the larger effort of increasing the positive public image of the City to encourage community economic success.

Development Trends

As of the early 2000s, the City of San Pablo has been considered “built-out” by the City’s Planning Division. The City mainly encourages

⁵ Data in “Demographics” and “Economic & Social Trends” from the U.S. Census Bureau’s American Community Survey estimates for 2017.

development along its major corridors and roadways; for example, along San Pablo Dam Road, San Pablo Avenue, 23rd Street, and Rumrill Boulevard. The City has two Specific Plans—for 23rd Street and San Pablo Avenue—to guide development in these corridors. The City has created a new mixed-use development site, “Plaza San Pablo,” which will include the new City Hall, along with the already constructed Contra Costa County Women Infants and Children (WIC) clinic, County Library, West County Health facilities, and more. The City is looking for long-term opportunities to advance transit oriented development (TOD), particularly along the San Pablo Avenue corridor near the Contra Costa College campus and commercial centers.

Commitment to Sustainability

The City of San Pablo has an Environmental Services Division (Environmental Division) within the Public Works Department (PW) with an ongoing staff of 1.5 FTE, although staff capacity has been augmented in recent years through the CivicSpark AmeriCorps Fellowship program. The Environmental Division’s workplan focuses on stormwater projects, including the implementation of provisions related to development in the MRP. However, the Environmental Division also strives to connect San Pablo residents to local, regional, and statewide resources related to energy and water efficiency, as well as solid waste reduction.

The City has leveraged multiple grant opportunities and regional partnerships to create and implement sustainability plans, including the *Climate Action Plan* and the *Bicycle and Pedestrian Master Plan*.

The 2019-2021 Priority Workplan for the City of San Pablo identifies developing long-term environmental stewardship goals (Priority 202) and assessing environmental impacts over the long-term (Priority 203) under the broader policy goal of “Enhanc[ing] Community Resilience.”

1.2.2 Watersheds and Storm Drainage

The City of San Pablo falls within the San Pablo Basin, as identified by the San Francisco Bay RWQCB, and includes portions of the Rheem Creek, San Pablo Creek, and Wildcat Creek watersheds (listed from North to South), which all drain into the San Pablo and San Francisco Bays.

Watersheds

Out of the three (3) creeks that traverse the City, Rheem Creek spans the shortest distance. Rheem Creek flows from the western edge of the East Bay Hills and empties to the San Pablo Bay. Rheem Creek is culverted

between Contra Costa College and Wanlass Park, under residential development and San Pablo Avenue, but is daylighted for the remainder of its span within City boundaries. However, nearly the entire stretch of Rheem Creek within the City flows through a concrete channel that is controlled and maintained by the Contra Costa County Flood Control District. Much of Rheem Creek dries up during the dry season, although urban runoff may contribute to some year-round standing water.

The broader San Pablo Creek watershed includes the San Pablo and Briones Reservoirs, both of which are potable water storage reservoirs located to the southeast of the City. San Pablo Creek maintains flowing water year-round, and large storms during the rainy season can lead to peak creek heights of near bank levels. San Pablo Creek is culverted beneath Interstate-80 (I-80) and major intersections within San Pablo, but otherwise flows in a natural earthen channel through the City.

The majority of Wildcat Creek within City boundaries has been daylighted, with exception of the stretch that is culverted beneath San Pablo Avenue, the South San Pablo Avenue shopping area, and I-80. Much of Wildcat Creek dries up during the dry season, although urban runoff may contribute to some year-round standing water. Large storms during the rainy season can lead to peak creek heights of near bank levels.

These three (3) creeks divide the City into five (5) hydrologic zones, characterized by the *City of San Pablo Storm Drain Master Plan* as: north of Rheem Creek (North Rheem), south of Rheem Creek (South Rheem), north of San Pablo Creek (San Pablo), between San Pablo Creek and Wildcat Creek (Wildcat to San Pablo), and south of Wildcat Creek (Southwest).

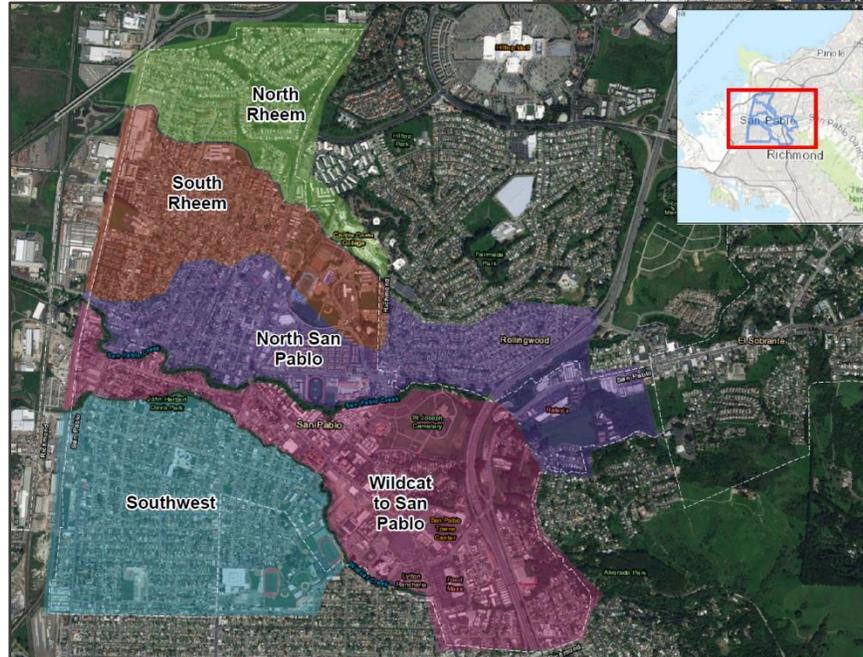


Figure 1: City of San Pablo Storm Drain Master Plan Hydrologic Zones

Flood Zones

Portions of San Pablo are located in flood-prone areas, as a result of the City's generally low topography and the creeks that run through City boundaries. According to the Federal Emergency Management Agency National Flood Insurance Program from 2015, approximately 10% of the City is located in a 100-year floodzone and approximately 17% in a 500-year floodzone, primarily around San Pablo and Wildcat Creeks. GI facilities may help address localized flooding in the San Pablo community.

Storm Drains

Drainage facilities in San Pablo include the City's creeks (Rheem, San Pablo, Wildcat), inlets, outfalls, manholes, culverts, and drainage channels. The creeks collect both surface runoff and flows from storm drain pipes. Water levels in the creeks have a large influence on the City's storm drain system, since each storm drain outfall feeds into a creek and City storm drain lines are generally very short. Due to the primarily flat topography of the City, beyond the hillside areas mentioned in Section 1.2.1, there is little natural elevation change to enable rapid enough water drainage to avoid storm drain backflow and localized flooding. GI can be well-suited to help address such issues by encouraging stormwater infiltration and slowing the flow of water entering the storm drain system.

1.2.3 Green Infrastructure

As required by the MRP, the City currently implements sustainable stormwater management practices on land development projects regulated by Provision C.3. Specific methods and design criteria are outlined in the Contra Costa Clean Water Program's (CCCWP's) *Stormwater C.3 Guidebook*, which the City has referenced in *San Pablo Municipal Code (SPMC)* Section 8.40. Table 1 details GI projects in San Pablo, as required by the prevailing version of the MRP.

Table 1: Completed GI Projects in the City of San Pablo⁶

Project Name	Project Type	Year	Acres Treated	Site Location
Casino San Pablo Parking Lot	Private	2009	0.7	San Pablo Ave. & Vale Rd.
St. Joseph Funeral Home	Private	2009	1.8	Church Ln.
Abella Paseo	Private	2009	2.0	El Portal Dr.
Abella Commercial	Private	2009	8.3	San Pablo Ave. & El Portal Dr.
AutoZone	Private	2011	0.9	San Pablo Ave.
Walgreens	Private	2011	1.4	San Pablo Ave. & Laurie Ln.
West County Health Center	Public (County)	2012	3.6	San Pablo Ave.
Helms Community Center	Public (City)	2014	0.6	Rd. 20
Rumrill Sports Park	Public (City)	2015	4.4	Rumrill Blvd.
Abella Vista	Private	2016	4.9	Rd. 20
Walgreens	Private	2016	1.4	San Pablo Ave. & Gateway Ave.
Plaza San Pablo Roads Phase 1 & 2	Public (City)	2016	1.7	Chattleton Ln. & Gateway Ave.
Lao Family Community	Private	2016	0.4	Rumrill Blvd.
Shell Gas Station	Private	2017	0.9	El Portal Dr.

The legal authority for City implementation of the *GI Plan* stems from the requirements of the California Environmental Quality Act; California Building Code adopted pursuant to Title 15 of the *SPMC*; zoning and land use requirements pursuant to the *City of San Pablo General Plan* and Title 17 of the *SPMC*; property maintenance requirements pursuant to Title 8 of the *SPMC*; and Chapter 8.40, "Stormwater Management and Discharge Control" of the *SPMC*, which implements federal and state clean water laws. The City Council of the City of San Pablo approved the *GI Plan* by resolution.

⁶ As of the Fiscal Year 2017-18 Annual Report.

1.2.4 Related San Pablo Planning Documents

Recommended updates were identified for key City planning documents to ensure that GI is considered and supported in the range of planning and design processes for public and private projects within the City.

Table 2: Planning Documents to Update to Align with *GI Plan*

Planning Document	Summary of Updates	Completion Date
<i>San Pablo General Plan 2030</i>	Appendix 4, Section 1	Potential <i>General Plan</i> amendment in late 2019. Full <i>General Plan</i> update 2019-2023.
<i>City of San Pablo, California Zoning Ordinance</i>	Appendix 4, Section 2	Potential update late 2019.
<i>San Pablo Municipal Code</i>	Appendix 4, Section 3	Potential update 2019-2020.
<i>San Pablo Avenue Specific Plan</i>	Appendix 4, Section 4	Potential update 2021-2023.
<i>23rd Street Specific Plan</i>	Appendix 4, Section 5	Potential update 2021-2023.
<i>City of San Pablo Bicycle & Pedestrian Master Plan</i>	Appendix 4, Section 6	No planned update, but relevant policies will be incorporated in the short-run into the <i>General Plan</i> .
<i>City of San Pablo Climate Action Plan</i>	Appendix 4, Section 7	Potential update 2021-2022.
<i>Davis Park Master Plan</i>	Appendix 4, Section 8	No planned update, but relevant policies will be incorporated in the short-run into the <i>General Plan</i> .
<i>City of San Pablo Storm Drain Master Plan</i>	Appendix 4, Section 9	No planned update, but relevant policies will be incorporated in the short-run into the <i>General Plan</i> .
<i>City of San Pablo Master Landscape Plan</i>	Appendix 4, Section 10	No planned update, but appropriate policies will be incorporated into City GI specifications.

1.3 Outreach and Education

The development process for the *City of San Pablo GI Plan* engaged a variety of stakeholders, including government staff, elected officials, and community members who will live, work, and play near future GI projects. The City will continue to engage relevant government staff, elected officials, and community members as projects move forward toward design and implementation.

Outreach activities broadly fall into: 1) public engagement informing project priorities, 2) staff engagement in regional GI collaboration, 3) interdepartmental coordination informing *GI Plan* content and adoption, 4) elected engagement and education on *GI Plan* content and adoption, and 5) interdepartmental staff training on GI implementation.

1. *Public Engagement: GI Project Priorities*

Multiple projects included in the City's priority lists were drawn from the *Contra Costa Watersheds Stormwater Resource Plan (CCW SWRP)* conducted at a countywide level over the course of 2017-2018 (see Section 2.1.1 for more details). Due to the sequential timing of *CCW SWRP* and *GI Plan* development, the City aimed to build upon, rather than duplicate, the work conducted for the *CCW SWRP*.

CCW SWRP outreach included public meetings and other outreach strategies to connect with community stakeholders—including local watershed groups and non-governmental organizations—and solicit comments regarding local stormwater projects and community priorities. A selection of *CCW SWRP* outreach events—identified by “*CCW SWRP*” in the description—are detailed in Table 3. These outreach events were not hosted by the City.

2. *Staff Engagement: Regional GI Collaboration*

Staff from the Environmental Division have actively participated in CCCWP and BASMAA meetings since establishment of the *GI Plan* requirement in 2015. Staff involvement has prioritized incorporating regional GI best practices into the City's *GI Plan* and advocating for cost-effective and regionally practicable GI implementation.

3. *Interdepartmental Coordination: GI Plan Content and Adoption*

Staff from the Environmental Division facilitated coordination between the other PW Divisions (Engineering and Maintenance) and the Community & Economic Development Department (C&ED) to identify upcoming capital improvement program (CIP) projects, future ROW priorities, and expected future private development (Section 2.1.2); frame ROW design guidelines (Section 6.1); and create typical details and specifications (Section 6.2). Intradepartmental and interdepartmental meetings are detailed in Chapter 6.

4. *San Pablo Leadership Engagement: GI Plan Content and Adoption*

San Pablo elected and appointed leaders were engaged through a series of Council meetings, detailed in Table 3. These meetings were intended to inform officials about regional water quality standards, stormwater management requirements, and *GI Plan* content. Council meeting presentations also served as an opportunity for elected and appointed leaders, as well as the public, to comment on the *GI Plan*.

5. *Interdepartmental Training: GI Project Implementation*

Staff from PW (Engineering, Environmental, Maintenance Divisions) and C&ED collaborated on the development of a formalized internal procedure to ensure proper implementation of the *GI Plan*. These internal meetings are included in Table 3.

The Environmental Division provides an annual training for the Maintenance Division regarding a variety of environmental topics, including stormwater regulations and maintenance of GI facilities in the City.

Table 3: Outreach for *CCW SWRP* & *GI Plan* Development

Date	Outreach Event	Description
Apr. 13, 2017	Presentation to Contra Costa Public Managers Association (including Contra Costa City Managers)	Announced the <i>CCW SWRP</i> to municipal leaders and described connection between <i>CCW SWRP</i> and <i>GI Plan</i>
May 17, 2017	Presentation at Contra Costa Watershed Forum Meeting	Discussed <i>CCW SWRP</i> and solicited feedback from stakeholders
June 5, 2017	Presentation to San Pablo City Council	Summarized <i>GI Plan</i> Framework and sought motion to approve
July 12, 2017	Presentation at Contra Costa Watershed Forum Meeting	Provided update on <i>CCW SWRP</i>
Sept. 13, 2017	Presentation at Contra Costa Watershed Forum Meeting	Provided update on <i>CCW SWRP</i>
Sept. 21, 2017	Presentation at Wildcat and San Pablo Creek Watershed Council Meeting	Engaged West County stakeholders in <i>CCW SWRP</i> development and solicited feedback on draft evaluation criteria and project lists
Nov. 14, 2017	Presentation at Contra Costa Watershed Forum Meeting	Provided update on <i>CCW SWRP</i>
Apr. 11, 2018	Annual Maintenance Training	Trained Maintenance Division to conduct proper bioswale maintenance in the City
May 9, 2018	Presentation at Contra Costa Watershed Forum Meeting	Provided update on <i>CCW SWRP</i>
July 11, 2018	Presentation at Contra Costa Watershed Forum Meeting	Provided update on <i>CCW SWRP</i>
Aug. 31, 2018	Email to stakeholder outreach list and website update	Began soliciting public comments on <i>CCW SWRP</i> Draft
Sept. 12, 2018	Presentation at Contra Costa Watershed Forum Meeting	Presented <i>CCW SWRP</i> Draft and solicited feedback
Mar. 21, 2019	Wildcat and San Pablo Creek Watershed Council Meeting	Summarized <i>GI Plan</i> and solicited feedback
Mar. 21, 2019	CCCWP “Maintaining Green Infrastructure Including Bioretention Facilities Workshop”	Two (2) City Maintenance staff learned about GI maintenance through presentations and a walking tour of GI facilities

Table 3: Outreach for *CCW SWRP & GI Plan* Development

Date	Outreach Event	Description
Mar. 25, 2019	Presentation to San Pablo Economic Development Council Standing Committee	Summarized MRP and <i>GI Plan</i> , and solicited feedback
Apr. 8, 2019	City of San Pablo Public Meeting	Summarized MRP and <i>GI Plan</i> , and solicited feedback
May 20, 2019	Presentation to San Pablo City Council	Summarized MRP and <i>GI Plan</i> , and sought motion to approve

Ongoing Public Engagement: GI Project Implementation

Private GI project implementation will incorporate City feedback through the Planning review/entitlement, building permit, and design review process, including approval from Planning Commission, as needed.

Public GI project implementation will incorporate public engagement, as appropriate to the project, during the planning and design phases.

2 Project Identification and Prioritization

2.1 Project Identification and Prioritization

Prioritized projects for GI implementation were identified through a three (3) phase process:

1. *Contra Costa Watershed Stormwater Resources Plan (CCW SWRP)*
2. Urban Sim (Re)development Projections
3. Annual CIP Project Review (“no missed opportunities”)

Additional City review sessions were held between the Environmental Division of PW and the Planning Division of C&ED to finalize projected public and private development lists prior to *GI Plan* approval.

2.1.1 *Contra Costa Watersheds Stormwater Resources Plan*

The *CCW SWRP* was funded by the State Water Resources Control Board (SWRCB) through the Proposition (Prop) 1 Storm Water Grant Program (SWGP), with matching contributions provided by Contra Costa Permittees through the CCCWP. The *CCW SWRP* identified and prioritized potential multi-benefit stormwater management projects and programs.

The *CCW SWRP* facilitates future project development since the projects and programs identified in the Plan are eligible for grant funds, such as Prop 1 SWGP Implementation funds. *CCW SWRP* development included extensive public outreach, technical analysis, and feedback from city staff to produce a curated list of GI project opportunities. Section 1.3 includes a selection of public outreach events that informed the *CCW SWRP*.

CCW SWRP project opportunities were scored preliminarily using a multi-benefit evaluation consistent with the requirements of the State’s Stormwater Resources Plan Guidance (SWRCB, 2015). The complete methodology is described in the *CCW SWRP Hydrologic/Hydraulic Modeling Tools and Quantitative Methodologies Evaluation and Screening and Prioritization using Multi-Benefit Metrics* memorandum.

The *CCW SWRP* project opportunity scoring process used the following categories, with additional details in Table 4:

- **Parcel area** (Regional and Parcel-Based GI Projects Only) – Larger parcels received more points, based on the assumption that larger parcels have more opportunities for GI implementation.

- **Opportunity location slope** – Flatter locations received more points, as such locations typically require less grading and hydraulic connection considerations.
- **Infiltration feasibility** – Greater infiltration feasibility received more points, since retention of runoff through percolation or infiltration is known to provide enhanced pollutant reduction, reestablishment of natural drainage, recharge potential, and reduction of runoff rates, among other beneficial outcomes.
- **PCBs/Mercury Yield Classification in Project Drainage Area** – Areas with higher pollutant loading for PCBs and mercury received more points, as such areas have higher potential pollutant load reductions.
- **Removes Pollutant Loads from Stormwater** – Areas well-suited for GI or treatment control facilities received more points, as these support the GI goals outlined by the SWRCB. Regional projects received more points, as such projects may remove a larger pollutant load than a parcel-based or ROW project.
- **Augments Water Supply** – Projects with potential to augment local water supply received more points, scaled to the anticipated water supply increase.
- **Provides Flood Control Benefits** – Projects with flood control facilities received more points, scaled to the anticipated flood control benefit.
- **Re-establishes natural water drainage systems or Develops, restores, or enhances habitat and open space** – Projects with potential to incorporate hydromodification control, stream restoration, and habitat restoration received more points, scaled to the anticipated hydrologic benefit.
- **Provides community enhancement** – Projects that provide public use areas or public education components received more points.

Table 4: CCW SWRP Project Metrics-Based Multi-Benefit Scoring

Project Component	Benefit Addressed	Points		
		0	1	2
Parcel area	All	< 1 acre	1 - < 4 acres	> 4 acres
Location slope	All	7-10%	3-7%	0-3%
Infiltration feasibility	All	No	Partial	Yes
PCBs/Mercury yield class in project drainage area	Water Quality	New Urban, Agriculture, Open Space, or Other	Old urban	Old industrial or source property (+1)

Table 4: CCW SWRP Project Metrics-Based Multi-Benefit Scoring

Project Component	Benefit Addressed	Points		
		0	1	2
Removes pollutants from stormwater	Water Quality	Trash Capture Devices	Non-GI and non-infiltrating GI treatment control	Partially and fully infiltrating GI project or regional project (+1)
Augments water supply	Water Supply	--	Infiltrating GI or infiltrating flood control project over potential water supply aquifer	Harvest/Use or other water augmentation project
Provides flood control	Flood	--	Fully and partially infiltrating GI project	Flood control project
Re-establishes natural drainage systems	Environmental	--	Fully and partially infiltrating GI project	Stream restoration or hydro-modification control
Develops or restores habitat and open space	Environmental	--	GI Project	Habitat restoration project
Provides new or enhanced public and recreational areas with opportunities for community involvement and education	Community	--	GI Project	Public use area or public education project component

Adapted from CCW SWRP Project Opportunity Prioritization Instructions for Permittees Memorandum, Attachment A: Project Metrics-Based Multi-Benefit Evaluation, Geosyntec Project Number: WW2371

In total, 397 project opportunities were considered through the CCW SWRP preliminary ranking process. The lowest scoring projects earned four (4) points; the three (3) highest scoring projects earned 14.5 points out of a possible 20 points. The average project score was 10.1 points.

Next, the City conducted an independent project opportunity ranking process, using the CCW SWRP scores as a foundation. City staff—representing the Engineering, Environmental, Maintenance, and Planning Divisions—used local knowledge and City goals to guide the ranking process. Certain project opportunities were removed from consideration due to implementation concerns (e.g. underground utility conflicts, limited ROW space). All City rankings included a justification to ensure consistency and allow for future documentation.

The City scoring process used the following categories:

- **Opportunity** – Projects that align with existing City priorities (e.g. planned or funded CIP projects, projects identified in the Priority Workplan, identified City Plans), projects that are located in areas

planned for new development or redevelopment, and/or projects that address significant environmental concerns received more points.

- **Additional Benefits** – Projects with aesthetic, community, environmental, or other benefits not previously scored—especially flood control and traffic calming—received more points.
- **Implementation** – Projects with fewer implementation challenges due to site constraints (e.g. grading, utility conflicts) and public opinion (e.g. concerns about reduced parking) received more points.
- **Cost** – Projects with secured funding, or an identifiable funding source, and lower capital and maintenance costs, in addition to being compatible with labor and staff capacity, received more points.
- **Safety and Security** – Projects that did *not* create a potential safety hazard and had a lower risk of being vandalized received more points.

In total, 140 potential project areas were considered through the City’s ranking process. Out of a possible ten (10) points, two (2) projects earned nine (9) and ten (10) points, while 21 projects scored between six (6) and eight (8) points. The average project score was 2.3, as 89 projects scored two (2) points or fewer.

2.1.2 UrbanSim Private Development Projections

To forecast private development, the City of San Pablo participated in a regional process coordinated through the CCCWP and shared with BASMAA member agencies. This process utilized the outputs of UrbanSim, a planning software developed by the Urban Analytics Lab at the University of California, Berkeley, under contract to the Metropolitan Transportation Commission/Association of Bay Area Governments (MTC/ABAG). UrbanSim is a modeling system developed to analyze the potential effects of land use policies and infrastructure investments on the development and character of cities and regions. The Bay Area’s application of UrbanSim was developed to support the development of Plan Bay Area, the Regional Transportation Plan/Sustainable Communities Strategy planning effort required by Senate Bill 375.

MTC/ABAG forecasts growth in households and jobs and uses the UrbanSim model to identify new development and redevelopment (hereon referred to collectively as (re)development) sites to satisfy future demand. Model inputs include parcel-specific zoning and real estate data; model outputs include projected household and job increases attributable to specific parcels. The methods and results of the UrbanSim

model have been approved by MTC/ABAG Committees for use in transportation projections and the regional Plan Bay Area development process.

The CCCWP process used outputs from the Bay Area UrbanSim model to map parcels predicted to undergo (re)development in each Contra Costa jurisdiction by 2020, 2030, and 2040. The resulting maps for the City were reviewed by staff from the Engineering, Environmental, and Planning Divisions to ensure consistency with local planning and development initiatives. Maps were revised as follows:

1. Parcels that staff believe are not likely to be (re)developed prior to 2040 were removed from UrbanSim output;
2. Parcels that staff believe were in the incorrect development period were reclassified (e.g. expected (re)development date of a parcel might be changed from “2030” to “2040”); and
3. Parcels that staff believe will be (re)developed, but were not identified by UrbanSim, were added to the output and assigned a development period (i.e. “2020”, “2030,” or “2040”).

Additionally, staff adjusted potential project boundaries, if such were expected to differ significantly from parcel boundaries. The UrbanSim software originally identified 70 sites for private or public parcel-based (re)development for the City of San Pablo and a final list of 102 parcel-based projects were identified. The final list is considered ambitious, given that the City was considered built-out starting in the early 2000s by the Planning Division and the City no longer has a Redevelopment Agency to finance public redevelopment.

2.1.3 Annual CIP Project Review (“No Missed Opportunities”)

Staff from the Environmental Division meet annually with the Director of PW to discuss upcoming CIP projects—including new and substantial upgrades to City facilities, transportation projects, and storm drainage projects—and opportunities to incorporate GI into these projects. Projects are identified through City plans (e.g. the *Storm Drain Master Plan*, the *Bicycle and Pedestrian Master Plan*) and the broader CIP planning process. Projects previously identified through this CIP Review are evaluated to determine if GI implementation is still feasible and GI project lists are updated accordingly. GI features are incorporated into projects whenever doing so is consistent with project objectives and technical and financial constraints.

The CIP Review follows BASMAA's *Guidance for Identifying Green Infrastructure Potential in Municipal Capital Improvement Projects*. The *Green Complete Street Checklist* (Section 6.1) further informs discussion of how GI may support accessibility and resiliency in ROW projects.

2.2 Reasonable Assurance Analysis (RAA)

Provisions C.11/12.c.ii.(2) of the MRP require Permittees to prepare a Reasonable Assurance Analysis (RAA) to demonstrate that pollutant load reductions for the San Francisco Bay PCBs and mercury total maximum daily loads (TMDLs) will be met through *GI Plan* implementation and other stormwater management measures.

Using the GI project opportunities identified through the *CCW SWRP* and UrbanSim analysis, the CCCWP and consultants created a Permittee PCBs Load Reduction Attainment Tool (Tool) intended to assist Permittees in the preparation of GI plans. The Tool contains a database of the PCBs load reductions attributable to completed GI projects (as entered into the CCCWP ArcGIS platform, see Section 5.1), *CCW SWRP* project opportunity sites, and UrbanSim private (re)development projects, calculated using the RAA methodology and assuming standard bioretention treatment.

The Tool identifies the countywide PCBs public retrofit load reduction goal by subtracting the load reduced by existing and future private (re)development, identified by UrbanSim, from the countywide goal. The Tool then facilitates prioritization of public projects, by listing the project opportunities from the *CCW SWRP* with their PCBs yield. See Appendix 5 for additional details regarding the RAA scenario modeling for Contra Costa County and the RAA Countywide Attainment Strategy.

The City incorporated five (5) of the six (6) areas with the highest baseline PCBs load, as identified by the Tool, into the City's priority project list⁷. See Chapter 3 for a list of public priority projects.

2.3 Potential Countywide Pollutant Load Reduction Strategy

As of May 2019, Contra Costa County Permittees are investigating the possibility of addressing pollutant loads on a countywide scale. To allow for the most efficient implementation of GI to achieve the MRP-

⁷ The area that was part of the top six (6) areas with the highest baseline PCBs load but was not included in the City's priority project list is an affordable housing project that was constructed prior to the GI facility requirement of the current MRP. Staff consider it unlikely that this site will be redeveloped prior to 2040.

stipulated load reduction goal, some Permittees are investigating ways that communities without cost-effective opportunities to reduce PCBs via GI may fund GI projects in communities with such opportunities. However, the legal and administrative requirements of this strategy are complex; thus, this strategy may ultimately not be feasible.

If this strategy is successfully developed and implemented, the City of San Pablo will coordinate with other jurisdictions regarding potential projects to be implemented as part of a countywide effort. For more information about this scenario please see Section 7.3.

3 Public Project Lists

MRP Provision C.3.j.ii. requires that the City maintain a list of public and private GI projects planned for implementation during the 2015-2020 permit term, in addition to other public projects with potential for GI features. The City submitted an initial list with the Fiscal Year (FY) 2015-16 Annual Report to the RWQCB and an updated the list with the FY2016-17 and FY2017-18 Annual Reports.

3.1 Public Project Priorities for 2020

Table 5 summarizes the City's 2020 priority list, developed between 2015 and 2019. See Appendix 3.5 for a map of projected public and private projects for 2020.

Table 5: City Priority Projects with GI Facilities – 2020 Timeframe

Project Name	Description	Approximate Project Site Area (acres)	Project Type	Project Status ⁸
Women Infants and Children (WIC) Center	New WIC building funded by Contra Costa County	0.9	Parcel-based MRP-regulated	Completed Spring 2019.
Plaza San Pablo Phase 3 & 4 Roads	New road construction as part of the Plaza San Pablo redevelopment area	0.7	ROW MRP-regulated	Completed Spring 2019.
New City Hall	New City of San Pablo City Hall	2.9	Parcel-based MRP-regulated	Under construction. Expected completion 2020.
LifeLong Urgent Care Center	Parking lot upgrade in conjunction with Wildcat Creek Restoration and Greenway Trail Project	1.6	Parcel-based MRP-regulated	100% design. Expected completion 2020.
Wildcat Creek Restoration and Greenway Trail	Small segment of a creek restoration and bikeway project with grant funding	0.1	Parcel-based Non-regulated	100% design. Expected completion 2020.
Rumrill Boulevard Complete Streets	Complete Streets project improving 1.7 miles of Rumrill Blvd. with grant funding	7.5	ROW Non-regulated	95% design. Expected completion 2020, subject to delays due to utility relocation.
El Portal Drive Greening	Stormwater and bikeway project with grant funding	0.4	ROW Non-regulated	100% design. Expected completion end of 2019.

⁸ As of May 2019.

Additionally, a new West County health facility (approximately 0.9 acres) located in Plaza San Pablo is a public project slated for 2020 completion. The project is regulated under the MRP and is not included in the City priority list since it will be built and maintained by Contra Costa County.

3.2 Public Project Priorities for 2030

Table 6 summarizes the City’s 2030 priority list, developed in 2019. See Appendix 3.6 for a map of projected public and private projects for 2030.

Table 6: City Priority Projects with Proposed GI Facilities – 2030 Timeframe

Project Name	Description	Approximate Project Site Area (acres)	Project Type	Project Status ⁹
Moraga Road Parcel	Potential location of future development and/or park renovation at existing San Pablo Youth Soccer Fields.	8.9	Parcel-based MRP-regulated	Undergoing public engagement efforts for Prop 68 application to fund park project. Currently unfunded.
Contra Costa County Fire Protection District Station	New fire station funded by the City and County Fire Protection District (which provides City fire services).	0.5	Parcel-based MRP-regulated	Under construction. Expected completion in 2021.
Plaza San Pablo Former Lot 5	Plaza San Pablo lot across from the new City Hall site.	2.0	Parcel-based MRP-regulated	Potential location for new Police Station/Regional Training Center. Concept only. Currently unfunded.

Additionally, the US Army Reserve Center (approximately 6.9 acres) is expected to be surplus and redeveloped, likely regulated under the MRP, by 2030. As the future developer is currently unknown, the project is identified as “public” since it is currently under public ownership.

3.3 Public Project Priorities for 2040

Table 7 summarizes the City’s 2040 priority list, developed in 2019. See Appendix 3.7 for a map of projected public and private projects for 2040.

⁹ As of May 2019.

Table 7: City Priority Projects with Proposed GI Facilities – 2040 Timeframe

Project Name	Description	Approximate Project Site Area (acres)	Project Type	Project Status
1411 Rumrill Boulevard	City lot located off of Rumrill Blvd.	1.9	Parcel-based MRP-regulated	Potential location for new Corporation Yard. Concept only. Currently unfunded.
Road 20 and San Pablo Avenue	Corner parcels at the intersection of Rd. 20 and San Pablo Ave.	0.3	ROW Unknown if will be MRP-regulated	Likely to be incorporated into proposed creek restoration, bridge restoration, and road reconfiguration. Concept only. Partial funding secured.
Market Avenue	Potential ROW improvement from Church Ln. to City boundary. Identified in <i>Storm Drain Master Plan</i> as experiencing flooding during large storm events.	Unknown	ROW Non-regulated	Potential project only. May incorporate drainage improvements, bicycle and pedestrian facility upgrades, and traffic calming features. Currently unfunded.
Sutter Avenue	Potential ROW improvement from Rumrill Blvd. to 23 rd St. Identified in <i>Storm Drain Master Plan</i> as experiencing flooding during large storm events.	Unknown	ROW Non-regulated	Concept design created through <i>CCW SWRP</i> process (Appendix 6). May incorporate drainage improvements, bicycle and pedestrian facility upgrades, and traffic calming features. Currently unfunded.
Giant Road	Potential ROW improvement from Brookside Dr. to Miner Ave. Identified in <i>Storm Drain Master Plan</i> as experiencing flooding during large storm events.	Unknown	ROW Non-regulated	Potential project only. May incorporate drainage improvements, bicycle and pedestrian facility upgrades (per City's <i>Bicycle and Pedestrian Master Plan</i>), and traffic calming features. Currently unfunded.
Southwest Flooding Area of Concern	Region bounded by California Ave., Market Ave., Rumrill Blvd. and 17 th St. Identified in <i>Storm Drain Master Plan</i> as experiencing flooding during large storm events.	Unknown	ROW Non-regulated	Undefined project. City encouraged to integrate GI facilities with CIP projects in this region to address flooding concerns. Currently unfunded.
San Pablo Creek Flooding Area of Concern	Region bounded by Rd. 20, Rumrill Blvd., 18 th St. and 20 th St. Identified in <i>Storm Drain Master Plan</i> as experiencing flooding during large storm events.	Unknown	ROW Non-regulated	Undefined project. City encouraged to integrate GI facilities with CIP projects in this region to address flooding concerns. Currently unfunded.

Additionally, the City envisions a long-term possibility of creating a TOD between San Pablo Avenue and Contra Costa College (identified as a private project under the impervious surface targets in Chapter 4). Although this is an undefined project, the City aspires to facilitate the TOD goals established by Plan Bay Area. This potential TOD integrates key resources, including the major corridor of San Pablo Avenue, multiple bus lines provided by the Alameda-Contra Costa Transit District (AC Transit), Contra Costa College, nearby commercial and residential districts, as well as other community resources (e.g. Wanlass Park, the San Pablo Creek).

4 Green Infrastructure Targets and Maps

Provision C.3.j.i.2.c of the MRP requires the City's *GI Plan* to identify impervious surface targets to be retrofitted by 2020, 2030, and 2040. When defining impervious surface targets to be retrofitted by 2020, 2030, and 2040, it is important to consider the distinctions between pervious, impervious, and disconnected impervious surfaces.

Water can pass through pervious surfaces (e.g. landscaped areas) but cannot pass through impervious surfaces (e.g. asphalt roadways, concrete sidewalks). Water that lands on an impervious surface will run-off and flow until it reaches the Municipal Separate Storm Sewer System (MS4), a pervious surface, or an impervious basin.

Disconnected impervious surfaces are areas where water cannot pass through, but generated runoff is directed into a pervious area where the runoff is filtered through a GI facility, such as a bioretention facility, and subsequently infiltrates into the ground or overflows into the MS4. Thus, disconnected impervious areas are primarily impervious, but they are disconnected from directly flowing to the MS4. Therefore, disconnected impervious surfaces are in line with the National Pollutant Discharge Elimination System (NPDES) permit goal of reducing the water and pollutant load on the MS4. While pervious and disconnected impervious surfaces are different, these categories may be grouped together for the purposes of this Plan.

The total area of the City is 1,667 acres. As of 2006 (the baseline year), the City was 56.9% impervious and 43.1% pervious. Based on estimated projected public and private (re)development and ROW improvements between 2019 and 2040, Table 8 outlines the City's goals for increasing total pervious plus disconnected impervious surfaces.

The projected increases in disconnected impervious area, as a result of GI development in the City, are estimates only and are in significant part dependent on development decisions made by private entities. While the City will ensure that all MRP-regulated development abides by C.3 guidelines, the City has no control over the location and timeline of private (re)development in the City. Therefore, the Table 8 does not imply a binding City commitment toward achieving these goals.

Table 8: Potential New Pervious + Disconnected Impervious Area – All (Re)Development¹⁰

Year	Cumulative Percent Increase from Baseline Pervious Area	Total Citywide Pervious + Disconnected Impervious Area
2006 (Baseline)	0%	43.1%
Existing	4.6%	45.0%
2020	6%	45.7%
2030	8%	46.5%
2040	12%	48.2%

4.1 Private Development Projections

The City identified potential future private (re)development through the process outlined in Section 2.1.2. It is assumed that all multifamily residential, commercial, and industrial developments will incorporate stormwater treatment facilities in accordance with MRP Provisions C.3.b., C.3.c., and C.3.d. Because of high land values, it is expected that more than 50% of the existing impervious area in each parcel will be replaced if a parcel is developed; therefore, the entire parcel will be subject to Provision C.3 requirements and will need to incorporate GI¹¹. Cumulative estimates of potential new pervious plus disconnected impervious area created by projected private (re)development are detailed in Table 9 and mapped in Figure 2 (see Appendix 3 for full size map).

Table 9: Potential New Pervious + Disconnected Impervious Area – Private (Re)Development

Year	Cumulative Area (acres)	Comments
Existing	22.5	Sum of all project areas listed in Section 1.2.3, Table 1
2020	24.7	Includes San Pablo Casino Parking Lot at former Old Moose Lodge site and underutilized properties along San Pablo Ave.
2030	30.6	Includes San Pablo Casino Parking Lot at former Doctor's Medical Center site and underutilized properties along San Pablo Ave. and Rumrill Blvd.
2040	45.9	Includes Giant Trade Center, South San Pablo Ave. shopping areas, an envisioned TOD project between Contra Costa College and San Pablo Ave., and underutilized properties along 23 rd St.

¹⁰ Assumption: Retrofitted acres start out as entirely impervious since the City of San Pablo has been considered built-out since the early 2000s and there are few parcels that have not been capped by an impervious surface.

¹¹ Consistent with the "50% rule" requirement of MRP Provision C.3.b.

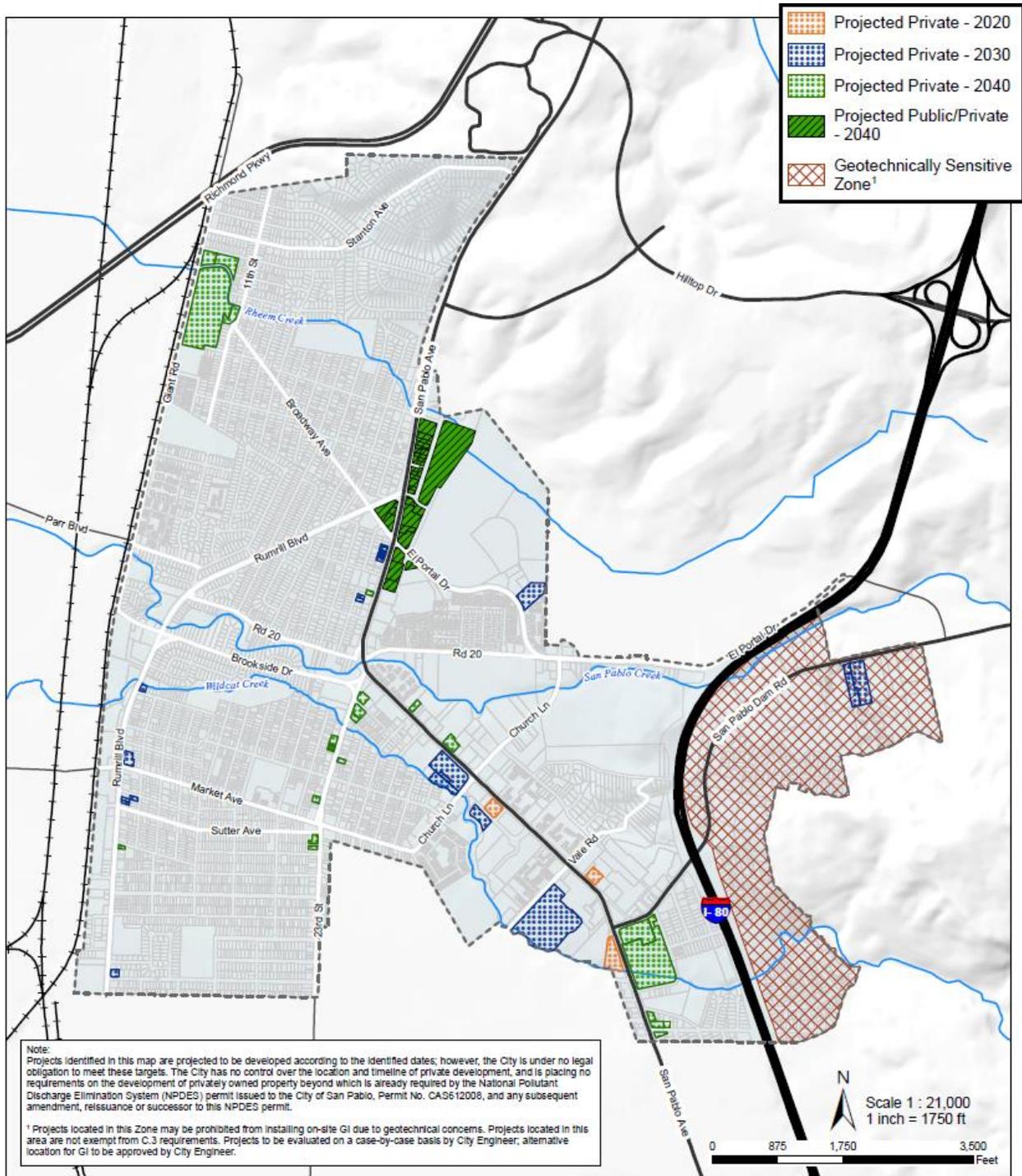


Figure 2: Potential Green Infrastructure Development – Private

Projects submitted to the City are subject to an internal review process to ensure that proposed (re)development incorporates GI facilities in accordance with the Provision C.3 requirements and the most recent version of the CCCWP *Stormwater C.3 Guidebook*. At this time, the City

does not anticipate expanding GI requirements beyond what is required by the most recent version of the MRP.

The City requires that the location and footprints of planned GI facilities be incorporated into site plans, landscaping plans, stormwater control plans, and operation and maintenance documents submitted for the City’s discretionary review. The City inspects construction of GI facilities to ensure the facilities are built in accordance with the criteria in the *Stormwater C.3 Guidebook*. The City requires owners of properties with GI facilities to agree to maintain the facilities in perpetuity through a land covenant recorded on the property, and the City conducts periodic operation and maintenance verification inspections of built facilities.

4.2 Public Development Projections

The City identified potential future public (re)development and ROW projects through the process outlined in Section 2.1. The City is committed to incorporating GI into public projects when feasible in order to shift from conventional “collect and convey” storm drain infrastructure to more resilient, sustainable stormwater management systems that reduce runoff volumes, disperse runoff to vegetated areas, harvest and use runoff where feasible, promote infiltration and evapotranspiration, and use natural processes to capture and treat runoff. The public (re)development estimates detailed in Table 10 and mapped in Figure 3 (see Appendix 3 for full size map) are contingent on future budget prioritization by City Council and grant funding secured by the City. Future public ROW priorities, as mapped in Figure 3, are not included in Table 10 as they do not reflect specific funded projects, but rather are intended to guide future project development.

Table 10: Potential New Pervious + Disconnected Impervious Area – ROW & Public (Re)Development

Year	Cumulative Area (acres)	Comments
Existing	10.3	Sum of all project areas listed in Section 1.2.3, Table 1
2020	19.1	Includes portions of Plaza San Pablo redevelopment (WIC, new City Hall, West County Medical Facility, Phase 3&4 Roads), Rumrill Blvd. Complete Streets, El Portal Dr. Greening
2030	26.6	Includes portions of Moraga Rd. Parcel, US Army Reserve Center, Plaza San Pablo redevelopment, County Fire Station
2040	40.0	Includes portions of potential new Corp Yard, San Pablo Ave./Rd. 20 creek restoration and bridge replacement

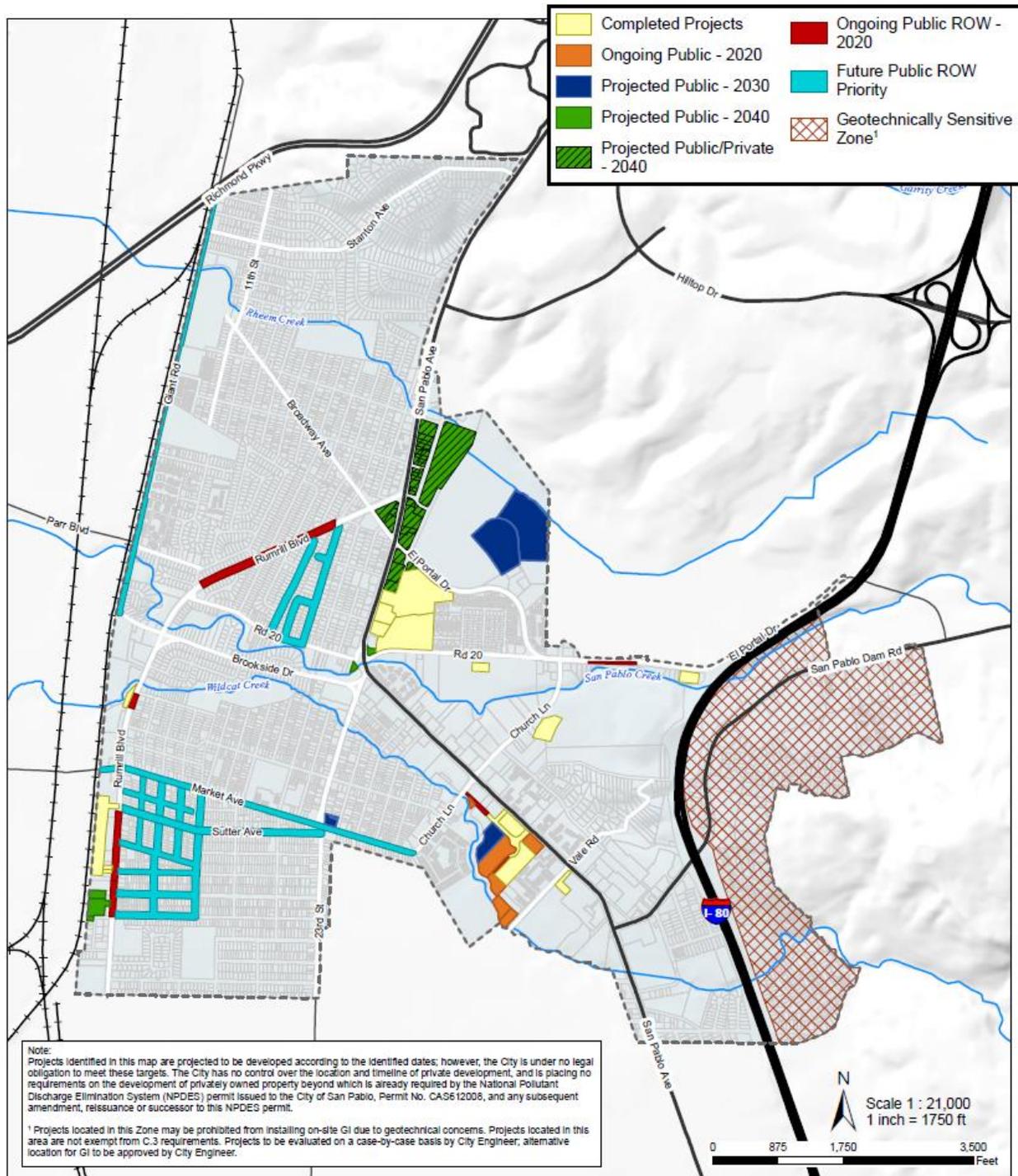


Figure 3: Potential Green Infrastructure Development – Public

5 Tracking and Mapping Projects

5.1 Tools and Process

The CCCWP has developed a countywide geographic information system (GIS) platform for maintaining, analyzing, displaying, and reporting municipal stormwater program data and information related to MRP Provisions C.10 (trash load reduction activities) and C.11/C.12 (mercury and PCBs source property identification and abatement screening activities). This tool is also used to track and report on GI project implementation as part of Provision C.3.

The CCCWP's stormwater GIS platform features web maps and applications created using ESRI's ArcGIS Online (AGOL) for Organizations environment, which accesses GIS data, custom web services, and reports that are hosted within an Amazon cloud service running ESRI's ArcGIS Server technology.

The "C.3 Project Tracking and Load Reduction Accounting Tool" within the CCCWP AGOL system is used to track and report on GI project implementation. It is currently used to track and map existing private and public projects incorporating GI. In the future, it may also be used to map planned projects and will allow for ongoing review of opportunities for incorporating GI into existing and planned CIP projects. The AGOL system can be used to develop maps to be displayed on public-facing websites or otherwise distributed to the public. These maps may contain information regarding the GI project data entered into the AGOL system.

The "C.3 Project Tracking and Load Reduction Accounting Tool" is intended to be used to allow for estimates of potential project load reductions for PCBs and mercury, and presently supports the BASMAA Interim Accounting Methodology for certain load reduction activities. In the future, the Tool is planned to be updated with the RAA methodology developed for the County.

The City of San Pablo actively engages with the AGOL tool and maintains up-to-date project data. The City currently updates the AGOL tool as projects are completed, as specified by an internal PW standard operating procedure, and performs a completeness check each spring with a final check when preparing each Annual Report for the RWQCB.

5.2 Public Access

The general public will be able to access materials and content related to the *GI Plan* through the City's website (sanpabloca.gov/2637/Green-Infrastructure-Plan) and through Environmental Division staff. The *GI Plan* webpage will be updated as needed and will be translated to Spanish when possible given staff capacity.

Residents interested in updated maps of completed GI projects can contact the Senior Environmental Analyst at (510) 215-3066 for a PDF map, e.g. Figure 4.

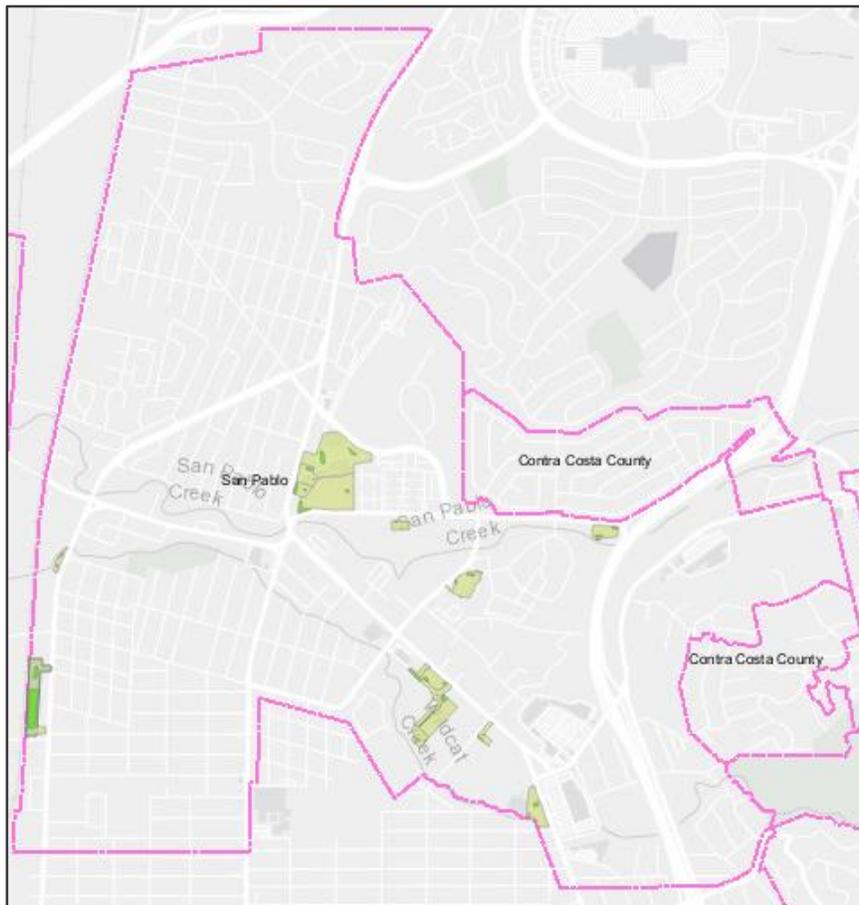


Figure 4: Sample AGOL Map Output

6 Design Guidelines and Specifications

6.1 Guidelines for Streetscape and Project Design

The City of San Pablo created general design resources to assist with the integration of GI facilities into the public ROW. Staff, designers, and developers are encouraged to reference the National Association of City Transportation Officials *Urban Street Stormwater Guide*, the San Mateo County *Sustainable Green Streets and Parking Lots Design Guidebook*, and other resources from the CCCWP website in designing ROW improvements with integrated stormwater management features.

For parcel-based development, both public and private, project designers and developers should refer to the most recent edition of the CCCWP *Stormwater C.3 Guidebook* for stormwater management requirements and general design guidelines.

The following “Complete Green Streets Checklist” is adapted from a Central Coast Low Impact Development Institute (LIDI) checklist and is intended to facilitate the “no-missed opportunities” CIP review, in addition to the development of any new streets in the City. These design guidelines were developed through the process detailed in Table 11.

Table 11: “Complete Green Streets Checklist” Stakeholder Outreach

Jan. 2019	Preliminary review of existing design guidelines by the Environmental Division.
Jan. 30, 2019	Meeting between the Environmental and Planning Divisions to discuss design “Checklist” and planning document integration.
Feb. 27, 2019	Meeting between the Environmental and Planning Divisions to review draft “Checklist.”
Mar. 26, 2019	Meeting between the Environmental and Planning Divisions to review updated “Checklist.”
Apr. 25, 2019	Meeting between the Environmental and Planning Divisions to finalize City “Checklist.”
May 13, 2019	Final review of “Checklist” by Engineering Division.

Table 12: Complete Green Streets Checklist

Street Feature	Recommended Street Locations	Definition	Design Considerations	Green Street Opportunities
Bicycle Facilities	Residential Districts Mixed-Use Districts Commercial Corridor Arterial & Boulevard Shared-Use Pathways	<p><i>Class I:</i> Shared bicycle and pedestrian path</p> <p><i>Class II:</i> Separated bicycle facility on roadway</p> <p><i>Class III:</i> Shared bicycle and vehicle traffic facility ("bike route" or "sharrow")</p> <p><i>Class IV:</i> Separated and protected bicycle facility on roadway</p>	<p>Design bicycle facilities in accordance with Caltrans requirements.</p> <p>Use different pavement materials and colors to delineate bicycle lane from vehicular travel lane. Class IV facilities are preferred for high-traffic and high-speed roadways.</p>	<p>Bioretention facilities can serve as buffers for Class IV bicycle facilities to increase safety and collect stormwater runoff.</p>
Sidewalks / Walkways	Residential Districts Mixed-Use Districts Commercial Corridor Arterial & Boulevard	<p>Paved paths for pedestrians, typically adjacent to roadways.</p>	<p>Design sidewalks and walkways in accordance with the Americans with Disabilities Act (ADA), City, County, and Caltrans requirements.</p> <p>Wider sidewalks support pedestrian activity, especially around non-residential land uses.</p> <p>Include landscaping and street furniture, as appropriate given street design and available space.</p>	<p>Incorporate bioretention facilities and/or street trees. Incorporate pervious pavers and/or pervious paving when appropriate.</p>
Curb Bulb-Out	Residential Districts Mixed-Use Districts Commercial Corridor Arterial & Boulevard Parking Lots	<p>Extended curb, primarily used to extend the sidewalk into the roadway and reduce the crossing distance for pedestrians. A traffic-calming measure.</p>	<p>Design curb bulb-outs in accordance with ADA, City, County, and Caltrans requirements.</p> <p>Appropriate at corners and mid-block, especially where there is on-street parking. Mid-block locations may support mid-block crossings.</p> <p>Bus bulb-outs may be used in locations with transit service in combination with on-street parking. If space permits, incorporate shelters, benches, and trash/recycling receptacles.</p> <p>Consider impacts to street operations and maintenance, such as street sweeping.</p> <p>Consider impacts of curb radius at intersections on crossing distance. Small radii may reduce the speed of turning movements onto residential streets.</p>	<p>New curb space may incorporate pervious pavers, bioretention facilities, or street trees.</p>

Table 12: Complete Green Streets Checklist

Street Feature	Recommended Street Locations	Definition	Design Considerations	Green Street Opportunities
Curb Ramps & Crosswalks	Residential Districts Mixed-Use Districts Commercial Corridor Arterial & Boulevard Parking Lots	Ramp graded from a sidewalk to a street.	Design curb ramps to meet ADA, City, County, and Caltrans requirements. Wider ramps can accommodate higher pedestrian volumes (e.g. near schools or parks). Striped crosswalks recommended across arterials.	Safety requirement. Incorporate pervious pavers and/or pervious paving when appropriate.
Landscaping	Residential Districts Mixed-Use Districts Commercial Corridor Arterial & Boulevard Parking Lots Alley Ways Shared-Use Pathways	Trees and groundcover.	Follow the <i>City of San Pablo Master Landscape Plan</i> for appropriate native and drought-resistant species, which minimize establishment requirements and maintenance/irrigation. Landscaping within GI facilities should follow guidelines in the Contra Costa Clean Water Program <i>Stormwater C.3 Guidebook</i> . Low-level landscaping preserves sight lines at arterial crosswalks.	Bioretention facilities can serve as a buffer between pedestrians and vehicles. Street trees provide pedestrian shading, decrease the urban heat island effect, increase aesthetic of the street, and increase pervious surface.
Outdoor Furniture	Residential Districts Mixed-Use Districts Commercial Corridor Arterial & Boulevard Shared-Use Pathways	Including, but not limited to, benches, bus shelters, trash and recycling receptacles, bicycle parking, and way finding.	Use as appropriate given sidewalk width and landscaping. Color-code trash and recycling receptacles to be intuitive to community members.	No GI opportunities expected.
Lighting	Residential Districts Mixed-Use Districts Commercial Corridor Arterial & Boulevard Parking Lots Alley Ways Shared-Use Pathways	Lights along roadways and walkways. Lighting should be adapted for motorists' and pedestrians' needs.	Follow the <i>City-Wide Street Lighting Evaluation</i> and Illuminating Engineering Society guidelines. Prioritize street lighting at intersections, pedestrian crossings on arterial roads, near priority destinations (e.g. schools, community centers, business districts, parks, transit stops), and areas with security concerns. Use "dark sky" friendly light fixtures.	Solar powered lighting or LED lights minimize electricity usage.
Decorative Elements	Residential Districts Mixed-Use Districts Commercial Corridor Arterial & Boulevard Parking Lots Alley Ways Shared-Use Pathways	Design elements that promote and support community goals, values, and character, e.g. public art, specialty paving.	Encouraged in pedestrian zones on residential, mixed-use, commercial, and arterial streets. Consider the amount of maintenance that will be needed. Use graffiti-resistant materials and preventative designs (e.g. Crime Prevention Through Environmental Design guidelines).	Incorporate pervious pavers in pedestrian-only zones or low vehicle traffic areas. Decorative elements may be added to street furniture or bioretention facilities.

Table 12: Complete Green Streets Checklist

Street Feature	Recommended Street Locations	Definition	Design Considerations	Green Street Opportunities
Medians	Mixed-Use Districts Commercial Corridor Arterial & Boulevard Parking Lots	A strip of dividing land between lands of traffic or parking areas. Generally linear and continuous.	Raised medians in crosswalks provide a mid-roadway safe space for pedestrians, as well as a potential location for pedestrian safety features, traffic control devices, or other amenities.	Incorporate bioretention facilities to reduce impervious surface, as appropriate given site grading.
Travel Lanes	Residential Districts Mixed-Use Districts Commercial Corridor Arterial & Boulevard	Lane for the movement of vehicles, not including shoulders.	Design travel lanes in accordance with City and Caltrans requirements. Narrower motor vehicle lanes calm traffic, reduce pedestrian crossing distances, and enhance allocation of across all users and uses of right-of-way.	No GI opportunities expected.
On-Street Parking	Residential Districts Mixed-Use Districts Commercial Corridor	Parking for vehicles along the street curb.	Location and size of zones and parking stalls shall be designed in accordance with City and Caltrans requirements. May be considered in areas where transit service is not a priority. Can be used as a buffer between sidewalks/bicycle facilities and traffic.	May be integrated with street trees, curb bulb-outs, or bicycle facilities to distinguish parking zones and separate motorists from cyclists and pedestrians. Incorporate pervious pavers and/or pervious paving when appropriate.
Driveways	Residential Districts Mixed-Use Districts Commercial Corridor Arterial & Boulevard Parking Lots	A connection from public road to a parking area, either for residential or commercial uses.	Design driveways to meet ADA, City, and Caltrans requirements. Narrower driveway widths minimize area of potential conflict between pedestrians and motorized vehicles.	Incorporate pervious pavers and/or pervious paving when appropriate.
Loading / Unloading Zones	Mixed-Use Districts Commercial Corridor Arterial & Boulevard Parking Lots	Curbside areas to allow for loading or unloading of passengers or freight.	Location and size of zones shall be designed in accordance with City, Manual on Uniform Traffic Control Devices (MUTCD), and Caltrans requirements. Consider presence of rideshare vehicles and demand for pick-up/drop-off space.	Street trees and curb bulb-outs may be used to distinguish loading/unloading zones.

6.2 Specifications and Typical Design Details

All GI features and facilities must be designed and constructed in accordance with the applicable specifications and criteria in the CCCWP *Stormwater C.3 Guidebook*. Staff created City-specific typical details and specifications for the GI facilities and elements that are most relevant for San Pablo: slope-sided bioretention facilities, planter-box bioretention facilities, curb cut inlets, concrete check dams, and permeable pavers. See the City website for the most up-to-date City typical details and specifications. See Appendix 7 for City GI typical details and specifications, updated as of May 2019.

LIDI *Bioretention Standard Details and Specifications*, which were developed with funding support from California Stormwater Quality Association (CASQA) Prop 84 Grant, were used as the basis for the City standards. The San Francisco Public Utilities Commission (SFPUC) *Stormwater Requirements and Design Guidelines Appendix B* also served as a reference. Additional typical details and specifications, as may be needed for design of ROW improvement projects, may be adapted from the Central Coast LIDI *Bioretention Standard Details and Specifications*, SFPUC *Stormwater Requirements and Design Guidelines Appendix B*, or other resources compiled by the CCCWP and available through the CCCWP website, subject to approval by the City Engineer.

Table 13: Typical Details and Specifications Stakeholder Outreach

Jan. 2019	Preliminary review of existing typical details and specifications—e.g. CASQA, SFPUC—by the Engineering and Environmental Divisions.
Jan. 23, 2019	Meeting between the Engineering and Environmental Divisions to discuss City-specific design requirements for typical details and specifications.
Feb. 5, 2019	Meeting between long-time staff from the Engineering, Environmental, and Maintenance Divisions to discuss lessons learned from existing GI facilities in the City.
Feb. 12, 2019	Meeting between the Engineering and Environmental Divisions to review City-specific design requirements for typical details and specifications.
Feb. – Mar. 2019	Secondary review of draft City typical details and specifications by the Engineering, Environmental, and Maintenance Divisions.
Apr. 2019	Tertiary review of draft City typical details and specifications by the Engineering, Environmental, and Maintenance Divisions.

Table 13: Typical Details and Specifications Stakeholder Outreach

May 13, 2019	Meeting between the Engineering, Environmental, and Maintenance Divisions to finalize City bioretention facility typical details and specifications.
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Moving forward, the City supports regional standardization of GI typical details and specifications to facilitate cross-jurisdictional simplicity and consistency. At this time there are no Countywide standards. Should a countywide interagency process be convened by the CCCWP to promote consistency in the design and construction of GI facilities, the City will:

- Share with other Contra Costa municipalities, through the CCCWP, plans and specifications developed for GI projects.
- Share lessons learned and best practices via interagency workshops and meetings.
- Participate in the evaluation and recommendation of typical design details and specifications for GI, with the goal of advancing countywide consistency, cost-efficiency, and quality of GI facilities.
- Provide comments on a countywide “Green Infrastructure Design Guide” to assist with project identification, evaluation, and design.
- Consider superseding City standards with the Countywide standards.

6.3 Sizing Requirements

MRP Provision C.3.d contains criteria for sizing stormwater treatment facilities. Facilities may be sized on the basis of flow, volume, or a combination of flow and volume. The adoption of the 2009 MRP allowed for an additional option, where “treatment systems that use a combination of flow and volume capacity shall be sized to treat at least 80 percent of the total runoff over the life of the project, using local rainfall data.” This option can also be used to develop sizing factors for facilities with a standard cross-section (i.e. where the volume available to detain runoff is proportional to facility surface area). To calculate sizing factors, inflows, storage, infiltration to groundwater, underdrain discharge, and overflows are tracked for each time-step during a long-term simulation. The continuous simulation is repeated, with variations in the treatment surface area, to determine the minimum area required for the facility to capture and treat 80% of the inflow during the simulation.

The City uses the sizing guidelines generated by the BASMAA report, *Guidance for Sizing Green Infrastructure Facilities in Street Projects*.

7 Funding Options

The City of San Pablo is committed to incorporating GI facilities in future development and infrastructure retrofits in order to move away from existing “gray” infrastructure. The City will collaborate with fellow Contra Costa permittees in the pursuit of funding and project opportunities that enable GI development. Note that private (re)development must cover the costs of GI facilities and NPDES permit compliance within their own budgets. The following discussion of GI funding is specific to City projects on publicly-owned parcels and/or the public ROW.

Existing Permittee Resources

Currently the City has a Stormwater Utility Assessment that provides approximately \$400,000 per year for all programs and activities related to the City’s stormwater infrastructure and implementation of the NPDES permit. These funds are not sufficient to cover all of the costs related to the implementation of the NPDES permit; therefore, the NPDES program is supplemented by the City’s General Fund.

However, the City’s General Fund will not be able to cover the additional expected expense for GI as part of public (re)development of public priority parcels and ROW in San Pablo. Given that San Pablo is a low-income community, the City does not anticipate proposing a new tax or fee on residents for GI construction. Therefore, the City will rely on funding from outside sources for any implementation of GI beyond the requirements outlined in Provision C.3.b of the MRP.

7.1 Grant Funding Strategies

As a low-income, state-identified disadvantaged community, the City relies on grants to help fund the majority of public projects that occur in the City; GI is no exception. To this end, the City was active in the development of the *CCW SWRP* in order to better prepare the City to secure grant funding for GI development; see Section 2.1.1 for details.

The City plans to seek grant funding for public parcel-based and ROW projects through various dynamic sources. Current state funding opportunities for projects that incorporate GI facilities include Prop 1 (2014)—the “Water Quality, Supply, and Infrastructure Improvement Act of 2014”—and Prop 68 (2018)—the “California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access for All Act of 2018.”

Additional potential funding opportunities for ROW projects, which may incorporate GI facilities, include the Greenhouse Gas Reduction Fund from State Cap-and-Trade proceeds. However, many funding sources for ROW projects include many specific requirements, such as a projected reduction in vehicle miles travelled or the inclusion of specific safety improvements. Such requirements can limit the opportunities to incorporate GI; however, the City will continuously review projects and outside funding sources to include GI features whenever possible.

Grant funding opportunities are summarized in Table 14. Many of these opportunities were drawn from the *Roadmap of Funding Solutions for Sustainable Streets* Report produced by the Regional Roundtable on Sustainable Streets, convened by BASMAA in 2017, as well as summary reports produced by the California Natural Resources Agency (CNRA).

Table 14 will be consulted as part of the funding evaluations for priority CIP projects, but does not require the City to apply for these funds nor does it require that the City implement the listed example projects. The City will utilize other local and regional funding opportunities and will seek out additional funding opportunities as needed.

Table 14: Grant Programs to Fund Public GI Project Implementation¹²

Grant Program	Administering Agency	Funding Source	Match Requirements	Example Projects	Funding Timeline
One Bay Area Grant (OBAG) Program	MTC/ABAG	Surface Transportation Block Grant Program (federal) Congestion Mitigation and Air Quality Improvement (federal)	11.47% Locally-funded design is highly encouraged.	ROW projects that incorporate GI as part of streetscape/safety improvement, e.g. Sutter Ave., Market Ave., Giant Rd.	OBAG Round 2 closed 2017.
Active Transportation Program (ATP)	CTC (California Transportation Commission)	Multiple (federal and state)	Not required by CTC. MTC requires 11.47% (may be waived for disadvantaged communities).	ROW projects that incorporate GI as part of streetscape/safety improvement, e.g. Sutter Ave., Market Ave., Giant Rd.	Cycle 4 closed July 2018. Cycle 5 anticipated 2020.
Transportation Development Act (TDA) Article 3	Contra Costa County via MTC/ABAG	TDA (state)	Not required.	ROW projects that incorporate GI as part of intersection safety improvements, e.g. Sutter Ave.	Last funding round closed Winter 2019. Annual funding rounds.
Transportation for Livable Communities	Contra Costa County via MTC/ABAG	Measure J (local)	Not required, but improves score.	ROW projects that incorporate GI as part of bicycle and pedestrian facilities, e.g. Sutter Ave., Market Ave., Giant Rd.	Last funding round closed 2017. Every 4 years.
Safe Routes to School (SRTS)	Contra Costa County via MTC/ABAG	Congestion Mitigation and Air Quality Improvement (federal)	Not required by Congestion Management and Air Quality Improvement funds.	ROW projects that incorporate GI as part of pedestrian safety improvements. As of May 2019, no GI priority projects are within a Safe Routes to School Zone.	Last funding round closed 2017. <i>SRTS funding overlaps with OBAG and ATP.</i>

¹² Updated as of May 2019.

Table 14: Grant Programs to Fund Public GI Project Implementation¹²

Grant Program	Administering Agency	Funding Source	Match Requirements	Example Projects	Funding Timeline
Transportation for Clean Air (TFCA)	Bay Area Air Quality Management District	TFCA Regional Fund (state)	10% of total eligible project costs.	ROW projects that incorporate GI as part of new bicycle facilities, e.g. Giant Rd.	Last funding round closed March 2018.
Pedestrian, Bicycle and Trail Facilities	Contra Costa County	Measure J (local)	Not required, but improves score.	ROW projects that incorporate GI as part of bicycle and pedestrian facilities, e.g. Sutter Ave., Market Ave., Giant Rd.	Last funding round closed 2017. Every 4 years.
Storm Water Grant Program (SWGP) – Implementation Grants	State Water Resources Control Board	Prop 1 (state)	Min. 50% (may be reduced for disadvantaged communities).	Multi-benefit projects that include GI, e.g. Sutter Ave., Market Ave., Giant Rd., Moraga Rd. Parcel.	Last round closed 2016. Round 2 anticipated Summer 2019.
Integrated Regional Water Management Implementation Grants	Department of Water Resources	Prop 1 (state)	Min. 50% cost share.	Multi-benefit projects that include GI, e.g. Sutter Ave., Market Ave., Giant Rd., Moraga Rd. Parcel.	Round 1 to close summer 2019. Round 2 anticipated 2020.
Proposition (Prop) 1	State Coastal Conservancy	Prop 1 (state)	Not required, but improves score.	Multi-benefit projects that include GI, e.g. Sutter Ave., Market Ave., Giant Rd., Moraga Rd. Parcel.	Last funding round closed April 2019.
Urban Greening Grant Program	CNRA	Cap-and-Trade funding (state)	Not required, but improves score.	Multi-benefit projects that include GI, e.g. Sutter Ave., Market Ave., Giant Rd., Moraga Rd. Parcel.	Round 3 closed Spring 2019.
San Francisco Bay Water Quality Improvement Grants	US Environmental Protection Agency	Multiple (federal)	Min. 50%.	Multi-benefit projects that include GI, e.g. Sutter Ave., Market Ave., Giant Rd., Moraga Rd. Parcel.	Last funding round closed Dec. 2018.
Cultural Community & Natural Resources	CNRA	Prop 68 (state)	Not required, but improves score.	Projects that enhance park, water, and natural resources and/or develop community resources, e.g. Moraga Rd. Parcel.	Funding round closed Feb. 2019. Likely no future rounds of funding.

Table 14: Grant Programs to Fund Public GI Project Implementation¹²

Grant Program	Administering Agency	Funding Source	Match Requirements	Example Projects	Funding Timeline
Green Infrastructure Program	CNRA	Prop 68 (state)	Not required in draft guidelines.	Multi-benefit projects that include GI, e.g. Sutter Ave., Market Ave., Giant Rd., Moraga Rd. Parcel.	Funding round to open mid-2019.
California River Parkways	CNRA	Prop 68 (state)	Not required, but improves score.	River parkway projects that provide public access along creeks, e.g. projects in Plaza San Pablo that border Wildcat Creek.	Funding round close Sept. 2018. Likely no future rounds of funding.
Environmental Enhancement and Mitigation	CNRA	Prop 68 (state)	Not required, but improves score.	Projects that incorporate GI to mitigate negative impacts of transportation projects, Sutter Ave., Market Ave., Giant Rd.	2019 Grant Cycle closed June 2019. 2020 Grant Cycle to begin Apr. 2020.
California Trails and Greenway Investments	CNRA	Prop 68 (state)	Unclear.	Projects that incorporate GI with trails, e.g. Moraga Rd. Parcel.	Funding round to open mid-2019.
Urban Stormwater and Waterways Improvement Program	CNRA	Prop 68 (state)	Unclear.	Multi-benefit projects that address urban flooding and include GI, e.g. Sutter Ave., Market Ave.	Funding round anticipated to begin late 2019.

The *Roadmap of Funding Solutions for Sustainable Streets* produced by BASMAA's Regional Roundtable compiled a list of key challenges that may constrain the City's ability to utilize grant funding sources:

- ***Ineligible components:*** Grant funding might not cover certain project components, e.g. transportation grants might not cover the cost of GI facilities and water quality grants might not cover the cost of transportation facilities.
- ***Ineligible activities:*** Grant funding might not cover all project phases, e.g. planning or maintenance.
- ***Matching funds constraints:*** Constraints on federal, state, and local eligible matching funds can limit the City's ability to fund a project due to lack of available General Funds or in-kind match.
- ***Lack of funding cycle coordination:*** Corridor projects—such as the ROW priorities identified by the City—are large projects that typically require multiple funding sources with different grant application, administration, and completion schedules.
- ***Grant application requirements:*** Limited staff capacity in PW (the Department responsible for securing grant funding) limits the number of grants that staff can pursue at a given time.
- ***Grant administration requirements:*** Limited staff capacity in PW (the Department responsible for grant management) limits the number of grants that staff can manage at a given time.
- ***Counterproductive scoring mechanisms:*** Most competitive grant applications incorporate cost-effectiveness as a key criterion; however, most multi-benefit projects incur significant costs because of the intent to create holistic improvements.

7.2 Local Funding Strategies

The City may evaluate instituting in-lieu fees and/or local alternative compliance for certain types of projects to fund the development of non-regulated GI facilities in public projects located in other regions of the City. No in-lieu fee program will be developed until further analysis has been completed; however, in concept, a potential in-lieu fee would be applied to development within hillside regions (as outlined in Appendix 3.2) and in potentially contaminated lands, where it has been determined that GI facilities may cause a safety or water quality concern. Such an in-lieu fee would fund the developer's "fair share" of GI facility development within the City. The intent is to levy a fee that is approximately equal to what it would have cost to develop the appropriate GI facilities on the proposed project site. The exact value of such a fee is yet to be determined.

Alternative Compliance

The City of San Pablo views local and regional alternative compliance as a key funding opportunity for GI implementation. In 2018, the City began discussions with the Tesoro Refinery, located in Martinez, California, and with the California Department of Transportation (Caltrans) regarding alternative compliance funding, given the limitations that these entities face in constructing on-site GI at particular project locations. The City will continue to build relationships with transportation and industry partners, as well as other outside entities, to address pollutant load reduction requirements throughout the San Francisco Bay watershed.

7.3 Potential Future Regional Funding Strategy

The cities of San Pablo, Walnut Creek, and Richmond (in conjunction with cities across the Bay Area) are proposing to research the feasibility of a water quality trading/banking system. Water quality credit trading and banking systems have been developed across the country as a way to reduce overall compliance costs of reducing pollutant sources within a watershed. Credit trading/banking systems are based on the fact that the cost of controlling pollutant sources may vary substantially depending on the location within a watershed. Trading systems enable locations facing higher pollution control costs to meet regulatory obligations by purchasing environmentally equivalent (or superior) pollution reductions from another source at a lower cost. Establishing a credit banking/trading or alternative compliance system will be very complex with many different legal, regulatory, and political matters to resolve before a program can be implemented. Any commitment to the implementation of an alternative compliance scenario will require regional agreement and is beyond the scope of this Plan. However, the City of San Pablo will actively investigate the viability of these regional systems as a potential funding source for GI facilities in the City.

8 Adaptive Management

8.1 Process for Adaptive Management

The City of San Pablo will amend or update this *GI Plan* as required by the RWQCB. Plan revisions may include updates of implemented public and private GI projects, as well as public GI projects identified for future implementation. As significant changes occur, the City may choose to update the *GI Plan* to reflect the changing environment; otherwise, all changes relevant to GI implementation will be incorporated directly into internal policies and procedures.

The City will employ adaptive management techniques to assess City policies, procedures, and decision processes to allow for continual improvement in *GI Plan* implementation. This learn-implement-evaluate-adjust approach is appropriate for contexts with considerable uncertainty. Identified uncertainties of the *GI Plan* include:

- funding sources and amounts;
- costs of GI implementation (labor, materials, and maintenance);
- rates of private (re)development;
- NPDES permit requirements;
- changing community concerns and priorities;
- infrastructure existing conditions; and
- new technologies.

As projects are identified and built, the City will evaluate project performance, identify internal and external barriers to implementation, document best practices and lessons learned, and adjust for future implementation. This approach will lead to continual improvement and revisiting of the *GI Plan*, along with an evolving list of potential projects.

8.2 Key Areas for Adaptation

Two key areas will greatly influence implementation of the City's *GI Plan*:

1. Future Funding Sources
2. Rates of (Re)Development

8.2.1 Future Funding Sources

Due to California Prop 13, Prop 218, and Prop 26, the City does not currently have the ability to independently raise taxes to implement the projects identified in the *GI Plan*. In 2012, Contra Costa County

Permittees put forth a ballot measure to establish a tax in Contra Costa to help with the compliance costs of the NPDES permit; however, this measure failed. The City will continue to evaluate the feasibility to raise funds for the implementation of this plan through grant sources, fees, or other means. However, until an established funding source can be identified, the City cannot commit to implementation of public projects beyond those identified for completion by 2020 in Section 3.1.

8.2.2 Rates of (Re)Development

The City of San Pablo has no control over the location and timeline for private (re)development in the City. The City will encourage (re)development when applicable, while following all federal, state, and local laws. Due to the limited control over (re)development, the projects and timelines listed in Section 4.1 are projections only, with no implied City commitment to their (re)development.

The City will ensure that all projects regulated under Provision C.3.b, or any other future provisions, will comply with the City's NPDES permit. As rates of development change, and projects are implemented, the City may choose to update the private project list to reflect the current situation. The City envisions this update to occur through the AGOL tool discussed in Section 5.1.

Appendix 1

Definitions

Green Infrastructure Plan Definitions	
Capital Improvement Program (CIP)	Identifies capital projects and equipment purchases, provides a schedule, and identifies options for financing planned projects and purchases.
Complete Streets	A street right-of-way that, through a variety of design and operational treatments, gives priority to pedestrian circulation and open space over other transportation uses. Treatments may include sidewalk widening, landscaping, traffic calming, and other pedestrian-oriented features. Streets may be considered “Complete Green Streets” through the incorporation of GI facilities that capture and treat stormwater.
Contra Costa Clean Water Program (CCCWP)	Comprised of the 19 cities and towns of Contra Costa County, the County, and the Contra Costa County Flood Control and Water Conservation District. Works to protect local creeks, reservoirs, watersheds, Delta, and Bay from contamination and pollution, as required by Federal and State clean water regulations.
Contra Costa Watersheds Stormwater Resource Plan (CCW SWRP)	A Plan that identified and prioritized potential multi-benefit stormwater management projects, including GI projects in watersheds and jurisdictions throughout Contra Costa County. Projects identified within the CCW SWRP are eligible to apply for future state funding.
Gray Infrastructure	Constructed structures, such as treatment facilities, sewer systems, stormwater systems, or storage basins. The term “gray” refers to the fact that such structures are often made of concrete.
Green Infrastructure (GI)	Storm drainage systems that are designed to reduce runoff volumes, disperse runoff to vegetated areas, harvest and use runoff where feasible, promote infiltration and evapotranspiration, and use bioretention and other natural systems to treat runoff before it reaches nearby water bodies. GI facilities include bioretention facilities, raingardens, pervious pavers, infiltration basins, green roofs, and rainwater harvesting systems.
Low Impact Development (LID)	Systems and practices that use or mimic natural processes to infiltrate stormwater. LID includes GI facilities.
Municipal Regional Stormwater Permit (MRP)	The San Francisco Bay Regional Water Quality Control Board (RWQCB) issued county-wide municipal stormwater permits in the 1990s to operators of MS4s serving populations over 100,000 (Phase 1). On November 19, 2015, the San Francisco Bay RWQCB re-issued these county-wide municipal stormwater permits as one Municipal Regional Stormwater NPDES Permit to regulate stormwater discharges from municipalities and local agencies in Alameda, Contra Costa, San Mateo, and Santa Clara counties, and the cities of Fairfield, Suisun City, and Vallejo.

MRP Provision Chapter 3 (C.3)	<p>Provision C.3, of the MRP approved in 2015, requires Permittees to use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address stormwater runoff pollutant discharges. This goal is to be accomplished in part through the implementation of LID techniques, such as GI. Projects that surpass the MRP-specified threshold of new or retrofitted impervious surfaces trigger Provision C.3. requirements and are considered “regulated” projects. See the most recent version of the MRP for relevant trigger thresholds.</p> <ul style="list-style-type: none"> • <u>C.3.b</u>: Provision subsection that requires Permittees to ensure that all regulated projects implement LID source control, site design, and stormwater treatment on-site or at a joint stormwater treatment facility.
MRP Provision Chapter 11 (C.11)	<p>Provision C.11, of the MRP approved in 2015, regulates how Permittees are to reduce mercury from the MS4.</p> <ul style="list-style-type: none"> • <u>C.11.c</u>: Provision subsection that requires Permittees to plan and implement GI to reduce mercury loads. • <u>C.11.d</u>: Provision subsection that requires Permittees to prepare an implementation plan and schedule to achieve TMDL allocations for mercury.
MRP Provision Chapter 12 (C.12)	<p>Provision C.12, of the MRP approved in 2015, regulates how Permittees are to reduce Polychlorinated Biphenyls (PCBs) from the MS4.</p> <ul style="list-style-type: none"> • <u>C.12.c</u>: Provision subsection that requires Permittees to plan and implement GI to reduce PCBs loads. • <u>C.12.d</u>: Provision subsection that requires Permittees to prepare an implementation plan and schedule to achieve TMDL allocations for PCBs.
Municipal Separate Storm Sewer System (MS4)	<p>Sewer infrastructure that collects stormwater runoff and directs it to a receiving water body with limited or no water quality treatment. In San Pablo, the receiving water bodies are the creeks, which feed into the Bay.</p>
National Pollutant Discharge Elimination System (NPDES) Permit	<p>A type of permit issued by the RWQCB with the purpose of reducing pollution discharges from stormwater and effectively maintaining public storm drain facilities.</p>
Reasonable Assurance Analysis (RAA)	<p>Provisions C.11/12.c.ii.(2) of the MRP require Permittees to prepare a RAA to demonstrate that pollutant load reductions for the San Francisco PCBs and Mercury TMDLs will be met through a combination of GI Plan implementation and other stormwater management measures.</p>
Stormwater Runoff	<p>Rainfall that flows over the ground surface. It is created when rain falls on roads, driveways, parking lots, rooftops, and other impervious surfaces that do not allow water to soak into the ground.</p>
Total Maximum Daily Load (TMDL)	<p>The calculation of the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet water quality standards for that particular pollutant. A TMDL determines a pollutant reduction target and allocates load reductions necessary to the source(s) of the pollutant.</p>
Transit Oriented Development (TOD)	<p>A type of walkable, mixed-use, and sustainable community development centered around public transit.</p>

Green Infrastructure Facility Examples	
<p>Bioretention Facility¹³</p>	<p>A basin designed to capture and infiltrate stormwater into soil below. Bioretention facilities can be designed as a “planter box” (vertical sides) or as a “swale” (sloped sides). If water infiltration is not desired or possible, facilities may include an underdrain to direct filtered water to the MS4. Contaminants and sediment are removed from runoff by the treatment area, which may include a grass buffer strip, sand bed, mulch layer, soil, and/or plants.</p> 
<p>Curb Bulb-Out¹⁴</p>	<p>A curb extended into a roadway that may calm traffic and reduce the pedestrian crossing distance. GI facilities can be incorporated into curb bulb-outs in order to collect stormwater from the roadway and sidewalks and enhance local aesthetics through landscaping.</p> 
<p>Permeable Pavers¹⁵</p>	<p>Type of surfacing that allows for stormwater infiltration through the pervious gaps between interlocking pavers into the soil below. Best suited for low-volume roadways, driveways, parking lots, or bicycle and pedestrian facilities.</p> 

¹³ Photo: “Right of Way Bioswale” by ChrisHamby under Creative Commons (CC) license. Cropped. commons.wikimedia.org/wiki/File:Right_of_Way_Bioswale.jpg

¹⁴ Photo: “Bioswale” by Eric Fischer under CC license. [flickr.com/photos/walkingsf/40369762221](https://www.flickr.com/photos/walkingsf/40369762221)

¹⁵ Photo: “Permeable Pavers on Cycle court (4575038342) (2)” by Brett VA under CC license. Cropped. [commons.wikimedia.org/wiki/File:Permeable_Pavers_on_Cycle_court_\(4575038342\)_2.jpg](https://commons.wikimedia.org/wiki/File:Permeable_Pavers_on_Cycle_court_(4575038342)_2.jpg)

<p>Permeable Paving¹⁶</p>	<p>Type of paving that allows for stormwater infiltration through the porous paved surface into the soil below. Best suited for low-volume roadways, driveways, parking lots, or bicycle and pedestrian facilities.</p>	
<p>Rainwater Harvesting¹⁷</p>	<p>Systems that collect stormwater runoff from structures or other impervious surfaces for later use. Such systems can range in size from a rain barrel to an above or belowground cistern that may supply indoor and outdoor household demand.</p>	
<p>Tree Well¹⁸</p>	<p>Tree planting area designed to collect large amounts of stormwater and treat it prior to discharge into the storm drain system or to the subsoil. Tree wells (single tree) or tree trenches (multiple trees) are often located in sidewalks or medians. Tree selection should follow local requirements.</p>	

¹⁶ Photo: "Closeup_of_pavement_with_grass" by Angel caboodle under CC license. Cropped.

en.wikipedia.org/wiki/File:Closeup_of_pavement_with_grass.JPG

¹⁷ Photo: "Painted Barrels! (#0646)" by regan76 under CC license. Cropped. [flickr.com/photos/j_regan/9005225009](https://www.flickr.com/photos/j_regan/9005225009)

¹⁸ Photo: "IMG_0971" by Brad Davis, AICP under CC license. Cropped. [flickr.com/photos/77021165@N03/7998505477](https://www.flickr.com/photos/77021165@N03/7998505477)

Appendix 2

Mercury and PCBs in the San Francisco Bay

The MRP pollutant-load reduction requirements are driven by the Total Maximum Daily Load (TMDL) threshold adopted by the RWQCB for mercury¹⁹ and PCBs²⁰. Each TMDL allocates allowable annual pollutant loads to the Bay (a Waste Load Allocation, or WLA) from identified sources, including from urban stormwater.

Mercury TMDL

The mercury TMDL addresses two (2) water quality objectives. The first applies to fish large enough to be consumed by humans and was established with the intent of protecting the health of people who consume Bay fish. The objective is 0.2 milligrams (mg) of mercury per kilogram (kg) of fish tissue²¹. The second objective applies to small fish (3-5 centimeters in length) commonly consumed by the California least tern, an endangered species of bird. This objective is 0.03 mg mercury per kg fish²². In order to achieve these water quality, human health, fish tissue, and bird egg monitoring targets, the Bay-wide suspended sediment mercury concentration must reach 0.2 mg mercury per kg dry sediment.

A decrease of approximately 50% in sediment, fish tissue, and bird egg mercury concentrations is necessary for the Bay to meet water quality standards. Reductions in sediment mercury concentrations are assumed to result in a proportional reduction in the total amount of mercury in the system, which will result in the achievement of target fish tissue and bird egg concentrations.

PCBs TMDL

The PCBs TMDL was developed based on a fish tissue target of ten (10) nanograms (ng) of PCBs per gram (g) of fish tissue. This target is based on a cancer risk of one (1) case per an exposed population of 100,000 for the 95th percentile San Francisco Bay Area sport and subsistence fish consumer²³. A food web model was developed by the San Francisco Estuary Institute to identify the sediment target concentration that would yield the fish tissue target; this sediment target was found to be one (1) microgram (µg) of PCBs per kg of sediment.

Twenty percent of the estimated allowable PCBs external load was allocated to urban stormwater runoff. The Bay Area-wide WLA for PCBs for urban stormwater is two (2) kg/year by 2030. This value was developed based on applying the required sediment concentration (1 µg/kg) to the estimated annual sediment load discharged from local tributaries.

¹⁹ Order No. R2-2004-0082 and R2-2005-0060.

²⁰ Order No. R2-2008-0012.

²¹ Average wet weight concentration measured in the muscle tissue of fish large enough to be consumed by humans.

²² Average wet weight concentration.

²³ Assumed consumption of 32 g fish per day.

Appendix 3

San Pablo Green Infrastructure Priority Maps

The following maps identify projected green infrastructure (GI) projects and priority areas, for public and private development, as well as zones with restrictions regarding GI development:

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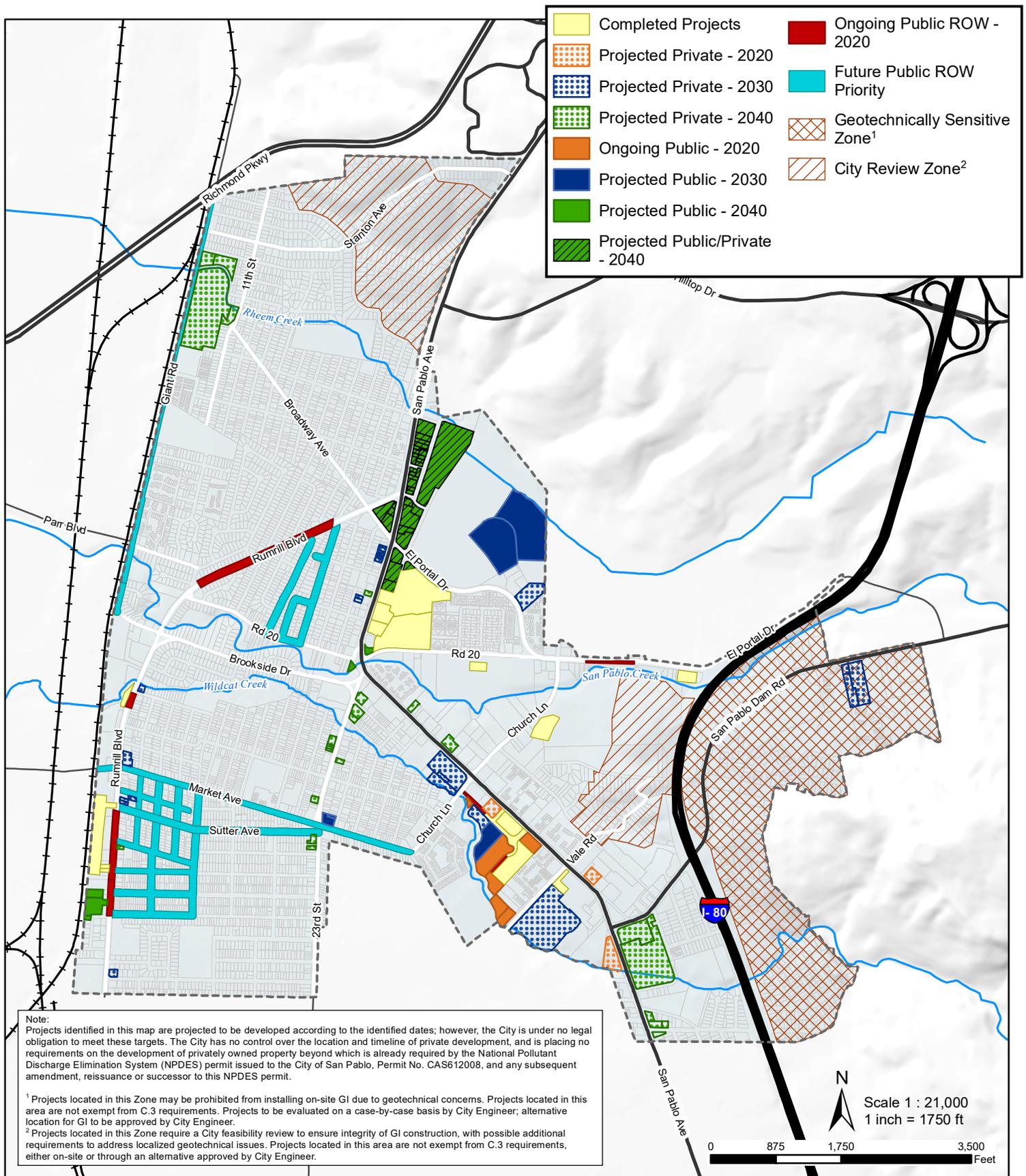


Figure 1: Green Infrastructure Priority Areas

City of San Pablo

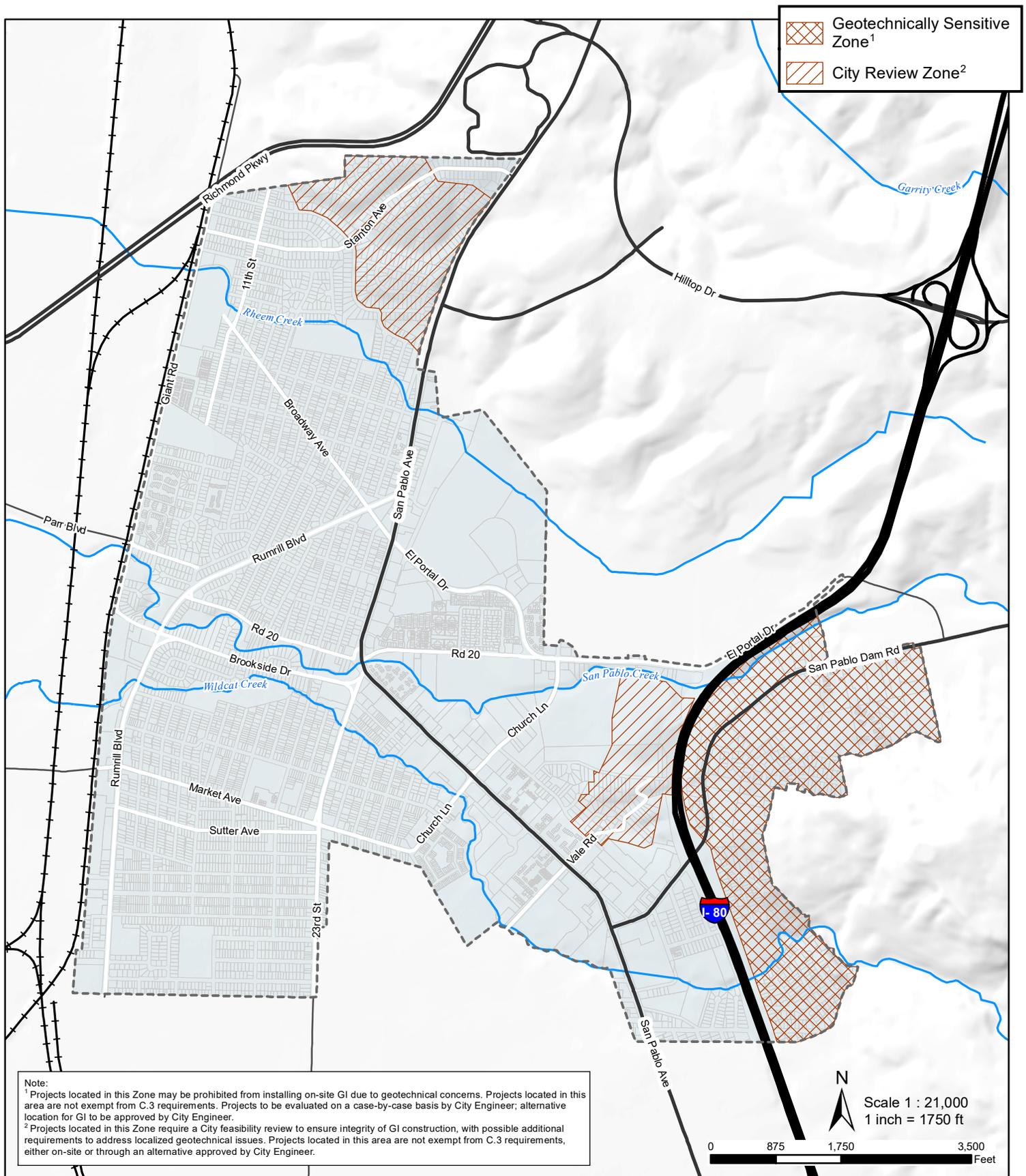


Figure 2: Green Infrastructure Restricted Zones



City of San Pablo

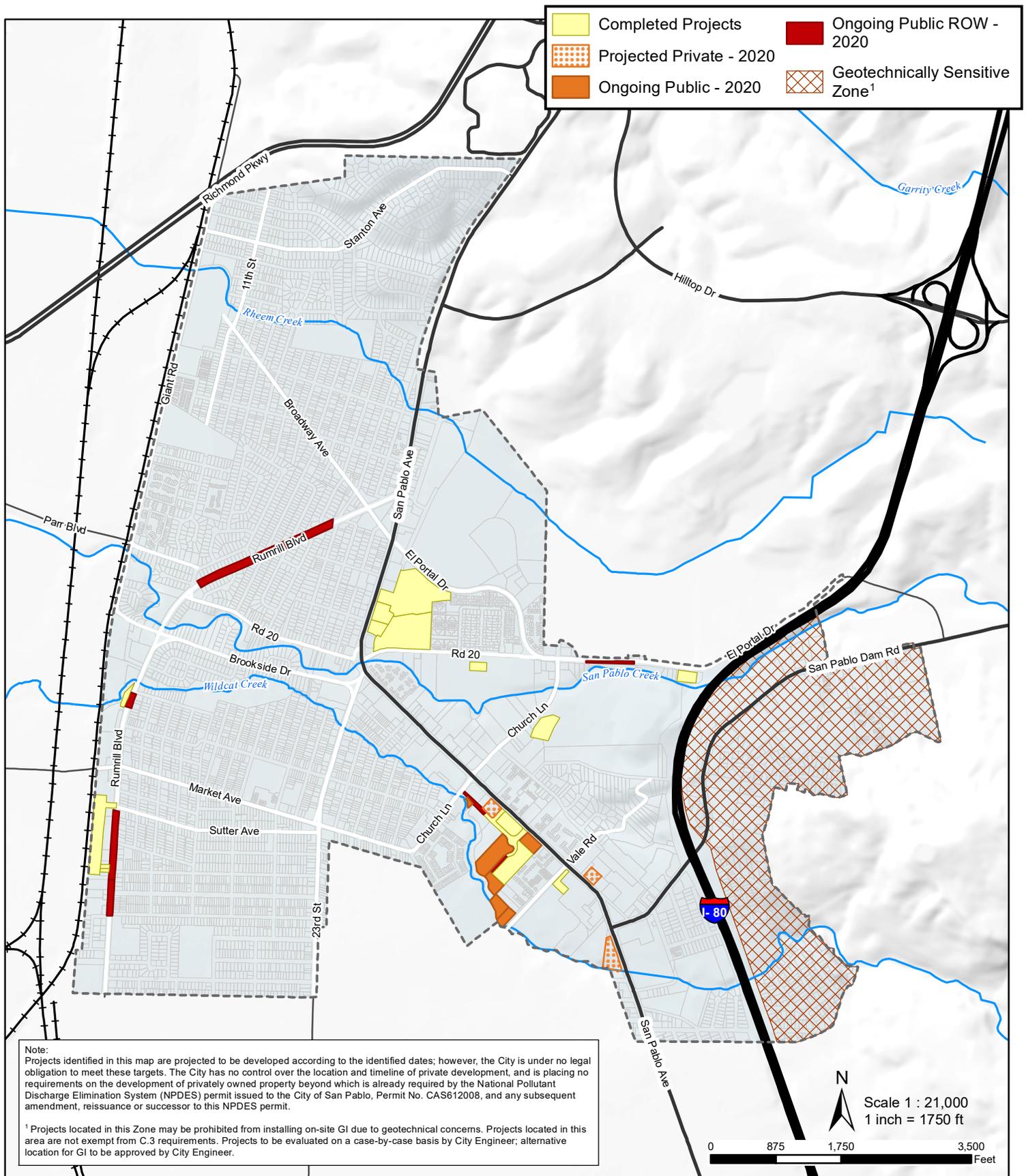


Figure 3: Green Infrastructure Priority Areas - 2020



City of San Pablo

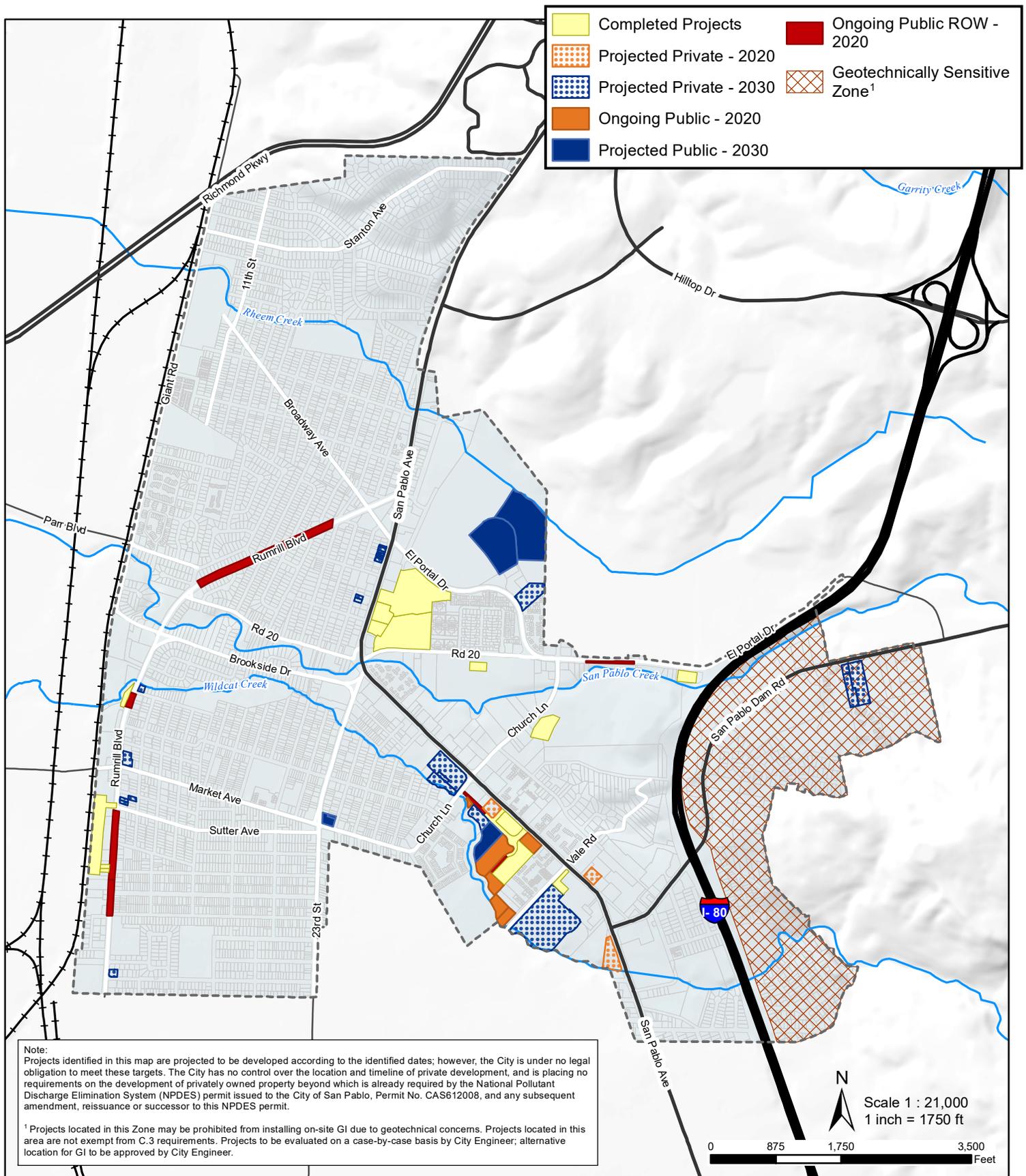
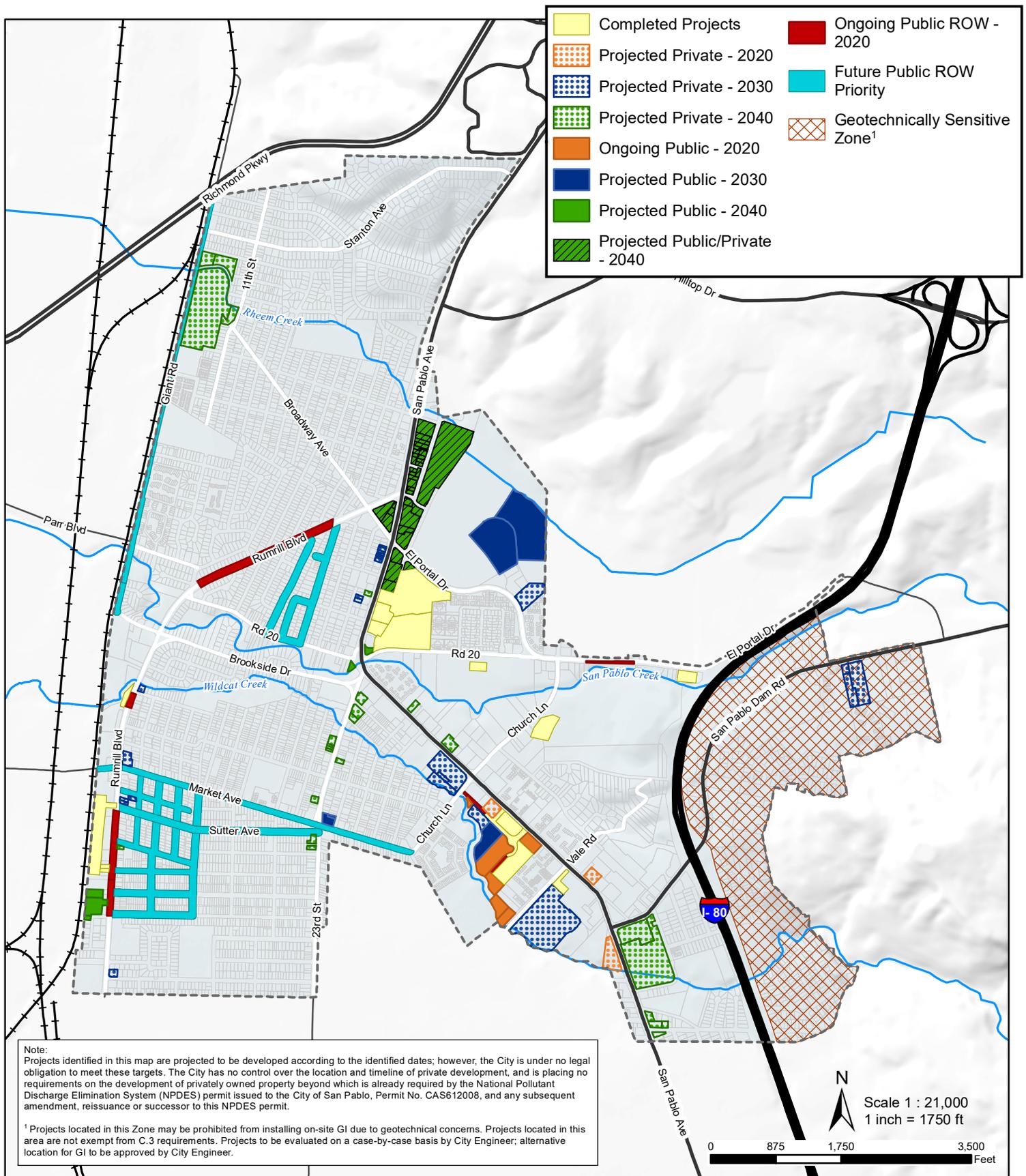


Figure 4: Green Infrastructure Priority Areas - 2030

City of San Pablo



CITY OF SAN PABLO
 City of New Directions



Figure 5: Green Infrastructure Priority Areas - 2040

City of San Pablo

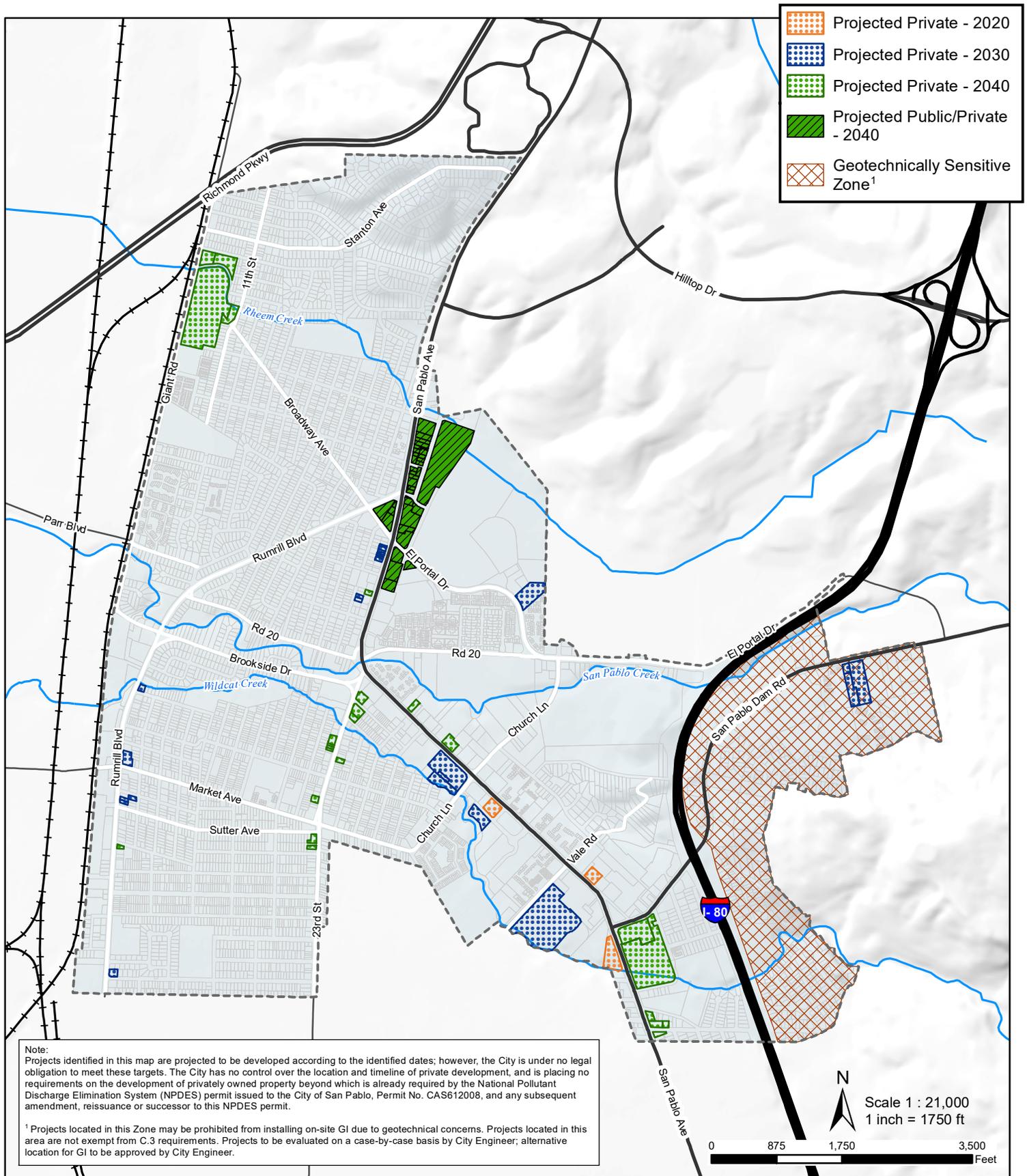


Figure 6: Potential Green Infrastructure Development - Private



City of San Pablo

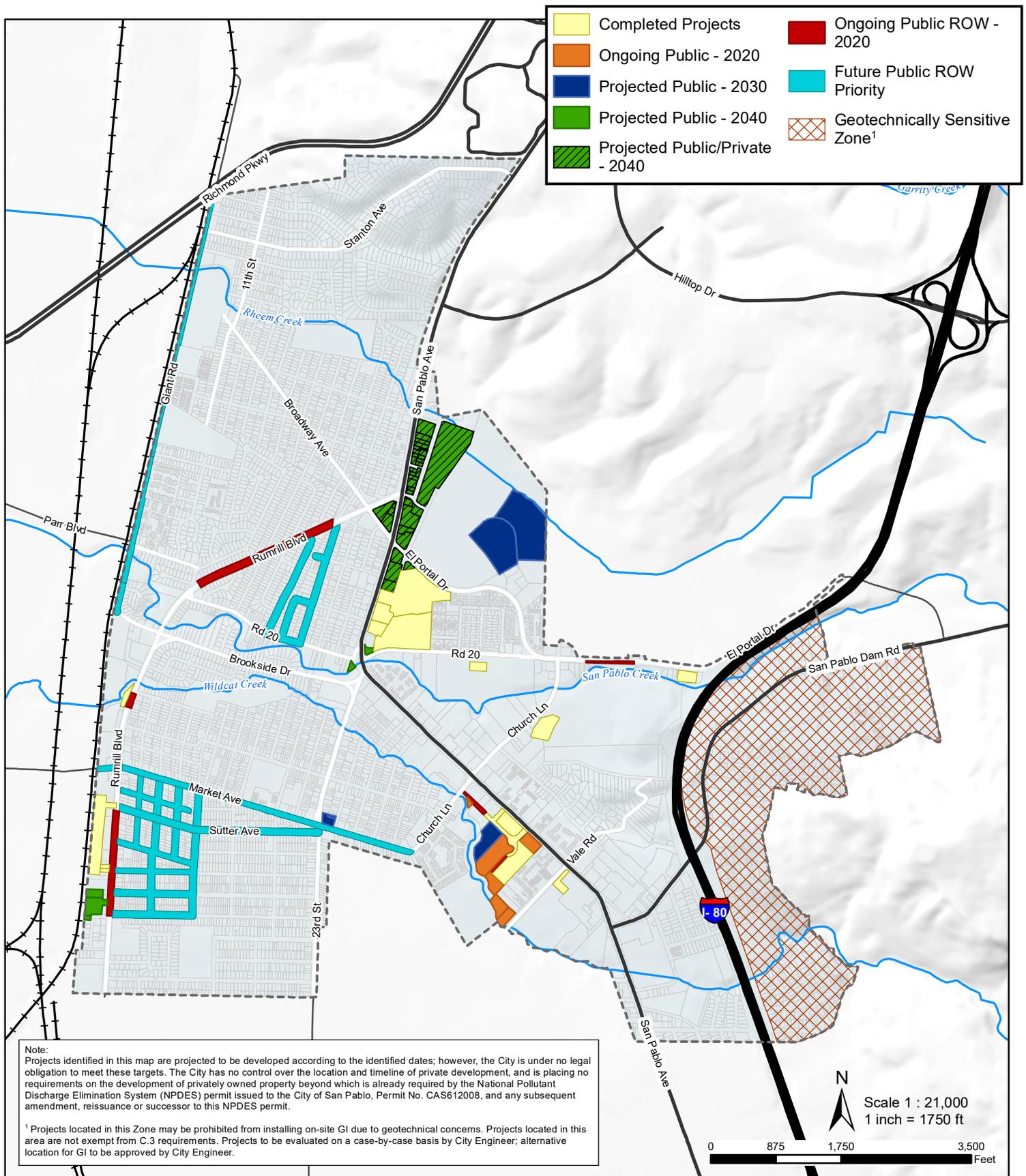


Figure 7: Potential Green Infrastructure Development - Public



City of San Pablo

Appendix 4

Recommended Planning Document Updates

The following identifies potential updates to key City planning and policy documents to support the implementation of the *City of San Pablo Green Infrastructure (GI) Plan*, per Provision C.3.j.i.(2)(h) of the MRP.

The outlined recommendations are a starting point for incorporating GI implementation language into future plans to facilitate efficient GI planning, design, construction, and maintenance within San Pablo. It is the intent of the City to consider incorporating language to support implementation of the *GI Plan* into any new or amended City plans. Recommended revisions will require consideration by the appropriate entities (e.g. Planning Commission, City Council) in a public process.

Potential updates are formatted with existing planning document text as normal text, deleted text is ~~red with strikethrough~~, and new text is red and underlined. Page numbers and general framing comments are *italicized in green*.

Appendix 4.1: San Pablo General Plan 2030 59

Appendix 4.2: City of San Pablo California Zoning Ordinance 62

Appendix 4.3: San Pablo Municipal Code 64

Appendix 4.4: San Pablo Avenue Specific Plan 66

Appendix 4.5: 23rd Street Specific Plan 70

Appendix 4.6: City of San Pablo Bicycle and Pedestrian Master Plan 72

Appendix 4.7: City of San Pablo Climate Action Plan 74

Appendix 4.8: Davis Park Master Plan 75

Appendix 4.9: City of San Pablo Storm Drain Master Plan 76

Appendix 4.10: City of San Pablo Master Landscape Plan 77

Appendix 4.1

San Pablo General Plan 2030

Chapter 9: Safety & Noise

9.1 Seismic and Geologic Hazards

GEOLOGY

P. 9-2

The “hillside zone” of the city is comprised of steep to moderate sloping hillside areas in two locations: (1) The eastern and southeastern portions of the city on the northwestern flank of San Pablo Ridge, generally above 100 feet in elevation, and (2) the northern portion of the city, generally above 60 feet in elevation. Most of the bedrock consists of non-marine sedimentary rocks, consisting of weakly consolidated pebble, conglomerate, sandstone, claystone and siltstone. The hills in San Pablo form part of a system of foothills that is ultimately connected to the Diablo Range south of the region.

As a result of the geotechnical sensitivity of the “hillside zone” of the City, development in these areas will be guided by the provisions outlined in the City’s Hillside Overlay Zoning District as well as the “City Review” and “Geotechnically Sensitive” zones identified in the *City of San Pablo Green Infrastructure (GI) Plan*.

IMPLEMENTING POLICIES

P. 9-7

SN-I-7 Ensure that green infrastructure (GI) development, as required by the most recent version of the Municipal Regional Stormwater Permit (MRP) and guided by the *City of San Pablo GI Plan* and the most recent edition of the Contra Costa Clean Water Program *Stormwater C.3 Guidebook*, is implemented according to the “City Review” and “Geotechnically Sensitive” zones identified in the *City of San Pablo GI Plan*.

9.2 Flood Hazards

P. 9-7

Flood-prone areas in San Pablo are generally located in topographically low areas and in areas close to shorelines and creeks.

MITIGATION OF FLOOD HAZARDS

Storm Drainage Management

P. 9-10

The Public Works ~~Division~~ Department performs cleaning and maintenance activities on creeks, drainage channels, pipes and catch basins in City easements and rights-of-way in accordance with an established schedule and other standard operating procedures. The City encourages homeowners with property along the creeks to ~~help~~ keep them clear of obstructions and to purchase flood insurance as a precaution. By way of City ordinance, it is illegal to dump trash, leaves, landscape debris, paint, greases, or any other material into any portion of the City's drainage system, and it is illegal to construct structures in the creek channels, regardless of private ownership.

The development of green infrastructure (GI) facilities, either voluntarily or as required by the most recent version of the Municipal Regional Stormwater Permit (MRP), is a strategy to help address storm drain management issues by encouraging stormwater infiltration and slowing the flow of water entering the storm drain system. See the City of San Pablo GI Plan and the most recent edition of the Contra Costa Clean Water Program Stormwater C.3 Guidebook for additional resources and details regarding GI implementation requirements.

IMPLEMENTING POLICIES*P. 9-12*

SN-I-78 Continue to minimize the risk of flooding ~~to development~~ through the development review process. Require new development within a flood plain to comply with the City's Floodplain Management and Flood Damage Prevention Ordinance and to submit hydrologic studies, identify site development and construction methods, and implement appropriate mitigation measures to minimize surface water run-off.

Developers will be required to provide an assessment of a project's potential impacts on the local storm drainage system as part of the development review process. If development is found to have a negative impact on storm drainage, mitigation measures such as the creation of permanent or temporary detention or retention basins, provision of additional landscaped areas and green roofs, installation of pump stations, and the use of permeable paving in driveways, walkways and parking areas, may be required. Developers shall refer to the City of San Pablo Green Infrastructure (GI) Plan and the most recent edition of the Contra Costa Clean Water Program Stormwater C.3 Guidebook for additional resources and details regarding GI construction.

P. 9-13

Additional policies to control stormwater and reduce urban runoff are in the 'Wastewater and Stormwater' section of the Parks, Schools, Community Facilities and Utilities Element. Refer to the City of San Pablo

[Green Infrastructure \(GI\) Plan and the most recent edition of the Contra Costa Clean Water Program Stormwater C.3 Guidebook for additional resources and details regarding GI construction.](#)

Appendix 4.2

City of San Pablo, California Zoning Ordinance

ARTICLE III ZONING DISTRICT, ALLOWED USES, AND DEVELOPMENT STANDARDS

Chapter 17.26 Establishment of Zoning Districts

[Chapter 17.27 Implementation of Green Infrastructure Facilities](#)

Chapter 17.28 Adoption of Zoning Map

Chapter 17.30 Classification of Uses

Chapter 17.32 Residential Districts, Allowed Uses, and Development Standards

Chapter 17.34 Commercial and Industrial Districts, Allowed Uses, and Development Standards

Chapter 17.36 Public and Semi-Public Districts, Allowed Uses, and Development Standards

Chapter 17.38 Overlay and Special Districts

Chapter 17.27 Implementation of Green Infrastructure Facilities

Sections in this chapter:

[17.27.010 Purpose](#)

[17.27.020 Applicability](#)

[17.27.030 Green Infrastructure Plan](#)

[17.27.040 Green Infrastructure Zones](#)

17.27.010 Purpose

[The purpose of this chapter is to protect and enhance the water quality in the City of San Pablo's watercourses through the implementation of the Municipal Regional Stormwater Permit \(MRP\), as issued by the California Regional Water Quality Control Board \(RWQCB\) for the San Francisco Bay Region in order to comply with the National Pollutant Discharge Elimination System \(NPDES\) program under the Federal Clean Water Act.](#)

17.27.020 Applicability

[The MRP is applicable in all areas of the City on all projects that meet or surpass the development thresholds identified in the most recent version of the MRP and detailed in the most recent edition of the Contra Costa Clean Water Program Stormwater C.3 Guidebook. All development within the City must comply with Chapter 8.40 of the San Pablo Municipal Code \(Stormwater Management and Discharge Control\).](#)

17.27.030 Green Infrastructure Plan

[The City of San Pablo Green Infrastructure \(GI\) Plan was adopted by resolution of the City Council, as required by the MRP 2.0 \(RWQCB San Francisco Bay Region MRP Order No. R2-2015-0049, NPDES Permit No. CAS612008\). Development of GI facilities within the City of San Pablo, either as a voluntary project](#)

feature or as required for projects regulated by the MRP, shall refer to the City's *GI Plan* for guidelines and specifications for GI facilities.

17.27.040 Green Infrastructure Zones

A. City Review Zone. The "City Review" zone in the *City of San Pablo GI Plan* identifies areas within the City in which a feasibility review is required for the development of GI facilities. Projects located in a City Review zone that are regulated under the most recent version of the MRP are not exempt from any applicable GI requirements. On-site compliance with GI requirements for projects located in a City Review zone may be required by the City to incorporate special structural elements in order to address local geotechnical conditions and ensure integrity of GI construction. Approval by City Engineer required for on-site development of GI or for an off-site compliance alternative.

B. Geotechnically Sensitive Zone. The "Geotechnically Sensitive" zone in the *City of San Pablo GI Plan* identifies areas within the City in which projects may be prohibited from installing on-site GI due to geotechnical concerns. Projects located in a Geotechnically Sensitive zone that are regulated under the most recent version of the MRP are not exempt from any applicable GI requirements. On-site compliance with GI requirements for projects located in a Geotechnically Sensitive zone may be required by the City to incorporate special structural elements in order to address local geotechnical conditions and ensure integrity of GI construction. Approval by City Engineer is required for on-site development of GI or for an off-site compliance alternative.

Appendix 4.3

San Pablo Municipal Code

Chapter 8.40 STORMWATER MANAGEMENT AND DISCHARGE CONTROL

8.40.010 Intent and purpose.

C. It is the purpose of the city council in enacting this chapter to protect the health, safety and general welfare of San Pablo's citizens by:

1. Minimizing non-stormwater discharges, whose pollutants would otherwise degrade the water quality of local streams, to the stormwater system.
2. Minimizing increases in nonpoint source pollution caused by stormwater runoff from development that would otherwise degrade local water quality.
3. Controlling the discharge to the city's stormwater system from spills, dumping or disposal of materials other than stormwater.
4. Reducing stormwater run-off rates and volumes and nonpoint source pollution whenever possible, through stormwater management controls and ensuring that these management controls are properly maintained and pose no threat to public safety. (Ord. 2016-006 § 1 (part), 2016: Ord. 05-001 § 1 (part), 2005)

5. Using the *City of San Pablo Green Infrastructure (GI) Plan* to guide public and private development of GI facilities in the City.

8.40.020 Definitions.

"Enforcement officer or officer" shall mean those individuals designated by the director to act as authorized enforcement officers.

"Green infrastructure" or "GI" shall mean the construction and retrofit of storm drainage systems to reduce runoff volumes, disperse runoff to vegetated areas, harvest and use runoff where feasible, promote infiltration and evapotranspiration, and use bioretention and other natural systems to detain and treat runoff.

"GI Plan" shall mean the *City of San Pablo Green Infrastructure Plan* adopted by resolution by the City Council.

"Guidebook" shall mean the most recent version of the Contra Costa Clean Water Program Stormwater C.3. Guidebook.

8.40.050 Stormwater control plan required.

A. In accordance with thresholds and effective dates in the city's NPDES permit, every application for a development project, including but not limited to a rezoning, tentative map, parcel map, conditional use

permit, variance, site development permit, design review, or building permit that is subject to the development runoff requirements in the city's NPDES permit shall be accompanied by a stormwater control plan that meets the criteria in the most recent version of the Contra Costa Clean Water Program Stormwater C.3. Guidebook and the most recent version of the *City of San Pablo GI Plan*.

Appendix 4.4

San Pablo Avenue Specific Plan

As part of the upcoming General Plan update, the San Pablo Avenue Specific Plan may be updated or a new targeted plan may be created to guide the development of San Pablo's major corridors. Should the San Pablo Avenue Specific Plan be updated, the following changes will be recommended for incorporation. All amendments to specific plans require a public hearing process following a public notice; thus, exact updates are subject to change. If a new targeted plan is created, then the intent of the following changes may be incorporated into the content of the new plan.

Chapter 4: Urban Design and Building Development Standards

4.2 STREETScape DESIGN

Streetscape Plan

P. 4-21

Additional items the community wanted to see included trash receptacles, security cameras, enhanced landscaping—such as green infrastructure facilities, which are specially designed landscaped areas that provide additional benefits like stormwater filtration and localized flood control—, and the undergrounding of electrical lines.

GUIDING POLICIES

P. 4-30

4-G-11 Design the streetscape at the pedestrian scale with wide sidewalks, bike lanes, and amenities for pedestrians and cyclists such as bike racks, comfortable street furnishings, sufficient and attractive lighting, green infrastructure facilities, and street trees for shading and aesthetics.

IMPLEMENTING POLICIES

P. 4-30

4-I-33 Where possible, provide curb bulb-outs—which may incorporate green infrastructure facilities— at street corners and midblock crossings to calm traffic and heighten pedestrian visibility and comfort.

P. 4-31

San Pablo Avenue

4-I-37 Create a clear identity for San Pablo Avenue by developing a comprehensive master streetscape plan that:

- Provides wide sidewalks, pedestrian-scaled lighting, shade, multi-benefit landscaping—like green infrastructure—planters, and benches.
- Provides landscaped medians—incorporating green infrastructure when possible—that alternate as turn lanes where the width of the street permits and provide pedestrian refuge at midblock crossings.

P. 4-32

4-I-41 Employ the use of rain gardens—or other green infrastructure facilities—in planting areas and curb extensions, and median islands to provide retention basins and improved stormwater management along San Pablo Avenue.

IMPLEMENTING POLICIES

P. 4-34

4-I-49 Provide wide sidewalks for areas that allow outdoor seating and uses. Ensure that these areas are buffered from the street edge through landscaping or low physical barriers such as bollards or green infrastructure facilities~~planters~~.

4.2 DEVELOPMENT STANDARDS AND BUILDING DESIGN GUIDELINES

TABLE 4-1 DEVELOPMENT STANDARDS BY LAND USE

p. 4-41

OPEN SPACE	
<u>Green Infrastructure</u>	<u>Refer to the most recent edition of the Contra Costa Clean Water Program Stormwater C.3 Guidebook for green infrastructure requirements. Refer to the City of San Pablo Green Infrastructure Plan for additional green infrastructure details and resources.</u>

Open Space

P. 4-49

DG-22 Limit hardscape to a maximum of 50% of required private common open space. Encourage the use of pervious materials to assist in stormwater management. Refer to the most recent edition

[of the Contra Costa Clean Water Program Stormwater C.3 Guidebook for drainage and green infrastructure requirements.](#)

P. 4-50

DG-25 Encourage sustainable landscape design with the use of hardy, native, low-water consumption, drought-tolerant planting, as well as stormwater management systems. Utilize bioswales, ~~and~~ rain gardens, [or other forms of green infrastructure](#) in street medians, ~~or~~ landscaped buffers [or curb bulb-outs](#). Employ moisture-sensitive irrigation systems.

Chapter 5: Utilities and Public Services

5.1 UTILITIES

Storm Drainage

P. 5-4

Under the NPDES permit issued by the Regional Water Quality Control Board, San Francisco Bay Region, the City requires new development to treat storm water runoff using methods such as infiltration prior to discharge to the city storm drain system and creeks. [Refer to the most recent edition of the Contra Costa Clean Water Program Stormwater C.3 Guidebook and the City of San Pablo Green Infrastructure Plan for additional details and resources.](#)

Chapter 8: Environment, Health, and Safety

8.1 WATER QUALITY AND FLOODING

Low Impact Development

P. 8-4

The proposed redevelopment in the Planning Area will employ low impact development techniques in order to capture and treat stormwater runoff at its source, [as required by the most recent edition of the Contra Costa Clean Water Program Stormwater C.3 Guidebook and guided by the City of San Pablo Green Infrastructure Plan.](#) On-site treatment reduces the amount of pollutants picked up in comparison to stormwater that drains to a central collection site.

IMPLEMENTING POLICIES

P. 8-4

8-I-1 Require development in the San Pablo Avenue Specific Plan Planning Area to include low impact development features to reduce stormwater pollutant loads and increase on-site infiltration, consistent with General Plan policy PSCU-I-34. Refer to the most recent edition of the Contra Costa Clean Water Program Stormwater C.3 Guidebook and the City of San Pablo Green Infrastructure Plan for additional details and resources. Features should be drawn from the Bay Area Stormwater Management Agency’s “Start at the Source Design Guidance Manual for Stormwater Quality protection.” Ensure the update of zoning stormwater management standards pursuant to General Plan policy PSCU-I-34 includes provisions for stronger stormwater management on sites within 300 feet of creeks in the Planning Area, with an emphasis on maintaining or restoring the natural character of the water feature.

8.4 HAZARDOUS MATERIALS AND AIR TOXICS

Toxic Air Contaminants

GUIDING POLICIES

P. 8-13

8-G-4 Ensure that infill and redevelopment in the San Pablo Avenue Specific Plan corridor minimize exposure to hazardous materials and toxic air contaminants. Green infrastructure facilities may not be appropriate in areas with soil toxicity concerns.

Chapter 9: Implementation

9.2 IMPLEMENTATION MEASURES

TABLE 9-2 IMPLEMENTATION PLAN

p. 9-3

Construct pedestrian streetscape improvements per figures 4-7, 4-9, and 4-11. This includes installing street trees, green infrastructure facilities~~planters~~, signage, lighting, gateway features, and other pedestrian amenities within the right-of-way. Efforts should be focused on Pedestrian Priority Zones, as identified in Figure 3-3: Accessibility.

Appendix 4.5

23rd Street Specific Plan

As part of the upcoming General Plan update, the 23rd Street Specific Plan may be updated or a new targeted plan may be created to guide the development of San Pablo's major corridors. Should the 23rd Street Specific Plan be updated, the following changes will be recommended for incorporation. All amendments to specific plans require a public hearing process following a public notice; thus, exact updates are subject to change. If a new targeted plan is created, then the intent of the following changes may be incorporated into the content of the new plan.

Chapter 4: GOALS AND POLICIES

B. Goals and Policies

1. Land Use

P. 4-2

Policy LU-2.3: Require outdoor components of new development to include design or construction components that minimize impacts to adjacent uses, for example green infrastructure that improves the local aesthetic and drainage.

2. Urban Design

P. 4-2

Policy UD-1.3: Encourage environmentally sensitive, green building construction and green infrastructure development to address water quality and drainage in the Plan Area.

6. Green Building and Sustainability

P. 4-7

Policy GRN-2.1: Provide incentives for buildings and construction methods that minimize energy use, reduce waste and limit stormwater runoff. Ensure compliance with regional stormwater management requirements, as found in the most recent edition of the Contra Costa Clean Water Program Stormwater C.3 Guidebook and guided by the City of San Pablo Green Infrastructure Plan.

Chapter 5: LAND USE

C. Open Space

1. Allowed Uses

P. 5-3

Non-recreational open space includes cemeteries, utility easements, flood control facilities—[such as green infrastructure facilities](#)—and related open areas for infrastructure facilities.

E. Infrastructure

P. 5-6

It is anticipated that these improvements will accommodate any additional runoff generated by development in the Plan Area. [However, all new development must comply with on-site stormwater management requirements, as described in the most recent edition of the Contra Costa Clean Water Program Stormwater C.3 Guidebook. For additional resources regarding on-site stormwater management, refer to the City of San Pablo Green Infrastructure Plan.](#)

Chapter 6: DEVELOPMENT STANDARDS

DEVELOPMENT STANDARDS: 23RD STREET SPECIFIC PLAN AREA

P. 6-20

<p>10. STORMWATER MANAGEMENT New development and significant redevelopment projects shall comply with the C.3 provisions of the city of San Pablo national pollutant discharge elimination system (NPDES) permit.</p>	<p>10.1 Stormwater Management <i>Add at end of section</i> Refer to the most recent edition of the Contra Costa Clean Water Program Stormwater C.3 Guidebook and the City of San Pablo Green Infrastructure Plan for additional details and resources.</p>
---	--

Appendix 4.6

City of San Pablo Bicycle & Pedestrian Master Plan

Chapter 6: Implementation Strategy

Maintenance Costs

P. 6-4

On-street bikeways should be maintained as part of the normal roadway maintenance program. Emphasis should be placed on keeping bicycle lanes and roadway shoulders clear of debris and keeping vegetation overgrowth from blocking visibility. Landscaping adjacent to bicycle and pedestrian facilities, such as green infrastructure facilities, should be regularly maintained in order to ensure proper facility drainage and positive aesthetics for cyclists and pedestrians. See the *City of San Pablo Green Infrastructure Plan* for resources and design guidelines.

Appendix A Review of Existing Plans and Policies

City Plans and Policies

23rd Street Specific Plan (2007)

Streetscape Design

Guiding Policies

P. A-26

4-G-11: Design the streetscape at the pedestrian scale with wide sidewalks, bike lanes, and amenities for pedestrians and cyclists such as bike racks, comfortable street furnishings, sufficient and attractive lighting, green infrastructure facilities, and street trees for shading and aesthetics.

Implementing Policies

P. A-26

4-I-33: Where possible, provide curb bulb-outs —which may incorporate green infrastructure facilities— at street corners and midblock crossings to calm traffic and heighten pedestrian visibility and comfort.

P. A-26

San Pablo Avenue

4-I-37: Create a clear identity for San Pablo Avenue by developing a comprehensive master streetscape plan that:

- Provides wide sidewalks, pedestrian-scaled lighting, shade, multi-benefit landscaping—like green infrastructure—planters, and benches.
- Provides landscaped medians—incorporating green infrastructure when possible—that alternate as turn lanes where the width of the street permits and provide pedestrian refuge at midblock crossings.

Appendix 4.7

City of San Pablo Climate Action Plan

After reviewing the City of San Pablo Climate Action Plan, it was determined that no updates were necessary to facilitate the implementation of the City's Green Infrastructure (GI) Plan. The City's GI Plan will inform the next Climate Action Plan update process, and language to facilitate the implementation of the City's GI Plan will be incorporated as relevant to identified strategies.

Appendix 4.8

Davis Park Master Plan

DESIGN CONSIDERATIONS

REGULATORY REQUIREMENTS

P. 20

- **RWQCB:** The Regional Water Quality Control Board's (RWQCB) mission is to preserve, enhance and restore the quality of California's water resources, which includes managing construction-related discharge of stormwater runoff. Adhering to the 2001 National Pollutant Discharge Elimination System (NPDES) requirements, project owners disturbing more than one-acre of land must obtain a General Permit for Discharges of Storm Water Associated with Construction Activity from the RWQCB prior to commencing construction activities. [Refer to the most recent edition of the Contra Costa Clean Water Program Stormwater C.3 Guidebook and the City of San Pablo Green Infrastructure Plan for additional details and resources.](#)
 - **C.3:** Effective August 15, 2006, provision C.3 of the revised 2003 NPDES permit requires that new and redevelopment projects that create or replace more than 10,000 square feet of impervious area must treat and/or detain stormwater runoff before it is discharged to creeks or storm drains. [Refer to the most recent edition of the Contra Costa Clean Water Program Stormwater C.3 Guidebook and the City of San Pablo Green Infrastructure Plan for additional details and resources.](#)
-

PARK MASTER PLAN

STORMWATER TREATMENT

P. 32

Several additional [green infrastructure](#) measures should also be considered to improve stormwater treatment and increase infiltration on the site.

P. 33

The above and other stormwater treatment and detention strategies should be employed as needed to meet the requirements of provision C.3 and manage pollutant discharge into the storm system. [Refer to the City of San Pablo Green Infrastructure Plan for additional details and resources.](#)

P. 33

OPERATIONS AND ~~MAINTENANCE~~MAINTENANCE

Appendix 4.9

City of San Pablo Storm Drain Master Plan

After reviewing the City of San Pablo Storm Drain Master Plan, it was determined that no updates were necessary to facilitate the implementation of the City's Green Infrastructure Plan. The Storm Drain Master Plan was used to inform the Green Infrastructure Plan regarding locations that are well suited for green infrastructure development to address flooding concerns.

Appendix 4.10

City of San Pablo Master Landscape Plan

The City of San Pablo Master Landscape Plan should incorporate references to the most recent edition of the Contra Costa Clean Water Program Stormwater C.3 Guidebook upon the next update of the Master Landscape Plan.

C3 BIOSWALE PLANTING GUIDE

The following [ing](#) is a general guide for the purpose of promoting an acceptable condition for the starting of a tree/shrub in a bio-retention facility (bioswale). Not all conditions will allow complete adherence, but it [will is](#) imperative [that](#) these guide-lines be followed as closely as possible. [Refer to the City of San Pablo Green Infrastructure Plan and the most recent edition of the Contra Costa Clean Water Program Stormwater C.3 Guidebook for additional details and resources regarding green infrastructure requirements and design. See the City's website for typical details and specifications for green infrastructure design and construction.](#)

Appendix 5

Contra Costa Clean Water Program Countywide Attainment Draft Memorandum

The following draft memorandum was produced by Geosyntec Consultants for the Contra Costa Clean Water Program (CCCWP) regarding the Reasonable Assurance Analysis (RAA) and Countywide Attainment Strategy.

DRAFT Memorandum

Date: May 1, 2019
To: Courtney Riddle and Lucile Paquette, Contra Costa Clean Water Program
Copy: Dan Cloak, Dan Cloak Environmental Consulting
From: Lisa Austin, Principal; Kelly Havens, Senior Engineer; and Austin Orr, Professional Engineer
Subject: Reasonable Assurance Analysis Countywide Attainment Strategy
Geosyntec Project Number: WW2407

1. BACKGROUND

1.1 Regulatory Requirements

Provisions C.11/12.c.ii.(2) of the Municipal Regional Permit (MRP) require Permittees to prepare Reasonable Assurance Analyses (RAA) for mercury and PCBs, respectively, that achieve the following objectives:

- a) Quantify the relationship between areal extent of green infrastructure (GI) implementation and load reductions, taking into consideration the scale of contamination of the treated area as well as the pollutant removal effectiveness of likely GI strategies;
- b) Estimate the amount and characteristics of land area that will be treated through GI by 2020, 2030, and 2040;
- c) Estimate the amount of load reductions that will result from GI implementation by 2020, 2030, and 2040; and
- d) Quantitatively demonstrate that PCBs reductions of at least 0.5 kg/yr and mercury reductions of 1.7 kg/yr will be realized within Contra Costa County by 2040 through implementation of GI projects.

1.2 Preliminary RAA Findings

Geosyntec Consultants (Geosyntec) is conducting RAA modeling for the Contra Costa Clean Water Program (CCCWP) as required by the MRP for submittal with the 2020 Annual Report. In

Fiscal Year 2018/19, Geosyntec conducted RAA modeling to assist the Permittees with GI planning¹.

As part of the preliminary RAA modeling conducted to assist Permittees with GI Planning, a “Countywide Attainment Scenario” was modeled which examined PCBs loads reduced by each project opportunity incorporated in the Contra Costa Watersheds Storm Water Resource Plan (CCW SWRP). This scenario focused on PCBs, consistent with the MRP’s emphasis on measures designed to reduce PCBs, while also evaluating opportunities for mercury reduction. CCCWP has drafted this Countywide Attainment Scenario memorandum to summarize these results and further the Permittees’ group discussion of how PCBs load reduction goals could be achieved on a countywide basis.

The results of this analysis demonstrate that the public GI retrofit opportunities that have the highest potential to reduce PCBs loads are concentrated within a small subset of Contra Costa Permittee area due to the pattern of pre-1980 industrial development within the region. (Note that GI implementation feasibility was not field-evaluated as part of development of the CCW SWRP, thus the feasibility of implementation for these potential project locations has yet to receive a site-specific evaluation.) Conversely, many Contra Costa Permittees have no or very few opportunities to contribute significantly toward achievement of countywide PCBs loading reductions via implementation of GI in their communities. Further, if load reductions are not achieved on a regional or countywide scale, and load reductions are allocated at a local level (by population), these Permittees would not be able to achieve those load reduction allocations due to a lack of opportunity.

Thus, given these findings, the Contra Costa Permittees, collectively, believe that a countywide strategy would be the best way to achieve the PCBs load reduction goals in a more efficient and effective manner. For the purposes of creating their local GI Plans, Contra Costa Permittees have prioritized their GI projects based on achieving other multiple benefits. These other benefits include controlling other stormwater pollutants, preserving and enhancing local stream hydrology, reducing localized flooding, helping communities adapt to climate change by increasing the resiliency of water supply, ancillary benefits that derive from adding landscaped areas within the urbanized environment, and mitigating the urban heat island effect.

This Countywide Attainment Strategy memorandum is referenced in the Permittees’ GI Plans for information only, and it does not represent, in any way, an intent to implement the strategy or any

¹ The results of this RAA modeling are preliminary. The CCCWP is in the process, in collaboration with BASMAA, of having the RAA modeling approach peer-reviewed. The RAA modeling results are subject to revision depending on the outcome of the peer review process.

of the projects listed herein. For projects for which potential implementation will be pursued, refer to each Permittee's individual GI Plan project list and prioritization.

This memorandum describes the approach used to model the Countywide Attainment scenario and presents the results of the analysis, in addition to potential next steps for Contra Costa County Permittees to implement projects collectively in an effort to meet the load reduction requirements included in the MRP.

2. COUNTYWIDE ATTAINMENT SCENARIO METHODOLOGY

2.1 Methodology Overview

To conduct the RAA Countywide Attainment Scenario modeling, calculations were performed, and inputs procured or developed, as follows:

1. Baseline modeling was conducted to estimate the baseline (i.e., 2003) load of PCBs and mercury for Contra Costa County.
2. Using the resulting baseline load, calculations were performed to establish the MRP-required load reduction through GI for 2040.
3. GIS inputs were obtained or finalized for existing redevelopment and public GI projects and future private (i.e., C.3.d) projects, as follows:
 - a. New development and redevelopment projects from 2003 – 2018 were compiled from existing AGOL² project data, and
 - b. UrbanSim³ redevelopment projections for 2020, 2030, and 2040 were confirmed or revised by the Permittees.
4. The GI load reduction model was applied to the existing development (through 2018) and predicted future private redevelopment (2019 – 2040) to assess the PCBs loads reduced by these projects.

² The CCCWP's stormwater GIS platform, created using ESRI's ArcGIS Online (AGOL) for Organizations environment. The *C.3 Project Tracking and Load Reduction Accounting Tool* is used for tracking GI projects implemented under C.3 within the CCCWP AGOL system.

³ A model developed by the Urban Analytics Lab at the University of California under contract to the Bay Area MTC. The Bay Area's application of UrbanSim was developed specifically to support the development of Plan Bay Area, the Bay Area's Sustainable Communities planning effort. MTC forecasts growth in households and jobs and uses the UrbanSim model to identify development and redevelopment sites to satisfy future demand. This model was applied to Contra Costa County to project new and redevelopment for the RAA model timeframes.

5. A countywide PCBs public retrofit load reduction goal was then calculated by subtracting the load reduced by the existing and projected future private redevelopment load from the countywide goal established in Step 2.
6. The GI load reduction model was applied to the CCW SWRP project opportunities list to assess PCBs loads reduced by each project opportunity.

Additional detail is provided in the following sections.

2.2 Baseline Modeling

The countywide baseline model was developed as described in the *Quantitative Relationship Between GI Implementation and PCBs/Mercury Load Reductions* report (CCCWP, 2018).

A GIS analysis was conducted to apportion the modeled baseline load to areas above and below dams, within the San Francisco Bay Regional Water Quality Control Board (Region 2) versus Central Valley Regional Water Quality Control Board (Region 5), and other NPDES permittee area (i.e., parcels associated with individual NPDES permits, Industrial General Permit facilities, and Phase 2 permittee areas). The TMDLs were calculated for all urban areas draining to San Francisco Bay (thus only Region 2) and for areas below dams (as it is assumed that the dams capture sediments and prevent them from carrying pollutants to the Bay). Additionally, the parcel area associated with other NPDES permits was removed to estimate the baseline load attributable to the MS4 permit area only. Thus, the baseline countywide PCBs load below dams, within Region 2, was used to establish the PCBs load reduction goal for the MS4 permit area.

The results of the baseline modeling are presented in Table 1 below. The baseline countywide load used to establish the PCBs load reduction goal for the Permittee area is shown in bold.

Table 1: RAA Baseline PCBs Load Allocation Table (grams)

RWQCB Region	Above/Below Dam	Permit	Baseline Load PCBs (grams)
Region 2	Below Dam	MRP	1,581.0
		NPDES	776.7
		Phase 2	13.7
	Above Dam	MRP	41.4
		NPDES	0.1
		Phase 2	0
Region 5	Below Dam	MRP	133.0
		NPDES	14.8
		Phase 2	0.6
	Above Dam	MRP	1.0
		NPDES	0
		Phase 2	0
		Total	2,562.2

2.3 Load Reduction Goal Calculations

Calculations were conducted to develop the load reduction goals for 2020, 2030, and 2040, as described in the *Bay Area RAA Guidance Document* (BASMAA, 2017). The calculation methodology is summarized below.

TMDL Attainment Load Reduction (2030)

$$LR_{\text{goal}} = \text{Baseline} - \text{WLA (kg/yr)}$$

Where:

$$LR_{\text{goal}} = \text{The load reduction goal (kg/yr)}$$

$$\text{Baseline} = \text{The baseline pollutant loading as calculated through the RAA}$$

$$\text{WLA} = \text{The population-based wasteload allocation}$$

The TMDL population-based wasteload allocations for Contra Costa County is provided Table 2.

Table 2: TMDL Population-Based Wasteload Allocations for Contra Costa County

Stormwater Improvement Goal	Mercury (kg/yr)	PCBs (kg/yr)
Contra Costa County	11	0.3

Per the equation above, the revised load reduction goal for Contra Costa County is 1.281 kg/yr.

MRP Load Reduction through GI by 2040

The PCBs load reduction required to be achieved through GI by 2040 (i.e., 3 kg/yr MRP area-wide or 0.5 kg/yr for Contra Costa County) should be adjusted to reflect the RAA-calculated baseline load (i.e., 1.581 kg/yr). The MRP load reduction requirement for GI for all permittees (3 kg/yr) represents 20.8% of the overall required TMDL load reduction. Therefore, the adjusted countywide load reduction through GI can be calculated as:

$$LR_{\text{MRP, GI, 2040}} = LR_{\text{goal}} * 20.8\%$$

The adjusted countywide PCBs load reduction goal through GI by 2040 was calculated to be 0.266 kg/yr.

2.4 Finalize GIS Inputs for Existing and Future Redevelopment

New development and redevelopment projects completed between 2003 – 2018 were compiled from the existing AGOL project data entered by the Permittees into their respective AGOL C.3 Tracking Tool databases.

UrbanSim redevelopment projections for 2020, 2030, and 2040, as confirmed or revised by the Permittees, were used to model future C.3 projects. The UrbanSim projections for 2020 only included parcels that were predicted to have been redeveloped from 2019 – 2020.

2.5 Develop Countywide Attainment Scenario

The 2040 PCBs load reduction goal for the Countywide Attainment scenario is calculated as the countywide load reduction goal (0.266 kg/yr) minus the load reduced by the current, projected private, and planned CIP/public retrofit GI projects through 2040. Table 3 indicates the remaining load reduction target for 2040 is approximately 56 grams per year.

Table 3: Load Reduction Goal for Contra Costa Countywide Attainment Scenario

PCBs 2040 Load Reduction Goal (kg/yr)	PCBs Load Reduction Achieved by Public and Private GI 2003 -2020 (kg/yr)	Projected PCBs Load Reduction Achieved by Public and Private GI 2003 - 2030 (kg/yr)	Projected PCBs Load Reduction Achieved by Public and Private GI 2003 - 2040 (kg/yr)	Load Reduction Target for Public GI by 2040 PCBs (kg/yr)
0.266	0.118	0.133	0.211	0.056

The baseline model produces a PCBs and mercury “load production” GIS layer that estimates the load corresponding with each parcel and ROW segment within the county (note that individual parcel loadings are representative of the ‘average tendency’ of loading for similar parcels). This “load production” layer was combined in GIS with the public retrofit project opportunities (parcels, regional project drainage areas, and ROW segments) listed in the CCW SWRP to estimate the potential load reduced by each project opportunity, assuming standard bioretention treatment.

3. COUNTYWIDE ATTAINMENT SCENARIO RESULTS

The modeled load reduction associated with each project opportunity from the CCW SWRP that is not included as a planned GI project in a Permittee’s GI Plan are listed in the table included in Attachment 1. This table only includes those projects achieving at least 0.01 grams of PCBs load reduction per year, based on the model output. For each project opportunity, the total area and impervious area treated⁴, baseline PCBs yield, and PCBs loads reduced are presented.

⁴ The SWRP did not include delineation of actual off-site tributary drainage areas for the regional project opportunities. Therefore, the pollutant load reduction for these projects was calculated for this Countywide Attainment scenario using the project opportunity parcel area only and the estimated load reduction is less than it would be for the full tributary area.

To achieve the load reduction goal through GI by 2040 of 56 grams per year would require treating, at a minimum, 350 acres of the highest-load-producing project area in 170 projects across the county (pending feasibility evaluations, and requiring implementation primarily focused in a few Permittee jurisdictions) and would require much more area and projects using less-load-reducing projects.

4. COUNTYWIDE ATTAINMENT STRATEGY

To allow for the most efficient implementation of GI to achieve the MRP-stipulated load reduction goal, some Contra Costa Permittees have been actively investigating ways that communities without opportunities to reduce PCBs via GI might potentially fund GI projects in communities that do have such opportunities. This has included consideration of funding streams derived from new developments (for example, in-lieu fees charged when only a portion of on-site C.3 compliance is achieved). However, the legal and administrative requirements are complex, would require considerable effort to resolve, and may not ultimately be resolvable.

The Permittees will continue to consider how to balance the goals of efficient PCBs load reduction via GI (which has been demonstrated to be highly location-specific, and not obtainable by all Permittees) versus the other benefits of GI. This consideration will include participation, with Water Board staff, in ongoing discussions of GI and PCBs load reduction requirements that may be included in MRP 3.0. The Permittees, collectively, will also consider the outcomes of these discussions when preparing the “reasonable assurance analysis to demonstrate quantitatively that PCBs reductions of 3 kg/year will be realized by 2040 through implementation of green infrastructure projects,” which is due in September 2020 as specified in Provision C.12.iii.(3).

Because resources are limited, there will ultimately be trade-offs between the goals of PCBs load reduction via GI versus the other benefits of GI. In the majority of Contra Costa communities, which have few or no locations where PCB loads could be efficiently reduced via GI, the pursuit of a potential Countywide Attainment Strategy would require trade-offs, including minimizing the opportunities to build community engagement and local support for GI. A similar trade-off exists within the communities that do have locations where PCBs loads could be efficiently reduced via GI, as the highest-ranked load-reduction locations rarely coincide with locations where other benefits to the community would be maximized.

5. REFERENCES

Bay Area Stormwater Management Agencies Association (BASMAA), 2017. Bay Area Reasonable Assurance Analysis Guidance Document. Prepared by Geosyntec Consultants and Paradigm Environmental for BASMAA. June 30, 2017.

Contra Costa Clean Water Program (CCCWP), 2018. Quantitative Relationship Between Green Infrastructure Implementation and PCBs/Mercury Load Reductions. Prepared by Geosyntec Consultants for the CCCWP. August 22, 2018.

* * * * *

Attachment 1

Countywide Attainment Scenario Load Reduction Results Table

DRAFT Contra Costa Countywide Attainment Strategy
 Attachment 1: Countywide Attainment Scenario Model Results

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Clayton	2	ROW 4341	ROW Opportunity	26.22	12.30	47%	0.001	0.072
Clayton	2	Parcel 283666	Parcel-Based Opportunity	6.77	2.04	30%	0.002	0.034
Clayton	2	ROW 3872	ROW Opportunity	2.82	1.25	44%	0.003	0.026
Clayton	2	ROW 11618	ROW Opportunity	1.61	0.77	48%	0.004	0.022
Clayton	2	ROW 5783	ROW Opportunity	1.29	0.56	43%	0.005	0.021
Clayton	2	ROW 12947	ROW Opportunity	1.05	0.43	41%	0.004	0.017
Clayton	2	ROW 11934	ROW Opportunity	10.54	5.01	48%	0.001	0.015
Clayton	2	ROW 13056	ROW Opportunity	8.81	3.84	44%	0.001	0.014
Clayton	2	ROW 13758	ROW Opportunity	5.93	1.49	25%	0.001	0.012
Clayton	2	ROW 19397	ROW Opportunity	5.73	2.58	45%	0.001	0.010
Concord	2	Parcel 376303	Parcel-Based Opportunity	494.22	25.30	5%	0.004	8.822
Concord	2	Parcel 376306	Parcel-Based Opportunity	208.83	10.65	5%	0.004	3.719
Concord	2	Parcel 177920	Parcel-Based Opportunity	18.60	14.13	76%	0.041	3.276
Concord	2	Parcel 324333	Parcel-Based Opportunity	163.95	8.57	5%	0.003	1.752
Concord	2	ROW 16900	ROW Opportunity	20.40	9.18	45%	0.016	1.300
Concord	2	ROW 21618	ROW Opportunity	37.07	24.40	66%	0.008	1.039
Concord	2	Parcel 184135	Parcel-Based Opportunity	5.35	3.96	74%	0.041	0.920
Concord	2	ROW 21616	ROW Opportunity	27.30	18.24	67%	0.008	0.799
Concord	2	ROW 1201	ROW Opportunity	20.53	13.24	64%	0.010	0.746
Concord	2	Parcel 192657	Parcel-Based Opportunity	5.89	3.00	51%	0.029	0.722
Concord	2	Parcel 244879	Parcel-Based Opportunity	66.94	3.41	5%	0.003	0.722
Concord	2	ROW 5707	ROW Opportunity	18.71	11.09	59%	0.009	0.650
Concord	2	ROW 17557	ROW Opportunity	5.80	3.71	64%	0.023	0.558
Concord	2	ROW 1712	ROW Opportunity	12.97	8.30	64%	0.010	0.500
Concord	2	ROW 7508	ROW Opportunity	5.32	3.73	70%	0.021	0.454
Concord	2	ROW 4583	ROW Opportunity	4.46	3.26	73%	0.024	0.437
Concord	2	ROW 20084	ROW Opportunity	2.97	2.10	71%	0.027	0.328
Concord	2	ROW 5817	ROW Opportunity	3.19	2.16	68%	0.023	0.295
Concord	2	Parcel 338478	Parcel-Based Opportunity	38.88	1.98	5%	0.002	0.292
Concord	2	ROW 19024	ROW Opportunity	2.48	1.34	54%	0.028	0.291
Concord	2	Parcel 191035	Regional Opportunity	2.32	1.16	50%	0.028	0.278
Concord	2	ROW 8864	ROW Opportunity	1.38	0.97	70%	0.037	0.214
Concord	2	ROW 5806	ROW Opportunity	7.28	4.91	67%	0.008	0.213
Concord	2	ROW 15327	ROW Opportunity	31.55	17.19	54%	0.002	0.211
Concord	2	ROW 4439	ROW Opportunity	1.97	1.40	71%	0.025	0.205
Concord	2	ROW 7624	ROW Opportunity	6.85	4.66	68%	0.008	0.204
Concord	2	ROW 9455	ROW Opportunity	4.02	2.74	68%	0.013	0.190
Concord	2	ROW 3954	ROW Opportunity	1.94	1.42	73%	0.024	0.185
Concord	2	ROW 21113	ROW Opportunity	48.19	24.40	51%	0.002	0.182
Concord	2	Parcel 186608	Regional Opportunity	1.06	0.73	69%	0.038	0.171
Concord	2	ROW 8938	ROW Opportunity	1.26	1.03	82%	0.032	0.169
Concord	2	Parcel 229694	Parcel-Based Opportunity	6.43	3.65	57%	0.007	0.166
Concord	2	Parcel 235175	Parcel-Based Opportunity	6.15	3.59	58%	0.007	0.160
Concord	2	ROW 2934	ROW Opportunity	5.33	3.63	68%	0.008	0.159
Concord	2	ROW 12379	ROW Opportunity	5.60	3.63	65%	0.008	0.157
Concord	2	ROW 7623	ROW Opportunity	1.90	1.39	73%	0.020	0.155
Concord	2	Parcel 205735	Parcel-Based Opportunity	4.42	3.53	80%	0.010	0.154
Concord	2	Parcel 198247	Parcel-Based Opportunity	5.13	3.94	77%	0.009	0.153
Concord	2	ROW 4349	ROW Opportunity	1.39	1.03	74%	0.025	0.141
Concord	2	ROW 11894	ROW Opportunity	16.04	9.24	58%	0.003	0.139
Concord	2	ROW 10734	ROW Opportunity	2.73	1.85	68%	0.013	0.136
Concord	2	ROW 19586	ROW Opportunity	32.40	16.40	51%	0.002	0.136
Concord	2	ROW 11140	ROW Opportunity	0.69	0.57	83%	0.045	0.132
Concord	2	ROW 4621	ROW Opportunity	21.49	10.65	50%	0.002	0.130
Concord	2	Parcel 240615	Parcel-Based Opportunity	14.13	8.79	62%	0.003	0.122
Concord	2	ROW 16782	ROW Opportunity	10.53	5.42	51%	0.004	0.122
Concord	2	Parcel 242414	Parcel-Based Opportunity	4.67	2.72	58%	0.007	0.121
Concord	2	ROW 10221	ROW Opportunity	14.29	7.61	53%	0.003	0.118
Concord	2	ROW 14417	ROW Opportunity	7.27	4.56	63%	0.005	0.113
Concord	2	ROW 20964	ROW Opportunity	9.96	4.91	49%	0.004	0.112
Concord	2	ROW 17558	ROW Opportunity	0.91	0.61	67%	0.029	0.109
Concord	2	Parcel 232269	Parcel-Based Opportunity	3.76	2.45	65%	0.008	0.108
Concord	2	ROW 14842	ROW Opportunity	15.90	7.68	48%	0.002	0.108
Concord	2	ROW 4342	ROW Opportunity	43.01	22.81	53%	0.001	0.106
Concord	2	ROW 545	ROW Opportunity	12.27	5.54	45%	0.003	0.106
Concord	2	ROW 1200	ROW Opportunity	9.75	5.67	58%	0.004	0.105
Concord	2	Parcel 203140	Parcel-Based Opportunity	3.46	2.29	66%	0.008	0.100
Concord	2	ROW 18045	ROW Opportunity	13.09	7.25	55%	0.003	0.099
Concord	2	ROW 14001	ROW Opportunity	12.47	6.86	55%	0.003	0.094
Concord	2	ROW 21494	ROW Opportunity	29.51	15.04	51%	0.001	0.094
Concord	2	ROW 8159	ROW Opportunity	9.23	5.02	54%	0.003	0.094
Concord	2	ROW 12852	ROW Opportunity	22.99	12.35	54%	0.002	0.092
Concord	2	ROW 12856	ROW Opportunity	2.03	1.22	60%	0.011	0.088
Concord	2	ROW 15146	ROW Opportunity	5.50	3.01	55%	0.005	0.084
Concord	2	ROW 4608	ROW Opportunity	4.23	2.67	63%	0.006	0.084
Concord	2	ROW 7622	ROW Opportunity	1.50	1.10	73%	0.015	0.084
Concord	2	ROW 1470	ROW Opportunity	1.70	1.14	67%	0.013	0.081
Concord	2	Parcel 247239	Regional Opportunity	2.44	1.71	70%	0.009	0.077
Concord	2	ROW 4619	ROW Opportunity	13.13	6.40	49%	0.002	0.076
Concord	2	ROW 8157	ROW Opportunity	13.11	7.08	54%	0.002	0.076
Concord	2	ROW 6819	ROW Opportunity	1.92	1.26	66%	0.011	0.075
Concord	2	Parcel 144216	Parcel-Based Opportunity	40.90	18.50	45%	0.001	0.074
Concord	2	ROW 4618	ROW Opportunity	18.48	9.41	51%	0.002	0.074
Concord	2	Parcel 231090	Parcel-Based Opportunity	3.71	1.58	43%	0.006	0.073
Concord	2	ROW 13705	ROW Opportunity	11.05	5.52	50%	0.002	0.071
Concord	2	ROW 1577	ROW Opportunity	2.98	1.51	51%	0.007	0.071
Concord	2	Parcel 192425	Parcel-Based Opportunity	0.48	0.28	58%	0.033	0.067
Concord	2	Parcel 291299	Parcel-Based Opportunity	40.01	16.11	40%	0.001	0.066
Concord	2	ROW 1474	ROW Opportunity	7.02	3.51	50%	0.003	0.066
Concord	2	ROW 20692	ROW Opportunity	4.78	2.17	45%	0.004	0.064
Concord	2	ROW 5673	ROW Opportunity	11.65	5.87	50%	0.002	0.063
Concord	2	ROW 4514	ROW Opportunity	4.22	2.32	55%	0.005	0.062
Concord	2	ROW 12217	ROW Opportunity	9.08	4.78	53%	0.002	0.058
Concord	2	ROW 21132	ROW Opportunity	2.04	1.36	67%	0.008	0.058

DRAFT Contra Costa Countywide Attainment Strategy
 Attachment 1: Countywide Attainment Scenario Model Results

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Concord	2	Parcel 214703	Parcel-Based Opportunity	3.81	1.22	32%	0.004	0.057
Concord	2	ROW 11820	ROW Opportunity	2.06	1.02	50%	0.008	0.057
Concord	2	ROW 6785	ROW Opportunity	2.52	1.66	66%	0.007	0.056
Concord	2	Parcel 190759	Regional Opportunity	1.26	1.11	88%	0.012	0.055
Concord	2	Parcel 251412	Parcel-Based Opportunity	3.12	1.06	34%	0.005	0.054
Concord	2	Parcel 376302	Parcel-Based Opportunity	42.06	12.85	31%	0.001	0.054
Concord	2	ROW 4137	ROW Opportunity	7.10	3.61	51%	0.003	0.053
Concord	2	ROW 13078	ROW Opportunity	4.96	2.60	52%	0.003	0.052
Concord	2	ROW 9759	ROW Opportunity	1.82	1.20	66%	0.008	0.051
Concord	2	ROW 13704	ROW Opportunity	9.77	5.13	53%	0.002	0.050
Concord	2	ROW 5392	ROW Opportunity	0.92	0.65	71%	0.014	0.050
Concord	2	ROW 4966	ROW Opportunity	6.49	2.88	44%	0.003	0.049
Concord	2	Parcel 290823	Regional Opportunity	1.29	1.10	85%	0.010	0.048
Concord	2	planned 203	Planned Creek/Marsh Restoration	131.53	18.22	14%	0.000	0.048
Concord	2	ROW 20635	ROW Opportunity	5.04	2.60	52%	0.003	0.048
Concord	2	Parcel 214282	Parcel-Based Opportunity	30.73	11.51	37%	0.001	0.047
Concord	2	ROW 7731	ROW Opportunity	2.11	1.48	70%	0.007	0.047
Concord	2	ROW 8996	ROW Opportunity	2.02	1.16	57%	0.007	0.046
Concord	2	Parcel 233711	Regional Opportunity	1.41	1.00	71%	0.009	0.044
Concord	2	ROW 6856	ROW Opportunity	15.51	7.43	48%	0.001	0.044
Concord	2	ROW 12679	ROW Opportunity	7.36	3.68	50%	0.002	0.043
Concord	2	ROW 4968	ROW Opportunity	15.10	7.32	48%	0.001	0.043
Concord	2	ROW 13077	ROW Opportunity	6.74	3.68	55%	0.002	0.042
Concord	2	ROW 14213	ROW Opportunity	3.96	2.09	53%	0.004	0.042
Concord	2	ROW 2389	ROW Opportunity	7.58	3.81	50%	0.002	0.041
Concord	2	ROW 9299	ROW Opportunity	2.01	1.31	65%	0.006	0.040
Concord	2	ROW 1445	ROW Opportunity	15.65	7.47	48%	0.001	0.039
Concord	2	ROW 19589	ROW Opportunity	1.50	0.88	59%	0.007	0.039
Concord	2	ROW 20799	ROW Opportunity	9.69	4.87	50%	0.002	0.039
Concord	2	ROW 8514	ROW Opportunity	2.14	1.69	79%	0.006	0.039
Concord	2	ROW 14399	ROW Opportunity	1.15	0.88	77%	0.009	0.038
Concord	2	ROW 8633	ROW Opportunity	2.16	1.19	55%	0.005	0.038
Concord	2	Parcel 206674	Regional Opportunity	1.53	0.90	59%	0.007	0.037
Concord	2	ROW 1496	ROW Opportunity	9.68	4.76	49%	0.002	0.037
Concord	2	ROW 11474	ROW Opportunity	13.96	6.70	48%	0.001	0.036
Concord	2	ROW 2707	ROW Opportunity	3.07	1.72	56%	0.004	0.036
Concord	2	ROW 19429	ROW Opportunity	2.86	1.57	55%	0.004	0.035
Concord	2	ROW 7830	ROW Opportunity	5.91	2.96	50%	0.002	0.035
Concord	2	ROW 8405	ROW Opportunity	0.88	0.57	65%	0.011	0.035
Concord	2	ROW 14485	ROW Opportunity	3.31	1.63	49%	0.003	0.034
Concord	2	ROW 15145	ROW Opportunity	3.60	1.90	53%	0.003	0.034
Concord	2	Parcel 143398	Parcel-Based Opportunity	17.79	8.05	45%	0.001	0.032
Concord	2	ROW 10594	ROW Opportunity	12.05	5.90	49%	0.001	0.032
Concord	2	ROW 14712	ROW Opportunity	2.42	1.43	59%	0.004	0.032
Concord	2	ROW 19358	ROW Opportunity	10.05	5.04	50%	0.001	0.032
Concord	2	ROW 19557	ROW Opportunity	0.29	0.17	59%	0.026	0.032
Concord	2	ROW 3955	ROW Opportunity	3.56	1.78	50%	0.003	0.032
Concord	2	planned 422	Planned Unlined Bioretention	2.14	1.20	56%	0.004	0.030
Concord	2	ROW 12567	ROW Opportunity	14.87	7.28	49%	0.001	0.030
Concord	2	ROW 13167	ROW Opportunity	11.13	5.31	48%	0.001	0.030
Concord	2	ROW 18933	ROW Opportunity	1.85	1.04	56%	0.005	0.030
Concord	2	ROW 686	ROW Opportunity	3.34	1.70	51%	0.003	0.030
Concord	2	ROW 7347	ROW Opportunity	1.22	0.93	76%	0.007	0.030
Concord	2	Parcel 189589	Regional Opportunity	1.31	0.64	49%	0.006	0.029
Concord	2	ROW 12422	ROW Opportunity	2.70	1.38	51%	0.004	0.029
Concord	2	ROW 9241	ROW Opportunity	1.67	0.80	48%	0.005	0.029
Concord	2	Parcel 215855	Regional Opportunity	1.37	0.61	45%	0.006	0.028
Concord	2	ROW 13981	ROW Opportunity	3.75	1.83	49%	0.002	0.028
Concord	2	ROW 330	ROW Opportunity	7.40	3.68	50%	0.002	0.028
Concord	2	ROW 4033	ROW Opportunity	3.71	1.78	48%	0.003	0.028
Concord	2	Parcel 231516	Regional Opportunity	1.44	0.59	41%	0.005	0.027
Concord	2	ROW 14000	ROW Opportunity	1.10	0.63	57%	0.007	0.027
Concord	2	ROW 4609	ROW Opportunity	1.62	1.09	67%	0.005	0.027
Concord	2	ROW 6347	ROW Opportunity	1.82	0.92	51%	0.004	0.027
Concord	2	ROW 6349	ROW Opportunity	7.25	3.95	54%	0.002	0.027
Concord	2	ROW 9635	ROW Opportunity	3.66	1.68	46%	0.003	0.027
Concord	2	ROW 11942	ROW Opportunity	2.12	1.16	55%	0.004	0.026
Concord	2	ROW 14482	ROW Opportunity	2.43	1.00	41%	0.003	0.026
Concord	2	ROW 15994	ROW Opportunity	7.13	3.36	47%	0.001	0.026
Concord	2	ROW 1867	ROW Opportunity	3.65	1.92	53%	0.003	0.026
Concord	2	ROW 2690	ROW Opportunity	4.41	2.49	56%	0.002	0.026
Concord	2	ROW 4136	ROW Opportunity	3.43	1.60	47%	0.003	0.026
Concord	2	Parcel 208247	Regional Opportunity	0.79	0.57	72%	0.009	0.025
Concord	2	ROW 1535	ROW Opportunity	3.62	2.07	57%	0.002	0.025
Concord	2	ROW 15747	ROW Opportunity	1.16	0.75	65%	0.006	0.025
Concord	2	ROW 16947	ROW Opportunity	13.34	6.33	47%	0.001	0.025
Concord	2	ROW 663	ROW Opportunity	3.78	1.89	50%	0.002	0.025
Concord	2	Parcel 228202	Regional Opportunity	0.75	0.54	72%	0.009	0.024
Concord	2	ROW 18838	ROW Opportunity	1.39	0.79	57%	0.005	0.024
Concord	2	ROW 18934	ROW Opportunity	1.22	0.76	62%	0.006	0.024
Concord	2	ROW 20559	ROW Opportunity	10.08	4.59	46%	0.001	0.024
Concord	2	ROW 20591	ROW Opportunity	5.62	3.00	53%	0.002	0.024
Concord	2	ROW 21160	ROW Opportunity	12.09	5.95	49%	0.001	0.024
Concord	2	ROW 7875	ROW Opportunity	8.98	4.45	50%	0.001	0.024
Concord	2	ROW 9740	ROW Opportunity	9.01	4.21	47%	0.001	0.024
Concord	2	Parcel 214996	Parcel-Based Opportunity	8.68	5.91	68%	0.001	0.023
Concord	2	ROW 12594	ROW Opportunity	1.04	0.65	63%	0.007	0.023
Concord	2	ROW 12595	ROW Opportunity	1.05	0.64	61%	0.006	0.023
Concord	2	ROW 1269	ROW Opportunity	3.07	1.61	52%	0.003	0.023
Concord	2	ROW 15782	ROW Opportunity	1.11	0.70	63%	0.006	0.023
Concord	2	ROW 19980	ROW Opportunity	1.29	0.65	50%	0.005	0.023
Concord	2	ROW 20290	ROW Opportunity	2.46	1.49	61%	0.003	0.023
Concord	2	ROW 20752	ROW Opportunity	2.19	1.61	74%	0.004	0.023
Concord	2	ROW 7581	ROW Opportunity	1.16	0.71	61%	0.006	0.023

DRAFT Contra Costa Countywide Attainment Strategy
 Attachment 1: Countywide Attainment Scenario Model Results

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Concord	2	ROW 8121	ROW Opportunity	8.21	3.76	46%	0.001	0.023
Concord	2	Parcel 140573	Parcel-Based Opportunity	9.15	5.56	61%	0.001	0.022
Concord	2	Parcel 196927	Regional Opportunity	0.93	0.65	70%	0.007	0.022
Concord	2	Parcel 231203	Parcel-Based Opportunity	14.55	5.28	36%	0.001	0.022
Concord	2	planned 421	Planned Unlined Bioretention	2.87	1.58	55%	0.003	0.022
Concord	2	ROW 1178	ROW Opportunity	4.47	2.20	49%	0.002	0.022
Concord	2	ROW 7635	ROW Opportunity	2.74	1.32	48%	0.003	0.022
Concord	2	Parcel 148570	Parcel-Based Opportunity	10.29	5.19	50%	0.001	0.021
Concord	2	ROW 1480	ROW Opportunity	1.83	1.02	56%	0.004	0.021
Concord	2	ROW 16608	ROW Opportunity	10.91	5.23	48%	0.001	0.021
Concord	2	ROW 231	ROW Opportunity	1.44	0.80	56%	0.004	0.021
Concord	2	ROW 6904	ROW Opportunity	8.33	3.99	48%	0.001	0.021
Concord	2	Parcel 282436	Parcel-Based Opportunity	11.78	4.88	41%	0.001	0.020
Concord	2	Parcel 298561	Parcel-Based Opportunity	38.95	5.79	15%	0.000	0.020
Concord	2	ROW 2388	ROW Opportunity	5.15	2.44	47%	0.002	0.020
Concord	2	ROW 272	ROW Opportunity	3.17	1.68	53%	0.002	0.020
Concord	2	ROW 5431	ROW Opportunity	11.51	5.65	49%	0.001	0.020
Concord	2	ROW 6270	ROW Opportunity	10.98	5.38	49%	0.001	0.020
Concord	2	ROW 6428	ROW Opportunity	3.11	1.75	56%	0.002	0.020
Concord	2	ROW 7665	ROW Opportunity	4.31	2.22	52%	0.002	0.020
Concord	2	Parcel 220285	Parcel-Based Opportunity	9.96	4.72	47%	0.001	0.019
Concord	2	ROW 12020	ROW Opportunity	4.76	2.29	48%	0.002	0.019
Concord	2	ROW 12340	ROW Opportunity	8.43	4.07	48%	0.001	0.019
Concord	2	ROW 16428	ROW Opportunity	8.29	3.98	48%	0.001	0.019
Concord	2	ROW 3778	ROW Opportunity	1.34	0.88	66%	0.005	0.019
Concord	2	ROW 472	ROW Opportunity	0.82	0.45	55%	0.007	0.019
Concord	2	Parcel 186686	Regional Opportunity	0.75	0.45	60%	0.007	0.018
Concord	2	Parcel 202503	Parcel-Based Opportunity	5.94	4.60	77%	0.001	0.018
Concord	2	Parcel 209956	Regional Opportunity	0.66	0.42	64%	0.008	0.018
Concord	2	ROW 16285	ROW Opportunity	4.76	2.23	47%	0.002	0.018
Concord	2	ROW 17122	ROW Opportunity	7.41	3.30	45%	0.001	0.018
Concord	2	ROW 4335	ROW Opportunity	9.00	4.52	50%	0.001	0.018
Concord	2	ROW 4353	ROW Opportunity	9.22	4.47	48%	0.001	0.018
Concord	2	ROW 4354	ROW Opportunity	4.55	2.23	49%	0.002	0.018
Concord	2	ROW 6786	ROW Opportunity	0.62	0.41	66%	0.008	0.018
Concord	2	Parcel 166238	Parcel-Based Opportunity	7.81	3.85	49%	0.001	0.017
Concord	2	Parcel 167541	Regional Opportunity	0.73	0.37	51%	0.006	0.017
Concord	2	Parcel 204041	Parcel-Based Opportunity	0.49	0.42	86%	0.010	0.017
Concord	2	Parcel 238207	Parcel-Based Opportunity	9.03	4.20	47%	0.001	0.017
Concord	2	Parcel 288737	Regional Opportunity	0.93	0.40	43%	0.005	0.017
Concord	2	ROW 13364	ROW Opportunity	9.62	4.24	44%	0.001	0.017
Concord	2	ROW 13763	ROW Opportunity	1.83	1.14	62%	0.003	0.017
Concord	2	ROW 14442	ROW Opportunity	1.54	0.81	53%	0.004	0.017
Concord	2	ROW 17045	ROW Opportunity	8.58	4.24	49%	0.001	0.017
Concord	2	ROW 18989	ROW Opportunity	1.44	0.71	49%	0.004	0.017
Concord	2	ROW 4337	ROW Opportunity	8.58	4.26	50%	0.001	0.017
Concord	2	ROW 5444	ROW Opportunity	7.67	3.18	41%	0.001	0.017
Concord	2	ROW 5808	ROW Opportunity	1.41	0.85	60%	0.004	0.017
Concord	2	ROW 7088	ROW Opportunity	5.53	2.70	49%	0.001	0.017
Concord	2	ROW 8374	ROW Opportunity	6.24	2.74	44%	0.001	0.017
Concord	2	Parcel 189945	Parcel-Based Opportunity	9.41	4.05	43%	0.001	0.016
Concord	2	Parcel 209201	Regional Opportunity	0.96	0.36	38%	0.005	0.016
Concord	2	Parcel 231117	Parcel-Based Opportunity	9.30	3.93	42%	0.001	0.016
Concord	2	ROW 11295	ROW Opportunity	1.02	0.63	62%	0.005	0.016
Concord	2	ROW 13815	ROW Opportunity	4.98	2.54	51%	0.001	0.016
Concord	2	ROW 14488	ROW Opportunity	2.78	1.40	50%	0.002	0.016
Concord	2	ROW 16235	ROW Opportunity	4.82	2.25	47%	0.001	0.016
Concord	2	ROW 18426	ROW Opportunity	5.82	3.22	55%	0.001	0.016
Concord	2	ROW 19300	ROW Opportunity	6.58	3.21	49%	0.001	0.016
Concord	2	ROW 3418	ROW Opportunity	8.49	3.91	46%	0.001	0.016
Concord	2	Parcel 149994	Parcel-Based Opportunity	10.00	3.69	37%	0.001	0.015
Concord	2	Parcel 193540	Parcel-Based Opportunity	7.39	3.59	49%	0.001	0.015
Concord	2	Parcel 200676	Parcel-Based Opportunity	5.03	3.86	77%	0.001	0.015
Concord	2	Parcel 210557	Regional Opportunity	0.59	0.34	58%	0.007	0.015
Concord	2	Parcel 211022	Parcel-Based Opportunity	7.84	3.86	49%	0.001	0.015
Concord	2	Parcel 228429	Parcel-Based Opportunity	8.15	3.64	45%	0.001	0.015
Concord	2	ROW 10926	ROW Opportunity	8.71	4.01	46%	0.001	0.015
Concord	2	ROW 12001	ROW Opportunity	6.33	4.11	65%	0.001	0.015
Concord	2	ROW 12464	ROW Opportunity	6.99	3.40	49%	0.001	0.015
Concord	2	ROW 14169	ROW Opportunity	7.12	3.63	51%	0.001	0.015
Concord	2	ROW 14214	ROW Opportunity	1.27	0.73	57%	0.004	0.015
Concord	2	ROW 14589	ROW Opportunity	8.26	3.76	46%	0.001	0.015
Concord	2	ROW 15996	ROW Opportunity	1.51	0.82	54%	0.003	0.015
Concord	2	ROW 16812	ROW Opportunity	3.85	1.82	47%	0.002	0.015
Concord	2	ROW 16832	ROW Opportunity	4.69	2.13	45%	0.001	0.015
Concord	2	ROW 19307	ROW Opportunity	5.38	3.83	71%	0.001	0.015
Concord	2	ROW 21441	ROW Opportunity	7.99	3.70	46%	0.001	0.015
Concord	2	ROW 4958	ROW Opportunity	5.71	2.74	48%	0.001	0.015
Concord	2	ROW 5672	ROW Opportunity	2.80	1.35	48%	0.002	0.015
Concord	2	ROW 7089	ROW Opportunity	5.57	2.70	48%	0.001	0.015
Concord	2	ROW 9096	ROW Opportunity	7.26	3.76	52%	0.001	0.015
Concord	2	Parcel 198111	Regional Opportunity	1.88	0.30	16%	0.003	0.014
Concord	2	Parcel 205796	Regional Opportunity	0.51	0.35	69%	0.008	0.014
Concord	2	Parcel 212241	Parcel-Based Opportunity	10.42	3.26	31%	0.001	0.014
Concord	2	Parcel 245777	Regional Opportunity	0.52	0.31	60%	0.008	0.014
Concord	2	Parcel 306186	Regional Opportunity	9.66	3.42	35%	0.001	0.014
Concord	2	planned 423	Planned Unlined Bioretention	0.45	0.32	71%	0.009	0.014
Concord	2	ROW 10430	ROW Opportunity	3.97	1.89	48%	0.001	0.014
Concord	2	ROW 11163	ROW Opportunity	0.60	0.49	82%	0.007	0.014
Concord	2	ROW 11347	ROW Opportunity	7.18	3.36	47%	0.001	0.014
Concord	2	ROW 13157	ROW Opportunity	10.52	4.40	42%	0.001	0.014
Concord	2	ROW 15822	ROW Opportunity	4.36	2.16	50%	0.001	0.014
Concord	2	ROW 17904	ROW Opportunity	2.21	1.14	52%	0.002	0.014
Concord	2	ROW 19257	ROW Opportunity	4.31	3.48	81%	0.001	0.014

DRAFT Contra Costa Countywide Attainment Strategy
Attachment 1: Countywide Attainment Scenario Model Results

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Concord	2	ROW 5809	ROW Opportunity	0.74	0.49	66%	0.006	0.014
Concord	2	ROW 9449	ROW Opportunity	5.91	2.94	50%	0.001	0.014
Concord	2	Parcel 172659	Parcel-Based Opportunity	8.26	3.21	39%	0.001	0.013
Concord	2	Parcel 176235	Parcel-Based Opportunity	0.43	0.29	67%	0.009	0.013
Concord	2	Parcel 198956	Regional Opportunity	1.88	0.31	16%	0.002	0.013
Concord	2	Parcel 200446	Regional Opportunity	1.05	0.58	55%	0.004	0.013
Concord	2	Parcel 202662	Parcel-Based Opportunity	4.54	3.47	76%	0.001	0.013
Concord	2	Parcel 203482	Parcel-Based Opportunity	0.44	0.28	64%	0.008	0.013
Concord	2	Parcel 207366	Parcel-Based Opportunity	0.44	0.35	80%	0.009	0.013
Concord	2	Parcel 245349	Parcel-Based Opportunity	0.50	0.29	58%	0.007	0.013
Concord	2	Parcel 283640	Parcel-Based Opportunity	8.85	3.17	36%	0.001	0.013
Concord	2	ROW 13215	ROW Opportunity	10.87	4.95	46%	0.000	0.013
Concord	2	ROW 15854	ROW Opportunity	6.90	3.41	49%	0.001	0.013
Concord	2	ROW 3470	ROW Opportunity	3.85	1.96	51%	0.001	0.013
Concord	2	ROW 425	ROW Opportunity	3.93	1.83	47%	0.001	0.013
Concord	2	ROW 6675	ROW Opportunity	3.24	1.53	47%	0.002	0.013
Concord	2	ROW 9266	ROW Opportunity	3.06	1.20	39%	0.002	0.013
Concord	2	Parcel 304455	Parcel-Based Opportunity	9.99	2.87	29%	0.001	0.012
Concord	2	ROW 10746	ROW Opportunity	5.86	2.84	48%	0.001	0.012
Concord	2	ROW 12239	ROW Opportunity	6.14	3.06	50%	0.001	0.012
Concord	2	ROW 12681	ROW Opportunity	6.89	3.12	45%	0.001	0.012
Concord	2	ROW 13166	ROW Opportunity	2.36	1.19	50%	0.002	0.012
Concord	2	ROW 14679	ROW Opportunity	6.33	3.08	49%	0.001	0.012
Concord	2	ROW 17761	ROW Opportunity	3.82	2.04	53%	0.001	0.012
Concord	2	ROW 18425	ROW Opportunity	2.25	1.39	62%	0.002	0.012
Concord	2	ROW 19367	ROW Opportunity	5.72	2.91	51%	0.001	0.012
Concord	2	ROW 19741	ROW Opportunity	15.61	6.71	43%	0.000	0.012
Concord	2	ROW 311	ROW Opportunity	4.66	2.30	49%	0.001	0.012
Concord	2	ROW 4967	ROW Opportunity	6.62	3.00	45%	0.001	0.012
Concord	2	ROW 7274	ROW Opportunity	5.67	2.85	50%	0.001	0.012
Concord	2	ROW 9397	ROW Opportunity	6.20	3.03	49%	0.001	0.012
Concord	2	Parcel 205395	Parcel-Based Opportunity	0.41	0.29	71%	0.008	0.011
Concord	2	ROW 1026	ROW Opportunity	6.02	2.70	45%	0.001	0.011
Concord	2	ROW 10444	ROW Opportunity	1.27	0.76	60%	0.003	0.011
Concord	2	ROW 13801	ROW Opportunity	3.61	1.92	53%	0.001	0.011
Concord	2	ROW 14604	ROW Opportunity	6.37	2.78	44%	0.001	0.011
Concord	2	ROW 15422	ROW Opportunity	3.73	1.82	49%	0.001	0.011
Concord	2	ROW 16761	ROW Opportunity	5.65	2.77	49%	0.001	0.011
Concord	2	ROW 19961	ROW Opportunity	5.36	2.71	51%	0.001	0.011
Concord	2	ROW 20887	ROW Opportunity	1.92	1.00	52%	0.002	0.011
Concord	2	ROW 2166	ROW Opportunity	4.72	3.21	68%	0.001	0.011
Concord	2	ROW 4343	ROW Opportunity	5.13	2.65	52%	0.001	0.011
Concord	2	ROW 6655	ROW Opportunity	5.76	2.88	50%	0.001	0.011
Concord	2	ROW 7547	ROW Opportunity	1.93	1.08	56%	0.002	0.011
Concord	2	ROW 840	ROW Opportunity	4.32	2.13	49%	0.001	0.011
Concord	2	ROW 9171	ROW Opportunity	5.93	2.70	46%	0.001	0.011
Concord	2	ROW 9371	ROW Opportunity	5.95	2.73	46%	0.001	0.011
Concord	2	Parcel 219241	Parcel-Based Opportunity	5.43	2.56	47%	0.001	0.010
Concord	2	ROW 10733	ROW Opportunity	0.86	0.41	48%	0.004	0.010
Concord	2	ROW 11477	ROW Opportunity	5.28	2.53	48%	0.001	0.010
Concord	2	ROW 13104	ROW Opportunity	2.83	1.42	50%	0.002	0.010
Concord	2	ROW 1509	ROW Opportunity	5.06	2.54	50%	0.001	0.010
Concord	2	ROW 17227	ROW Opportunity	3.24	2.61	81%	0.001	0.010
Concord	2	ROW 18867	ROW Opportunity	0.57	0.30	53%	0.005	0.010
Concord	2	ROW 18875	ROW Opportunity	5.49	2.53	46%	0.001	0.010
Concord	2	ROW 1942	ROW Opportunity	5.76	2.61	45%	0.001	0.010
Concord	2	ROW 4931	ROW Opportunity	5.95	2.64	44%	0.001	0.010
Concord	2	ROW 6969	ROW Opportunity	1.44	0.74	51%	0.003	0.010
Concord	2	ROW 7644	ROW Opportunity	3.34	2.69	81%	0.001	0.010
Concord	2	ROW 8954	ROW Opportunity	3.65	1.80	49%	0.001	0.010
Concord	2	ROW 9917	ROW Opportunity	5.57	2.54	46%	0.001	0.010
Danville	2	ROW 16936	ROW Opportunity	26.83	15.18	57%	0.009	0.752
Danville	2	ROW 3153	ROW Opportunity	22.64	11.45	51%	0.005	0.352
Danville	2	ROW 19015	ROW Opportunity	21.63	9.10	42%	0.004	0.264
Danville	2	ROW 10363	ROW Opportunity	15.72	7.19	46%	0.006	0.255
Danville	2	ROW 8645	ROW Opportunity	6.22	3.02	49%	0.012	0.252
Danville	2	ROW 5779	ROW Opportunity	29.66	12.29	41%	0.003	0.236
Danville	2	ROW 15495	ROW Opportunity	5.40	2.73	51%	0.013	0.235
Danville	2	ROW 6494	ROW Opportunity	13.53	5.65	42%	0.003	0.123
Danville	2	ROW 7569	ROW Opportunity	4.67	1.77	38%	0.008	0.114
Danville	2	ROW 20439	ROW Opportunity	5.29	2.56	48%	0.007	0.105
Danville	2	ROW 6553	ROW Opportunity	22.66	7.42	33%	0.002	0.101
Danville	2	ROW 10751	ROW Opportunity	6.96	2.81	40%	0.005	0.088
Danville	2	Parcel 3595	Regional Opportunity	1.32	0.94	71%	0.018	0.081
Danville	2	ROW 16231	ROW Opportunity	1.61	0.79	49%	0.013	0.071
Danville	2	ROW 11030	ROW Opportunity	4.72	1.69	36%	0.005	0.063
Danville	2	ROW 2419	ROW Opportunity	1.41	0.74	52%	0.014	0.063
Danville	2	Parcel 84842	Regional Opportunity	2.50	1.28	51%	0.007	0.061
Danville	2	ROW 15065	ROW Opportunity	3.30	1.46	44%	0.006	0.061
Danville	2	ROW 8646	ROW Opportunity	1.33	0.71	53%	0.013	0.058
Danville	2	planned 56	Planned Creek/Marsh Restoration	28.05	7.45	27%	0.001	0.054
Danville	2	ROW 13678	ROW Opportunity	1.73	0.69	40%	0.009	0.051
Danville	2	ROW 6273	ROW Opportunity	1.21	0.60	50%	0.012	0.049
Danville	2	ROW 4229	ROW Opportunity	1.02	0.47	46%	0.013	0.043
Danville	2	ROW 7541	ROW Opportunity	4.06	1.59	39%	0.004	0.043
Danville	2	ROW 8647	ROW Opportunity	1.24	0.61	49%	0.011	0.042
Danville	2	ROW 11350	ROW Opportunity	4.15	1.41	34%	0.003	0.035
Danville	2	ROW 5386	ROW Opportunity	10.48	3.17	30%	0.001	0.032
Danville	2	ROW 17662	ROW Opportunity	4.65	1.54	33%	0.003	0.030
Danville	2	ROW 8243	ROW Opportunity	17.78	6.46	36%	0.001	0.028
Danville	2	ROW 1278	ROW Opportunity	2.38	1.11	47%	0.004	0.027
Danville	2	ROW 20482	ROW Opportunity	4.27	1.25	29%	0.002	0.026
Danville	2	ROW 6485	ROW Opportunity	27.58	10.93	40%	0.000	0.026
Danville	2	ROW 7899	ROW Opportunity	5.60	1.66	30%	0.002	0.026

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Danville	2	ROW 14380	ROW Opportunity	10.15	3.63	36%	0.001	0.025
Danville	2	ROW 2772	ROW Opportunity	8.71	2.89	33%	0.001	0.025
Danville	2	ROW 5569	ROW Opportunity	8.89	2.11	24%	0.001	0.025
Danville	2	ROW 6880	ROW Opportunity	4.97	1.50	30%	0.002	0.025
Danville	2	ROW 17254	ROW Opportunity	0.58	0.26	45%	0.012	0.024
Danville	2	ROW 3171	ROW Opportunity	9.06	3.83	42%	0.001	0.024
Danville	2	ROW 10398	ROW Opportunity	8.60	2.53	29%	0.001	0.023
Danville	2	ROW 18078	ROW Opportunity	4.08	1.19	29%	0.002	0.023
Danville	2	ROW 4663	ROW Opportunity	14.21	5.41	38%	0.001	0.023
Danville	2	ROW 6934	ROW Opportunity	7.87	2.54	32%	0.001	0.023
Danville	2	ROW 12934	ROW Opportunity	9.74	3.39	35%	0.001	0.021
Danville	2	ROW 16006	ROW Opportunity	3.00	1.95	65%	0.003	0.020
Danville	2	ROW 21104	ROW Opportunity	3.41	0.72	21%	0.002	0.020
Danville	2	ROW 13883	ROW Opportunity	5.95	1.96	33%	0.001	0.018
Danville	2	ROW 3169	ROW Opportunity	27.83	11.62	42%	0.000	0.018
Danville	2	Parcel 7023	Parcel-Based Opportunity	4.47	2.08	47%	0.002	0.017
Danville	2	ROW 19889	ROW Opportunity	2.38	0.83	35%	0.003	0.017
Danville	2	ROW 4459	ROW Opportunity	4.95	1.71	35%	0.001	0.017
Danville	2	ROW 6502	ROW Opportunity	3.58	1.36	38%	0.002	0.017
Danville	2	ROW 20045	ROW Opportunity	6.37	1.75	27%	0.001	0.016
Danville	2	ROW 7490	ROW Opportunity	5.22	2.31	44%	0.001	0.016
Danville	2	ROW 8595	ROW Opportunity	10.06	3.71	37%	0.001	0.016
Danville	2	Parcel 2847	Parcel-Based Opportunity	0.35	0.16	46%	0.012	0.015
Danville	2	ROW 10387	ROW Opportunity	4.17	1.86	45%	0.002	0.015
Danville	2	ROW 13940	ROW Opportunity	6.12	2.31	38%	0.001	0.015
Danville	2	Parcel 2825	Parcel-Based Opportunity	0.35	0.14	40%	0.011	0.014
Danville	2	ROW 3111	ROW Opportunity	6.77	1.67	25%	0.001	0.014
Danville	2	ROW 7016	ROW Opportunity	3.24	0.99	31%	0.002	0.014
Danville	2	ROW 10801	ROW Opportunity	10.37	3.70	36%	0.001	0.013
Danville	2	ROW 8639	ROW Opportunity	5.23	1.56	30%	0.001	0.013
Danville	2	ROW 12473	ROW Opportunity	2.77	0.92	33%	0.002	0.012
Danville	2	ROW 13144	ROW Opportunity	6.32	2.32	37%	0.001	0.012
Danville	2	ROW 14418	ROW Opportunity	7.93	2.81	35%	0.001	0.012
Danville	2	ROW 3170	ROW Opportunity	17.87	7.49	42%	0.000	0.012
Danville	2	ROW 8231	ROW Opportunity	3.49	1.32	38%	0.002	0.012
Danville	2	ROW 9408	ROW Opportunity	3.29	1.31	40%	0.002	0.012
Danville	2	Parcel 2786	Parcel-Based Opportunity	0.34	0.13	38%	0.009	0.011
Danville	2	Parcel 7198	Regional Opportunity	2.07	1.46	71%	0.003	0.011
Danville	2	ROW 11870	ROW Opportunity	3.31	0.88	27%	0.002	0.011
Danville	2	ROW 12945	ROW Opportunity	3.98	1.15	29%	0.001	0.011
Danville	2	ROW 3876	ROW Opportunity	2.83	1.65	58%	0.002	0.011
Danville	2	ROW 7424	ROW Opportunity	1.50	1.04	69%	0.003	0.011
Danville	2	Parcel 8521	Regional Opportunity	0.89	0.19	21%	0.003	0.010
Danville	2	ROW 2262	ROW Opportunity	4.76	1.72	36%	0.001	0.010
Danville	2	ROW 3224	ROW Opportunity	6.67	2.37	36%	0.001	0.010
El Cerrito	2	ROW 57	ROW Opportunity	20.16	12.24	61%	0.008	0.521
El Cerrito	2	ROW 55	ROW Opportunity	8.61	5.54	64%	0.008	0.227
El Cerrito	2	ROW 15171	ROW Opportunity	5.98	3.48	58%	0.010	0.215
El Cerrito	2	planned_99	Planned Unlined Bioretention	3.97	2.99	75%	0.011	0.152
El Cerrito	2	ROW 17243	ROW Opportunity	5.47	3.28	60%	0.007	0.129
El Cerrito	2	planned_131	Planned Unlined Bioretention	10.94	5.84	53%	0.004	0.113
El Cerrito	2	Parcel 120972	Parcel-Based Opportunity	4.68	2.01	43%	0.006	0.100
El Cerrito	2	ROW 9948	ROW Opportunity	3.37	2.16	64%	0.008	0.083
El Cerrito	2	Parcel 121635	Parcel-Based Opportunity	2.11	1.58	75%	0.010	0.071
El Cerrito	2	ROW 3506	ROW Opportunity	4.25	2.52	59%	0.006	0.070
El Cerrito	2	planned_98	Planned Unlined Bioretention	14.94	10.23	68%	0.002	0.068
El Cerrito	2	ROW 10275	ROW Opportunity	2.52	1.58	63%	0.008	0.065
El Cerrito	2	Parcel 120393	Parcel-Based Opportunity	2.79	1.19	43%	0.006	0.060
El Cerrito	2	planned_122	Planned Unlined Bioretention	2.79	1.19	43%	0.006	0.060
El Cerrito	2	ROW 9949	ROW Opportunity	8.99	5.41	60%	0.003	0.056
El Cerrito	2	ROW 20173	ROW Opportunity	1.18	0.68	58%	0.012	0.053
El Cerrito	2	ROW 3882	ROW Opportunity	7.74	4.70	61%	0.003	0.053
El Cerrito	2	ROW 6997	ROW Opportunity	2.01	1.26	63%	0.008	0.053
El Cerrito	2	ROW 5240	ROW Opportunity	14.23	7.45	52%	0.002	0.051
El Cerrito	2	ROW 12667	ROW Opportunity	7.60	4.07	54%	0.003	0.048
El Cerrito	2	ROW 15194	ROW Opportunity	2.45	1.67	68%	0.006	0.044
El Cerrito	2	Parcel 108912	Parcel-Based Opportunity	19.52	10.10	52%	0.001	0.042
El Cerrito	2	ROW 13601	ROW Opportunity	9.94	5.69	57%	0.002	0.038
El Cerrito	2	ROW 18539	ROW Opportunity	3.28	1.97	60%	0.004	0.038
El Cerrito	2	ROW 4566	ROW Opportunity	9.09	4.81	53%	0.002	0.037
El Cerrito	2	Parcel 128153	Parcel-Based Opportunity	2.55	1.76	69%	0.005	0.036
El Cerrito	2	planned_389	Planned Creek/Marsh Restoration	1.00	0.66	66%	0.011	0.035
El Cerrito	2	ROW 9950	ROW Opportunity	2.05	1.31	64%	0.006	0.035
El Cerrito	2	Parcel 133358	Regional Opportunity	1.27	0.75	59%	0.008	0.034
El Cerrito	2	ROW 13602	ROW Opportunity	7.52	4.21	56%	0.002	0.033
El Cerrito	2	ROW 11539	ROW Opportunity	0.79	0.54	68%	0.011	0.029
El Cerrito	2	ROW 13367	ROW Opportunity	8.37	4.33	52%	0.002	0.029
El Cerrito	2	ROW 3041	ROW Opportunity	1.55	0.94	61%	0.006	0.029
El Cerrito	2	ROW 6936	ROW Opportunity	9.70	5.56	57%	0.001	0.029
El Cerrito	2	ROW 1264	ROW Opportunity	6.94	3.84	55%	0.002	0.028
El Cerrito	2	ROW 2251	ROW Opportunity	4.66	2.74	59%	0.003	0.028
El Cerrito	2	Parcel 118487	Parcel-Based Opportunity	1.00	0.55	55%	0.008	0.027
El Cerrito	2	planned_89	Planned Unlined Bioretention	80.88	5.47	7%	0.000	0.026
El Cerrito	2	ROW 20541	ROW Opportunity	1.08	0.66	61%	0.008	0.026
El Cerrito	2	ROW 16009	ROW Opportunity	1.55	0.96	62%	0.005	0.025
El Cerrito	2	ROW 15096	ROW Opportunity	6.18	3.20	52%	0.002	0.024
El Cerrito	2	ROW 6938	ROW Opportunity	6.31	3.67	58%	0.002	0.024
El Cerrito	2	Parcel 129420	Parcel-Based Opportunity	9.98	5.33	53%	0.001	0.023
El Cerrito	2	Parcel 137929	Parcel-Based Opportunity	5.49	2.41	44%	0.002	0.023
El Cerrito	2	ROW 10958	ROW Opportunity	7.39	4.41	60%	0.001	0.023
El Cerrito	2	ROW 15895	ROW Opportunity	9.74	5.57	57%	0.001	0.023
El Cerrito	2	ROW 20026	ROW Opportunity	0.68	0.54	79%	0.010	0.023
El Cerrito	2	ROW 15894	ROW Opportunity	9.10	5.36	59%	0.001	0.022
El Cerrito	2	ROW 11691	ROW Opportunity	5.62	3.28	58%	0.002	0.021

DRAFT Contra Costa Countywide Attainment Strategy
 Attachment 1: Countywide Attainment Scenario Model Results

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
El Cerrito	2	ROW 20328	ROW Opportunity	4.46	2.50	56%	0.002	0.021
El Cerrito	2	ROW 3523	ROW Opportunity	5.21	2.90	56%	0.002	0.021
El Cerrito	2	ROW 539	ROW Opportunity	6.98	3.97	57%	0.001	0.021
El Cerrito	2	ROW 10929	ROW Opportunity	5.36	3.22	60%	0.002	0.018
El Cerrito	2	ROW 11011	ROW Opportunity	4.83	2.80	58%	0.002	0.018
El Cerrito	2	ROW 14649	ROW Opportunity	0.60	0.40	67%	0.009	0.018
El Cerrito	2	ROW 6691	ROW Opportunity	7.35	4.29	58%	0.001	0.018
El Cerrito	2	ROW 10097	ROW Opportunity	6.15	3.70	60%	0.001	0.017
El Cerrito	2	ROW 15535	ROW Opportunity	4.95	2.77	56%	0.002	0.017
El Cerrito	2	ROW 20028	ROW Opportunity	0.50	0.39	78%	0.010	0.017
El Cerrito	2	ROW 20526	ROW Opportunity	4.64	2.70	58%	0.002	0.017
El Cerrito	2	ROW 6694	ROW Opportunity	6.59	3.78	57%	0.001	0.017
El Cerrito	2	planned 130	Planned Unlined Bioretention	0.45	0.37	82%	0.011	0.016
El Cerrito	2	ROW 6234	ROW Opportunity	1.67	0.95	57%	0.003	0.016
El Cerrito	2	ROW 6998	ROW Opportunity	2.36	1.37	58%	0.003	0.016
El Cerrito	2	Parcel 134601	Parcel-Based Opportunity	5.18	3.92	76%	0.001	0.015
El Cerrito	2	ROW 16809	ROW Opportunity	4.87	2.71	56%	0.002	0.015
El Cerrito	2	ROW 21519	ROW Opportunity	3.43	2.17	63%	0.002	0.015
El Cerrito	2	ROW 3495	ROW Opportunity	0.56	0.36	64%	0.008	0.015
El Cerrito	2	ROW 6367	ROW Opportunity	0.63	0.42	67%	0.007	0.015
El Cerrito	2	ROW 6911	ROW Opportunity	3.73	2.13	57%	0.002	0.015
El Cerrito	2	ROW 15196	ROW Opportunity	0.57	0.35	61%	0.007	0.014
El Cerrito	2	ROW 16545	ROW Opportunity	1.24	0.82	66%	0.004	0.014
El Cerrito	2	ROW 5254	ROW Opportunity	1.74	1.09	63%	0.003	0.014
El Cerrito	2	ROW 7864	ROW Opportunity	5.06	2.85	56%	0.001	0.014
El Cerrito	2	ROW 10953	ROW Opportunity	4.85	2.82	58%	0.001	0.013
El Cerrito	2	ROW 10955	ROW Opportunity	4.39	2.60	59%	0.001	0.013
El Cerrito	2	ROW 13600	ROW Opportunity	0.67	0.42	63%	0.006	0.013
El Cerrito	2	ROW 4340	ROW Opportunity	5.48	3.03	55%	0.001	0.013
El Cerrito	2	ROW 4650	ROW Opportunity	0.62	0.37	60%	0.007	0.013
El Cerrito	2	Parcel 376467	Parcel-Based Opportunity	5.15	2.93	57%	0.001	0.012
El Cerrito	2	ROW 10802	ROW Opportunity	4.97	2.88	58%	0.001	0.012
El Cerrito	2	ROW 13910	ROW Opportunity	0.48	0.28	58%	0.008	0.012
El Cerrito	2	ROW 1672	ROW Opportunity	5.53	3.07	56%	0.001	0.012
El Cerrito	2	ROW 5917	ROW Opportunity	4.58	2.67	58%	0.001	0.012
El Cerrito	2	ROW 6511	ROW Opportunity	3.16	1.88	59%	0.002	0.012
El Cerrito	2	ROW 9947	ROW Opportunity	0.92	0.61	66%	0.004	0.012
El Cerrito	2	Parcel 140018	Parcel-Based Opportunity	0.39	0.05	13%	0.008	0.011
El Cerrito	2	ROW 10930	ROW Opportunity	3.54	2.10	59%	0.001	0.011
El Cerrito	2	ROW 6968	ROW Opportunity	0.48	0.36	75%	0.007	0.011
El Cerrito	2	ROW 9065	ROW Opportunity	2.03	1.20	59%	0.002	0.011
El Cerrito	2	Parcel 120884	Regional Opportunity	0.59	0.21	36%	0.005	0.010
El Cerrito	2	ROW 15090	ROW Opportunity	4.58	2.54	55%	0.001	0.010
Hercules	2	Parcel 253834	Parcel-Based Opportunity	6.24	3.65	58%	0.034	0.860
Hercules	2	Parcel 258137	Parcel-Based Opportunity	11.26	2.85	25%	0.015	0.661
Hercules	2	ROW 1743	ROW Opportunity	11.16	4.37	39%	0.013	0.535
Hercules	2	ROW 15756	ROW Opportunity	4.43	2.04	46%	0.028	0.522
Hercules	2	ROW 13267	ROW Opportunity	3.21	1.44	45%	0.027	0.369
Hercules	2	ROW 20166	ROW Opportunity	8.49	3.53	42%	0.011	0.360
Hercules	2	ROW 16990	ROW Opportunity	5.25	1.32	25%	0.016	0.333
Hercules	2	Parcel 257979	Parcel-Based Opportunity	5.62	1.27	23%	0.013	0.303
Hercules	2	ROW 16634	ROW Opportunity	3.21	1.39	43%	0.022	0.290
Hercules	2	ROW 16909	ROW Opportunity	15.96	6.87	43%	0.005	0.260
Hercules	2	ROW 16911	ROW Opportunity	3.92	1.61	41%	0.016	0.247
Hercules	2	ROW 16090	ROW Opportunity	2.62	1.05	40%	0.022	0.243
Hercules	2	Parcel 257367	Parcel-Based Opportunity	3.87	0.86	22%	0.014	0.224
Hercules	2	ROW 14290	ROW Opportunity	6.27	2.06	33%	0.009	0.223
Hercules	2	ROW 6342	ROW Opportunity	2.63	0.75	29%	0.019	0.206
Hercules	2	ROW 19139	ROW Opportunity	3.17	0.80	25%	0.015	0.195
Hercules	2	ROW 18985	ROW Opportunity	21.38	7.42	35%	0.003	0.173
Hercules	2	Parcel 258157	Regional Opportunity	2.96	0.60	20%	0.014	0.168
Hercules	2	ROW 10622	ROW Opportunity	1.33	0.63	47%	0.028	0.160
Hercules	2	ROW 10623	ROW Opportunity	2.15	1.01	47%	0.017	0.153
Hercules	2	ROW 15482	ROW Opportunity	1.75	0.48	27%	0.020	0.141
Hercules	2	ROW 20676	ROW Opportunity	1.62	0.73	45%	0.021	0.140
Hercules	2	ROW 20171	ROW Opportunity	1.96	0.83	42%	0.016	0.125
Hercules	2	ROW 15483	ROW Opportunity	5.37	1.35	25%	0.006	0.115
Hercules	2	Parcel 257429	Regional Opportunity	1.90	0.43	23%	0.015	0.111
Hercules	2	ROW 1748	ROW Opportunity	1.51	0.38	25%	0.018	0.108
Hercules	2	Parcel 256321	Parcel-Based Opportunity	2.36	0.25	11%	0.010	0.097
Hercules	2	ROW 19622	ROW Opportunity	2.25	0.81	36%	0.011	0.095
Hercules	2	ROW 1435	ROW Opportunity	1.57	0.35	22%	0.014	0.086
Hercules	2	ROW 13170	ROW Opportunity	0.60	0.27	45%	0.026	0.067
Hercules	2	Parcel 257692	Regional Opportunity	1.04	0.24	23%	0.015	0.064
Hercules	2	ROW 1791	ROW Opportunity	1.59	0.35	22%	0.009	0.058
Hercules	2	ROW 7393	ROW Opportunity	1.06	0.36	34%	0.014	0.057
Hercules	2	ROW 7699	ROW Opportunity	0.56	0.19	34%	0.023	0.054
Hercules	2	ROW 17257	ROW Opportunity	0.40	0.21	53%	0.030	0.052
Hercules	2	ROW 10624	ROW Opportunity	0.39	0.17	44%	0.027	0.044
Hercules	2	ROW 7341	ROW Opportunity	0.35	0.15	43%	0.026	0.039
Hercules	2	ROW 11067	ROW Opportunity	7.45	2.66	36%	0.002	0.035
Hercules	2	ROW 1079	ROW Opportunity	0.90	0.39	43%	0.010	0.033
Hercules	2	ROW 6380	ROW Opportunity	0.41	0.24	59%	0.018	0.029
Hercules	2	ROW 365	ROW Opportunity	0.21	0.11	52%	0.029	0.026
Hercules	2	Parcel 257844	Parcel-Based Opportunity	0.43	0.10	23%	0.015	0.025
Hercules	2	ROW 11619	ROW Opportunity	0.42	0.12	29%	0.015	0.024
Hercules	2	Parcel 257823	Parcel-Based Opportunity	0.37	0.08	22%	0.015	0.022
Hercules	2	Parcel 257685	Parcel-Based Opportunity	0.34	0.08	24%	0.015	0.020
Hercules	2	Parcel 260776	Parcel-Based Opportunity	11.52	2.65	23%	0.001	0.019
Hercules	2	ROW 19683	ROW Opportunity	0.49	0.17	35%	0.010	0.019
Hercules	2	Parcel 254443	Parcel-Based Opportunity	8.83	1.56	18%	0.001	0.016
Hercules	2	ROW 2481	ROW Opportunity	0.15	0.07	47%	0.022	0.014
Hercules	2	Parcel 255602	Parcel-Based Opportunity	13.98	5.74	41%	0.000	0.013
Hercules	2	ROW 21077	ROW Opportunity	1.10	0.21	19%	0.003	0.012

DRAFT Contra Costa Countywide Attainment Strategy
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Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Hercules	2	ROW 17543	ROW Opportunity	0.12	0.04	33%	0.022	0.011
Hercules	2	Parcel 253250	Parcel-Based Opportunity	0.32	0.10	31%	0.008	0.010
Lafayette	2	ROW 8037	ROW Opportunity	4.09	2.48	61%	0.014	0.183
Lafayette	2	ROW 2243	ROW Opportunity	1.43	1.06	74%	0.032	0.167
Lafayette	2	ROW 12876	ROW Opportunity	6.73	3.27	49%	0.008	0.153
Lafayette	2	ROW 151	ROW Opportunity	3.55	2.15	61%	0.014	0.153
Lafayette	2	ROW 397	ROW Opportunity	10.95	2.47	23%	0.004	0.132
Lafayette	2	ROW 10450	ROW Opportunity	2.88	1.58	55%	0.013	0.126
Lafayette	2	ROW 8546	ROW Opportunity	30.28	4.86	16%	0.002	0.126
Lafayette	2	ROW 8982	ROW Opportunity	8.86	3.34	38%	0.004	0.097
Lafayette	2	ROW 2803	ROW Opportunity	2.21	1.37	62%	0.012	0.079
Lafayette	2	Parcel 375734	Parcel-Based Opportunity	29.49	9.07	31%	0.001	0.077
Lafayette	2	ROW 235	ROW Opportunity	2.40	1.49	62%	0.011	0.075
Lafayette	2	Parcel 22842	Parcel-Based Opportunity	26.65	4.08	15%	0.001	0.061
Lafayette	2	Parcel 38918	Parcel-Based Opportunity	17.79	6.51	37%	0.001	0.056
Lafayette	2	ROW 5749	ROW Opportunity	2.62	1.31	50%	0.007	0.051
Lafayette	2	ROW 16160	ROW Opportunity	13.26	2.44	18%	0.002	0.050
Lafayette	2	ROW 18657	ROW Opportunity	1.15	0.72	63%	0.013	0.045
Lafayette	2	ROW 6188	ROW Opportunity	2.68	1.13	42%	0.006	0.042
Lafayette	2	ROW 8493	ROW Opportunity	5.88	1.11	19%	0.003	0.041
Lafayette	2	Parcel 45274	Regional Opportunity	0.74	0.44	59%	0.016	0.040
Lafayette	2	ROW 12869	ROW Opportunity	11.00	2.85	26%	0.002	0.039
Lafayette	2	ROW 12445	ROW Opportunity	4.44	0.97	22%	0.003	0.037
Lafayette	2	ROW 17249	ROW Opportunity	4.54	1.96	43%	0.003	0.037
Lafayette	2	ROW 18068	ROW Opportunity	1.26	0.64	51%	0.010	0.037
Lafayette	2	ROW 15000	ROW Opportunity	1.59	0.80	50%	0.007	0.036
Lafayette	2	ROW 7204	ROW Opportunity	0.97	0.35	36%	0.011	0.034
Lafayette	2	ROW 17831	ROW Opportunity	14.18	3.00	21%	0.001	0.033
Lafayette	2	ROW 21105	ROW Opportunity	1.83	0.76	42%	0.006	0.030
Lafayette	2	Parcel 376452	Parcel-Based Opportunity	9.70	3.28	34%	0.001	0.029
Lafayette	2	Parcel 40931	Parcel-Based Opportunity	6.84	3.62	53%	0.002	0.029
Lafayette	2	Parcel 43618	Parcel-Based Opportunity	7.13	3.51	49%	0.002	0.029
Lafayette	2	ROW 18408	ROW Opportunity	7.32	1.94	27%	0.002	0.029
Lafayette	2	ROW 3774	ROW Opportunity	0.85	0.48	56%	0.011	0.029
Lafayette	2	ROW 7943	ROW Opportunity	9.50	1.66	17%	0.001	0.029
Lafayette	2	ROW 8461	ROW Opportunity	0.61	0.39	64%	0.015	0.029
Lafayette	2	ROW 13640	ROW Opportunity	2.39	0.70	29%	0.004	0.028
Lafayette	2	planned 546	Planned Creek/Marsh Restoration	2.12	0.60	28%	0.005	0.027
Lafayette	2	ROW 19821	ROW Opportunity	13.08	2.06	16%	0.001	0.027
Lafayette	2	ROW 8508	ROW Opportunity	1.56	0.60	38%	0.006	0.027
Lafayette	2	ROW 20225	ROW Opportunity	1.46	0.47	32%	0.006	0.026
Lafayette	2	ROW 11383	ROW Opportunity	8.22	1.99	24%	0.001	0.022
Lafayette	2	ROW 680	ROW Opportunity	1.59	0.67	42%	0.005	0.022
Lafayette	2	ROW 9300	ROW Opportunity	1.68	0.70	42%	0.005	0.022
Lafayette	2	ROW 12963	ROW Opportunity	5.60	1.60	29%	0.002	0.021
Lafayette	2	ROW 2256	ROW Opportunity	0.32	0.25	78%	0.020	0.021
Lafayette	2	Parcel 41948	Regional Opportunity	0.54	0.21	39%	0.011	0.020
Lafayette	2	ROW 155	ROW Opportunity	2.84	1.02	36%	0.003	0.020
Lafayette	2	ROW 2070	ROW Opportunity	2.66	1.20	45%	0.003	0.020
Lafayette	2	ROW 21071	ROW Opportunity	0.48	0.22	46%	0.012	0.018
Lafayette	2	ROW 14991	ROW Opportunity	0.74	0.22	30%	0.007	0.017
Lafayette	2	ROW 20798	ROW Opportunity	1.38	0.59	43%	0.005	0.017
Lafayette	2	ROW 18029	ROW Opportunity	5.83	1.14	20%	0.001	0.015
Lafayette	2	ROW 20971	ROW Opportunity	0.57	0.22	39%	0.008	0.015
Lafayette	2	Parcel 40526	Parcel-Based Opportunity	0.40	0.12	30%	0.010	0.014
Lafayette	2	ROW 7898	ROW Opportunity	7.71	1.06	14%	0.001	0.014
Lafayette	2	ROW 18768	ROW Opportunity	4.41	1.13	26%	0.001	0.013
Lafayette	2	ROW 2955	ROW Opportunity	3.77	0.91	24%	0.002	0.013
Lafayette	2	Parcel 43103	Parcel-Based Opportunity	8.38	2.44	29%	0.001	0.012
Lafayette	2	ROW 14844	ROW Opportunity	3.47	0.54	16%	0.002	0.012
Lafayette	2	ROW 20581	ROW Opportunity	2.06	0.66	32%	0.002	0.012
Lafayette	2	ROW 3114	ROW Opportunity	4.89	1.20	25%	0.001	0.012
Lafayette	2	Parcel 104404	Parcel-Based Opportunity	7.73	0.73	9%	0.001	0.011
Lafayette	2	ROW 11327	ROW Opportunity	5.07	1.07	21%	0.001	0.011
Lafayette	2	ROW 13216	ROW Opportunity	5.56	0.90	16%	0.001	0.011
Lafayette	2	ROW 16250	ROW Opportunity	2.49	0.97	39%	0.002	0.011
Lafayette	2	ROW 16635	ROW Opportunity	5.34	0.92	17%	0.001	0.011
Lafayette	2	ROW 18973	ROW Opportunity	3.41	0.90	26%	0.001	0.011
Lafayette	2	ROW 9365	ROW Opportunity	3.71	1.19	32%	0.001	0.011
Lafayette	2	ROW 2177	ROW Opportunity	4.87	0.90	18%	0.001	0.010
Lafayette	2	ROW 4253	ROW Opportunity	0.63	0.32	51%	0.005	0.010
Lafayette	2	ROW 5759	ROW Opportunity	4.91	0.98	20%	0.001	0.010
Martinez	2	planned 7	Planned Creek/Marsh Restoration	94.31	39.77	42%	0.018	6.741
Martinez	2	ROW 11847	ROW Opportunity	18.15	11.75	65%	0.030	2.289
Martinez	2	ROW 9312	ROW Opportunity	15.70	8.30	53%	0.019	1.200
Martinez	2	Parcel 256879	Parcel-Based Opportunity	4.53	3.61	80%	0.045	0.840
Martinez	2	Parcel 258271	Regional Opportunity	11.25	3.16	28%	0.016	0.738
Martinez	2	ROW 2615	ROW Opportunity	4.67	2.85	61%	0.029	0.568
Martinez	2	ROW 17609	ROW Opportunity	3.03	1.75	58%	0.034	0.432
Martinez	2	ROW 1199	ROW Opportunity	10.11	5.56	55%	0.009	0.350
Martinez	2	ROW 12654	ROW Opportunity	2.07	1.21	58%	0.034	0.301
Martinez	2	Parcel 224745	Parcel-Based Opportunity	12.27	5.56	45%	0.006	0.275
Martinez	2	Parcel 256618	Regional Opportunity	1.53	1.15	75%	0.042	0.271
Martinez	2	ROW 9751	ROW Opportunity	3.95	1.31	33%	0.016	0.264
Martinez	2	ROW 1704	ROW Opportunity	2.43	1.03	42%	0.025	0.262
Martinez	2	ROW 613	ROW Opportunity	44.88	20.72	46%	0.002	0.257
Martinez	2	Parcel 257598	Parcel-Based Opportunity	4.12	0.90	22%	0.014	0.241
Martinez	2	ROW 11018	ROW Opportunity	1.72	0.97	56%	0.033	0.238
Martinez	2	ROW 2610	ROW Opportunity	2.98	0.86	29%	0.017	0.219
Martinez	2	ROW 6722	ROW Opportunity	3.14	1.29	41%	0.017	0.214
Martinez	2	ROW 7179	ROW Opportunity	6.44	3.23	50%	0.008	0.194
Martinez	2	ROW 14509	ROW Opportunity	5.63	2.94	52%	0.009	0.175
Martinez	2	ROW 12653	ROW Opportunity	1.13	0.68	60%	0.035	0.165
Martinez	2	ROW 1198	ROW Opportunity	20.20	10.22	51%	0.003	0.158

DRAFT Contra Costa Countywide Attainment Strategy
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Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Martinez	2	Parcel 257469	Parcel-Based Opportunity	1.47	0.63	43%	0.025	0.155
Martinez	2	ROW 2021	ROW Opportunity	3.08	1.19	39%	0.012	0.154
Martinez	2	Parcel 257037	Parcel-Based Opportunity	1.31	0.60	46%	0.027	0.148
Martinez	2	ROW 11846	ROW Opportunity	1.07	0.66	62%	0.032	0.140
Martinez	2	ROW 6258	ROW Opportunity	1.28	0.54	42%	0.025	0.138
Martinez	2	ROW 13093	ROW Opportunity	19.22	8.75	46%	0.003	0.135
Martinez	2	ROW 15102	ROW Opportunity	1.17	0.49	42%	0.026	0.126
Martinez	2	ROW 12899	ROW Opportunity	23.68	11.07	47%	0.002	0.123
Martinez	2	ROW 6843	ROW Opportunity	7.57	3.72	49%	0.005	0.119
Martinez	2	ROW 12656	ROW Opportunity	1.13	0.45	40%	0.024	0.114
Martinez	2	Parcel 259273	Parcel-Based Opportunity	53.06	7.74	15%	0.001	0.110
Martinez	2	planned 375	Planned Unlined Bioretention	0.69	0.47	68%	0.036	0.104
Martinez	2	Parcel 256439	Parcel-Based Opportunity	6.52	4.34	67%	0.005	0.101
Martinez	2	ROW 11617	ROW Opportunity	6.23	3.68	59%	0.005	0.098
Martinez	2	ROW 3734	ROW Opportunity	10.53	5.59	53%	0.003	0.090
Martinez	2	ROW 4932	ROW Opportunity	2.88	1.64	57%	0.008	0.089
Martinez	2	ROW 15103	ROW Opportunity	0.78	0.33	42%	0.026	0.085
Martinez	2	Parcel 257604	Parcel-Based Opportunity	5.42	1.42	26%	0.004	0.080
Martinez	2	ROW 7416	ROW Opportunity	0.97	0.55	57%	0.020	0.078
Martinez	2	ROW 2023	ROW Opportunity	6.59	0.76	12%	0.003	0.076
Martinez	2	ROW 12901	ROW Opportunity	3.64	1.75	48%	0.005	0.070
Martinez	2	ROW 20611	ROW Opportunity	5.63	3.27	58%	0.004	0.069
Martinez	2	ROW 2910	ROW Opportunity	0.47	0.34	72%	0.035	0.069
Martinez	2	Parcel 229067	Regional Opportunity	2.22	1.53	69%	0.008	0.068
Martinez	2	ROW 14854	ROW Opportunity	1.55	1.06	68%	0.012	0.067
Martinez	2	ROW 10676	ROW Opportunity	2.73	1.61	59%	0.007	0.065
Martinez	2	ROW 7853	ROW Opportunity	7.02	3.11	44%	0.003	0.064
Martinez	2	ROW 15451	ROW Opportunity	4.14	2.09	50%	0.005	0.062
Martinez	2	ROW 19814	ROW Opportunity	0.70	0.24	34%	0.021	0.062
Martinez	2	ROW 629	ROW Opportunity	5.08	1.83	36%	0.004	0.060
Martinez	2	ROW 12109	ROW Opportunity	0.35	0.24	69%	0.039	0.058
Martinez	2	Parcel 259114	Parcel-Based Opportunity	9.40	2.23	24%	0.002	0.056
Martinez	2	ROW 11811	ROW Opportunity	3.12	1.63	52%	0.005	0.054
Martinez	2	Parcel 256442	Regional Opportunity	1.80	1.30	72%	0.008	0.053
Martinez	2	Parcel 251682	Parcel-Based Opportunity	32.13	8.78	27%	0.001	0.045
Martinez	2	Parcel 256990	Regional Opportunity	1.38	0.32	23%	0.008	0.043
Martinez	2	ROW 6892	ROW Opportunity	1.90	1.20	63%	0.006	0.040
Martinez	2	Parcel 232523	Regional Opportunity	1.40	0.76	54%	0.007	0.039
Martinez	2	ROW 15020	ROW Opportunity	9.04	2.92	32%	0.002	0.039
Martinez	2	ROW 8221	ROW Opportunity	6.16	3.05	50%	0.002	0.039
Martinez	2	ROW 3856	ROW Opportunity	20.44	8.96	44%	0.001	0.034
Martinez	2	ROW 610	ROW Opportunity	15.31	6.60	43%	0.001	0.034
Martinez	2	planned 372	Planned Unlined Bioretention	1.66	0.92	55%	0.006	0.033
Martinez	2	Parcel 256108	Regional Opportunity	0.92	0.73	79%	0.010	0.032
Martinez	2	Parcel 258236	Parcel-Based Opportunity	0.33	0.22	67%	0.024	0.032
Martinez	2	Parcel 222314	Regional Opportunity	1.35	0.61	45%	0.006	0.030
Martinez	2	ROW 6905	ROW Opportunity	1.95	0.94	48%	0.005	0.030
Martinez	2	Parcel 255702	Regional Opportunity	0.92	0.66	72%	0.009	0.029
Martinez	2	Parcel 256354	Regional Opportunity	0.89	0.65	73%	0.009	0.029
Martinez	2	ROW 8871	ROW Opportunity	2.44	1.23	50%	0.004	0.028
Martinez	2	Parcel 256320	Regional Opportunity	0.91	0.61	67%	0.008	0.027
Martinez	2	Parcel 256422	Regional Opportunity	0.76	0.50	66%	0.010	0.027
Martinez	2	ROW 6891	ROW Opportunity	7.35	3.61	49%	0.002	0.027
Martinez	2	Parcel 253376	Regional Opportunity	1.62	0.94	58%	0.005	0.026
Martinez	2	Parcel 254721	Regional Opportunity	1.16	0.53	46%	0.006	0.024
Martinez	2	Parcel 224949	Regional Opportunity	0.86	0.49	57%	0.008	0.023
Martinez	2	Parcel 237827	Regional Opportunity	0.71	0.52	73%	0.009	0.023
Martinez	2	Parcel 253818	Parcel-Based Opportunity	13.01	5.66	44%	0.001	0.023
Martinez	2	Parcel 256502	Parcel-Based Opportunity	0.42	0.31	74%	0.014	0.023
Martinez	2	ROW 7604	ROW Opportunity	2.87	1.45	51%	0.003	0.023
Martinez	2	ROW 14857	ROW Opportunity	17.86	8.48	47%	0.000	0.022
Martinez	2	ROW 20289	ROW Opportunity	7.12	3.17	45%	0.001	0.022
Martinez	2	ROW 7211	ROW Opportunity	6.08	2.85	47%	0.002	0.022
Martinez	2	Parcel 258083	Parcel-Based Opportunity	35.65	4.18	12%	0.000	0.021
Martinez	2	Parcel 243866	Parcel-Based Opportunity	14.00	5.43	39%	0.001	0.020
Martinez	2	ROW 2025	ROW Opportunity	9.51	4.84	51%	0.001	0.020
Martinez	2	Parcel 223914	Regional Opportunity	0.85	0.39	46%	0.006	0.019
Martinez	2	Parcel 258983	Regional Opportunity	122.27	7.70	6%	0.000	0.019
Martinez	2	ROW 14205	ROW Opportunity	6.33	3.34	53%	0.001	0.019
Martinez	2	ROW 20345	ROW Opportunity	5.01	2.30	46%	0.002	0.019
Martinez	2	ROW 9574	ROW Opportunity	1.17	0.62	53%	0.005	0.019
Martinez	2	Parcel 255585	Regional Opportunity	0.57	0.42	74%	0.009	0.018
Martinez	2	ROW 16176	ROW Opportunity	9.36	4.21	45%	0.001	0.018
Martinez	2	ROW 631	ROW Opportunity	3.69	1.73	47%	0.002	0.018
Martinez	2	Parcel 225041	Regional Opportunity	0.74	0.35	47%	0.007	0.017
Martinez	2	ROW 6965	ROW Opportunity	3.36	1.76	52%	0.002	0.017
Martinez	2	ROW 9879	ROW Opportunity	0.73	0.41	56%	0.007	0.017
Martinez	2	Parcel 253606	Parcel-Based Opportunity	0.49	0.36	73%	0.009	0.016
Martinez	2	Parcel 255151	Regional Opportunity	0.55	0.35	64%	0.008	0.016
Martinez	2	planned 376	Planned Unlined Bioretention	0.53	0.37	70%	0.009	0.016
Martinez	2	Parcel 225722	Parcel-Based Opportunity	0.34	0.06	18%	0.011	0.015
Martinez	2	ROW 12471	ROW Opportunity	5.06	2.37	47%	0.001	0.015
Martinez	2	ROW 12911	ROW Opportunity	4.33	2.19	51%	0.002	0.015
Martinez	2	ROW 12492	ROW Opportunity	5.90	2.58	44%	0.001	0.014
Martinez	2	ROW 14285	ROW Opportunity	3.17	1.67	53%	0.002	0.014
Martinez	2	ROW 14410	ROW Opportunity	0.55	0.30	55%	0.007	0.014
Martinez	2	ROW 1464	ROW Opportunity	1.92	0.74	39%	0.003	0.014
Martinez	2	ROW 20556	ROW Opportunity	1.78	0.79	44%	0.003	0.014
Martinez	2	ROW 7828	ROW Opportunity	1.92	0.94	49%	0.003	0.014
Martinez	2	ROW 9180	ROW Opportunity	1.23	0.59	48%	0.004	0.014
Martinez	2	Parcel 255587	Parcel-Based Opportunity	0.37	0.29	78%	0.010	0.013
Martinez	2	ROW 12005	ROW Opportunity	1.77	0.96	54%	0.003	0.013
Martinez	2	ROW 4933	ROW Opportunity	2.81	1.45	52%	0.002	0.013
Martinez	2	Parcel 214775	Parcel-Based Opportunity	9.97	2.81	28%	0.001	0.012

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Martinez	2	Parcel 238844	Parcel-Based Opportunity	14.31	3.94	28%	0.000	0.012
Martinez	2	ROW 14540	ROW Opportunity	0.51	0.25	49%	0.007	0.012
Martinez	2	ROW 15897	ROW Opportunity	3.30	1.73	52%	0.002	0.012
Martinez	2	ROW 20804	ROW Opportunity	4.55	2.34	51%	0.001	0.012
Martinez	2	ROW 4230	ROW Opportunity	1.56	0.52	33%	0.003	0.012
Martinez	2	ROW 6703	ROW Opportunity	0.74	0.43	58%	0.005	0.012
Martinez	2	Parcel 240285	Parcel-Based Opportunity	11.54	3.74	32%	0.000	0.011
Martinez	2	Parcel 252998	Parcel-Based Opportunity	8.29	4.83	58%	0.000	0.011
Martinez	2	Parcel 255494	Parcel-Based Opportunity	0.28	0.25	89%	0.011	0.011
Martinez	2	Parcel 256903	Parcel-Based Opportunity	0.23	0.11	48%	0.013	0.011
Martinez	2	planned 373	Planned Unlined Bioretention	1.59	0.50	31%	0.002	0.011
Martinez	2	ROW 12317	ROW Opportunity	0.64	0.34	53%	0.005	0.011
Martinez	2	ROW 16580	ROW Opportunity	1.80	0.75	42%	0.002	0.011
Martinez	2	ROW 20704	ROW Opportunity	5.72	2.55	45%	0.001	0.011
Martinez	2	Parcel 255781	Parcel-Based Opportunity	0.46	0.23	50%	0.006	0.010
Martinez	2	ROW 19347	ROW Opportunity	0.79	0.42	53%	0.004	0.010
Moraga	2	ROW 17250	ROW Opportunity	11.07	3.64	33%	0.016	0.647
Moraga	2	planned 1316	Planned Unlined Bioretention	2.98	1.05	35%	0.026	0.293
Moraga	2	Parcel 10950	Regional Opportunity	1.14	0.34	30%	0.041	0.185
Moraga	2	Parcel 10961	Regional Opportunity	1.15	0.30	26%	0.037	0.170
Moraga	2	ROW 12878	ROW Opportunity	4.53	1.88	42%	0.008	0.111
Moraga	2	Parcel 26092	Parcel-Based Opportunity	38.99	10.31	26%	0.001	0.106
Moraga	2	ROW 12881	ROW Opportunity	11.85	3.71	31%	0.003	0.072
Moraga	2	Parcel 12163	Parcel-Based Opportunity	43.07	7.49	17%	0.001	0.069
Moraga	2	Parcel 13537	Parcel-Based Opportunity	50.27	8.81	18%	0.000	0.067
Moraga	2	Parcel 7723	Parcel-Based Opportunity	24.01	5.65	24%	0.001	0.056
Moraga	2	ROW 3145	ROW Opportunity	19.33	5.50	28%	0.001	0.049
Moraga	2	ROW 10626	ROW Opportunity	13.66	3.97	29%	0.001	0.041
Moraga	2	ROW 4748	ROW Opportunity	14.73	3.93	27%	0.001	0.041
Moraga	2	ROW 3392	ROW Opportunity	10.09	4.09	41%	0.002	0.032
Moraga	2	Parcel 6384	Parcel-Based Opportunity	9.48	3.19	34%	0.002	0.030
Moraga	2	ROW 19295	ROW Opportunity	9.79	2.99	31%	0.001	0.030
Moraga	2	ROW 15965	ROW Opportunity	9.83	3.12	32%	0.001	0.028
Moraga	2	ROW 16744	ROW Opportunity	10.16	2.83	28%	0.001	0.027
Moraga	2	ROW 16992	ROW Opportunity	8.35	2.44	29%	0.001	0.023
Moraga	2	planned 150	Planned Creek/Marsh Restoration	9.22	0.93	10%	0.001	0.015
Moraga	2	Parcel 12154	Parcel-Based Opportunity	7.49	1.19	16%	0.001	0.013
Moraga	2	ROW 3874	ROW Opportunity	4.29	1.72	40%	0.001	0.013
Moraga	2	Parcel 12566	Parcel-Based Opportunity	19.96	2.68	13%	0.000	0.012
Moraga	2	Parcel 13376	Parcel-Based Opportunity	9.49	0.66	7%	0.001	0.012
Moraga	2	Parcel 13461	Parcel-Based Opportunity	4.70	1.31	28%	0.001	0.012
Moraga	2	ROW 20532	ROW Opportunity	3.80	1.22	32%	0.002	0.012
Moraga	2	ROW 5547	ROW Opportunity	4.78	1.26	26%	0.001	0.012
Moraga	2	ROW 5710	ROW Opportunity	4.70	1.16	25%	0.001	0.012
Moraga	2	Parcel 9225	Parcel-Based Opportunity	6.43	1.25	19%	0.001	0.011
Moraga	2	ROW 20599	ROW Opportunity	3.96	1.17	30%	0.001	0.011
Moraga	2	ROW 3147	ROW Opportunity	3.36	1.24	37%	0.002	0.011
Moraga	2	Parcel 3748	Parcel-Based Opportunity	8.12	0.56	7%	0.001	0.010
Moraga	2	ROW 12598	ROW Opportunity	3.52	1.17	33%	0.001	0.010
Orinda	2	ROW 21614	ROW Opportunity	31.32	10.62	34%	0.002	0.104
Orinda	2	Parcel 44823	Parcel-Based Opportunity	16.20	4.76	29%	0.001	0.046
Orinda	2	Parcel 46205	Parcel-Based Opportunity	22.26	2.96	13%	0.001	0.041
Orinda	2	ROW 9556	ROW Opportunity	15.77	2.91	18%	0.001	0.034
Orinda	2	Parcel 13835	Parcel-Based Opportunity	11.63	3.16	27%	0.001	0.030
Orinda	2	Parcel 49552	Parcel-Based Opportunity	28.42	2.67	9%	0.000	0.029
Orinda	2	Parcel 29088	Parcel-Based Opportunity	6.41	1.86	29%	0.001	0.018
Orinda	2	ROW 1107	ROW Opportunity	7.07	1.26	18%	0.001	0.018
Orinda	2	ROW 11198	ROW Opportunity	11.30	1.45	13%	0.001	0.018
Orinda	2	ROW 19957	ROW Opportunity	9.06	1.12	12%	0.001	0.017
Orinda	2	ROW 9077	ROW Opportunity	7.88	1.15	15%	0.001	0.017
Orinda	2	ROW 4721	ROW Opportunity	6.01	1.19	20%	0.001	0.015
Orinda	2	Parcel 47119	Parcel-Based Opportunity	10.58	0.76	7%	0.001	0.014
Orinda	2	Parcel 36062	Parcel-Based Opportunity	3.19	1.35	42%	0.002	0.013
Orinda	2	ROW 7202	ROW Opportunity	5.07	0.93	18%	0.001	0.011
Pinole	2	Parcel 254723	Parcel-Based Opportunity	4.41	2.14	49%	0.030	0.532
Pinole	2	ROW 16912	ROW Opportunity	10.96	5.87	54%	0.008	0.283
Pinole	2	ROW 19218	ROW Opportunity	7.85	3.87	49%	0.006	0.158
Pinole	2	ROW 14911	ROW Opportunity	4.68	2.63	56%	0.009	0.147
Pinole	2	ROW 14916	ROW Opportunity	9.85	4.50	46%	0.005	0.141
Pinole	2	ROW 20585	ROW Opportunity	1.13	0.71	63%	0.027	0.122
Pinole	2	ROW 1018	ROW Opportunity	2.13	1.30	61%	0.008	0.059
Pinole	2	ROW 15540	ROW Opportunity	8.95	3.99	45%	0.003	0.059
Pinole	2	Parcel 230897	Regional Opportunity	2.72	1.22	45%	0.006	0.056
Pinole	2	ROW 15484	ROW Opportunity	0.95	0.39	41%	0.014	0.052
Pinole	2	ROW 18207	ROW Opportunity	0.78	0.47	60%	0.017	0.050
Pinole	2	ROW 14605	ROW Opportunity	2.38	1.39	58%	0.006	0.047
Pinole	2	Parcel 230869	Regional Opportunity	1.51	0.94	62%	0.009	0.044
Pinole	2	Parcel 232274	Parcel-Based Opportunity	22.08	9.87	45%	0.001	0.040
Pinole	2	ROW 6874	ROW Opportunity	9.82	4.43	45%	0.002	0.038
Pinole	2	ROW 7727	ROW Opportunity	0.61	0.33	54%	0.014	0.033
Pinole	2	Parcel 221780	Regional Opportunity	3.09	1.00	32%	0.003	0.032
Pinole	2	ROW 7150	ROW Opportunity	2.17	1.19	55%	0.005	0.030
Pinole	2	Parcel 245647	Regional Opportunity	0.88	0.67	76%	0.010	0.029
Pinole	2	Parcel 247794	Parcel-Based Opportunity	0.30	0.08	27%	0.019	0.023
Pinole	2	Parcel 245383	Regional Opportunity	0.65	0.49	75%	0.010	0.022
Pinole	2	ROW 12194	ROW Opportunity	3.86	1.94	50%	0.002	0.022
Pinole	2	ROW 3363	ROW Opportunity	5.11	2.55	50%	0.002	0.022
Pinole	2	ROW 5887	ROW Opportunity	13.54	5.22	39%	0.001	0.022
Pinole	2	ROW 5599	ROW Opportunity	1.98	1.15	58%	0.004	0.021
Pinole	2	Parcel 243023	Parcel-Based Opportunity	9.49	5.01	53%	0.001	0.020
Pinole	2	ROW 15034	ROW Opportunity	1.70	0.94	55%	0.004	0.020
Pinole	2	ROW 13497	ROW Opportunity	6.04	3.06	51%	0.001	0.019
Pinole	2	ROW 17159	ROW Opportunity	7.51	3.24	43%	0.001	0.019
Pinole	2	Parcel 219618	Parcel-Based Opportunity	13.15	4.37	33%	0.001	0.018

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Pinole	2	Parcel 247475	Parcel-Based Opportunity	0.12	0.08	67%	0.038	0.018
Pinole	2	ROW 5886	ROW Opportunity	4.30	2.40	56%	0.002	0.018
Pinole	2	ROW 1742	ROW Opportunity	4.13	1.95	47%	0.002	0.017
Pinole	2	ROW 11596	ROW Opportunity	0.67	0.39	58%	0.007	0.016
Pinole	2	ROW 15440	ROW Opportunity	1.90	0.96	51%	0.003	0.016
Pinole	2	ROW 4012	ROW Opportunity	1.39	0.72	52%	0.004	0.016
Pinole	2	ROW 306	ROW Opportunity	1.68	0.94	56%	0.003	0.015
Pinole	2	ROW 1017	ROW Opportunity	0.97	0.42	43%	0.005	0.014
Pinole	2	ROW 13999	ROW Opportunity	0.44	0.22	50%	0.009	0.014
Pinole	2	ROW 293	ROW Opportunity	2.06	1.13	55%	0.003	0.014
Pinole	2	ROW 15441	ROW Opportunity	0.57	0.38	67%	0.007	0.013
Pinole	2	ROW 15478	ROW Opportunity	1.37	0.77	56%	0.003	0.013
Pinole	2	ROW 16159	ROW Opportunity	1.46	0.86	59%	0.003	0.013
Pinole	2	Parcel 244914	Parcel-Based Opportunity	0.42	0.28	67%	0.009	0.012
Pinole	2	Parcel 249339	Regional Opportunity	0.52	0.26	50%	0.007	0.012
Pinole	2	ROW 14913	ROW Opportunity	3.64	1.88	52%	0.002	0.012
Pinole	2	ROW 16077	ROW Opportunity	1.72	0.80	47%	0.003	0.012
Pinole	2	ROW 7141	ROW Opportunity	1.41	0.78	55%	0.003	0.012
Pinole	2	ROW 1021	ROW Opportunity	1.11	0.49	44%	0.003	0.011
Pinole	2	ROW 14440	ROW Opportunity	1.13	0.42	37%	0.003	0.011
Pinole	2	ROW 4571	ROW Opportunity	5.72	2.53	44%	0.001	0.011
Pinole	2	Parcel 246543	Parcel-Based Opportunity	0.40	0.23	58%	0.008	0.010
Pinole	2	Parcel 249605	Parcel-Based Opportunity	4.61	0.72	16%	0.001	0.010
Pinole	2	ROW 646	ROW Opportunity	4.57	2.48	54%	0.001	0.010
Pittsburg	2	Parcel 352273	Parcel-Based Opportunity	22.24	7.16	32%	0.020	1.973
Pittsburg	2	ROW 6199	ROW Opportunity	17.07	9.41	55%	0.023	1.681
Pittsburg	2	ROW 13238	ROW Opportunity	17.62	9.84	56%	0.016	1.119
Pittsburg	2	ROW 11361	ROW Opportunity	11.26	7.09	63%	0.019	0.890
Pittsburg	2	ROW 7663	ROW Opportunity	8.79	5.55	63%	0.024	0.887
Pittsburg	2	ROW 4315	ROW Opportunity	3.78	2.84	75%	0.040	0.661
Pittsburg	2	ROW 14954	ROW Opportunity	7.36	4.19	57%	0.020	0.642
Pittsburg	2	ROW 2265	ROW Opportunity	3.43	2.47	72%	0.038	0.568
Pittsburg	2	ROW 14958	ROW Opportunity	4.91	3.47	71%	0.026	0.548
Pittsburg	2	Parcel 366531	Parcel-Based Opportunity	6.87	2.53	37%	0.015	0.449
Pittsburg	2	ROW 14798	ROW Opportunity	3.48	2.15	62%	0.028	0.412
Pittsburg	2	ROW 1954	ROW Opportunity	2.50	1.71	68%	0.037	0.401
Pittsburg	2	ROW 11359	ROW Opportunity	13.31	7.75	58%	0.007	0.342
Pittsburg	2	ROW 3090	ROW Opportunity	5.95	3.72	63%	0.014	0.342
Pittsburg	2	Parcel 356238	Parcel-Based Opportunity	10.36	3.44	33%	0.008	0.326
Pittsburg	2	ROW 7525	ROW Opportunity	2.93	1.85	63%	0.026	0.326
Pittsburg	2	Parcel 350839	Parcel-Based Opportunity	14.33	6.63	46%	0.006	0.316
Pittsburg	2	ROW 6215	ROW Opportunity	2.16	1.40	65%	0.033	0.310
Pittsburg	2	ROW 6741	ROW Opportunity	2.05	1.30	63%	0.034	0.304
Pittsburg	2	ROW 9457	ROW Opportunity	1.88	1.26	67%	0.036	0.296
Pittsburg	2	ROW 17711	ROW Opportunity	1.60	1.28	80%	0.042	0.292
Pittsburg	2	ROW 7526	ROW Opportunity	5.46	3.95	72%	0.013	0.279
Pittsburg	2	ROW 8562	ROW Opportunity	2.35	1.45	62%	0.027	0.275
Pittsburg	2	ROW 20368	ROW Opportunity	6.68	4.19	63%	0.010	0.251
Pittsburg	2	Parcel 367743	Regional Opportunity	2.24	1.01	45%	0.025	0.247
Pittsburg	2	ROW 8561	ROW Opportunity	7.93	4.62	58%	0.008	0.236
Pittsburg	2	ROW 1955	ROW Opportunity	1.47	0.99	67%	0.036	0.231
Pittsburg	2	ROW 6257	ROW Opportunity	21.27	11.80	55%	0.003	0.231
Pittsburg	2	ROW 21116	ROW Opportunity	8.88	4.83	54%	0.007	0.228
Pittsburg	2	ROW 6280	ROW Opportunity	5.74	3.46	60%	0.010	0.227
Pittsburg	2	ROW 11974	ROW Opportunity	1.43	0.96	67%	0.036	0.226
Pittsburg	2	ROW 8563	ROW Opportunity	12.59	7.66	61%	0.005	0.220
Pittsburg	2	ROW 9582	ROW Opportunity	2.15	1.25	58%	0.023	0.212
Pittsburg	2	Parcel 349390	Parcel-Based Opportunity	6.79	4.68	69%	0.008	0.207
Pittsburg	2	ROW 6226	ROW Opportunity	4.40	2.71	62%	0.011	0.194
Pittsburg	2	ROW 7859	ROW Opportunity	7.77	4.29	55%	0.007	0.191
Pittsburg	2	ROW 6505	ROW Opportunity	3.76	2.13	57%	0.011	0.170
Pittsburg	2	ROW 15499	ROW Opportunity	1.44	1.06	74%	0.027	0.169
Pittsburg	2	ROW 18481	ROW Opportunity	1.15	0.71	62%	0.033	0.166
Pittsburg	2	ROW 3328	ROW Opportunity	1.31	0.78	60%	0.029	0.165
Pittsburg	2	ROW 3327	ROW Opportunity	1.14	0.65	57%	0.031	0.154
Pittsburg	2	Parcel 363475	Parcel-Based Opportunity	7.77	3.26	42%	0.005	0.150
Pittsburg	2	ROW 8520	ROW Opportunity	3.06	1.75	57%	0.011	0.135
Pittsburg	2	ROW 11360	ROW Opportunity	7.80	4.64	59%	0.005	0.133
Pittsburg	2	ROW 6737	ROW Opportunity	0.93	0.57	61%	0.033	0.133
Pittsburg	2	ROW 20440	ROW Opportunity	1.02	0.53	52%	0.028	0.126
Pittsburg	2	ROW 2855	ROW Opportunity	24.34	12.97	53%	0.002	0.117
Pittsburg	2	ROW 6736	ROW Opportunity	0.84	0.50	60%	0.032	0.117
Pittsburg	2	ROW 6237	ROW Opportunity	2.47	1.38	56%	0.011	0.110
Pittsburg	2	Parcel 362143	Regional Opportunity	0.99	0.41	41%	0.026	0.109
Pittsburg	2	ROW 4561	ROW Opportunity	4.16	2.43	58%	0.007	0.108
Pittsburg	2	ROW 18479	ROW Opportunity	0.76	0.45	59%	0.032	0.106
Pittsburg	2	Parcel 373150	Parcel-Based Opportunity	5.22	2.26	43%	0.005	0.103
Pittsburg	2	ROW 15210	ROW Opportunity	11.75	7.22	61%	0.003	0.093
Pittsburg	2	Parcel 367785	Regional Opportunity	1.98	1.79	90%	0.011	0.078
Pittsburg	2	ROW 21076	ROW Opportunity	0.54	0.34	63%	0.033	0.078
Pittsburg	2	ROW 3879	ROW Opportunity	7.88	4.73	60%	0.003	0.075
Pittsburg	2	ROW 8564	ROW Opportunity	9.90	5.38	54%	0.003	0.074
Pittsburg	2	Parcel 361465	Parcel-Based Opportunity	9.00	2.11	23%	0.002	0.072
Pittsburg	2	ROW 5091	ROW Opportunity	19.64	10.50	53%	0.001	0.072
Pittsburg	2	ROW 20894	ROW Opportunity	1.00	0.63	63%	0.017	0.071
Pittsburg	2	ROW 11324	ROW Opportunity	1.53	1.00	65%	0.012	0.070
Pittsburg	2	ROW 17896	ROW Opportunity	0.57	0.34	60%	0.028	0.070
Pittsburg	2	ROW 9581	ROW Opportunity	1.45	0.88	61%	0.012	0.070
Pittsburg	2	Parcel 362407	Regional Opportunity	2.93	1.49	51%	0.006	0.068
Pittsburg	2	ROW 1336	ROW Opportunity	3.78	2.22	59%	0.005	0.068
Pittsburg	2	Parcel 371128	Parcel-Based Opportunity	14.11	3.86	27%	0.002	0.067
Pittsburg	2	Parcel 362118	Regional Opportunity	2.29	1.41	62%	0.008	0.063
Pittsburg	2	ROW 7571	ROW Opportunity	10.34	5.77	56%	0.002	0.063
Pittsburg	2	ROW 15487	ROW Opportunity	2.36	1.45	61%	0.007	0.062

DRAFT Contra Costa Countywide Attainment Strategy
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Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Pittsburg	2	ROW 6193	ROW Opportunity	3.97	2.52	63%	0.005	0.060
Pittsburg	2	Parcel 362980	Parcel-Based Opportunity	29.43	14.40	49%	0.001	0.058
Pittsburg	2	ROW 1284	ROW Opportunity	0.36	0.25	69%	0.036	0.057
Pittsburg	2	ROW 5206	ROW Opportunity	3.75	2.42	65%	0.005	0.057
Pittsburg	2	ROW 15053	ROW Opportunity	2.48	1.28	52%	0.006	0.055
Pittsburg	2	Parcel 374906	Parcel-Based Opportunity	6.68	4.37	65%	0.003	0.054
Pittsburg	2	ROW 18482	ROW Opportunity	0.42	0.22	52%	0.029	0.054
Pittsburg	2	Parcel 356104	Regional Opportunity	2.28	1.53	67%	0.007	0.053
Pittsburg	2	Parcel 370086	Regional Opportunity	1.37	1.18	86%	0.010	0.052
Pittsburg	2	ROW 6195	ROW Opportunity	6.47	3.95	61%	0.003	0.052
Pittsburg	2	Parcel 362426	Regional Opportunity	1.89	1.15	61%	0.007	0.051
Pittsburg	2	ROW 434	ROW Opportunity	0.36	0.23	64%	0.033	0.051
Pittsburg	2	ROW 11734	ROW Opportunity	3.49	2.06	59%	0.004	0.050
Pittsburg	2	Parcel 358872	Regional Opportunity	1.52	1.10	72%	0.009	0.048
Pittsburg	2	ROW 17448	ROW Opportunity	2.84	1.45	51%	0.005	0.047
Pittsburg	2	ROW 3086	ROW Opportunity	0.45	0.29	64%	0.023	0.045
Pittsburg	2	Parcel 363463	Regional Opportunity	2.26	0.96	42%	0.005	0.044
Pittsburg	2	ROW 16768	ROW Opportunity	0.36	0.19	53%	0.028	0.044
Pittsburg	2	Parcel 363309	Parcel-Based Opportunity	6.78	2.01	30%	0.002	0.043
Pittsburg	2	ROW 810	ROW Opportunity	0.26	0.18	69%	0.037	0.043
Pittsburg	2	Parcel 371346	Parcel-Based Opportunity	0.24	0.18	75%	0.039	0.041
Pittsburg	2	ROW 5831	ROW Opportunity	3.02	1.89	63%	0.004	0.041
Pittsburg	2	ROW 6214	ROW Opportunity	3.42	2.08	61%	0.004	0.041
Pittsburg	2	ROW 5428	ROW Opportunity	4.76	2.60	55%	0.003	0.037
Pittsburg	2	ROW 6228	ROW Opportunity	4.44	2.89	65%	0.003	0.037
Pittsburg	2	ROW 11833	ROW Opportunity	3.89	2.24	58%	0.003	0.036
Pittsburg	2	ROW 762	ROW Opportunity	6.64	3.55	53%	0.002	0.036
Pittsburg	2	Parcel 372570	Regional Opportunity	1.35	0.77	57%	0.007	0.035
Pittsburg	2	ROW 18594	ROW Opportunity	8.91	5.04	57%	0.002	0.035
Pittsburg	2	Parcel 374691	Parcel-Based Opportunity	11.06	5.22	47%	0.001	0.034
Pittsburg	2	ROW 18048	ROW Opportunity	4.41	2.71	61%	0.003	0.034
Pittsburg	2	Parcel 368250	Parcel-Based Opportunity	0.32	0.18	56%	0.024	0.033
Pittsburg	2	ROW 1733	ROW Opportunity	1.96	0.93	47%	0.005	0.033
Pittsburg	2	Parcel 348794	Parcel-Based Opportunity	20.29	7.64	38%	0.001	0.032
Pittsburg	2	ROW 2115	ROW Opportunity	1.76	0.97	55%	0.005	0.032
Pittsburg	2	ROW 17251	ROW Opportunity	8.95	5.16	58%	0.001	0.031
Pittsburg	2	ROW 394	ROW Opportunity	1.85	1.05	57%	0.005	0.031
Pittsburg	2	ROW 15726	ROW Opportunity	3.11	1.83	59%	0.003	0.030
Pittsburg	2	ROW 21525	ROW Opportunity	5.44	2.94	54%	0.002	0.030
Pittsburg	2	ROW 20465	ROW Opportunity	38.58	20.17	52%	0.000	0.029
Pittsburg	2	Parcel 361545	Parcel-Based Opportunity	18.57	6.68	36%	0.001	0.028
Pittsburg	2	ROW 14014	ROW Opportunity	1.80	0.94	52%	0.005	0.028
Pittsburg	2	ROW 15496	ROW Opportunity	2.11	1.33	63%	0.004	0.028
Pittsburg	2	ROW 3866	ROW Opportunity	1.39	0.66	47%	0.006	0.028
Pittsburg	2	ROW 6218	ROW Opportunity	1.32	0.86	65%	0.006	0.028
Pittsburg	2	Parcel 351544	Parcel-Based Opportunity	13.19	6.68	51%	0.001	0.027
Pittsburg	2	Parcel 358992	Parcel-Based Opportunity	3.66	2.32	63%	0.003	0.027
Pittsburg	2	Parcel 374956	Parcel-Based Opportunity	7.22	2.76	38%	0.002	0.027
Pittsburg	2	ROW 2172	ROW Opportunity	3.63	2.26	62%	0.003	0.027
Pittsburg	2	ROW 1734	ROW Opportunity	4.43	2.52	57%	0.002	0.026
Pittsburg	2	ROW 20003	ROW Opportunity	12.36	6.63	54%	0.001	0.026
Pittsburg	2	Parcel 342146	Parcel-Based Opportunity	12.50	6.01	48%	0.001	0.025
Pittsburg	2	ROW 6217	ROW Opportunity	1.01	0.70	69%	0.007	0.025
Pittsburg	2	Parcel 348459	Parcel-Based Opportunity	12.96	5.96	46%	0.001	0.024
Pittsburg	2	Parcel 372876	Regional Opportunity	1.32	0.53	40%	0.005	0.024
Pittsburg	2	Parcel 373402	Regional Opportunity	1.03	0.53	51%	0.006	0.024
Pittsburg	2	ROW 11064	ROW Opportunity	3.96	2.19	55%	0.002	0.024
Pittsburg	2	ROW 14856	ROW Opportunity	3.11	1.80	58%	0.002	0.024
Pittsburg	2	ROW 16225	ROW Opportunity	4.64	2.66	57%	0.002	0.024
Pittsburg	2	ROW 20398	ROW Opportunity	0.77	0.43	56%	0.008	0.024
Pittsburg	2	Parcel 352244	Parcel-Based Opportunity	10.05	5.65	56%	0.001	0.023
Pittsburg	2	Parcel 362344	Parcel-Based Opportunity	14.44	5.98	41%	0.001	0.023
Pittsburg	2	ROW 11358	ROW Opportunity	1.06	0.49	46%	0.006	0.023
Pittsburg	2	ROW 11872	ROW Opportunity	2.97	1.69	57%	0.003	0.023
Pittsburg	2	ROW 12501	ROW Opportunity	4.54	2.65	58%	0.002	0.023
Pittsburg	2	ROW 20394	ROW Opportunity	1.63	0.97	60%	0.004	0.023
Pittsburg	2	ROW 20627	ROW Opportunity	4.36	2.57	59%	0.002	0.023
Pittsburg	2	ROW 2826	ROW Opportunity	4.45	2.57	58%	0.002	0.023
Pittsburg	2	ROW 4032	ROW Opportunity	2.50	1.16	46%	0.003	0.023
Pittsburg	2	ROW 6219	ROW Opportunity	1.46	0.92	63%	0.005	0.023
Pittsburg	2	Parcel 366285	Parcel-Based Opportunity	26.81	4.81	18%	0.000	0.022
Pittsburg	2	ROW 894	ROW Opportunity	4.26	2.49	58%	0.002	0.022
Pittsburg	2	Parcel 336890	Parcel-Based Opportunity	9.19	5.25	57%	0.001	0.021
Pittsburg	2	Parcel 357792	Regional Opportunity	1.23	1.04	85%	0.006	0.021
Pittsburg	2	ROW 11969	ROW Opportunity	0.49	0.26	53%	0.011	0.021
Pittsburg	2	ROW 14500	ROW Opportunity	0.21	0.12	57%	0.024	0.021
Pittsburg	2	ROW 6695	ROW Opportunity	1.68	0.92	55%	0.004	0.021
Pittsburg	2	Parcel 355971	Parcel-Based Opportunity	0.38	0.12	32%	0.012	0.020
Pittsburg	2	Parcel 364979	Parcel-Based Opportunity	10.21	5.56	54%	0.001	0.020
Pittsburg	2	Parcel 367368	Parcel-Based Opportunity	11.66	4.87	42%	0.001	0.020
Pittsburg	2	Parcel 372224	Regional Opportunity	0.54	0.37	69%	0.010	0.020
Pittsburg	2	ROW 12237	ROW Opportunity	8.69	4.66	54%	0.001	0.020
Pittsburg	2	ROW 1520	ROW Opportunity	2.90	1.59	55%	0.002	0.019
Pittsburg	2	ROW 3686	ROW Opportunity	2.00	0.51	26%	0.003	0.019
Pittsburg	2	ROW 6221	ROW Opportunity	1.24	0.79	64%	0.005	0.019
Pittsburg	2	ROW 8940	ROW Opportunity	6.24	4.08	65%	0.001	0.019
Pittsburg	2	ROW 14011	ROW Opportunity	0.79	0.44	56%	0.006	0.018
Pittsburg	2	ROW 20795	ROW Opportunity	3.72	2.00	54%	0.002	0.018
Pittsburg	2	ROW 5463	ROW Opportunity	0.90	0.54	60%	0.006	0.018
Pittsburg	2	ROW 6045	ROW Opportunity	0.75	0.42	56%	0.007	0.018
Pittsburg	2	ROW 6805	ROW Opportunity	0.65	0.36	55%	0.008	0.018
Pittsburg	2	Parcel 348698	Regional Opportunity	0.48	0.40	83%	0.010	0.017
Pittsburg	2	Parcel 372393	Regional Opportunity	0.60	0.37	62%	0.008	0.017
Pittsburg	2	Parcel 374571	Regional Opportunity	0.54	0.38	70%	0.009	0.017

DRAFT Contra Costa Countywide Attainment Strategy
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Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Pittsburg	2	ROW 11603	ROW Opportunity	1.42	0.34	24%	0.003	0.017
Pittsburg	2	ROW 14658	ROW Opportunity	5.25	3.04	58%	0.001	0.017
Pittsburg	2	ROW 20383	ROW Opportunity	5.64	3.31	59%	0.001	0.017
Pittsburg	2	ROW 21083	ROW Opportunity	7.55	4.13	55%	0.001	0.017
Pittsburg	2	ROW 4764	ROW Opportunity	1.16	0.71	61%	0.005	0.017
Pittsburg	2	ROW 5824	ROW Opportunity	2.16	1.07	50%	0.003	0.017
Pittsburg	2	Parcel 359451	Parcel-Based Opportunity	11.40	4.60	40%	0.001	0.016
Pittsburg	2	Parcel 364198	Parcel-Based Opportunity	10.22	3.89	38%	0.001	0.016
Pittsburg	2	ROW 11370	ROW Opportunity	0.33	0.21	64%	0.013	0.016
Pittsburg	2	ROW 17388	ROW Opportunity	1.59	0.88	55%	0.003	0.016
Pittsburg	2	ROW 5853	ROW Opportunity	1.28	0.74	58%	0.004	0.016
Pittsburg	2	ROW 6194	ROW Opportunity	2.19	1.29	59%	0.002	0.016
Pittsburg	2	ROW 6238	ROW Opportunity	0.61	0.36	59%	0.007	0.016
Pittsburg	2	Parcel 349343	Regional Opportunity	1.12	0.32	29%	0.004	0.015
Pittsburg	2	ROW 13380	ROW Opportunity	0.48	0.23	48%	0.008	0.015
Pittsburg	2	ROW 17358	ROW Opportunity	6.93	3.73	54%	0.001	0.015
Pittsburg	2	ROW 3583	ROW Opportunity	6.04	3.35	55%	0.001	0.015
Pittsburg	2	ROW 6223	ROW Opportunity	2.68	1.66	62%	0.002	0.015
Pittsburg	2	ROW 9712	ROW Opportunity	6.85	3.87	56%	0.001	0.015
Pittsburg	2	ROW 9726	ROW Opportunity	6.75	3.66	54%	0.001	0.015
Pittsburg	2	Parcel 368854	Parcel-Based Opportunity	0.36	0.31	86%	0.011	0.014
Pittsburg	2	ROW 11832	ROW Opportunity	1.52	0.86	57%	0.003	0.014
Pittsburg	2	ROW 11900	ROW Opportunity	3.22	1.71	53%	0.002	0.014
Pittsburg	2	ROW 17755	ROW Opportunity	3.00	1.60	53%	0.002	0.014
Pittsburg	2	Parcel 351110	Parcel-Based Opportunity	107.94	43.80	41%	0.000	0.013
Pittsburg	2	Parcel 358978	Parcel-Based Opportunity	0.25	0.18	72%	0.013	0.013
Pittsburg	2	Parcel 361603	Parcel-Based Opportunity	0.48	0.31	65%	0.008	0.013
Pittsburg	2	Parcel 371237	Parcel-Based Opportunity	0.43	0.30	70%	0.009	0.013
Pittsburg	2	planned 431	Planned Unlined Bioretention	0.48	0.31	65%	0.008	0.013
Pittsburg	2	ROW 11357	ROW Opportunity	3.17	1.95	62%	0.002	0.013
Pittsburg	2	ROW 12433	ROW Opportunity	6.02	3.27	54%	0.001	0.013
Pittsburg	2	ROW 1329	ROW Opportunity	8.23	4.37	53%	0.001	0.013
Pittsburg	2	Parcel 372099	Parcel-Based Opportunity	0.41	0.26	63%	0.008	0.012
Pittsburg	2	ROW 10175	ROW Opportunity	6.76	3.47	51%	0.001	0.012
Pittsburg	2	ROW 12638	ROW Opportunity	0.12	0.07	58%	0.025	0.012
Pittsburg	2	ROW 15237	ROW Opportunity	2.52	1.28	51%	0.002	0.012
Pittsburg	2	ROW 20371	ROW Opportunity	5.02	3.02	60%	0.001	0.012
Pittsburg	2	ROW 20402	ROW Opportunity	3.81	2.21	58%	0.001	0.012
Pittsburg	2	ROW 20411	ROW Opportunity	4.81	2.95	61%	0.001	0.012
Pittsburg	2	ROW 20801	ROW Opportunity	3.20	1.94	61%	0.002	0.012
Pittsburg	2	ROW 5843	ROW Opportunity	5.08	3.01	59%	0.001	0.012
Pittsburg	2	ROW 6299	ROW Opportunity	5.53	2.99	54%	0.001	0.012
Pittsburg	2	ROW 6474	ROW Opportunity	3.61	1.94	54%	0.001	0.012
Pittsburg	2	Parcel 353346	Parcel-Based Opportunity	7.56	2.47	33%	0.001	0.011
Pittsburg	2	ROW 1196	ROW Opportunity	1.56	0.85	54%	0.002	0.011
Pittsburg	2	ROW 14319	ROW Opportunity	5.30	2.79	53%	0.001	0.011
Pittsburg	2	ROW 15497	ROW Opportunity	0.90	0.77	86%	0.004	0.011
Pittsburg	2	ROW 16028	ROW Opportunity	5.20	2.77	53%	0.001	0.011
Pittsburg	2	ROW 20374	ROW Opportunity	3.94	2.27	58%	0.001	0.011
Pittsburg	2	ROW 2952	ROW Opportunity	5.23	2.80	54%	0.001	0.011
Pittsburg	2	ROW 9735	ROW Opportunity	4.76	2.79	59%	0.001	0.011
Pleasant Hill	2	ROW 19233	ROW Opportunity	2.08	1.67	80%	0.043	0.382
Pleasant Hill	2	ROW 4670	ROW Opportunity	17.32	8.32	48%	0.005	0.280
Pleasant Hill	2	ROW 19166	ROW Opportunity	30.21	13.52	45%	0.003	0.239
Pleasant Hill	2	Parcel 198405	Parcel-Based Opportunity	96.46	48.68	50%	0.001	0.203
Pleasant Hill	2	Parcel 181521	Parcel-Based Opportunity	9.56	4.74	50%	0.006	0.193
Pleasant Hill	2	ROW 2970	ROW Opportunity	9.37	5.99	64%	0.006	0.181
Pleasant Hill	2	ROW 9267	ROW Opportunity	3.51	1.89	54%	0.012	0.170
Pleasant Hill	2	ROW 20243	ROW Opportunity	2.99	1.93	65%	0.013	0.148
Pleasant Hill	2	ROW 8317	ROW Opportunity	12.17	5.45	45%	0.003	0.111
Pleasant Hill	2	ROW 15010	ROW Opportunity	21.53	8.73	41%	0.002	0.110
Pleasant Hill	2	ROW 12076	ROW Opportunity	2.39	1.40	59%	0.012	0.106
Pleasant Hill	2	ROW 4673	ROW Opportunity	4.72	2.27	48%	0.006	0.103
Pleasant Hill	2	Parcel 150985	Regional Opportunity	0.77	0.41	53%	0.030	0.098
Pleasant Hill	2	ROW 4671	ROW Opportunity	5.14	2.67	52%	0.006	0.098
Pleasant Hill	2	Parcel 161733	Parcel-Based Opportunity	3.53	2.11	60%	0.008	0.094
Pleasant Hill	2	Parcel 142700	Parcel-Based Opportunity	3.60	2.10	58%	0.007	0.093
Pleasant Hill	2	ROW 17670	ROW Opportunity	6.18	3.50	57%	0.004	0.084
Pleasant Hill	2	ROW 5047	ROW Opportunity	3.17	1.88	59%	0.007	0.084
Pleasant Hill	2	Parcel 186000	Parcel-Based Opportunity	4.15	1.73	42%	0.005	0.079
Pleasant Hill	2	ROW 13734	ROW Opportunity	8.72	3.90	45%	0.003	0.079
Pleasant Hill	2	Parcel 185324	Parcel-Based Opportunity	4.04	1.69	42%	0.005	0.077
Pleasant Hill	2	ROW 12853	ROW Opportunity	4.72	2.76	58%	0.005	0.072
Pleasant Hill	2	ROW 2494	ROW Opportunity	14.34	6.19	43%	0.002	0.072
Pleasant Hill	2	ROW 6872	ROW Opportunity	1.64	0.99	60%	0.012	0.072
Pleasant Hill	2	ROW 6671	ROW Opportunity	3.95	1.92	49%	0.005	0.067
Pleasant Hill	2	ROW 13220	ROW Opportunity	3.76	2.25	60%	0.005	0.062
Pleasant Hill	2	Parcel 189822	Parcel-Based Opportunity	26.23	15.34	58%	0.001	0.061
Pleasant Hill	2	ROW 4672	ROW Opportunity	2.09	1.06	51%	0.008	0.060
Pleasant Hill	2	Parcel 173214	Regional Opportunity	2.92	1.24	42%	0.006	0.059
Pleasant Hill	2	ROW 4280	ROW Opportunity	2.43	1.23	51%	0.007	0.058
Pleasant Hill	2	ROW 4377	ROW Opportunity	9.02	4.33	48%	0.002	0.056
Pleasant Hill	2	ROW 5054	ROW Opportunity	2.66	1.53	58%	0.006	0.055
Pleasant Hill	2	planned 143	Planned Water Quality Basin	38.26	17.06	45%	0.001	0.054
Pleasant Hill	2	Parcel 146724	Parcel-Based Opportunity	30.26	12.96	43%	0.001	0.053
Pleasant Hill	2	Parcel 155831	Regional Opportunity	1.32	1.23	93%	0.011	0.053
Pleasant Hill	2	ROW 4886	ROW Opportunity	2.01	1.26	63%	0.007	0.048
Pleasant Hill	2	ROW 19602	ROW Opportunity	1.97	1.24	63%	0.007	0.047
Pleasant Hill	2	ROW 8079	ROW Opportunity	14.00	3.93	28%	0.001	0.045
Pleasant Hill	2	ROW 8193	ROW Opportunity	9.91	3.96	40%	0.002	0.045
Pleasant Hill	2	ROW 13735	ROW Opportunity	2.08	1.04	50%	0.006	0.040
Pleasant Hill	2	Parcel 142400	Regional Opportunity	1.85	0.83	45%	0.006	0.039
Pleasant Hill	2	ROW 13554	ROW Opportunity	6.29	2.86	45%	0.002	0.039
Pleasant Hill	2	Parcel 185980	Regional Opportunity	1.25	0.79	63%	0.008	0.035

DRAFT Contra Costa Countywide Attainment Strategy
 Attachment 1: Countywide Attainment Scenario Model Results

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Pleasant Hill	2	ROW 14564	ROW Opportunity	7.82	3.13	40%	0.002	0.035
Pleasant Hill	2	Parcel 131105	Regional Opportunity	1.45	0.72	50%	0.007	0.034
Pleasant Hill	2	ROW 17048	ROW Opportunity	1.65	0.76	46%	0.006	0.034
Pleasant Hill	2	ROW 7753	ROW Opportunity	3.18	1.28	40%	0.003	0.034
Pleasant Hill	2	ROW 9560	ROW Opportunity	0.50	0.19	38%	0.017	0.034
Pleasant Hill	2	Parcel 185990	Regional Opportunity	1.68	0.71	42%	0.005	0.032
Pleasant Hill	2	ROW 11390	ROW Opportunity	7.82	3.29	42%	0.002	0.031
Pleasant Hill	2	ROW 9880	ROW Opportunity	3.49	1.47	42%	0.003	0.029
Pleasant Hill	2	Parcel 156974	Parcel-Based Opportunity	9.89	3.33	34%	0.001	0.028
Pleasant Hill	2	ROW 13741	ROW Opportunity	1.00	0.63	63%	0.008	0.028
Pleasant Hill	2	ROW 13736	ROW Opportunity	4.01	1.82	45%	0.002	0.027
Pleasant Hill	2	ROW 19478	ROW Opportunity	1.79	0.76	42%	0.004	0.027
Pleasant Hill	2	ROW 6668	ROW Opportunity	4.38	1.90	43%	0.002	0.027
Pleasant Hill	2	Parcel 149937	Regional Opportunity	2.29	1.03	45%	0.004	0.026
Pleasant Hill	2	Parcel 131108	Regional Opportunity	0.82	0.54	66%	0.008	0.024
Pleasant Hill	2	Parcel 187984	Parcel-Based Opportunity	23.59	5.41	23%	0.000	0.024
Pleasant Hill	2	ROW 20206	ROW Opportunity	11.06	5.11	46%	0.001	0.023
Pleasant Hill	2	ROW 2045	ROW Opportunity	2.31	1.12	48%	0.003	0.022
Pleasant Hill	2	ROW 4500	ROW Opportunity	3.13	1.84	59%	0.003	0.022
Pleasant Hill	2	ROW 6670	ROW Opportunity	1.70	0.79	46%	0.004	0.022
Pleasant Hill	2	ROW 11085	ROW Opportunity	3.49	1.68	48%	0.002	0.021
Pleasant Hill	2	ROW 12762	ROW Opportunity	3.17	1.40	44%	0.002	0.021
Pleasant Hill	2	ROW 287	ROW Opportunity	1.37	0.44	32%	0.004	0.021
Pleasant Hill	2	ROW 4178	ROW Opportunity	7.51	3.18	42%	0.001	0.021
Pleasant Hill	2	Parcel 168841	Regional Opportunity	0.97	0.44	45%	0.006	0.020
Pleasant Hill	2	ROW 15029	ROW Opportunity	3.85	1.58	41%	0.002	0.019
Pleasant Hill	2	ROW 17703	ROW Opportunity	4.38	1.92	44%	0.002	0.019
Pleasant Hill	2	ROW 5754	ROW Opportunity	1.34	0.80	60%	0.004	0.019
Pleasant Hill	2	Parcel 167223	Parcel-Based Opportunity	10.92	4.29	39%	0.001	0.018
Pleasant Hill	2	ROW 12009	ROW Opportunity	2.27	1.14	50%	0.003	0.018
Pleasant Hill	2	ROW 17057	ROW Opportunity	2.52	1.13	45%	0.002	0.018
Pleasant Hill	2	ROW 4611	ROW Opportunity	0.64	0.40	63%	0.008	0.018
Pleasant Hill	2	ROW 6669	ROW Opportunity	1.68	0.82	49%	0.003	0.018
Pleasant Hill	2	Parcel 155751	Regional Opportunity	1.57	0.26	17%	0.003	0.017
Pleasant Hill	2	ROW 15355	ROW Opportunity	0.64	0.38	59%	0.008	0.017
Pleasant Hill	2	ROW 15358	ROW Opportunity	3.11	1.40	45%	0.002	0.017
Pleasant Hill	2	ROW 3210	ROW Opportunity	7.85	3.33	42%	0.001	0.017
Pleasant Hill	2	Parcel 155321	Regional Opportunity	0.56	0.36	64%	0.008	0.016
Pleasant Hill	2	ROW 11244	ROW Opportunity	6.29	2.71	43%	0.001	0.016
Pleasant Hill	2	ROW 12046	ROW Opportunity	9.42	3.82	41%	0.001	0.016
Pleasant Hill	2	ROW 1343	ROW Opportunity	1.64	0.72	44%	0.003	0.016
Pleasant Hill	2	ROW 533	ROW Opportunity	2.07	0.90	43%	0.003	0.016
Pleasant Hill	2	Parcel 178916	Parcel-Based Opportunity	3.76	2.58	69%	0.002	0.015
Pleasant Hill	2	ROW 5767	ROW Opportunity	2.66	1.19	45%	0.002	0.015
Pleasant Hill	2	ROW 5966	ROW Opportunity	3.55	1.52	43%	0.002	0.015
Pleasant Hill	2	planned 144	Planned Unlined Swale	13.98	6.95	50%	0.000	0.014
Pleasant Hill	2	planned 145	Planned Unlined Swale	13.97	6.95	50%	0.000	0.014
Pleasant Hill	2	planned 146	Planned Unlined Bioretention	13.97	6.95	50%	0.000	0.014
Pleasant Hill	2	ROW 13223	ROW Opportunity	1.24	0.62	50%	0.004	0.014
Pleasant Hill	2	ROW 1583	ROW Opportunity	0.88	0.41	47%	0.005	0.014
Pleasant Hill	2	ROW 1578	ROW Opportunity	0.11	0.06	55%	0.028	0.013
Pleasant Hill	2	ROW 21619	ROW Opportunity	0.42	0.30	71%	0.009	0.013
Pleasant Hill	2	ROW 9265	ROW Opportunity	3.88	1.63	42%	0.001	0.013
Pleasant Hill	2	ROW 9827	ROW Opportunity	0.83	0.55	66%	0.005	0.013
Pleasant Hill	2	Parcel 160193	Parcel-Based Opportunity	7.87	2.98	38%	0.001	0.012
Pleasant Hill	2	ROW 16415	ROW Opportunity	6.78	2.96	44%	0.001	0.012
Pleasant Hill	2	ROW 19765	ROW Opportunity	5.47	2.26	41%	0.001	0.012
Pleasant Hill	2	ROW 20458	ROW Opportunity	1.53	0.73	48%	0.003	0.012
Pleasant Hill	2	ROW 20779	ROW Opportunity	1.73	0.65	38%	0.002	0.012
Pleasant Hill	2	ROW 6601	ROW Opportunity	2.26	1.12	50%	0.002	0.012
Pleasant Hill	2	Parcel 140820	Parcel-Based Opportunity	6.41	2.61	41%	0.001	0.011
Pleasant Hill	2	Parcel 156885	Regional Opportunity	1.48	0.76	51%	0.003	0.011
Pleasant Hill	2	ROW 20849	ROW Opportunity	6.60	2.63	40%	0.001	0.011
Pleasant Hill	2	ROW 4526	ROW Opportunity	1.86	0.90	48%	0.002	0.011
Pleasant Hill	2	ROW 5980	ROW Opportunity	2.92	1.23	42%	0.002	0.011
Pleasant Hill	2	ROW 6634	ROW Opportunity	6.62	2.81	42%	0.001	0.011
Pleasant Hill	2	Parcel 176573	Parcel-Based Opportunity	4.87	2.62	54%	0.001	0.010
Pleasant Hill	2	Parcel 182562	Parcel-Based Opportunity	5.49	2.50	46%	0.001	0.010
Pleasant Hill	2	ROW 1108	ROW Opportunity	6.39	2.49	39%	0.001	0.010
Richmond	2	ROW 20822	ROW Opportunity	39.83	15.26	38%	0.035	5.536
Richmond	2	Parcel 129049	Parcel-Based Opportunity	22.09	16.69	76%	0.043	3.838
Richmond	2	Parcel 127810	Parcel-Based Opportunity	42.57	8.26	19%	0.018	3.044
Richmond	2	ROW 3504	ROW Opportunity	23.46	15.79	67%	0.030	2.744
Richmond	2	ROW 7696	ROW Opportunity	16.17	10.80	67%	0.034	2.163
Richmond	2	Parcel 123788	Parcel-Based Opportunity	11.85	7.18	61%	0.042	1.971
Richmond	2	Parcel 120807	Parcel-Based Opportunity	9.67	6.99	72%	0.049	1.882
Richmond	2	Parcel 124519	Parcel-Based Opportunity	19.03	5.78	30%	0.024	1.772
Richmond	2	GIP 00181 / ROW 8576	ROW Opportunity (aspirational)	15.12	9.82	65%	0.028	1.643
Richmond	2	GIP 00144 / planned 485	Parcel-Based Opportunity (aspirational)	17.80	11.62	65%	0.022	1.526
Richmond	2	ROW 11830	ROW Opportunity	12.26	7.59	62%	0.029	1.377
Richmond	2	GIP 00128 / planned 175	Parcel-Based Opportunity (aspirational)	12.22	6.77	55%	0.026	1.249
Richmond	2	planned 499	Planned Creek/Marsh Restoration	14.17	5.11	36%	0.022	1.243
Richmond	2	Parcel 128990	Parcel-Based Opportunity	6.86	5.17	75%	0.043	1.191
Richmond	2	Parcel 125155	Parcel-Based Opportunity	6.08	4.04	66%	0.047	1.140
Richmond	2	Parcel 163241	Parcel-Based Opportunity	7.34	4.87	66%	0.038	1.127
Richmond	2	ROW 13188	ROW Opportunity	10.46	6.45	62%	0.024	0.978
Richmond	2	GIP 00136 / planned 469	Parcel-Based Opportunity (aspirational)	7.99	4.10	51%	0.030	0.968
Richmond	2	ROW 7811	ROW Opportunity	7.27	4.20	58%	0.031	0.908
Richmond	2	ROW 21445	ROW Opportunity	6.74	4.73	70%	0.034	0.902
Richmond	2	ROW 20428	ROW Opportunity	8.97	5.45	61%	0.026	0.900
Richmond	2	ROW 16598	ROW Opportunity	5.68	3.88	68%	0.038	0.858
Richmond	2	ROW 13906	ROW Opportunity	10.89	7.33	67%	0.021	0.852
Richmond	2	ROW 20478	ROW Opportunity	5.90	3.53	60%	0.035	0.838
Richmond	2	ROW 15751	ROW Opportunity	5.55	3.33	60%	0.037	0.817

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Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Richmond	2	ROW 2597	ROW Opportunity	6.82	3.55	52%	0.030	0.815
Richmond	2	ROW 12288	ROW Opportunity	4.84	3.24	67%	0.039	0.758
Richmond	2	Parcel 170010	Parcel-Based Opportunity	4.52	3.14	69%	0.041	0.737
Richmond	2	ROW 10536	ROW Opportunity	4.37	2.57	59%	0.042	0.737
Richmond	2	Parcel 113348	Parcel-Based Opportunity	6.69	1.91	29%	0.028	0.694
Richmond	2	ROW 11839	ROW Opportunity	4.37	2.51	57%	0.039	0.691
Richmond	2	ROW 3732	ROW Opportunity	5.46	4.24	78%	0.032	0.685
Richmond	2	ROW 16560	ROW Opportunity	3.78	2.59	69%	0.044	0.672
Richmond	2	ROW 6855	ROW Opportunity	3.69	2.65	72%	0.041	0.607
Richmond	2	ROW 8567	ROW Opportunity	3.74	2.04	55%	0.040	0.602
Richmond	2	ROW 14144	ROW Opportunity	3.21	2.59	81%	0.046	0.586
Richmond	2	ROW 11498	ROW Opportunity	21.21	14.65	69%	0.008	0.577
Richmond	2	ROW 3742	ROW Opportunity	3.63	2.47	68%	0.039	0.577
Richmond	2	GIP 00180 / ROW 5241	ROW Opportunity (aspirational)	21.59	14.60	68%	0.008	0.574
Richmond	2	ROW 18209	ROW Opportunity	3.51	2.46	70%	0.040	0.567
Richmond	2	ROW 15876	ROW Opportunity	5.16	2.25	44%	0.027	0.566
Richmond	2	ROW 17007	ROW Opportunity	3.15	1.90	60%	0.043	0.546
Richmond	2	ROW 8889	ROW Opportunity	7.45	5.28	71%	0.020	0.542
Richmond	2	Parcel 118976	Parcel-Based Opportunity	7.69	1.60	21%	0.017	0.537
Richmond	2	ROW 20886	ROW Opportunity	2.41	1.89	78%	0.053	0.515
Richmond	2	ROW 16532	ROW Opportunity	3.19	2.11	66%	0.039	0.499
Richmond	2	ROW 15749	ROW Opportunity	4.74	2.94	62%	0.027	0.497
Richmond	2	ROW 7809	ROW Opportunity	11.56	3.25	28%	0.011	0.496
Richmond	2	Parcel 114973	Regional Opportunity	2.84	1.61	57%	0.042	0.471
Richmond	2	ROW 18134	ROW Opportunity	3.07	1.56	51%	0.038	0.469
Richmond	2	ROW 8456	ROW Opportunity	2.87	1.60	56%	0.040	0.459
Richmond	2	ROW 17719	ROW Opportunity	2.63	1.56	59%	0.042	0.446
Richmond	2	ROW 15166	ROW Opportunity	2.88	1.95	68%	0.038	0.445
Richmond	2	ROW 6827	ROW Opportunity	2.89	2.10	73%	0.037	0.429
Richmond	2	ROW 12287	ROW Opportunity	2.82	1.98	70%	0.038	0.424
Richmond	2	ROW 1670	ROW Opportunity	19.48	13.28	68%	0.007	0.422
Richmond	2	ROW 14670	ROW Opportunity	3.12	1.33	43%	0.033	0.410
Richmond	2	Parcel 159148	Regional Opportunity	2.48	1.76	71%	0.041	0.407
Richmond	2	ROW 1342	ROW Opportunity	12.99	5.89	45%	0.009	0.401
Richmond	2	ROW 6275	ROW Opportunity	3.46	1.24	36%	0.029	0.401
Richmond	2	ROW 16455	ROW Opportunity	2.53	1.71	68%	0.038	0.384
Richmond	2	GIP 00122 / Parcel 152787	Regional Opportunity (aspirational)	2.53	1.64	65%	0.037	0.380
Richmond	2	Parcel 171579	Parcel-Based Opportunity	3.65	2.87	79%	0.027	0.380
Richmond	2	ROW 4530	ROW Opportunity	3.12	1.81	58%	0.030	0.380
Richmond	2	ROW 4590	ROW Opportunity	2.11	1.33	63%	0.045	0.376
Richmond	2	ROW 20441	ROW Opportunity	5.49	3.04	55%	0.018	0.374
Richmond	2	GIP 00147 / planned 491	Parcel-Based Opportunity (aspirational)	3.12	1.99	64%	0.030	0.369
Richmond	2	ROW 16485	ROW Opportunity	2.63	1.92	73%	0.035	0.369
Richmond	2	ROW 11379	ROW Opportunity	2.04	1.65	81%	0.045	0.368
Richmond	2	ROW 15485	ROW Opportunity	2.06	1.37	67%	0.044	0.363
Richmond	2	ROW 355	ROW Opportunity	2.64	1.88	71%	0.034	0.354
Richmond	2	ROW 3738	ROW Opportunity	2.58	1.82	71%	0.034	0.346
Richmond	2	Parcel 114963	Parcel-Based Opportunity	4.22	1.02	24%	0.021	0.345
Richmond	2	ROW 1767	ROW Opportunity	1.96	1.18	60%	0.044	0.343
Richmond	2	Parcel 153008	Parcel-Based Opportunity	10.59	7.84	74%	0.010	0.340
Richmond	2	Parcel 126231	Regional Opportunity	1.65	1.47	89%	0.050	0.334
Richmond	2	ROW 14678	ROW Opportunity	6.63	4.45	67%	0.014	0.333
Richmond	2	ROW 15193	ROW Opportunity	6.84	4.72	69%	0.014	0.333
Richmond	2	ROW 15752	ROW Opportunity	2.85	1.93	68%	0.029	0.328
Richmond	2	ROW 16472	ROW Opportunity	2.17	1.54	71%	0.037	0.324
Richmond	2	ROW 15877	ROW Opportunity	4.92	2.81	57%	0.017	0.323
Richmond	2	ROW 9595	ROW Opportunity	2.77	2.08	75%	0.029	0.312
Richmond	2	ROW 3292	ROW Opportunity	2.05	1.67	81%	0.038	0.306
Richmond	2	ROW 3744	ROW Opportunity	3.85	2.44	63%	0.020	0.299
Richmond	2	planned 487	Planned Unlined Bioretention	22.60	15.02	66%	0.005	0.296
Richmond	2	ROW 17305	ROW Opportunity	1.92	0.98	51%	0.038	0.295
Richmond	2	planned 496	Planned Creek/Marsh Restoration	3.90	2.25	58%	0.020	0.294
Richmond	2	GIP 00140 / planned 479	Parcel-Based Opportunity (aspirational)	12.83	8.77	68%	0.007	0.291
Richmond	2	ROW 333	ROW Opportunity	9.12	6.07	67%	0.009	0.290
Richmond	2	ROW 3883	ROW Opportunity	8.72	5.79	66%	0.010	0.282
Richmond	2	ROW 6859	ROW Opportunity	2.12	0.59	28%	0.033	0.279
Richmond	2	ROW 9722	ROW Opportunity	1.69	1.17	69%	0.041	0.276
Richmond	2	ROW 16528	ROW Opportunity	2.22	1.27	57%	0.031	0.273
Richmond	2	Parcel 115416	Regional Opportunity	1.53	0.93	61%	0.044	0.270
Richmond	2	ROW 17316	ROW Opportunity	1.73	0.90	52%	0.039	0.268
Richmond	2	ROW 12193	ROW Opportunity	5.91	4.11	70%	0.013	0.264
Richmond	2	ROW 7332	ROW Opportunity	1.62	1.25	77%	0.041	0.263
Richmond	2	ROW 11831	ROW Opportunity	1.49	1.14	77%	0.044	0.262
Richmond	2	Parcel 167791	Parcel-Based Opportunity	3.42	2.71	79%	0.020	0.261
Richmond	2	ROW 6828	ROW Opportunity	1.71	1.18	69%	0.038	0.261
Richmond	2	ROW 12952	ROW Opportunity	3.16	1.44	46%	0.021	0.259
Richmond	2	ROW 12328	ROW Opportunity	2.62	0.81	31%	0.024	0.258
Richmond	2	ROW 14807	ROW Opportunity	2.63	1.88	71%	0.026	0.255
Richmond	2	ROW 156	ROW Opportunity	4.72	3.23	68%	0.015	0.255
Richmond	2	ROW 13420	ROW Opportunity	5.29	3.71	70%	0.013	0.252
Richmond	2	ROW 6274	ROW Opportunity	4.20	2.48	59%	0.016	0.252
Richmond	2	ROW 16487	ROW Opportunity	1.47	1.09	74%	0.042	0.249
Richmond	2	ROW 9163	ROW Opportunity	3.60	2.25	63%	0.018	0.245
Richmond	2	planned 495	Planned Water Quality Basin	1.91	1.10	58%	0.032	0.242
Richmond	2	ROW 15892	ROW Opportunity	14.20	7.48	53%	0.005	0.239
Richmond	2	ROW 1795	ROW Opportunity	1.37	1.03	75%	0.043	0.239
Richmond	2	ROW 18184	ROW Opportunity	1.61	0.80	50%	0.037	0.238
Richmond	2	Parcel 116238	Parcel-Based Opportunity	1.29	0.82	64%	0.045	0.234
Richmond	2	ROW 11883	ROW Opportunity	1.42	0.98	69%	0.041	0.231
Richmond	2	planned 497	Planned Creek/Marsh Restoration	1.59	0.97	61%	0.036	0.230
Richmond	2	ROW 1792	ROW Opportunity	1.33	0.97	73%	0.042	0.227
Richmond	2	ROW 6971	ROW Opportunity	1.62	1.15	71%	0.035	0.224
Richmond	2	ROW 18110	ROW Opportunity	2.22	1.56	70%	0.026	0.223
Richmond	2	ROW 16442	ROW Opportunity	3.16	0.67	21%	0.017	0.220

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Richmond	2	ROW 18395	ROW Opportunity	2.05	0.89	43%	0.026	0.213
Richmond	2	ROW 15167	ROW Opportunity	1.76	1.21	69%	0.030	0.211
Richmond	2	ROW 16436	ROW Opportunity	1.97	1.36	69%	0.027	0.211
Richmond	2	ROW 16535	ROW Opportunity	2.13	1.38	65%	0.025	0.211
Richmond	2	ROW 16488	ROW Opportunity	1.32	0.96	73%	0.039	0.209
Richmond	2	Parcel 110613	Regional Opportunity	1.25	0.72	58%	0.042	0.208
Richmond	2	ROW 17259	ROW Opportunity	1.63	0.69	42%	0.032	0.207
Richmond	2	ROW 15285	ROW Opportunity	1.06	0.71	67%	0.048	0.205
Richmond	2	ROW 1765	ROW Opportunity	1.21	0.71	59%	0.042	0.204
Richmond	2	ROW 863	ROW Opportunity	1.39	0.86	62%	0.036	0.204
Richmond	2	planned 531	Planned Water Quality Basin	75.78	38.92	51%	0.001	0.202
Richmond	2	ROW 16441	ROW Opportunity	2.29	1.59	69%	0.023	0.202
Richmond	2	ROW 5443	ROW Opportunity	1.01	0.88	87%	0.049	0.200
Richmond	2	Parcel 111210	Regional Opportunity	1.27	0.90	71%	0.040	0.197
Richmond	2	ROW 4125	ROW Opportunity	2.29	1.49	65%	0.022	0.197
Richmond	2	ROW 13349	ROW Opportunity	1.13	0.84	74%	0.043	0.196
Richmond	2	ROW 1468	ROW Opportunity	2.21	1.56	71%	0.023	0.196
Richmond	2	ROW 6857	ROW Opportunity	1.59	0.64	40%	0.031	0.196
Richmond	2	ROW 14518	ROW Opportunity	1.76	1.15	65%	0.028	0.195
Richmond	2	ROW 1731	ROW Opportunity	1.11	0.83	75%	0.044	0.193
Richmond	2	ROW 3731	ROW Opportunity	1.22	0.82	67%	0.040	0.191
Richmond	2	Parcel 162407	Regional Opportunity	1.21	0.82	68%	0.039	0.190
Richmond	2	ROW 289	ROW Opportunity	1.43	0.78	55%	0.033	0.188
Richmond	2	ROW 1770	ROW Opportunity	8.43	5.33	63%	0.007	0.187
Richmond	2	ROW 15757	ROW Opportunity	1.18	0.64	54%	0.039	0.186
Richmond	2	GIP 00165 / planned 534	Parcel-Based Opportunity (aspirational)	2.20	1.33	60%	0.022	0.183
Richmond	2	ROW 318	ROW Opportunity	2.13	1.41	66%	0.022	0.183
Richmond	2	Parcel 134412	Parcel-Based Opportunity	4.34	3.50	81%	0.012	0.181
Richmond	2	ROW 11890	ROW Opportunity	0.99	0.79	80%	0.046	0.181
Richmond	2	Parcel 198059	Parcel-Based Opportunity	6.65	3.60	54%	0.008	0.180
Richmond	2	ROW 17324	ROW Opportunity	1.23	0.80	65%	0.036	0.178
Richmond	2	Parcel 166327	Regional Opportunity	2.29	1.75	76%	0.020	0.174
Richmond	2	ROW 2766	ROW Opportunity	1.36	0.86	63%	0.032	0.174
Richmond	2	ROW 15468	ROW Opportunity	1.02	0.75	74%	0.042	0.171
Richmond	2	ROW 16520	ROW Opportunity	1.38	0.79	57%	0.031	0.171
Richmond	2	ROW 16913	ROW Opportunity	16.07	8.93	56%	0.004	0.171
Richmond	2	Parcel 169252	Regional Opportunity	1.01	0.72	71%	0.042	0.169
Richmond	2	ROW 161	ROW Opportunity	1.86	1.31	70%	0.024	0.169
Richmond	2	ROW 17298	ROW Opportunity	0.91	0.59	65%	0.046	0.168
Richmond	2	ROW 1749	ROW Opportunity	0.97	0.72	74%	0.043	0.168
Richmond	2	ROW 16840	ROW Opportunity	6.87	4.81	70%	0.008	0.166
Richmond	2	ROW 14810	ROW Opportunity	0.89	0.58	65%	0.046	0.165
Richmond	2	ROW 70	ROW Opportunity	3.96	2.77	70%	0.012	0.165
Richmond	2	ROW 20040	ROW Opportunity	2.45	1.53	62%	0.018	0.164
Richmond	2	ROW 21242	ROW Opportunity	1.27	0.83	65%	0.032	0.160
Richmond	2	Parcel 169551	Parcel-Based Opportunity	3.47	2.76	80%	0.013	0.157
Richmond	2	Parcel 238663	Parcel-Based Opportunity	50.69	7.21	14%	0.001	0.156
Richmond	2	ROW 3740	ROW Opportunity	1.92	1.15	60%	0.021	0.156
Richmond	2	Parcel 120883	Regional Opportunity	0.95	0.54	57%	0.040	0.154
Richmond	2	ROW 16482	ROW Opportunity	1.10	0.73	66%	0.035	0.154
Richmond	2	ROW 9124	ROW Opportunity	8.76	4.50	51%	0.006	0.154
Richmond	2	ROW 16456	ROW Opportunity	1.03	0.65	63%	0.037	0.151
Richmond	2	ROW 7328	ROW Opportunity	7.44	4.86	65%	0.006	0.149
Richmond	2	Parcel 112907	Regional Opportunity	2.04	0.43	21%	0.018	0.147
Richmond	2	ROW 176	ROW Opportunity	0.99	0.68	69%	0.037	0.147
Richmond	2	ROW 16976	ROW Opportunity	0.83	0.62	75%	0.043	0.146
Richmond	2	Parcel 193343	Parcel-Based Opportunity	0.62	0.27	44%	0.058	0.145
Richmond	2	planned 527	Planned Unlined Bioretention	4.44	3.26	73%	0.010	0.143
Richmond	2	ROW 20689	ROW Opportunity	0.90	0.49	54%	0.040	0.143
Richmond	2	ROW 16452	ROW Opportunity	0.92	0.62	67%	0.038	0.142
Richmond	2	ROW 1766	ROW Opportunity	0.85	0.49	58%	0.041	0.141
Richmond	2	ROW 3022	ROW Opportunity	1.28	0.85	66%	0.028	0.141
Richmond	2	ROW 173	ROW Opportunity	2.06	1.39	67%	0.018	0.140
Richmond	2	ROW 233	ROW Opportunity	4.88	3.24	66%	0.009	0.139
Richmond	2	ROW 344	ROW Opportunity	3.21	2.36	74%	0.012	0.139
Richmond	2	ROW 6305	ROW Opportunity	0.95	0.58	61%	0.036	0.138
Richmond	2	Parcel 144553	Parcel-Based Opportunity	4.24	3.16	75%	0.010	0.137
Richmond	2	ROW 2543	ROW Opportunity	0.87	0.46	53%	0.039	0.137
Richmond	2	planned 484	Planned Unlined Bioretention	3.36	2.28	68%	0.011	0.136
Richmond	2	ROW 20415	ROW Opportunity	1.09	0.78	72%	0.031	0.135
Richmond	2	ROW 11849	ROW Opportunity	4.83	3.30	68%	0.008	0.134
Richmond	2	GIP 00166 / planned 535	Parcel-Based Opportunity (aspirational)	4.59	3.21	70%	0.009	0.133
Richmond	2	Parcel 225180	Parcel-Based Opportunity	4.05	3.00	74%	0.010	0.133
Richmond	2	ROW 10967	ROW Opportunity	0.87	0.44	51%	0.038	0.133
Richmond	2	ROW 17276	ROW Opportunity	0.72	0.47	65%	0.046	0.133
Richmond	2	ROW 3965	ROW Opportunity	0.72	0.47	65%	0.046	0.133
Richmond	2	Parcel 172178	Parcel-Based Opportunity	3.68	2.88	78%	0.010	0.129
Richmond	2	ROW 16559	ROW Opportunity	0.85	0.56	66%	0.038	0.129
Richmond	2	ROW 7673	ROW Opportunity	1.89	0.92	49%	0.018	0.128
Richmond	2	ROW 9823	ROW Opportunity	0.70	0.54	77%	0.045	0.126
Richmond	2	ROW 16531	ROW Opportunity	3.40	2.29	67%	0.011	0.125
Richmond	2	ROW 17258	ROW Opportunity	0.77	0.43	56%	0.040	0.125
Richmond	2	ROW 20486	ROW Opportunity	4.18	2.56	61%	0.009	0.124
Richmond	2	Parcel 155701	Regional Opportunity	0.77	0.53	69%	0.039	0.123
Richmond	2	ROW 17037	ROW Opportunity	4.87	3.10	64%	0.008	0.123
Richmond	2	ROW 3505	ROW Opportunity	0.88	0.62	70%	0.035	0.123
Richmond	2	ROW 12830	ROW Opportunity	1.15	0.73	63%	0.027	0.121
Richmond	2	ROW 74	ROW Opportunity	2.79	1.80	65%	0.012	0.120
Richmond	2	ROW 16434	ROW Opportunity	1.25	0.88	70%	0.025	0.119
Richmond	2	ROW 6803	ROW Opportunity	1.00	0.69	69%	0.030	0.119
Richmond	2	ROW 226	ROW Opportunity	3.03	2.02	67%	0.011	0.117
Richmond	2	ROW 15830	ROW Opportunity	8.70	6.19	71%	0.005	0.115
Richmond	2	ROW 15989	ROW Opportunity	4.07	2.72	67%	0.008	0.112
Richmond	2	ROW 17301	ROW Opportunity	0.65	0.48	74%	0.043	0.112

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Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Richmond	2	ROW 168	ROW Opportunity	5.27	3.69	70%	0.007	0.110
Richmond	2	ROW 291	ROW Opportunity	0.71	0.46	65%	0.038	0.110
Richmond	2	ROW 11622	ROW Opportunity	7.40	4.72	64%	0.005	0.109
Richmond	2	Parcel 125476	Regional Opportunity	0.74	0.37	50%	0.036	0.108
Richmond	2	ROW 11840	ROW Opportunity	0.65	0.37	57%	0.041	0.107
Richmond	2	ROW 15750	ROW Opportunity	1.48	0.80	54%	0.019	0.107
Richmond	2	ROW 4528	ROW Opportunity	1.18	0.55	47%	0.023	0.107
Richmond	2	ROW 4784	ROW Opportunity	0.68	0.50	74%	0.039	0.107
Richmond	2	ROW 16464	ROW Opportunity	3.55	2.42	68%	0.009	0.106
Richmond	2	Parcel 196459	Parcel-Based Opportunity	0.43	0.19	44%	0.058	0.101
Richmond	2	ROW 10962	ROW Opportunity	0.54	0.35	65%	0.045	0.100
Richmond	2	ROW 17311	ROW Opportunity	0.62	0.43	69%	0.040	0.100
Richmond	2	ROW 6267	ROW Opportunity	0.66	0.42	64%	0.037	0.100
Richmond	2	ROW 15881	ROW Opportunity	11.64	6.16	53%	0.003	0.097
Richmond	2	ROW 11062	ROW Opportunity	2.50	1.26	50%	0.011	0.096
Richmond	2	ROW 1732	ROW Opportunity	0.52	0.33	63%	0.046	0.096
Richmond	2	Parcel 129221	Regional Opportunity	0.56	0.33	59%	0.042	0.095
Richmond	2	Parcel 163884	Regional Opportunity	0.60	0.41	68%	0.039	0.095
Richmond	2	Parcel 212172	Parcel-Based Opportunity	3.35	2.09	62%	0.009	0.095
Richmond	2	planned 463	Planned Unlined Bioretention	3.35	2.09	62%	0.008	0.095
Richmond	2	ROW 15232	ROW Opportunity	0.63	0.46	73%	0.038	0.095
Richmond	2	ROW 8095	ROW Opportunity	5.10	2.61	51%	0.006	0.095
Richmond	2	ROW 3104	ROW Opportunity	0.60	0.46	77%	0.039	0.094
Richmond	2	ROW 5507	ROW Opportunity	0.52	0.32	62%	0.045	0.094
Richmond	2	GIP 00121 / Parcel 144341	Regional Opportunity (aspirational)	2.87	2.15	75%	0.010	0.093
Richmond	2	ROW 9164	ROW Opportunity	0.62	0.40	65%	0.037	0.093
Richmond	2	ROW 17006	ROW Opportunity	1.13	0.60	53%	0.022	0.092
Richmond	2	ROW 73	ROW Opportunity	0.59	0.40	68%	0.039	0.092
Richmond	2	planned 199	Planned Creek/Marsh Restoration	3.43	1.93	56%	0.008	0.091
Richmond	2	ROW 11378	ROW Opportunity	3.08	1.99	65%	0.009	0.091
Richmond	2	ROW 16846	ROW Opportunity	0.61	0.44	72%	0.037	0.091
Richmond	2	ROW 187	ROW Opportunity	1.62	1.06	65%	0.015	0.091
Richmond	2	ROW 17720	ROW Opportunity	0.53	0.32	60%	0.043	0.090
Richmond	2	ROW 5467	ROW Opportunity	0.76	0.29	38%	0.030	0.090
Richmond	2	ROW 254	ROW Opportunity	7.15	4.85	68%	0.004	0.088
Richmond	2	ROW 3103	ROW Opportunity	0.47	0.38	81%	0.047	0.088
Richmond	2	Parcel 119238	Parcel-Based Opportunity	3.39	1.91	56%	0.008	0.087
Richmond	2	ROW 16465	ROW Opportunity	0.60	0.44	73%	0.036	0.087
Richmond	2	Parcel 110802	Regional Opportunity	0.82	0.25	30%	0.026	0.085
Richmond	2	Parcel 170769	Regional Opportunity	2.46	1.96	80%	0.010	0.085
Richmond	2	ROW 2596	ROW Opportunity	1.62	1.11	69%	0.015	0.085
Richmond	2	ROW 5180	ROW Opportunity	0.47	0.29	62%	0.045	0.085
Richmond	2	ROW 16552	ROW Opportunity	3.51	2.33	66%	0.007	0.084
Richmond	2	Parcel 155487	Regional Opportunity	3.02	1.80	60%	0.008	0.083
Richmond	2	ROW 16445	ROW Opportunity	1.04	0.70	67%	0.021	0.083
Richmond	2	ROW 6721	ROW Opportunity	0.50	0.36	72%	0.041	0.083
Richmond	2	Parcel 116278	Regional Opportunity	0.91	0.24	26%	0.022	0.082
Richmond	2	Parcel 117353	Regional Opportunity	2.33	0.81	35%	0.010	0.082
Richmond	2	ROW 21198	ROW Opportunity	0.41	0.29	71%	0.050	0.082
Richmond	2	ROW 15197	ROW Opportunity	0.50	0.35	70%	0.040	0.081
Richmond	2	Parcel 119884	Regional Opportunity	0.64	0.27	42%	0.032	0.080
Richmond	2	ROW 116	ROW Opportunity	2.56	1.74	68%	0.009	0.080
Richmond	2	ROW 200	ROW Opportunity	5.74	3.95	69%	0.005	0.080
Richmond	2	ROW 9162	ROW Opportunity	4.57	3.10	68%	0.006	0.080
Richmond	2	Parcel 124307	Regional Opportunity	0.46	0.28	61%	0.043	0.079
Richmond	2	Parcel 165219	Regional Opportunity	1.77	1.40	79%	0.013	0.078
Richmond	2	ROW 21073	ROW Opportunity	3.56	2.16	61%	0.007	0.078
Richmond	2	ROW 2162	ROW Opportunity	9.38	6.41	68%	0.003	0.078
Richmond	2	ROW 9937	ROW Opportunity	2.83	1.11	39%	0.008	0.078
Richmond	2	GIP 00153 / planned 512	Parcel-Based Opportunity (aspirational)	4.34	2.92	67%	0.006	0.077
Richmond	2	ROW 16538	ROW Opportunity	1.07	0.58	54%	0.019	0.077
Richmond	2	ROW 20633	ROW Opportunity	4.94	2.89	59%	0.005	0.077
Richmond	2	ROW 16467	ROW Opportunity	2.66	1.79	67%	0.009	0.076
Richmond	2	ROW 16496	ROW Opportunity	4.37	2.90	66%	0.006	0.076
Richmond	2	Parcel 375479	Parcel-Based Opportunity	68.51	8.98	13%	0.000	0.075
Richmond	2	ROW 13581	ROW Opportunity	0.59	0.26	44%	0.032	0.075
Richmond	2	ROW 10098	ROW Opportunity	6.38	4.15	65%	0.004	0.074
Richmond	2	ROW 1830	ROW Opportunity	1.38	0.93	67%	0.015	0.074
Richmond	2	ROW 82	ROW Opportunity	0.80	0.60	75%	0.024	0.074
Richmond	2	ROW 92	ROW Opportunity	4.38	3.00	68%	0.006	0.073
Richmond	2	ROW 12125	ROW Opportunity	5.50	3.66	67%	0.005	0.072
Richmond	2	Parcel 115970	Regional Opportunity	0.55	0.12	22%	0.032	0.070
Richmond	2	Parcel 144098	Regional Opportunity	1.08	0.98	91%	0.018	0.070
Richmond	2	ROW 2164	ROW Opportunity	1.27	0.90	71%	0.015	0.070
Richmond	2	ROW 16394	ROW Opportunity	0.51	0.23	45%	0.034	0.069
Richmond	2	ROW 16563	ROW Opportunity	4.10	2.78	68%	0.006	0.069
Richmond	2	ROW 16866	ROW Opportunity	3.52	2.37	67%	0.006	0.069
Richmond	2	ROW 7810	ROW Opportunity	0.59	0.27	46%	0.029	0.069
Richmond	2	Parcel 115590	Regional Opportunity	0.98	0.21	21%	0.017	0.068
Richmond	2	Parcel 116661	Regional Opportunity	0.52	0.13	25%	0.033	0.068
Richmond	2	ROW 16544	ROW Opportunity	4.83	3.31	69%	0.005	0.068
Richmond	2	ROW 16480	ROW Opportunity	1.96	1.32	67%	0.010	0.067
Richmond	2	ROW 195	ROW Opportunity	5.26	3.67	70%	0.005	0.067
Richmond	2	ROW 11623	ROW Opportunity	5.63	3.78	67%	0.004	0.066
Richmond	2	ROW 5903	ROW Opportunity	0.39	0.28	72%	0.042	0.066
Richmond	2	ROW 9784	ROW Opportunity	0.50	0.22	44%	0.033	0.066
Richmond	2	Parcel 129781	Parcel-Based Opportunity	0.46	0.22	48%	0.036	0.065
Richmond	2	Parcel 174262	Parcel-Based Opportunity	2.11	1.19	56%	0.009	0.065
Richmond	2	ROW 17728	ROW Opportunity	0.42	0.22	52%	0.039	0.065
Richmond	2	ROW 2163	ROW Opportunity	3.02	2.13	71%	0.007	0.065
Richmond	2	ROW 16504	ROW Opportunity	0.99	0.61	62%	0.017	0.064
Richmond	2	ROW 17527	ROW Opportunity	9.09	4.79	53%	0.003	0.064
Richmond	2	ROW 20751	ROW Opportunity	0.72	0.52	72%	0.023	0.064
Richmond	2	ROW 8571	ROW Opportunity	3.24	2.28	70%	0.006	0.064

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Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Richmond	2	GIP 00171 / ROW 16561	ROW Opportunity (aspirational)	4.64	3.09	67%	0.005	0.063
Richmond	2	Parcel 117968	Regional Opportunity	0.56	0.24	43%	0.028	0.063
Richmond	2	ROW 147	ROW Opportunity	0.82	0.56	68%	0.020	0.062
Richmond	2	ROW 21231	ROW Opportunity	0.41	0.21	51%	0.037	0.062
Richmond	2	GIP 00125 / planned 138	Parcel-Based Opportunity (aspirational)	39.35	14.16	36%	0.001	0.061
Richmond	2	Parcel 154186	Parcel-Based Opportunity	0.39	0.26	67%	0.039	0.061
Richmond	2	ROW 105	ROW Opportunity	2.41	1.61	67%	0.008	0.061
Richmond	2	ROW 1763	ROW Opportunity	0.34	0.21	62%	0.044	0.061
Richmond	2	ROW 3733	ROW Opportunity	0.47	0.25	53%	0.032	0.061
Richmond	2	ROW 6864	ROW Opportunity	0.36	0.26	72%	0.042	0.061
Richmond	2	ROW 15878	ROW Opportunity	3.44	1.96	57%	0.006	0.060
Richmond	2	ROW 19023	ROW Opportunity	1.43	0.96	67%	0.012	0.060
Richmond	2	ROW 9166	ROW Opportunity	0.45	0.28	62%	0.033	0.060
Richmond	2	Parcel 118569	Parcel-Based Opportunity	0.46	0.19	41%	0.031	0.059
Richmond	2	ROW 15195	ROW Opportunity	6.51	4.28	66%	0.003	0.059
Richmond	2	ROW 18037	ROW Opportunity	4.29	2.74	64%	0.005	0.059
Richmond	2	ROW 2697	ROW Opportunity	2.39	1.65	69%	0.008	0.059
Richmond	2	ROW 1794	ROW Opportunity	0.32	0.25	78%	0.046	0.058
Richmond	2	ROW 19952	ROW Opportunity	0.87	0.59	68%	0.018	0.058
Richmond	2	ROW 20453	ROW Opportunity	0.55	0.39	71%	0.027	0.058
Richmond	2	Parcel 116468	Parcel-Based Opportunity	0.74	0.29	39%	0.019	0.057
Richmond	2	Parcel 133667	Parcel-Based Opportunity	25.54	14.75	58%	0.001	0.057
Richmond	2	ROW 16116	ROW Opportunity	0.32	0.20	63%	0.044	0.057
Richmond	2	ROW 16539	ROW Opportunity	1.03	0.59	57%	0.015	0.057
Richmond	2	ROW 886	ROW Opportunity	9.50	6.34	67%	0.003	0.057
Richmond	2	ROW 16475	ROW Opportunity	2.52	1.67	66%	0.007	0.056
Richmond	2	ROW 4147	ROW Opportunity	0.75	0.48	64%	0.020	0.056
Richmond	2	ROW 9755	ROW Opportunity	0.36	0.24	67%	0.038	0.056
Richmond	2	ROW 17721	ROW Opportunity	0.32	0.19	59%	0.044	0.055
Richmond	2	ROW 3294	ROW Opportunity	0.50	0.34	68%	0.028	0.055
Richmond	2	ROW 16486	ROW Opportunity	0.67	0.40	60%	0.021	0.054
Richmond	2	ROW 18476	ROW Opportunity	1.55	1.08	70%	0.010	0.054
Richmond	2	Parcel 150073	Regional Opportunity	1.80	1.20	67%	0.009	0.053
Richmond	2	ROW 13891	ROW Opportunity	0.41	0.18	44%	0.032	0.053
Richmond	2	Parcel 176154	Parcel-Based Opportunity	27.12	13.35	49%	0.001	0.052
Richmond	2	ROW 18074	ROW Opportunity	3.67	2.41	66%	0.005	0.052
Richmond	2	Parcel 236849	Parcel-Based Opportunity	260.54	3.37	1%	0.000	0.051
Richmond	2	ROW 18477	ROW Opportunity	2.41	1.65	68%	0.007	0.051
Richmond	2	ROW 9129	ROW Opportunity	3.29	1.38	42%	0.005	0.051
Richmond	2	Parcel 118639	Parcel-Based Opportunity	0.45	0.10	22%	0.028	0.050
Richmond	2	Parcel 150614	Regional Opportunity	2.05	1.74	85%	0.008	0.049
Richmond	2	ROW 13905	ROW Opportunity	3.58	2.15	60%	0.005	0.049
Richmond	2	ROW 21154	ROW Opportunity	2.44	1.79	73%	0.007	0.049
Richmond	2	ROW 11838	ROW Opportunity	0.29	0.17	59%	0.041	0.048
Richmond	2	ROW 3859	ROW Opportunity	7.00	4.53	65%	0.003	0.048
Richmond	2	Parcel 255238	Parcel-Based Opportunity	611.35	20.49	3%	0.000	0.047
Richmond	2	ROW 20475	ROW Opportunity	1.12	0.76	68%	0.012	0.047
Richmond	2	ROW 9125	ROW Opportunity	2.59	0.93	36%	0.005	0.047
Richmond	2	ROW 98	ROW Opportunity	2.55	1.75	69%	0.006	0.047
Richmond	2	ROW 15754	ROW Opportunity	0.35	0.22	63%	0.033	0.046
Richmond	2	ROW 16440	ROW Opportunity	0.58	0.41	71%	0.021	0.046
Richmond	2	ROW 16512	ROW Opportunity	1.89	1.24	66%	0.008	0.046
Richmond	2	ROW 3979	ROW Opportunity	11.15	7.70	69%	0.002	0.046
Richmond	2	ROW 3728	ROW Opportunity	0.28	0.19	68%	0.040	0.045
Richmond	2	ROW 7216	ROW Opportunity	2.32	1.56	67%	0.006	0.045
Richmond	2	Parcel 132474	Regional Opportunity	1.13	0.87	77%	0.011	0.044
Richmond	2	Parcel 149687	Regional Opportunity	1.43	1.00	70%	0.009	0.044
Richmond	2	planned 326	Planned Creek/Marsh Restoration	2.22	0.57	26%	0.006	0.044
Richmond	2	ROW 14433	ROW Opportunity	1.36	0.88	65%	0.010	0.044
Richmond	2	ROW 247	ROW Opportunity	13.62	8.74	64%	0.002	0.044
Richmond	2	ROW 5190	ROW Opportunity	0.35	0.14	40%	0.031	0.044
Richmond	2	ROW 785	ROW Opportunity	6.19	3.83	62%	0.003	0.044
Richmond	2	ROW 9939	ROW Opportunity	0.37	0.14	38%	0.029	0.044
Richmond	2	GIP 00112 / Parcel 133196	Regional Opportunity (aspirational)	1.20	1.00	83%	0.011	0.043
Richmond	2	planned 296	Planned Creek/Marsh Restoration	83.80	11.53	14%	0.000	0.043
Richmond	2	ROW 17312	ROW Opportunity	0.27	0.14	52%	0.040	0.043
Richmond	2	ROW 8642	ROW Opportunity	3.74	2.42	65%	0.004	0.043
Richmond	2	GIP 00120 / Parcel 143826	Regional Opportunity (aspirational)	1.04	0.89	86%	0.012	0.042
Richmond	2	GIP 00179 / ROW 3507	ROW Opportunity (aspirational)	9.06	5.66	62%	0.002	0.042
Richmond	2	Parcel 188482	Parcel-Based Opportunity	7.05	3.25	46%	0.002	0.042
Richmond	2	ROW 13417	ROW Opportunity	5.44	3.72	68%	0.003	0.042
Richmond	2	ROW 16211	ROW Opportunity	8.14	5.41	66%	0.002	0.042
Richmond	2	ROW 175	ROW Opportunity	3.50	2.49	71%	0.004	0.042
Richmond	2	Parcel 113228	Parcel-Based Opportunity	0.23	0.14	61%	0.044	0.041
Richmond	2	Parcel 149904	Regional Opportunity	1.45	0.91	63%	0.008	0.041
Richmond	2	Parcel 211565	Regional Opportunity	1.57	0.88	56%	0.008	0.041
Richmond	2	ROW 16555	ROW Opportunity	3.26	2.17	67%	0.004	0.041
Richmond	2	GIP 00123 / Parcel 152927	Regional Opportunity (aspirational)	3.09	1.99	64%	0.005	0.040
Richmond	2	Parcel 139167	Regional Opportunity	0.87	0.70	80%	0.013	0.040
Richmond	2	ROW 100	ROW Opportunity	3.68	2.57	70%	0.004	0.040
Richmond	2	ROW 10892	ROW Opportunity	0.90	0.53	59%	0.012	0.040
Richmond	2	ROW 14676	ROW Opportunity	1.05	0.73	70%	0.011	0.040
Richmond	2	ROW 2159	ROW Opportunity	3.17	2.21	70%	0.004	0.040
Richmond	2	ROW 245	ROW Opportunity	12.24	7.96	65%	0.002	0.040
Richmond	2	ROW 273	ROW Opportunity	9.08	6.04	67%	0.002	0.040
Richmond	2	ROW 66	ROW Opportunity	1.53	1.13	74%	0.008	0.040
Richmond	2	Parcel 116652	Parcel-Based Opportunity	0.23	0.13	57%	0.042	0.039
Richmond	2	ROW 16507	ROW Opportunity	1.11	0.73	66%	0.010	0.039
Richmond	2	ROW 248	ROW Opportunity	6.87	4.50	66%	0.002	0.039
Richmond	2	ROW 11363	ROW Opportunity	9.37	6.08	65%	0.002	0.038
Richmond	2	ROW 126	ROW Opportunity	1.73	1.12	65%	0.007	0.038
Richmond	2	ROW 15753	ROW Opportunity	0.77	0.46	60%	0.014	0.038
Richmond	2	ROW 16503	ROW Opportunity	2.40	1.57	65%	0.005	0.038
Richmond	2	ROW 16557	ROW Opportunity	3.91	2.61	67%	0.004	0.038

DRAFT Contra Costa Countywide Attainment Strategy
 Attachment 1: Countywide Attainment Scenario Model Results

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Richmond	2	ROW 212	ROW Opportunity	7.21	4.69	65%	0.002	0.038
Richmond	2	ROW 257	ROW Opportunity	9.16	6.03	66%	0.002	0.038
Richmond	2	ROW 69	ROW Opportunity	1.85	1.26	68%	0.007	0.038
Richmond	2	GIP 00145 /planned 486	Parcel-Based Opportunity (aspirational)	5.73	3.84	67%	0.003	0.037
Richmond	2	Parcel 375480	Parcel-Based Opportunity	39.00	23.68	61%	0.000	0.037
Richmond	2	ROW 16208	ROW Opportunity	2.13	1.44	68%	0.006	0.037
Richmond	2	ROW 16518	ROW Opportunity	2.48	1.62	65%	0.005	0.037
Richmond	2	ROW 211	ROW Opportunity	4.70	3.08	66%	0.003	0.037
Richmond	2	Parcel 126574	Regional Opportunity	0.58	0.15	26%	0.016	0.036
Richmond	2	ROW 11885	ROW Opportunity	0.22	0.15	68%	0.041	0.036
Richmond	2	ROW 19949	ROW Opportunity	0.81	0.55	68%	0.013	0.036
Richmond	2	Parcel 133977	Regional Opportunity	1.28	0.66	52%	0.008	0.035
Richmond	2	Parcel 137626	Regional Opportunity	1.25	0.75	60%	0.008	0.035
Richmond	2	Parcel 146294	Parcel-Based Opportunity	14.14	9.02	64%	0.001	0.035
Richmond	2	Parcel 195923	Parcel-Based Opportunity	0.15	0.06	40%	0.059	0.035
Richmond	2	ROW 16433	ROW Opportunity	1.10	0.75	68%	0.009	0.035
Richmond	2	ROW 16437	ROW Opportunity	3.09	2.10	68%	0.004	0.035
Richmond	2	ROW 16443	ROW Opportunity	3.11	2.01	65%	0.004	0.035
Richmond	2	ROW 246	ROW Opportunity	0.43	0.31	72%	0.022	0.035
Richmond	2	ROW 3755	ROW Opportunity	0.29	0.11	38%	0.030	0.035
Richmond	2	Parcel 234570	Parcel-Based Opportunity	21.31	2.72	13%	0.001	0.034
Richmond	2	ROW 11014	ROW Opportunity	5.98	3.95	66%	0.002	0.034
Richmond	2	ROW 15831	ROW Opportunity	9.53	6.34	67%	0.002	0.034
Richmond	2	ROW 17021	ROW Opportunity	0.48	0.20	42%	0.019	0.034
Richmond	2	ROW 283	ROW Opportunity	6.12	4.23	69%	0.002	0.034
Richmond	2	ROW 56	ROW Opportunity	1.53	1.09	71%	0.007	0.034
Richmond	2	Parcel 111332	Parcel-Based Opportunity	0.26	0.11	42%	0.032	0.033
Richmond	2	Parcel 120275	Regional Opportunity	1.53	0.52	34%	0.006	0.033
Richmond	2	Parcel 154534	Parcel-Based Opportunity	0.21	0.14	67%	0.039	0.033
Richmond	2	ROW 191	ROW Opportunity	1.46	1.08	74%	0.007	0.033
Richmond	2	ROW 21542	ROW Opportunity	8.21	5.22	64%	0.002	0.033
Richmond	2	ROW 239	ROW Opportunity	10.01	6.58	66%	0.002	0.033
Richmond	2	ROW 6159	ROW Opportunity	6.69	4.35	65%	0.002	0.033
Richmond	2	ROW 85	ROW Opportunity	0.84	0.56	67%	0.011	0.033
Richmond	2	GIP 00148 /planned 492	Parcel-Based Opportunity (aspirational)	2.50	1.76	70%	0.005	0.032
Richmond	2	ROW 243	ROW Opportunity	9.52	6.21	65%	0.002	0.032
Richmond	2	ROW 282	ROW Opportunity	5.99	4.14	69%	0.002	0.032
Richmond	2	GIP 00146 /planned 488	Parcel-Based Opportunity (aspirational)	2.69	1.81	67%	0.004	0.031
Richmond	2	Parcel 119762	Regional Opportunity	1.08	0.35	32%	0.008	0.031
Richmond	2	Parcel 125511	Parcel-Based Opportunity	0.17	0.11	65%	0.047	0.031
Richmond	2	Parcel 142243	Regional Opportunity	0.79	0.65	82%	0.012	0.031
Richmond	2	Parcel 207080	Parcel-Based Opportunity	11.36	4.54	40%	0.001	0.031
Richmond	2	ROW 19630	ROW Opportunity	2.57	0.92	36%	0.004	0.031
Richmond	2	ROW 259	ROW Opportunity	7.70	5.06	66%	0.002	0.031
Richmond	2	ROW 298	ROW Opportunity	5.20	3.55	68%	0.003	0.031
Richmond	2	ROW 323	ROW Opportunity	5.79	3.97	69%	0.002	0.031
Richmond	2	ROW 16432	ROW Opportunity	0.17	0.13	76%	0.042	0.030
Richmond	2	ROW 16444	ROW Opportunity	1.83	1.25	68%	0.005	0.030
Richmond	2	ROW 16533	ROW Opportunity	0.59	0.36	61%	0.014	0.030
Richmond	2	ROW 5978	ROW Opportunity	1.46	0.86	59%	0.007	0.030
Richmond	2	ROW 80	ROW Opportunity	0.96	0.68	71%	0.009	0.030
Richmond	2	Parcel 198527	Parcel-Based Opportunity	7.70	0.55	7%	0.002	0.029
Richmond	2	ROW 11807	ROW Opportunity	9.05	5.81	64%	0.001	0.029
Richmond	2	ROW 12123	ROW Opportunity	8.06	5.15	64%	0.002	0.029
Richmond	2	ROW 12145	ROW Opportunity	8.39	5.45	65%	0.002	0.029
Richmond	2	ROW 21089	ROW Opportunity	2.88	1.39	48%	0.003	0.029
Richmond	2	GIP 00159 /planned 519	Parcel-Based Opportunity (aspirational)	7.69	5.20	68%	0.002	0.028
Richmond	2	Parcel 120253	Parcel-Based Opportunity	0.33	0.14	42%	0.021	0.028
Richmond	2	Parcel 150301	Regional Opportunity	0.90	0.66	73%	0.009	0.028
Richmond	2	ROW 10074	ROW Opportunity	9.03	5.68	63%	0.001	0.028
Richmond	2	ROW 10718	ROW Opportunity	7.91	4.98	63%	0.002	0.028
Richmond	2	ROW 16439	ROW Opportunity	1.16	0.76	66%	0.008	0.028
Richmond	2	ROW 16546	ROW Opportunity	2.59	1.81	70%	0.004	0.028
Richmond	2	ROW 7714	ROW Opportunity	6.37	4.16	65%	0.002	0.028
Richmond	2	GIP 00157 /planned 517	Parcel-Based Opportunity (aspirational)	6.85	4.64	68%	0.002	0.027
Richmond	2	ROW 13419	ROW Opportunity	1.62	1.06	65%	0.006	0.027
Richmond	2	ROW 16451	ROW Opportunity	5.28	3.42	65%	0.002	0.027
Richmond	2	ROW 16525	ROW Opportunity	1.21	0.69	57%	0.007	0.027
Richmond	2	ROW 20279	ROW Opportunity	6.17	4.13	67%	0.002	0.027
Richmond	2	ROW 241	ROW Opportunity	7.41	4.90	66%	0.002	0.027
Richmond	2	ROW 280	ROW Opportunity	6.70	4.42	66%	0.002	0.027
Richmond	2	ROW 7716	ROW Opportunity	5.73	3.73	65%	0.002	0.027
Richmond	2	Parcel 150205	Regional Opportunity	0.89	0.61	69%	0.009	0.026
Richmond	2	Parcel 375468	Parcel-Based Opportunity	0.97	0.09	9%	0.009	0.026
Richmond	2	ROW 11626	ROW Opportunity	0.14	0.09	64%	0.044	0.026
Richmond	2	ROW 16463	ROW Opportunity	6.46	4.31	67%	0.002	0.026
Richmond	2	ROW 238	ROW Opportunity	0.20	0.14	70%	0.033	0.026
Richmond	2	ROW 7717	ROW Opportunity	2.09	1.39	67%	0.004	0.026
Richmond	2	ROW 8365	ROW Opportunity	9.43	5.05	54%	0.001	0.026
Richmond	2	ROW 8849	ROW Opportunity	6.28	4.11	65%	0.002	0.026
Richmond	2	ROW 9165	ROW Opportunity	0.31	0.19	61%	0.021	0.026
Richmond	2	ROW 9347	ROW Opportunity	8.44	5.50	65%	0.001	0.026
Richmond	2	Parcel 227484	Parcel-Based Opportunity	150.23	0.93	1%	0.000	0.025
Richmond	2	ROW 12098	ROW Opportunity	3.92	2.44	62%	0.003	0.025
Richmond	2	ROW 13064	ROW Opportunity	12.19	6.07	50%	0.001	0.025
Richmond	2	ROW 169	ROW Opportunity	0.64	0.50	78%	0.011	0.025
Richmond	2	ROW 190	ROW Opportunity	1.00	0.73	73%	0.008	0.025
Richmond	2	ROW 207	ROW Opportunity	0.87	0.60	69%	0.009	0.025
Richmond	2	ROW 252	ROW Opportunity	5.36	3.50	65%	0.002	0.025
Richmond	2	ROW 16476	ROW Opportunity	0.55	0.32	58%	0.012	0.024
Richmond	2	ROW 16495	ROW Opportunity	2.25	1.50	67%	0.004	0.024
Richmond	2	ROW 188	ROW Opportunity	1.08	0.78	72%	0.007	0.024
Richmond	2	ROW 9992	ROW Opportunity	2.54	1.65	65%	0.003	0.024
Richmond	2	GIP 00111 / Parcel 132965	Regional Opportunity (aspirational)	0.59	0.46	78%	0.011	0.023

DRAFT Contra Costa Countywide Attainment Strategy
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Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Richmond	2	GIP 00114 / Parcel 133558	Regional Opportunity (aspirational)	0.63	0.52	83%	0.011	0.023
Richmond	2	GIP 00131 / planned 186	Parcel-Based Opportunity (aspirational)	18.01	5.20	29%	0.001	0.023
Richmond	2	GIP 00135 / planned 468	Parcel-Based Opportunity (aspirational)	18.01	5.20	29%	0.001	0.023
Richmond	2	GIP 00161 / planned 521	Parcel-Based Opportunity (aspirational)	5.57	3.75	67%	0.002	0.023
Richmond	2	planned 174	Planned Unlined Swale	0.69	0.47	68%	0.010	0.023
Richmond	2	ROW 11010	ROW Opportunity	5.64	3.65	65%	0.002	0.023
Richmond	2	ROW 11852	ROW Opportunity	0.88	0.58	66%	0.008	0.023
Richmond	2	ROW 128	ROW Opportunity	3.64	2.51	69%	0.003	0.023
Richmond	2	ROW 14749	ROW Opportunity	1.79	0.86	48%	0.004	0.023
Richmond	2	ROW 16490	ROW Opportunity	2.47	1.59	64%	0.003	0.023
Richmond	2	ROW 216	ROW Opportunity	5.26	3.39	64%	0.002	0.023
Richmond	2	ROW 284	ROW Opportunity	4.68	3.14	67%	0.002	0.023
Richmond	2	ROW 345	ROW Opportunity	7.17	4.37	61%	0.001	0.023
Richmond	2	ROW 4274	ROW Opportunity	0.75	0.51	68%	0.009	0.023
Richmond	2	ROW 59	ROW Opportunity	1.06	0.68	64%	0.007	0.023
Richmond	2	ROW 7798	ROW Opportunity	3.24	2.02	62%	0.003	0.023
Richmond	2	ROW 862	ROW Opportunity	0.62	0.49	79%	0.011	0.023
Richmond	2	GIP 00113 / Parcel 133528	Regional Opportunity (aspirational)	0.61	0.50	82%	0.011	0.022
Richmond	2	GIP 00164 / planned 529	Parcel-Based Opportunity (aspirational)	8.35	3.96	47%	0.001	0.022
Richmond	2	Parcel 177214	Parcel-Based Opportunity	11.57	5.65	49%	0.001	0.022
Richmond	2	Parcel 197712	Parcel-Based Opportunity	0.34	0.05	15%	0.017	0.022
Richmond	2	Parcel 231444	Parcel-Based Opportunity	9.82	5.16	53%	0.001	0.022
Richmond	2	planned 514	Planned Unlined Swale	0.26	0.17	65%	0.022	0.022
Richmond	2	ROW 14348	ROW Opportunity	4.73	2.85	60%	0.002	0.022
Richmond	2	ROW 16540	ROW Opportunity	3.11	1.96	63%	0.003	0.022
Richmond	2	ROW 16547	ROW Opportunity	3.20	2.06	64%	0.003	0.022
Richmond	2	ROW 4556	ROW Opportunity	4.85	2.97	61%	0.002	0.022
Richmond	2	ROW 6276	ROW Opportunity	0.11	0.08	73%	0.051	0.022
Richmond	2	ROW 6850	ROW Opportunity	5.70	3.79	66%	0.002	0.022
Richmond	2	ROW 7554	ROW Opportunity	4.93	2.93	59%	0.002	0.022
Richmond	2	ROW 8344	ROW Opportunity	2.79	1.43	51%	0.003	0.022
Richmond	2	ROW 9354	ROW Opportunity	4.61	2.81	61%	0.002	0.022
Richmond	2	Parcel 136865	Regional Opportunity	0.56	0.40	71%	0.011	0.021
Richmond	2	Parcel 142495	Regional Opportunity	1.67	1.01	60%	0.004	0.021
Richmond	2	Parcel 150789	Regional Opportunity	0.68	0.49	72%	0.009	0.021
Richmond	2	ROW 16459	ROW Opportunity	3.83	2.58	67%	0.002	0.021
Richmond	2	ROW 20540	ROW Opportunity	1.86	1.20	65%	0.004	0.021
Richmond	2	ROW 4128	ROW Opportunity	0.53	0.40	75%	0.011	0.021
Richmond	2	ROW 4276	ROW Opportunity	1.18	0.85	72%	0.006	0.021
Richmond	2	ROW 4470	ROW Opportunity	5.90	3.81	65%	0.002	0.021
Richmond	2	ROW 68	ROW Opportunity	3.20	2.16	68%	0.003	0.021
Richmond	2	Parcel 164500	Regional Opportunity	1.15	0.45	39%	0.005	0.020
Richmond	2	planned 187	Planned Unlined Bioretention	0.48	0.29	60%	0.012	0.020
Richmond	2	ROW 12816	ROW Opportunity	5.38	3.23	60%	0.002	0.020
Richmond	2	ROW 13418	ROW Opportunity	2.49	1.71	69%	0.003	0.020
Richmond	2	ROW 16450	ROW Opportunity	5.38	3.61	67%	0.002	0.020
Richmond	2	ROW 16677	ROW Opportunity	4.69	2.78	59%	0.002	0.020
Richmond	2	ROW 18208	ROW Opportunity	1.75	1.14	65%	0.004	0.020
Richmond	2	ROW 1991	ROW Opportunity	7.58	4.72	62%	0.001	0.020
Richmond	2	ROW 20007	ROW Opportunity	6.72	4.21	63%	0.001	0.020
Richmond	2	ROW 501	ROW Opportunity	5.00	3.06	61%	0.002	0.020
Richmond	2	ROW 6847	ROW Opportunity	5.45	3.61	66%	0.002	0.020
Richmond	2	ROW 7333	ROW Opportunity	3.29	2.13	65%	0.003	0.020
Richmond	2	ROW 7747	ROW Opportunity	4.04	2.68	66%	0.002	0.020
Richmond	2	ROW 9126	ROW Opportunity	1.07	0.38	36%	0.005	0.020
Richmond	2	GIP 00126 / planned 141	Parcel-Based Opportunity (aspirational)	18.40	3.20	17%	0.000	0.019
Richmond	2	Parcel 196851	Parcel-Based Opportunity	4.96	0.08	2%	0.002	0.019
Richmond	2	ROW 12536	ROW Opportunity	2.88	1.31	45%	0.003	0.019
Richmond	2	ROW 16534	ROW Opportunity	1.86	1.27	68%	0.004	0.019
Richmond	2	ROW 17129	ROW Opportunity	10.19	4.51	44%	0.001	0.019
Richmond	2	ROW 3972	ROW Opportunity	0.65	0.40	62%	0.009	0.019
Richmond	2	ROW 6954	ROW Opportunity	0.73	0.55	75%	0.008	0.019
Richmond	2	GIP 00118 / Parcel 140096	Parcel-Based Opportunity (aspirational)	6.62	4.81	73%	0.001	0.018
Richmond	2	GIP 00152 / planned 511	Parcel-Based Opportunity (aspirational)	2.00	1.36	68%	0.003	0.018
Richmond	2	GIP 00162 / planned 522	Parcel-Based Opportunity (aspirational)	5.90	4.00	68%	0.001	0.018
Richmond	2	Parcel 126885	Regional Opportunity	1.12	0.39	35%	0.005	0.018
Richmond	2	Parcel 151124	Parcel-Based Opportunity	0.47	0.35	74%	0.011	0.018
Richmond	2	Parcel 151604	Regional Opportunity	0.50	0.42	84%	0.011	0.018
Richmond	2	Parcel 152942	Regional Opportunity	0.52	0.42	81%	0.010	0.018
Richmond	2	ROW 160	ROW Opportunity	4.58	3.15	69%	0.002	0.018
Richmond	2	ROW 16470	ROW Opportunity	2.55	1.66	65%	0.003	0.018
Richmond	2	ROW 20777	ROW Opportunity	1.92	1.28	67%	0.003	0.018
Richmond	2	ROW 213	ROW Opportunity	5.91	3.79	64%	0.001	0.018
Richmond	2	ROW 2915	ROW Opportunity	4.41	2.90	66%	0.002	0.018
Richmond	2	ROW 2928	ROW Opportunity	3.99	2.40	60%	0.002	0.018
Richmond	2	ROW 3295	ROW Opportunity	0.13	0.06	46%	0.035	0.018
Richmond	2	ROW 4531	ROW Opportunity	0.29	0.15	52%	0.016	0.018
Richmond	2	ROW 6066	ROW Opportunity	0.37	0.11	30%	0.013	0.018
Richmond	2	ROW 67	ROW Opportunity	1.78	1.28	72%	0.004	0.018
Richmond	2	Parcel 209985	Parcel-Based Opportunity	7.78	4.24	54%	0.001	0.017
Richmond	2	planned 489	Planned Unlined Bioretention	1.91	1.34	70%	0.003	0.017
Richmond	2	ROW 16453	ROW Opportunity	4.49	2.90	65%	0.002	0.017
Richmond	2	ROW 16524	ROW Opportunity	0.17	0.12	71%	0.027	0.017
Richmond	2	ROW 16920	ROW Opportunity	0.89	0.46	52%	0.006	0.017
Richmond	2	ROW 17076	ROW Opportunity	4.77	2.85	60%	0.002	0.017
Richmond	2	ROW 290	ROW Opportunity	1.30	0.94	72%	0.005	0.017
Richmond	2	ROW 4396	ROW Opportunity	2.92	1.91	65%	0.002	0.017
Richmond	2	GIP 00141 / planned 480	Parcel-Based Opportunity (aspirational)	3.92	2.68	68%	0.002	0.016
Richmond	2	Parcel 150106	Parcel-Based Opportunity	0.47	0.36	77%	0.010	0.016
Richmond	2	Parcel 50787	Parcel-Based Opportunity	0.13	0.09	69%	0.032	0.016
Richmond	2	planned 94	Planned Creek/Marsh Restoration	4.16	2.12	51%	0.002	0.016
Richmond	2	ROW 115	ROW Opportunity	3.74	2.52	67%	0.002	0.016
Richmond	2	ROW 1385	ROW Opportunity	0.62	0.34	55%	0.008	0.016
Richmond	2	ROW 250	ROW Opportunity	2.22	1.47	66%	0.003	0.016

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Richmond	2	ROW 314	ROW Opportunity	4.06	2.72	67%	0.002	0.016
Richmond	2	ROW 3741	ROW Opportunity	0.59	0.40	68%	0.008	0.016
Richmond	2	ROW 4398	ROW Opportunity	3.21	2.08	65%	0.002	0.016
Richmond	2	ROW 4866	ROW Opportunity	5.85	3.86	66%	0.001	0.016
Richmond	2	GIP 00124 / planned 137	Parcel-Based Opportunity (aspirational)	9.66	3.71	38%	0.001	0.015
Richmond	2	Parcel 160376	Parcel-Based Opportunity	4.81	4.00	83%	0.001	0.015
Richmond	2	ROW 12101	ROW Opportunity	1.93	1.31	68%	0.003	0.015
Richmond	2	ROW 16447	ROW Opportunity	3.16	2.13	67%	0.002	0.015
Richmond	2	ROW 16479	ROW Opportunity	0.89	0.59	66%	0.006	0.015
Richmond	2	ROW 17605	ROW Opportunity	7.60	3.45	45%	0.001	0.015
Richmond	2	ROW 18926	ROW Opportunity	4.43	2.72	61%	0.002	0.015
Richmond	2	ROW 20542	ROW Opportunity	0.72	0.51	71%	0.007	0.015
Richmond	2	ROW 20895	ROW Opportunity	0.46	0.22	48%	0.009	0.015
Richmond	2	ROW 21152	ROW Opportunity	4.90	3.36	69%	0.002	0.015
Richmond	2	ROW 258	ROW Opportunity	0.55	0.39	71%	0.008	0.015
Richmond	2	ROW 6047	ROW Opportunity	4.81	3.21	67%	0.001	0.015
Richmond	2	ROW 78	ROW Opportunity	0.84	0.63	75%	0.006	0.015
Richmond	2	ROW 81	ROW Opportunity	1.73	1.19	69%	0.003	0.015
Richmond	2	ROW 93	ROW Opportunity	5.91	3.85	65%	0.001	0.015
Richmond	2	Parcel 136418	Regional Opportunity	0.51	0.31	61%	0.008	0.014
Richmond	2	Parcel 139156	Regional Opportunity	2.90	1.37	47%	0.002	0.014
Richmond	2	Parcel 139599	Parcel-Based Opportunity	5.30	3.53	67%	0.001	0.014
Richmond	2	Parcel 143456	Parcel-Based Opportunity	0.42	0.32	76%	0.010	0.014
Richmond	2	Parcel 143637	Regional Opportunity	0.71	0.32	45%	0.006	0.014
Richmond	2	Parcel 191941	Parcel-Based Opportunity	7.01	0.25	4%	0.000	0.014
Richmond	2	Parcel 375481	Parcel-Based Opportunity	4.63	2.18	47%	0.002	0.014
Richmond	2	Parcel 47763	Parcel-Based Opportunity	4.66	2.90	62%	0.001	0.014
Richmond	2	ROW 11012	ROW Opportunity	2.36	1.46	62%	0.002	0.014
Richmond	2	ROW 129	ROW Opportunity	0.42	0.29	69%	0.010	0.014
Richmond	2	ROW 14437	ROW Opportunity	13.77	3.20	23%	0.000	0.014
Richmond	2	ROW 16491	ROW Opportunity	1.26	0.81	64%	0.004	0.014
Richmond	2	ROW 16494	ROW Opportunity	2.27	1.51	67%	0.003	0.014
Richmond	2	ROW 16611	ROW Opportunity	1.02	0.78	76%	0.005	0.014
Richmond	2	ROW 19951	ROW Opportunity	4.44	2.66	60%	0.002	0.014
Richmond	2	ROW 20316	ROW Opportunity	2.88	1.90	66%	0.002	0.014
Richmond	2	ROW 286	ROW Opportunity	2.29	1.57	69%	0.003	0.014
Richmond	2	ROW 89	ROW Opportunity	1.38	0.90	65%	0.004	0.014
Richmond	2	ROW 9417	ROW Opportunity	2.08	1.34	64%	0.003	0.014
Richmond	2	GIP 00127 / planned 171	Parcel-Based Opportunity (aspirational)	16.16	2.93	18%	0.000	0.013
Richmond	2	GIP 00138 / planned 475	Parcel-Based Opportunity (aspirational)	16.16	2.93	18%	0.000	0.013
Richmond	2	GIP 00149 / planned 508	Parcel-Based Opportunity (aspirational)	3.47	2.33	67%	0.002	0.013
Richmond	2	GIP 00175 / ROW 17569	ROW Opportunity (aspirational)	2.96	1.75	59%	0.002	0.013
Richmond	2	Parcel 112290	Regional Opportunity	1.12	0.16	14%	0.005	0.013
Richmond	2	Parcel 155750	Parcel-Based Opportunity	0.43	0.30	70%	0.009	0.013
Richmond	2	ROW 12140	ROW Opportunity	0.81	0.58	72%	0.006	0.013
Richmond	2	ROW 163	ROW Opportunity	5.21	3.41	65%	0.001	0.013
Richmond	2	ROW 194	ROW Opportunity	4.22	2.78	66%	0.001	0.013
Richmond	2	ROW 2595	ROW Opportunity	1.07	0.42	39%	0.004	0.013
Richmond	2	ROW 6848	ROW Opportunity	2.21	1.46	66%	0.002	0.013
Richmond	2	ROW 7330	ROW Opportunity	5.35	3.48	65%	0.001	0.013
Richmond	2	ROW 8151	ROW Opportunity	4.36	2.94	67%	0.001	0.013
Richmond	2	GIP 00160 / planned 520	Parcel-Based Opportunity (aspirational)	2.35	1.60	68%	0.002	0.012
Richmond	2	Parcel 147723	Parcel-Based Opportunity	0.34	0.27	79%	0.010	0.012
Richmond	2	Parcel 150072	Parcel-Based Opportunity	0.36	0.27	75%	0.010	0.012
Richmond	2	Parcel 211418	Parcel-Based Opportunity	9.02	2.38	26%	0.001	0.012
Richmond	2	Parcel 225370	Parcel-Based Opportunity	25.07	3.05	12%	0.000	0.012
Richmond	2	Parcel 375470	Parcel-Based Opportunity	57.79	1.88	3%	0.000	0.012
Richmond	2	ROW 132	ROW Opportunity	1.65	1.13	68%	0.003	0.012
Richmond	2	ROW 13338	ROW Opportunity	1.01	0.70	69%	0.004	0.012
Richmond	2	ROW 14167	ROW Opportunity	4.84	3.18	66%	0.001	0.012
Richmond	2	ROW 14369	ROW Opportunity	0.27	0.09	33%	0.012	0.012
Richmond	2	ROW 16466	ROW Opportunity	3.17	2.13	67%	0.002	0.012
Richmond	2	ROW 16474	ROW Opportunity	2.85	1.84	65%	0.002	0.012
Richmond	2	ROW 16502	ROW Opportunity	2.06	1.33	65%	0.002	0.012
Richmond	2	ROW 204	ROW Opportunity	4.79	3.07	64%	0.001	0.012
Richmond	2	ROW 253	ROW Opportunity	4.86	3.10	64%	0.001	0.012
Richmond	2	ROW 281	ROW Opportunity	0.38	0.28	74%	0.010	0.012
Richmond	2	ROW 4277	ROW Opportunity	0.43	0.27	63%	0.008	0.012
Richmond	2	ROW 5573	ROW Opportunity	1.06	0.63	59%	0.004	0.012
Richmond	2	ROW 6101	ROW Opportunity	4.34	2.67	62%	0.001	0.012
Richmond	2	ROW 6558	ROW Opportunity	1.87	1.00	53%	0.002	0.012
Richmond	2	ROW 7748	ROW Opportunity	4.34	2.86	66%	0.001	0.012
Richmond	2	ROW 913	ROW Opportunity	0.22	0.10	45%	0.015	0.012
Richmond	2	ROW 9680	ROW Opportunity	2.49	1.58	63%	0.002	0.012
Richmond	2	GIP 00133 / planned 193	Parcel-Based Opportunity (aspirational)	0.97	0.27	28%	0.004	0.011
Richmond	2	GIP 00150 / planned 509	Parcel-Based Opportunity (aspirational)	3.02	2.04	68%	0.002	0.011
Richmond	2	GIP 00151 / planned 510	Parcel-Based Opportunity (aspirational)	2.11	1.43	68%	0.002	0.011
Richmond	2	Parcel 112193	Parcel-Based Opportunity	0.18	0.07	39%	0.016	0.011
Richmond	2	Parcel 116931	Parcel-Based Opportunity	11.22	0.40	4%	0.000	0.011
Richmond	2	Parcel 121594	Parcel-Based Opportunity	3.20	1.53	48%	0.002	0.011
Richmond	2	Parcel 128233	Parcel-Based Opportunity	3.85	2.80	73%	0.001	0.011
Richmond	2	Parcel 145759	Parcel-Based Opportunity	0.34	0.25	74%	0.010	0.011
Richmond	2	Parcel 149557	Parcel-Based Opportunity	0.35	0.25	71%	0.009	0.011
Richmond	2	Parcel 150416	Parcel-Based Opportunity	0.32	0.27	84%	0.011	0.011
Richmond	2	Parcel 152538	Parcel-Based Opportunity	0.37	0.26	70%	0.009	0.011
Richmond	2	Parcel 167393	Parcel-Based Opportunity	4.98	2.79	56%	0.001	0.011
Richmond	2	Parcel 243861	Parcel-Based Opportunity	33.58	2.75	8%	0.000	0.011
Richmond	2	ROW 111	ROW Opportunity	3.22	2.10	65%	0.002	0.011
Richmond	2	ROW 11660	ROW Opportunity	0.34	0.18	53%	0.010	0.011
Richmond	2	ROW 13123	ROW Opportunity	1.20	0.83	69%	0.003	0.011
Richmond	2	ROW 14811	ROW Opportunity	0.29	0.19	66%	0.011	0.011
Richmond	2	ROW 16446	ROW Opportunity	1.36	0.89	65%	0.003	0.011
Richmond	2	ROW 16468	ROW Opportunity	3.10	2.04	66%	0.002	0.011
Richmond	2	ROW 16483	ROW Opportunity	2.83	1.77	63%	0.002	0.011

DRAFT Contra Costa Countywide Attainment Strategy
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Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Richmond	2	ROW 19203	ROW Opportunity	3.74	2.18	58%	0.001	0.011
Richmond	2	ROW 19688	ROW Opportunity	4.52	2.76	61%	0.001	0.011
Richmond	2	ROW 20469	ROW Opportunity	2.29	1.56	68%	0.002	0.011
Richmond	2	ROW 249	ROW Opportunity	4.36	2.85	65%	0.001	0.011
Richmond	2	ROW 322	ROW Opportunity	4.52	3.02	67%	0.001	0.011
Richmond	2	ROW 3981	ROW Opportunity	2.93	1.87	64%	0.002	0.011
Richmond	2	ROW 4397	ROW Opportunity	3.99	2.39	60%	0.001	0.011
Richmond	2	ROW 9967	ROW Opportunity	5.27	2.53	48%	0.001	0.011
Richmond	2	GIP 00115 / Parcel 135904	Parcel-Based Opportunity (aspirational)	8.78	2.30	26%	0.001	0.010
Richmond	2	planned 490	Planned Unlined Bioretention	3.29	2.20	67%	0.001	0.010
Richmond	2	ROW 106	ROW Opportunity	2.85	1.90	67%	0.002	0.010
Richmond	2	ROW 12330	ROW Opportunity	0.08	0.04	50%	0.032	0.010
Richmond	2	ROW 14072	ROW Opportunity	1.98	1.16	59%	0.002	0.010
Richmond	2	ROW 16841	ROW Opportunity	3.01	1.97	65%	0.002	0.010
Richmond	2	ROW 17073	ROW Opportunity	3.30	2.03	62%	0.002	0.010
Richmond	2	ROW 17322	ROW Opportunity	0.62	0.22	35%	0.005	0.010
Richmond	2	ROW 3014	ROW Opportunity	0.11	0.07	64%	0.025	0.010
Richmond	2	GIP 00110 / Parcel 109368	Parcel-Based Opportunity (aspirational)	3.40	2.17	64%	0.001	0.009
Richmond	2	GIP 00169 / ROW 15040	ROW Opportunity (aspirational)	1.55	0.99	64%	0.003	0.009
Richmond	2	GIP 00172 / ROW 16800	ROW Opportunity (aspirational)	3.21	1.91	60%	0.001	0.008
Richmond	2	GIP 00130 / planned 185	Parcel-Based Opportunity (aspirational)	6.84	1.74	25%	0.001	0.007
Richmond	2	GIP 00134 / planned 467	Parcel-Based Opportunity (aspirational)	6.84	1.74	25%	0.001	0.007
Richmond	2	GIP 00143 / planned 482	Parcel-Based Opportunity (aspirational)	2.83	1.88	66%	0.001	0.007
Richmond	2	GIP 00168 / ROW 12341	ROW Opportunity (aspirational)	2.99	1.76	59%	0.001	0.007
Richmond	2	GIP 00156 / planned 516	Parcel-Based Opportunity (aspirational)	2.16	1.44	67%	0.001	0.006
Richmond	2	GIP 00176 / ROW 2981	ROW Opportunity (aspirational)	2.42	1.41	58%	0.001	0.006
Richmond	2	GIP 00117 / Parcel 137234	Regional Opportunity (aspirational)	2.25	0.99	44%	0.001	0.004
Richmond	2	GIP 00119 / Parcel 140108	Regional Opportunity (aspirational)	1.53	1.06	69%	0.001	0.004
Richmond	2	GIP 00154 / planned 513	Parcel-Based Opportunity (aspirational)	1.69	1.13	67%	0.001	0.004
Richmond	2	GIP 00132 / planned 192	Parcel-Based Opportunity (aspirational)	2.19	0.73	33%	0.001	0.003
Richmond	2	GIP 00137 / planned 474	Parcel-Based Opportunity (aspirational)	2.19	0.73	33%	0.001	0.003
Richmond	2	GIP 00155 / planned 515	Parcel-Based Opportunity (aspirational)	1.39	0.94	68%	0.001	0.003
Richmond	2	GIP 00158 / planned 518	Parcel-Based Opportunity (aspirational)	1.02	0.69	68%	0.001	0.003
Richmond	2	GIP 00163 / planned 525	Parcel-Based Opportunity (aspirational)	1.23	0.77	63%	0.001	0.003
Richmond	2	GIP 00116 / Parcel 136910	Regional Opportunity (aspirational)	0.65	0.27	42%	0.001	0.001
Richmond	2	GIP 00129 / planned 184	Parcel-Based Opportunity (aspirational)	0.01	0.01	100%	0.002	0.000
San Pablo	2	GIP 10057 / ROW 7812	ROW Opportunity (aspirational)	7.18	4.82	67%	0.038	1.114
San Pablo	2	ROW 16921	ROW Opportunity	12.99	7.46	57%	0.008	0.353
San Pablo	2	planned 36	Planned Flood Control Basin	38.92	17.91	46%	0.002	0.256
San Pablo	2	planned 162	Planned Unlined Bioretention	53.22	35.34	66%	0.002	0.246
San Pablo	2	ROW 16388	ROW Opportunity	7.27	5.13	71%	0.010	0.245
San Pablo	2	planned 302	Planned Creek/Marsh Restoration	3.18	1.46	46%	0.019	0.235
San Pablo	2	ROW 20797	ROW Opportunity	1.05	0.93	89%	0.051	0.214
San Pablo	2	ROW 7812	ROW Opportunity	1.06	0.70	66%	0.038	0.162
San Pablo	2	ROW 16905	ROW Opportunity	5.86	3.97	68%	0.007	0.138
San Pablo	2	ROW 16907	ROW Opportunity	7.77	5.24	67%	0.005	0.126
San Pablo	2	ROW 16903	ROW Opportunity	4.25	2.88	68%	0.008	0.119
San Pablo	2	ROW 6559	ROW Opportunity	12.76	7.53	59%	0.003	0.114
San Pablo	2	planned 304	Planned Creek/Marsh Restoration	28.94	14.49	50%	0.002	0.105
San Pablo	2	GIP 10065 / SD MasterPlan	ROW Opportunity (aspirational)	29.73	19.48	66%	0.001	0.094
San Pablo	2	ROW 4126	ROW Opportunity	0.60	0.43	72%	0.038	0.092
San Pablo	2	ROW 19846	ROW Opportunity	6.35	3.77	59%	0.004	0.076
San Pablo	2	ROW 2698	ROW Opportunity	8.13	5.52	68%	0.003	0.074
San Pablo	2	ROW 2767	ROW Opportunity	1.26	0.75	60%	0.015	0.070
San Pablo	2	GIP 10055 / ROW 11891	ROW Opportunity (aspirational)	7.98	5.43	68%	0.003	0.068
San Pablo	2	ROW 189	ROW Opportunity	3.45	2.35	68%	0.006	0.068
San Pablo	2	ROW 2769	ROW Opportunity	5.25	2.83	54%	0.004	0.063
San Pablo	2	ROW 7219	ROW Opportunity	1.16	0.79	68%	0.014	0.061
San Pablo	2	ROW 9756	ROW Opportunity	3.58	2.30	64%	0.006	0.060
San Pablo	2	ROW 6033	ROW Opportunity	7.68	5.03	65%	0.003	0.055
San Pablo	2	ROW 77	ROW Opportunity	0.39	0.30	77%	0.034	0.052
San Pablo	2	ROW 4227	ROW Opportunity	4.63	2.97	64%	0.004	0.047
San Pablo	2	ROW 192	ROW Opportunity	3.68	2.55	69%	0.004	0.045
San Pablo	2	ROW 18421	ROW Opportunity	9.68	6.08	63%	0.002	0.039
San Pablo	2	ROW 786	ROW Opportunity	5.66	3.27	58%	0.003	0.039
San Pablo	2	ROW 16914	ROW Opportunity	2.49	1.66	67%	0.005	0.037
San Pablo	2	ROW 16014	ROW Opportunity	5.29	3.53	67%	0.003	0.036
San Pablo	2	ROW 18397	ROW Opportunity	2.76	1.78	64%	0.004	0.035
San Pablo	2	ROW 4228	ROW Opportunity	2.60	1.68	65%	0.005	0.035
San Pablo	2	GIP 10056 / ROW 18927	ROW Opportunity (aspirational)	6.33	4.23	67%	0.002	0.033
San Pablo	2	ROW 18924	ROW Opportunity	0.25	0.19	76%	0.033	0.032
San Pablo	2	ROW 16015	ROW Opportunity	1.34	0.88	66%	0.007	0.031
San Pablo	2	ROW 15641	ROW Opportunity	4.30	2.76	64%	0.003	0.030
San Pablo	2	ROW 4668	ROW Opportunity	2.52	1.68	67%	0.004	0.030
San Pablo	2	ROW 12843	ROW Opportunity	2.13	1.52	71%	0.005	0.029
San Pablo	2	ROW 167	ROW Opportunity	6.95	4.63	67%	0.002	0.028
San Pablo	2	ROW 6930	ROW Opportunity	0.90	0.64	71%	0.009	0.028
San Pablo	2	ROW 15350	ROW Opportunity	1.12	0.66	59%	0.007	0.027
San Pablo	2	ROW 19954	ROW Opportunity	3.17	2.07	65%	0.003	0.027
San Pablo	2	ROW 20000	ROW Opportunity	1.97	1.36	69%	0.005	0.027
San Pablo	2	ROW 165	ROW Opportunity	5.88	3.79	64%	0.002	0.026
San Pablo	2	ROW 17042	ROW Opportunity	5.45	3.63	67%	0.002	0.025
San Pablo	2	ROW 11891	ROW Opportunity	1.83	1.26	69%	0.005	0.024
San Pablo	2	ROW 12558	ROW Opportunity	8.04	4.68	58%	0.001	0.023
San Pablo	2	ROW 16390	ROW Opportunity	1.74	1.08	62%	0.005	0.023
San Pablo	2	ROW 4473	ROW Opportunity	1.50	0.88	59%	0.005	0.022
San Pablo	2	Parcel 177888	Regional Opportunity	0.72	0.48	67%	0.009	0.021
San Pablo	2	ROW 12611	ROW Opportunity	2.08	1.46	70%	0.004	0.021
San Pablo	2	ROW 4651	ROW Opportunity	1.36	0.86	63%	0.005	0.021
San Pablo	2	ROW 21121	ROW Opportunity	4.48	2.81	63%	0.002	0.020
San Pablo	2	ROW 52	ROW Opportunity	3.36	1.97	59%	0.002	0.020
San Pablo	2	Parcel 174149	Regional Opportunity	1.30	0.40	31%	0.004	0.019
San Pablo	2	planned 155	Planned Creek/Marsh Restoration	0.31	0.18	58%	0.016	0.019
San Pablo	2	ROW 10495	ROW Opportunity	2.74	1.83	67%	0.003	0.019

DRAFT Contra Costa Countywide Attainment Strategy
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Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
San Pablo	2	ROW 4471	ROW Opportunity	1.20	0.64	53%	0.005	0.019
San Pablo	2	planned 325	Planned Unlined Bioretention	5.36	1.64	31%	0.001	0.018
San Pablo	2	ROW 11364	ROW Opportunity	0.57	0.40	70%	0.009	0.018
San Pablo	2	ROW 11808	ROW Opportunity	0.75	0.49	65%	0.008	0.018
San Pablo	2	ROW 125	ROW Opportunity	4.82	3.00	62%	0.002	0.018
San Pablo	2	ROW 12612	ROW Opportunity	2.24	1.38	62%	0.003	0.018
San Pablo	2	ROW 171	ROW Opportunity	3.11	1.99	64%	0.002	0.018
San Pablo	2	ROW 18927	ROW Opportunity	0.12	0.08	67%	0.039	0.018
San Pablo	2	ROW 65	ROW Opportunity	6.84	4.46	65%	0.001	0.018
San Pablo	2	ROW 13089	ROW Opportunity	1.15	0.81	70%	0.005	0.016
San Pablo	2	ROW 16916	ROW Opportunity	0.68	0.48	71%	0.007	0.016
San Pablo	2	ROW 2963	ROW Opportunity	3.78	2.51	66%	0.002	0.016
San Pablo	2	Parcel 190737	Parcel-Based Opportunity	11.43	3.64	32%	0.001	0.015
San Pablo	2	ROW 108	ROW Opportunity	3.27	2.07	63%	0.002	0.015
San Pablo	2	ROW 14830	ROW Opportunity	3.59	2.40	67%	0.002	0.015
San Pablo	2	ROW 170	ROW Opportunity	4.03	2.63	65%	0.002	0.015
San Pablo	2	ROW 19776	ROW Opportunity	2.43	1.55	64%	0.002	0.014
San Pablo	2	planned 172	Planned Unlined Swale	2.97	1.38	46%	0.002	0.013
San Pablo	2	planned 303	Planned Creek/Marsh Restoration	2.48	1.06	43%	0.002	0.013
San Pablo	2	planned 342	Planned Creek/Marsh Restoration	3.00	1.41	47%	0.002	0.013
San Pablo	2	planned 343	Planned Habitat Restoration	3.01	1.41	47%	0.002	0.013
San Pablo	2	planned 413	Planned Unlined Bioretention	2.97	1.38	46%	0.002	0.013
San Pablo	2	ROW 16389	ROW Opportunity	1.15	0.78	68%	0.004	0.013
San Pablo	2	ROW 3087	ROW Opportunity	3.36	2.28	68%	0.002	0.013
San Pablo	2	ROW 2765	ROW Opportunity	0.45	0.32	71%	0.008	0.012
San Pablo	2	ROW 7319	ROW Opportunity	0.65	0.48	74%	0.006	0.012
San Pablo	2	planned 159	Planned Flood Control	0.94	0.44	47%	0.004	0.011
San Pablo	2	planned 160	Planned Flood Control	0.94	0.44	47%	0.004	0.011
San Pablo	2	ROW 114	ROW Opportunity	2.62	1.66	63%	0.002	0.011
San Pablo	2	ROW 14301	ROW Opportunity	3.39	2.13	63%	0.002	0.011
San Pablo	2	ROW 15832	ROW Opportunity	0.35	0.24	69%	0.009	0.011
San Pablo	2	ROW 20998	ROW Opportunity	2.84	1.84	65%	0.002	0.011
San Pablo	2	ROW 11348	ROW Opportunity	1.55	1.05	68%	0.003	0.010
San Pablo	2	ROW 18545	ROW Opportunity	1.13	0.78	69%	0.003	0.010
San Pablo	2	ROW 604	ROW Opportunity	2.68	1.72	64%	0.002	0.010
San Ramon	2	ROW 16937	ROW Opportunity	14.91	8.01	54%	0.008	0.404
San Ramon	2	ROW 5150	ROW Opportunity	17.26	9.38	54%	0.006	0.361
San Ramon	2	Parcel 1429	Parcel-Based Opportunity	7.08	3.05	43%	0.012	0.288
San Ramon	2	ROW 16938	ROW Opportunity	44.75	26.81	60%	0.002	0.202
San Ramon	2	Parcel 1424	Parcel-Based Opportunity	3.25	2.00	62%	0.016	0.177
San Ramon	2	ROW 13922	ROW Opportunity	5.32	2.95	55%	0.010	0.166
San Ramon	2	ROW 5023	ROW Opportunity	5.42	2.58	48%	0.009	0.161
San Ramon	2	Parcel 74168	Parcel-Based Opportunity	4.28	3.30	77%	0.010	0.154
San Ramon	2	ROW 19140	ROW Opportunity	13.00	6.76	52%	0.003	0.112
San Ramon	2	ROW 560	ROW Opportunity	48.47	23.77	49%	0.001	0.102
San Ramon	2	ROW 14434	ROW Opportunity	2.77	1.52	55%	0.011	0.095
San Ramon	2	ROW 16426	ROW Opportunity	1.39	0.84	60%	0.016	0.077
San Ramon	2	ROW 13536	ROW Opportunity	15.98	8.39	53%	0.002	0.068
San Ramon	2	Parcel 59728	Parcel-Based Opportunity	40.01	15.74	39%	0.001	0.066
San Ramon	2	ROW 9268	ROW Opportunity	1.38	0.82	59%	0.013	0.060
San Ramon	2	ROW 19361	ROW Opportunity	0.95	0.61	64%	0.015	0.052
San Ramon	2	ROW 5451	ROW Opportunity	24.69	12.16	49%	0.001	0.049
San Ramon	2	Parcel 74549	Regional Opportunity	0.89	0.57	64%	0.015	0.048
San Ramon	2	ROW 7238	ROW Opportunity	5.09	2.65	52%	0.003	0.047
San Ramon	2	ROW 2693	ROW Opportunity	27.57	13.61	49%	0.001	0.046
San Ramon	2	ROW 14869	ROW Opportunity	14.80	6.94	47%	0.001	0.043
San Ramon	2	ROW 19759	ROW Opportunity	3.77	1.87	50%	0.004	0.043
San Ramon	2	Parcel 1440	Regional Opportunity	2.20	0.24	11%	0.005	0.039
San Ramon	2	ROW 14030	ROW Opportunity	3.62	2.17	60%	0.004	0.039
San Ramon	2	ROW 20234	ROW Opportunity	3.27	1.89	58%	0.004	0.037
San Ramon	2	ROW 2149	ROW Opportunity	14.02	7.03	50%	0.001	0.036
San Ramon	2	Parcel 54308	Regional Opportunity	1.18	0.65	55%	0.008	0.032
San Ramon	2	Parcel 73130	Regional Opportunity	1.30	0.32	25%	0.007	0.030
San Ramon	2	ROW 2328	ROW Opportunity	0.92	0.30	33%	0.009	0.030
San Ramon	2	ROW 5995	ROW Opportunity	8.73	3.50	40%	0.002	0.030
San Ramon	2	Parcel 1133	Parcel-Based Opportunity	9.50	2.66	28%	0.001	0.025
San Ramon	2	Parcel 56107	Parcel-Based Opportunity	16.67	5.24	31%	0.001	0.024
San Ramon	2	Parcel 56619	Parcel-Based Opportunity	11.96	4.45	37%	0.001	0.021
San Ramon	2	ROW 7425	ROW Opportunity	5.04	2.86	57%	0.002	0.020
San Ramon	2	Parcel 54147	Parcel-Based Opportunity	11.94	4.08	34%	0.001	0.019
San Ramon	2	ROW 11940	ROW Opportunity	5.68	2.26	40%	0.002	0.019
San Ramon	2	ROW 12822	ROW Opportunity	14.95	7.56	51%	0.000	0.019
San Ramon	2	ROW 3355	ROW Opportunity	4.30	1.88	44%	0.002	0.019
San Ramon	2	Parcel 56925	Parcel-Based Opportunity	10.03	3.99	40%	0.001	0.018
San Ramon	2	ROW 5148	ROW Opportunity	0.88	0.42	48%	0.007	0.018
San Ramon	2	ROW 17356	ROW Opportunity	7.97	3.72	47%	0.001	0.016
San Ramon	2	ROW 558	ROW Opportunity	2.14	1.25	58%	0.003	0.016
San Ramon	2	ROW 10130	ROW Opportunity	0.82	0.51	62%	0.005	0.014
San Ramon	2	ROW 10239	ROW Opportunity	6.36	3.22	51%	0.001	0.014
San Ramon	2	ROW 14016	ROW Opportunity	5.41	2.19	40%	0.001	0.014
San Ramon	2	ROW 17472	ROW Opportunity	3.74	1.78	48%	0.002	0.014
San Ramon	2	ROW 19366	ROW Opportunity	7.37	3.52	48%	0.001	0.014
San Ramon	2	ROW 6768	ROW Opportunity	2.05	1.31	64%	0.003	0.013
San Ramon	2	ROW 7432	ROW Opportunity	4.06	1.64	40%	0.001	0.013
San Ramon	2	ROW 18224	ROW Opportunity	5.30	2.56	48%	0.001	0.012
San Ramon	2	ROW 3115	ROW Opportunity	3.26	1.35	41%	0.002	0.012
San Ramon	2	ROW 14638	ROW Opportunity	5.32	2.59	49%	0.001	0.011
San Ramon	2	ROW 20860	ROW Opportunity	3.04	1.64	54%	0.002	0.011
San Ramon	2	ROW 6884	ROW Opportunity	4.99	2.61	52%	0.001	0.011
San Ramon	2	ROW 3070	ROW Opportunity	4.82	2.40	50%	0.001	0.010
San Ramon	2	ROW 3632	ROW Opportunity	4.57	2.38	52%	0.001	0.010
Unincorporated	2	planned 32	Planned Unlined Bioretention	460.01	217.16	47%	0.005	8.311
Unincorporated	2	Parcel 234358	Regional Opportunity	437.95	212.62	49%	0.005	8.269
Unincorporated	2	planned 426	Planned Creek/Marsh Restoration	11.44	3.32	29%	0.012	0.573

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Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Unincorporated	2	Parcel 253891	Parcel-Based Opportunity	31.99	2.26	7%	0.005	0.466
Unincorporated	2	ROW 18993	ROW Opportunity	4.03	1.35	33%	0.019	0.330
Unincorporated	2	Parcel 257160	Regional Opportunity	27.71	15.65	56%	0.004	0.312
Unincorporated	2	planned 928	Planned Unlined Bioretention	12.72	5.77	45%	0.006	0.285
Unincorporated	2	ROW 326	ROW Opportunity	5.29	3.11	59%	0.012	0.232
Unincorporated	2	planned 845	Planned Unlined Bioretention	9.56	4.74	50%	0.006	0.193
Unincorporated	2	planned 1251	Planned Unlined Bioretention	6.65	3.60	54%	0.008	0.180
Unincorporated	2	ROW 4127	ROW Opportunity	4.13	2.65	64%	0.012	0.180
Unincorporated	2	planned 134	Planned Unlined Bioretention	7.12	4.36	61%	0.007	0.172
Unincorporated	2	planned 1128	Planned Unlined Bioretention	18.84	6.19	33%	0.003	0.171
Unincorporated	2	planned 813	Planned Unlined Bioretention	6.43	3.65	57%	0.007	0.166
Unincorporated	2	ROW 336	ROW Opportunity	1.33	0.82	62%	0.031	0.166
Unincorporated	2	ROW 18095	ROW Opportunity	1.02	0.74	73%	0.040	0.164
Unincorporated	2	planned 834	Planned Unlined Bioretention	6.15	3.59	58%	0.007	0.160
Unincorporated	2	planned 1158	Planned Unlined Bioretention	4.47	2.62	59%	0.008	0.127
Unincorporated	2	Parcel 231873	Regional Opportunity	4.42	2.78	63%	0.008	0.126
Unincorporated	2	planned 922	Planned Unlined Bioretention	4.80	2.79	58%	0.007	0.124
Unincorporated	2	ROW 7003	ROW Opportunity	3.09	0.99	32%	0.009	0.116
Unincorporated	2	planned 910	Planned Unlined Bioretention	0.77	0.41	53%	0.030	0.098
Unincorporated	2	ROW 3884	ROW Opportunity	4.07	2.27	56%	0.007	0.098
Unincorporated	2	planned 921	Planned Unlined Bioretention	3.60	2.10	58%	0.007	0.093
Unincorporated	2	planned 944	Planned Unlined Bioretention	7.39	1.26	17%	0.003	0.091
Unincorporated	2	ROW 15893	ROW Opportunity	2.97	1.65	56%	0.008	0.078
Unincorporated	2	ROW 18461	ROW Opportunity	1.29	0.56	43%	0.015	0.077
Unincorporated	2	ROW 7816	ROW Opportunity	1.63	0.34	21%	0.011	0.074
Unincorporated	2	planned 948	Planned Unlined Bioretention	2.32	1.60	69%	0.009	0.072
Unincorporated	2	planned 951	Planned Unlined Bioretention	2.22	1.53	69%	0.008	0.068
Unincorporated	2	planned 715	Planned Unlined Bioretention	4.86	2.45	50%	0.004	0.067
Unincorporated	2	Parcel 373409	Regional Opportunity	46.53	17.47	38%	0.001	0.061
Unincorporated	2	ROW 9938	ROW Opportunity	0.86	0.53	62%	0.019	0.061
Unincorporated	2	Parcel 212559	Regional Opportunity	2.98	1.31	44%	0.005	0.057
Unincorporated	2	planned 1159	Planned Unlined Bioretention	2.41	1.29	54%	0.007	0.057
Unincorporated	2	planned 824	Planned Unlined Bioretention	2.98	1.31	44%	0.005	0.057
Unincorporated	2	Parcel 234658	Regional Opportunity	1.95	1.27	65%	0.008	0.056
Unincorporated	2	planned 1120	Planned Unlined Bioretention	2.72	1.22	45%	0.006	0.056
Unincorporated	2	planned 932	Planned Unlined Bioretention	1.95	1.27	65%	0.008	0.056
Unincorporated	2	ROW 14235	ROW Opportunity	1.05	0.63	60%	0.013	0.055
Unincorporated	2	planned 1145	Planned Unlined Bioretention	1.80	1.30	72%	0.008	0.053
Unincorporated	2	Parcel 238562	Regional Opportunity	12.03	6.43	53%	0.002	0.052
Unincorporated	2	planned 950	Planned Unlined Bioretention	1.69	1.17	69%	0.008	0.052
Unincorporated	2	Parcel 233114	Regional Opportunity	1.76	1.09	62%	0.008	0.050
Unincorporated	2	Parcel 227066	Regional Opportunity	1.84	0.99	54%	0.007	0.047
Unincorporated	2	Parcel 183600	Regional Opportunity	2.16	1.04	48%	0.006	0.046
Unincorporated	2	planned 1234	Planned Unlined Bioretention	2.16	1.04	48%	0.006	0.046
Unincorporated	2	planned 965	Planned Unlined Bioretention	6.89	2.96	43%	0.002	0.042
Unincorporated	2	ROW 8370	ROW Opportunity	3.43	2.12	62%	0.004	0.042
Unincorporated	2	Parcel 227359	Regional Opportunity	1.61	0.86	53%	0.007	0.041
Unincorporated	2	planned 949	Planned Unlined Bioretention	1.37	0.93	68%	0.008	0.041
Unincorporated	2	planned 1160	Planned Unlined Bioretention	1.68	0.89	53%	0.007	0.040
Unincorporated	2	ROW 17780	ROW Opportunity	2.96	1.24	42%	0.004	0.040
Unincorporated	2	planned 18	Planned Lined Bioretention	1.52	0.87	57%	0.007	0.038
Unincorporated	2	ROW 10003	ROW Opportunity	1.69	0.37	22%	0.006	0.036
Unincorporated	2	planned 1295	Planned Unlined Bioretention	1.25	0.75	60%	0.008	0.035
Unincorporated	2	planned 13	Planned Lined Bioretention	2.14	0.72	34%	0.005	0.035
Unincorporated	2	planned 1161	Planned Unlined Bioretention	1.41	0.66	47%	0.006	0.032
Unincorporated	2	Parcel 218901	Regional Opportunity	1.82	1.15	63%	0.005	0.030
Unincorporated	2	planned 829	Planned Unlined Bioretention	1.82	1.15	63%	0.005	0.030
Unincorporated	2	planned 927	Planned Unlined Bioretention	1.35	0.61	45%	0.006	0.030
Unincorporated	2	Parcel 251699	Regional Opportunity	1.25	0.63	50%	0.007	0.029
Unincorporated	2	Parcel 40021	Regional Opportunity	17.61	7.00	40%	0.001	0.029
Unincorporated	2	planned 1138	Planned Unlined Bioretention	0.92	0.66	72%	0.009	0.029
Unincorporated	2	planned 1144	Planned Unlined Bioretention	0.89	0.65	73%	0.009	0.029
Unincorporated	2	planned 890	Planned Unlined Bioretention	1.14	0.66	58%	0.007	0.029
Unincorporated	2	planned 714	Planned Unlined Bioretention	18.57	6.68	36%	0.001	0.028
Unincorporated	2	planned 818	Planned Unlined Bioretention	1.37	0.61	45%	0.006	0.028
Unincorporated	2	ROW 302	ROW Opportunity	4.48	2.58	58%	0.002	0.027
Unincorporated	2	planned 1132	Planned Unlined Bioretention	1.16	0.53	46%	0.006	0.024
Unincorporated	2	planned 955	Planned Unlined Bioretention	0.82	0.54	66%	0.008	0.024
Unincorporated	2	Parcel 11752	Regional Opportunity	10.67	2.59	24%	0.001	0.023
Unincorporated	2	Parcel 225283	Regional Opportunity	10.44	5.50	53%	0.001	0.023
Unincorporated	2	planned 1249	Planned Unlined Bioretention	8.27	3.84	46%	0.001	0.023
Unincorporated	2	planned 947	Planned Unlined Bioretention	0.86	0.49	57%	0.008	0.023
Unincorporated	2	planned 1297	Planned Unlined Bioretention	0.62	0.12	19%	0.010	0.021
Unincorporated	2	planned 1188	Planned Unlined Bioretention	2.05	0.21	10%	0.003	0.020
Unincorporated	2	planned 843	Planned Unlined Bioretention	0.97	0.44	45%	0.006	0.020
Unincorporated	2	planned 1056	Planned Unlined Bioretention	2.73	1.12	41%	0.003	0.019
Unincorporated	2	planned 19	Planned Lined Bioretention	0.94	0.40	43%	0.006	0.019
Unincorporated	2	planned 926	Planned Unlined Bioretention	0.85	0.39	46%	0.006	0.019
Unincorporated	2	Parcel 190589	Regional Opportunity	7.24	4.65	64%	0.001	0.018
Unincorporated	2	Parcel 190676	Regional Opportunity	2.81	1.39	49%	0.002	0.018
Unincorporated	2	planned 1148	Planned Unlined Bioretention	0.57	0.42	74%	0.009	0.018
Unincorporated	2	planned 1248	Planned Unlined Bioretention	2.81	1.39	49%	0.002	0.018
Unincorporated	2	Parcel 134621	Regional Opportunity	5.52	4.38	79%	0.001	0.017
Unincorporated	2	Parcel 18653	Regional Opportunity	10.01	4.18	42%	0.001	0.017
Unincorporated	2	Parcel 211551	Regional Opportunity	0.70	0.38	54%	0.007	0.017
Unincorporated	2	Parcel 248771	Regional Opportunity	8.72	4.17	48%	0.001	0.017
Unincorporated	2	Parcel 260347	Regional Opportunity	13.69	3.71	27%	0.001	0.017
Unincorporated	2	planned 825	Planned Unlined Bioretention	0.70	0.38	54%	0.007	0.017
Unincorporated	2	planned 854	Planned Unlined Bioretention	0.73	0.37	51%	0.006	0.017
Unincorporated	2	Parcel 185725	Regional Opportunity	0.67	0.37	55%	0.007	0.016
Unincorporated	2	Parcel 204352	Regional Opportunity	0.50	0.37	74%	0.010	0.016
Unincorporated	2	Parcel 214683	Regional Opportunity	0.82	0.32	39%	0.005	0.016
Unincorporated	2	Parcel 234760	Regional Opportunity	10.17	3.71	36%	0.001	0.016
Unincorporated	2	Parcel 261278	Regional Opportunity	7.47	4.01	54%	0.001	0.016

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Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g)
Unincorporated	2	Parcel 363962	Regional Opportunity	8.03	3.75	47%	0.001	0.016
Unincorporated	2	planned 1099	Planned Unlined Bioretention	7.47	4.01	54%	0.001	0.016
Unincorporated	2	planned 1232	Planned Unlined Bioretention	0.67	0.37	55%	0.007	0.016
Unincorporated	2	planned 817	Planned Unlined Bioretention	9.30	3.93	42%	0.001	0.016
Unincorporated	2	planned 827	Planned Unlined Bioretention	0.82	0.32	39%	0.005	0.016
Unincorporated	2	Parcel 221126	Regional Opportunity	7.83	3.50	45%	0.001	0.015
Unincorporated	2	Parcel 259820	Regional Opportunity	8.72	3.46	40%	0.001	0.015
Unincorporated	2	Parcel 373937	Regional Opportunity	9.10	4.03	44%	0.001	0.015
Unincorporated	2	planned 1047	Planned Unlined Bioretention	4.54	1.79	39%	0.002	0.015
Unincorporated	2	planned 820	Planned Unlined Bioretention	0.59	0.34	58%	0.007	0.015
Unincorporated	2	Parcel 236835	Regional Opportunity	11.70	2.62	22%	0.001	0.014
Unincorporated	2	Parcel 25124	Regional Opportunity	10.84	2.77	26%	0.001	0.014
Unincorporated	2	Parcel 260232	Regional Opportunity	0.64	0.31	48%	0.006	0.014
Unincorporated	2	Parcel 262723	Regional Opportunity	10.53	3.23	31%	0.001	0.014
Unincorporated	2	planned 838	Planned Unlined Bioretention	0.51	0.35	69%	0.008	0.014
Unincorporated	2	Parcel 180679	Regional Opportunity	0.58	0.29	50%	0.007	0.013
Unincorporated	2	Parcel 368650	Regional Opportunity	7.51	3.18	42%	0.001	0.013
Unincorporated	2	planned 1065	Planned Unlined Bioretention	7.95	2.46	31%	0.001	0.013
Unincorporated	2	planned 837	Planned Unlined Bioretention	0.44	0.28	64%	0.008	0.013
Unincorporated	2	planned 905	Planned Unlined Bioretention	0.92	0.52	57%	0.004	0.013
Unincorporated	2	ROW 19675	ROW Opportunity	4.36	2.48	57%	0.001	0.013
Unincorporated	2	Parcel 186716	Regional Opportunity	0.53	0.28	53%	0.007	0.012
Unincorporated	2	Parcel 373408	Regional Opportunity	12.02	4.26	35%	0.000	0.012
Unincorporated	2	planned 1231	Planned Unlined Bioretention	0.53	0.28	53%	0.007	0.012
Unincorporated	2	Parcel 20770	Regional Opportunity	7.74	2.72	35%	0.001	0.011
Unincorporated	2	Parcel 234439	Parcel-Based Opportunity	0.38	0.25	66%	0.009	0.011
Unincorporated	2	planned 1026	Planned Unlined Bioretention	7.74	2.72	35%	0.001	0.011
Unincorporated	2	planned 1134	Planned Unlined Bioretention	0.23	0.11	48%	0.013	0.011
Unincorporated	2	planned 1281	Planned Unlined Bioretention	0.34	0.25	74%	0.010	0.011
Unincorporated	2	planned 839	Planned Unlined Bioretention	0.41	0.29	71%	0.008	0.011
Unincorporated	2	planned 909	Planned Unlined Bioretention	1.48	0.76	51%	0.003	0.011
Unincorporated	2	planned 953	Planned Unlined Bioretention	0.38	0.06	16%	0.008	0.011
Unincorporated	2	ROW 10414	ROW Opportunity	5.41	0.94	17%	0.001	0.011
Unincorporated	2	Parcel 244216	Regional Opportunity	2.77	1.14	41%	0.002	0.010
Unincorporated	2	planned 1029	Planned Unlined Bioretention	0.89	0.19	21%	0.003	0.010
Unincorporated	2	planned 1055	Planned Unlined Bioretention	2.12	1.35	64%	0.002	0.010
Unincorporated	2	planned 1176	Planned Unlined Bioretention	0.40	0.23	58%	0.008	0.010
Walnut Creek	2	GIP 10032 / planned 213	Parcel-Based Opportunity (planned)	8.96	6.84	76%	0.010	0.302
Walnut Creek	2	GIP 10042 / ROW 12633	ROW Opportunity (planned)	5.92	2.96	50%	0.009	0.209
Walnut Creek	2	GIP 10049 / Parcel 120162	Parcel-Based Opportunity (planned)	4.71	3.32	70%	0.009	0.160
Walnut Creek	2	GIP 10044 / ROW 17453	ROW Opportunity (planned)	8.19	4.13	50%	0.006	0.156
Walnut Creek	2	GIP 10047 / ROW 1225	ROW Opportunity (planned)	4.45	3.00	67%	0.010	0.149
Walnut Creek	2	GIP 10024	Regional Opportunity (planned)	15.64	4.86	31%	0.003	0.123
Walnut Creek	2	ROW 13263	ROW Opportunity	1.31	0.40	31%	0.019	0.104
Walnut Creek	2	GIP 10052	Regional Opportunity (planned)	180.53	56.43	31%	0.000	0.073
Walnut Creek	2	GIP 10048 / Parcel 113464	Regional Opportunity (planned)	1.99	1.41	71%	0.010	0.072
Walnut Creek	2	GIP 10051	Regional Opportunity (planned)	68.22	18.26	27%	0.000	0.051
Walnut Creek	2	GIP 10040 / Parcel 49020	Regional Opportunity (planned)	1.77	1.13	64%	0.008	0.049
Walnut Creek	2	GIP 10038 / Parcel 128594	Regional Opportunity (planned)	2.40	0.93	39%	0.005	0.043
Walnut Creek	2	GIP 10041 / Parcel 129611	Regional Opportunity (planned)	2.32	0.89	38%	0.005	0.041
Walnut Creek	2	GIP 10037 / Parcel 136845	Regional Opportunity (planned)	1.46	0.72	49%	0.007	0.036
Walnut Creek	2	GIP 10053	Regional Opportunity (planned)	21.50	7.65	36%	0.001	0.034
Walnut Creek	2	GIP 10025	Regional Opportunity (planned)	10.70	3.02	28%	0.001	0.015
Walnut Creek	2	GIP 10045 / Parcel 45368	Parcel-Based Opportunity (planned)	0.42	0.33	79%	0.010	0.014
Walnut Creek	2	GIP 10050	Regional Opportunity (planned)	6.92	2.68	39%	0.001	0.011
Walnut Creek	2	GIP 10046 / Parcel 111176	Parcel-Based Opportunity (planned)	0.28	0.19	68%	0.010	0.010
Walnut Creek	2	GIP 10028	Regional Opportunity (planned)	6.82	1.76	26%	0.001	0.008
Walnut Creek	2	GIP 10022 / ROW 13709	ROW Opportunity (planned)	6.59	2.78	42%	0.000	0.007
Walnut Creek	2	GIP 10029	Regional Opportunity (planned)	6.59	1.71	26%	0.000	0.007
Walnut Creek	2	GIP 10021 / ROW 13708	ROW Opportunity (planned)	6.65	2.50	38%	0.000	0.006
Walnut Creek	2	GIP 10023	Regional Opportunity (planned)	25.68	4.00	16%	0.000	0.004
Walnut Creek	2	GIP 10026	Regional Opportunity (planned)	159.56	6.60	4%	0.000	0.003
Walnut Creek	2	GIP 10027	Regional Opportunity (planned)	3.45	0.46	13%	0.000	0.002
Walnut Creek	2	GIP 10039 / Parcel 125621	Regional Opportunity (planned)	1.73	0.48	28%	0.001	0.002
Walnut Creek	2	GIP 10043 / Parcel 135339	Regional Opportunity (planned)	1.32	0.02	2%	0.000	0.000

Appendix 6

Sutter Avenue Green Street Draft Concept Design

The following draft Sutter Avenue Green Street Concept Design for a retrofit of the public right of way was created by Geosyntec Consultants as part of the Contra Costa Watersheds Stormwater Resource Plan (CCW SWRP).

SUTTER AVENUE GREEN STREET

SITE DESCRIPTION

Jurisdiction:	San Pablo
Location:	Sutter Avenue from Rumrill Boulevard to 23 rd Street
APN(s):	N/A
Land Owner:	City of San Pablo
Planning Unit/Watershed:	West Planning Unit, Wildcat Creek Watershed
ROW Length:	2,750 feet
Soil Type:	HSG C and HSG D

PROJECT CONCEPT

Sutter Avenue is a 0.5-mile-long road located in the southwestern portion of the City of San Pablo, and is currently impacted by unsafe traffic speeds, lack of pedestrian facilities, and lack of stormwater infrastructure (Figure D-41). Surface water flows from east to west along Sutter Avenue, where there are no storm drains or inlets from 23rd Street (the easternmost cross street) to 14th Street and Rumrill Boulevard (the westernmost cross streets). This lack of infrastructure may contribute to flooding at the 14th Street intersection, exacerbated by backwater conditions in the storm drain system.

The proposed green street retrofits would incorporate a variety of types of green infrastructure along Sutter Avenue that will provide multiple benefits, including reducing flooding, calming traffic, improving pedestrian safety, providing street trees, and improving stormwater quality. The types of green infrastructure facilities include bioretention, installed variously as bulbouts at intersections and as mid-block chicanes (replacing existing speed bumps) and Silva Cell modular suspended pavement systems, which treat stormwater and promote street tree growth by retaining or detaining stormwater in a soil matrix below the ground surface (Figures D-42 and D-43). Figure D-44 presents a schematic cross-section and examples of bioretention facilities. Figure D-45 presents a schematic cross-section and example Silva Cell facilities.

A total of 43 drainage areas (SPO-1 – SPO-42; SPO-Bush St.) were identified along Sutter Avenue from Rumrill Boulevard to 23rd Street. These drainage areas and the green infrastructure proposed for each drainage area are displayed on Figure D-42 and Figure D-43. Placement and selection of green infrastructure was completed using review of aerial imagery; plan review and field confirmation of drainage and utility conflicts will be required.

DESIGN INFORMATION

Utilizing a 2.2% sizing factor, there is insufficient room within the Sutter ROW to completely treat additional surface drainage from Bush St and 17th St. Alternatively, more BMPs could be installed along Bush Street as part of a later design phase if feasible.

Drainage Catchment Size:	12.1 ac	
Drainage Catchment Imperviousness:	79%	
Land Use Yield Category:	Category	Percent of Total Area
	New Urban	1%
	Old Urban	97%
	Open Space	2%
Precipitation Depth:	22 inches	
Facility Type:	Bioretention without underdrains, one bioretention cell with underdrain, and Silva Cells.	
Facility Footprint:	0.21 acres	
Assumed Infiltration Rate:	Type D soils with 0.024 in/hr saturated hydraulic conductivity	

Location	Facility Type	Total Drainage Areas (acres)	BMP Footprint (sq-ft)
SPO-01	Silva Cell	0.20	171
SPO-02	Bioretention Without Underdrain	0.07	52
SPO-03	Bioretention With Underdrain	0.21	179
SPO-04	Silva Cell	0.27	208
SPO-05	Silva Cell	0.70	499
SPO-06	Silva Cell	0.45	361
SPO-07	Silva Cell	0.16	121
SPO-08	Silva Cell	0.28	212
SPO-09	Bioretention Without Underdrain	0.30	234
SPO-10	Silva Cell	0.32	238
SPO-11	Bioretention Without Underdrain	0.26	210
SPO-12	Silva Cell	0.20	166
SPO-13	Bioretention Without Underdrain	0.28	218
SPO-14	Silva Cell	0.19	144
SPO-15	Silva Cell	0.33	253
SPO-16	Silva Cell	0.29	219
SPO-17	Silva Cell	0.39	294
SPO-18	Silva Cell	0.20	150
SPO-19	Bioretention Without Underdrain	0.29	227
SPO-20	Silva Cell	0.23	174
SPO-21	Silva Cell	0.36	276
SPO-22	Silva Cell	0.32	242
SPO-23	Silva Cell	0.30	231
SPO-24	Bioretention Without Underdrain	0.23	181
SPO-25	Silva Cell	0.20	157
SPO-26	Bioretention Without Underdrain	0.37	280
SPO-27	Silva Cell	0.27	201
SPO-28	Silva Cell	0.38	291
SPO-29	Silva Cell	0.29	224
SPO-30	Bioretention Without Underdrain	0.32	244
SPO-31	Silva Cell	0.11	83
SPO-32	Silva Cell	0.22	171
SPO-33	Silva Cell	0.32	241
SPO-34	Bioretention Without Underdrain	0.44	351
SPO-35	Silva Cell	0.35	273
SPO-36	Silva Cell	0.22	183
SPO-37	Bioretention Without Underdrain	0.33	265
SPO-38	Bioretention Without Underdrain	0.31	233
SPO-39	Bioretention Without Underdrain	0.39	291
SPO-40	Bioretention Without Underdrain	0.25	196
SPO-41	Bioretention Without Underdrain	0.21	170
SPO-42	Bioretention Without Underdrain	0.23	191
TOTAL		12.1	9,305

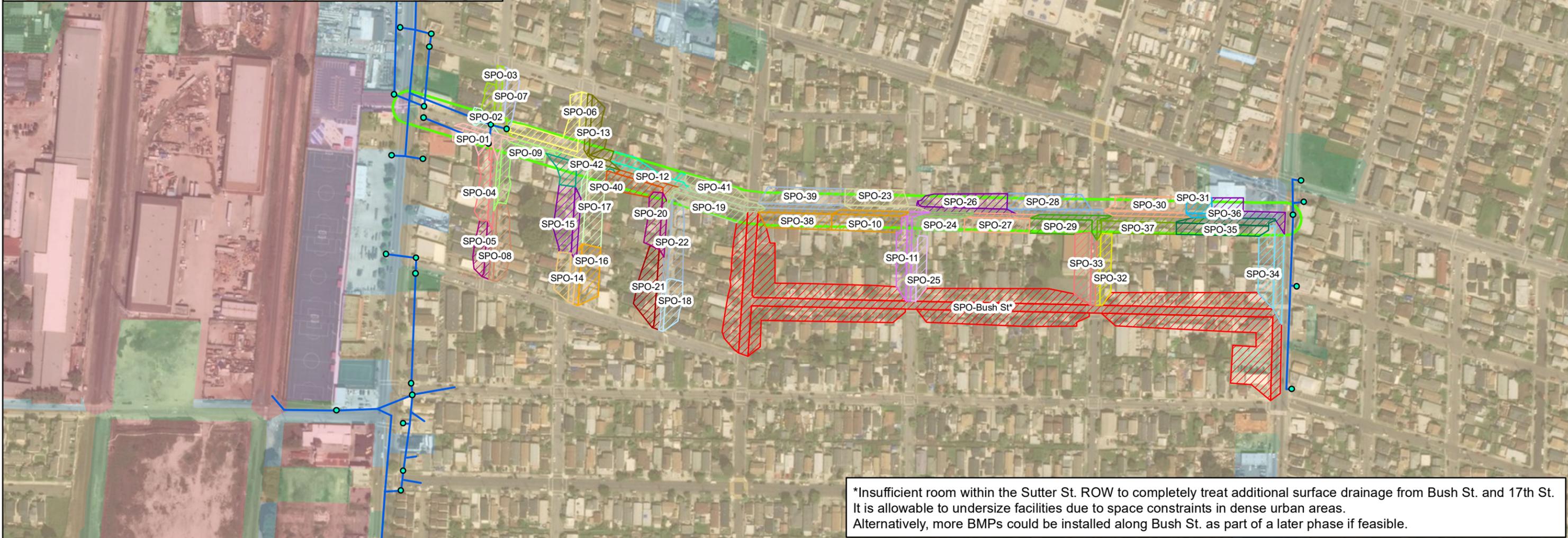
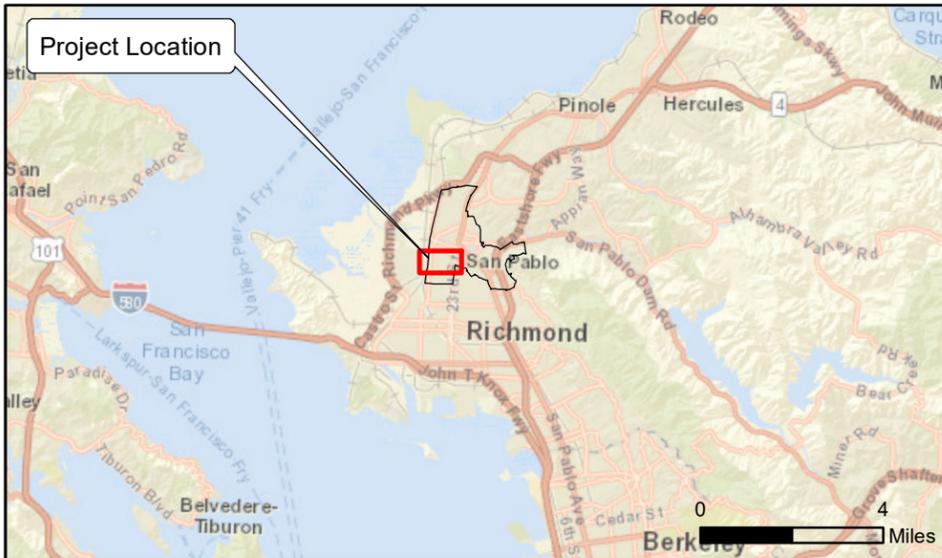
PROJECT BENEFITS

PCBs Loads Reduced:	TBD
Mercury Loads Reduced:	TBD
Water Supply Benefits:	N/A
Flood Management Benefits:	The project will provide flood management benefit through detention and infiltration benefits.
Natural Drainage System Benefits:	The project will provide hydrologic benefit to natural drainage system by allowing for infiltration.
Habitat or Open Space Benefits:	The project will provide 0.21 acres of green space in an urban area.
Community Benefits:	The project will calm traffic, improve pedestrian facilities, and potentially install street trees.

COST ESTIMATE

DESCRIPTION	TREATED AREA (AC)	UNIT COST	TOTAL COST
Green Street	12.1	\$114,687 x acres + \$36,927	\$1,400,000
DESIGN AND CONSTRUCTION COST			\$1,400,000

Draft



*Insufficient room within the Sutter St. ROW to completely treat additional surface drainage from Bush St. and 17th St. It is allowable to undersize facilities due to space constraints in dense urban areas. Alternatively, more BMPs could be installed along Bush St. as part of a later phase if feasible.

Legend		Land Use Yield Category		Control Measure Drainage Areas	
Project Area	New Urban	SPO-01	SPO-07	SPO-13	SPO-19
Existing Stormwater Infrastructure	Old Industrial	SPO-02	SPO-08	SPO-14	SPO-20
Inlet	Old Urban	SPO-03	SPO-09	SPO-15	SPO-21
Storm Drain	Open Space	SPO-04	SPO-10	SPO-16	SPO-22
		SPO-05	SPO-11	SPO-17	SPO-23
		SPO-06	SPO-12	SPO-18	SPO-24
				SPO-25	SPO-28
				SPO-26	SPO-31
				SPO-27	SPO-32
				SPO-28	SPO-33
				SPO-29	SPO-34
				SPO-30	SPO-35
				SPO-31	SPO-36
				SPO-32	SPO-37
				SPO-33	SPO-38
				SPO-34	SPO-39
				SPO-35	SPO-40
				SPO-36	SPO-41
				SPO-37	SPO-42
				SPO-38	Bush St*

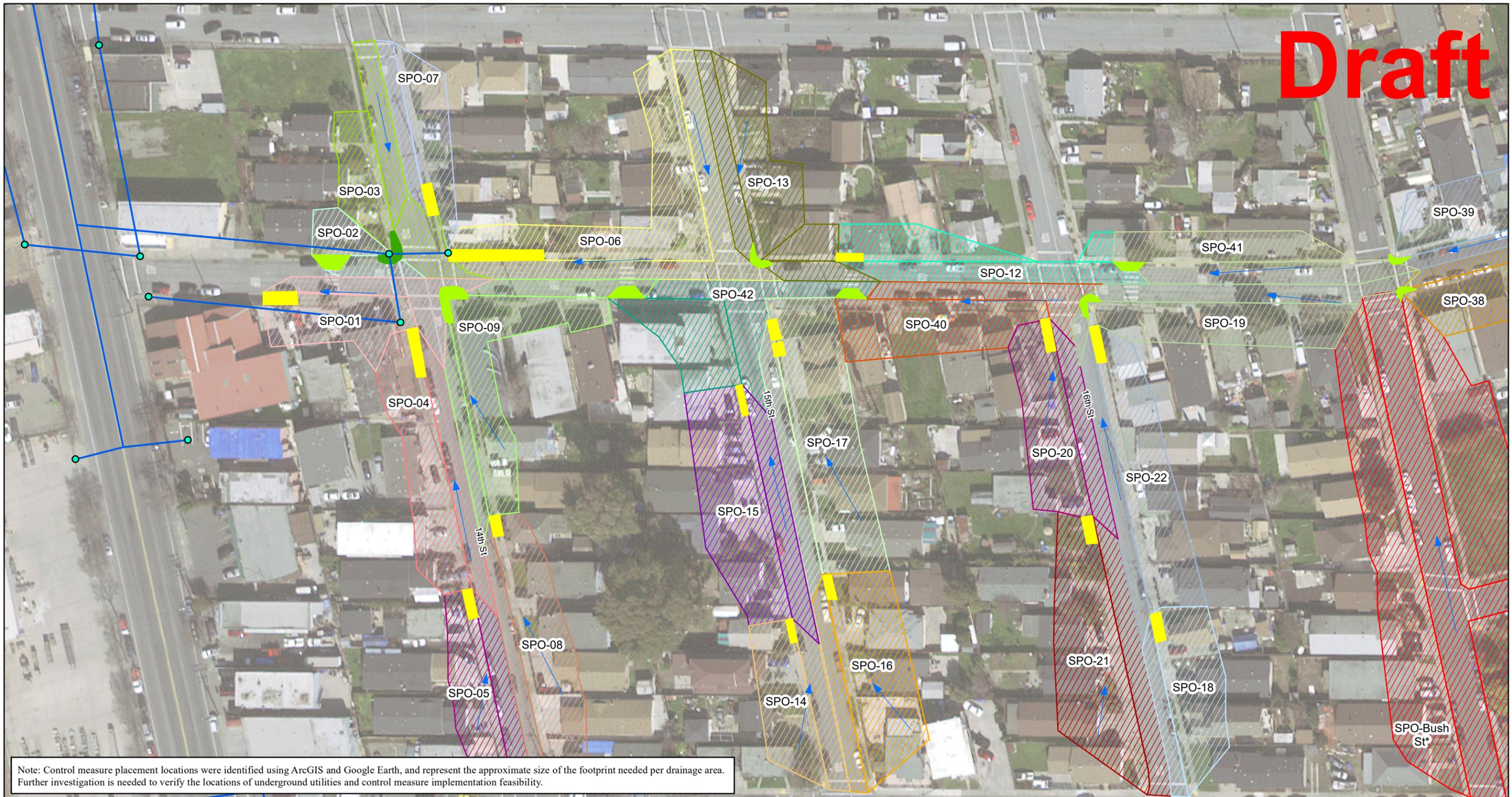
Contra Costa Watersheds Stormwater Resource Plan
Sutter Avenue Green Street Retrofit
10% Conceptual Design
San Pablo, CA

Geosyntec consultants

WW2371 May 2018

Figure D - 41

Draft



Note: Control measure placement locations were identified using ArcGIS and Google Earth, and represent the approximate size of the footprint needed per drainage area. Further investigation is needed to verify the locations of underground utilities and control measure implementation feasibility.

Legend		Existing Stormwater Infrastructure		Control Measure Drainage Areas		Proposed Control Measures	
Inlet	Surface Flow Direction	Storm Drain	SPO-01	SPO-02	SPO-03	SPO-04	SPO-05
			SPO-06	SPO-07	SPO-08	SPO-09	SPO-10
			SPO-11	SPO-12	SPO-13	SPO-14	SPO-15
			SPO-16	SPO-17	SPO-18	SPO-19	SPO-20
			SPO-21	SPO-22	SPO-23	SPO-24	SPO-25
			SPO-26	SPO-27	SPO-28	SPO-29	SPO-30
			SPO-31	SPO-32	SPO-33	SPO-34	SPO-35
			SPO-36	SPO-37	SPO-38	SPO-39	SPO-40
			SPO-41	SPO-42	Bush St	Silva Cells Under Permeable Paving	Bioretention Without Underdrain
						Bioretention With Underdrain	

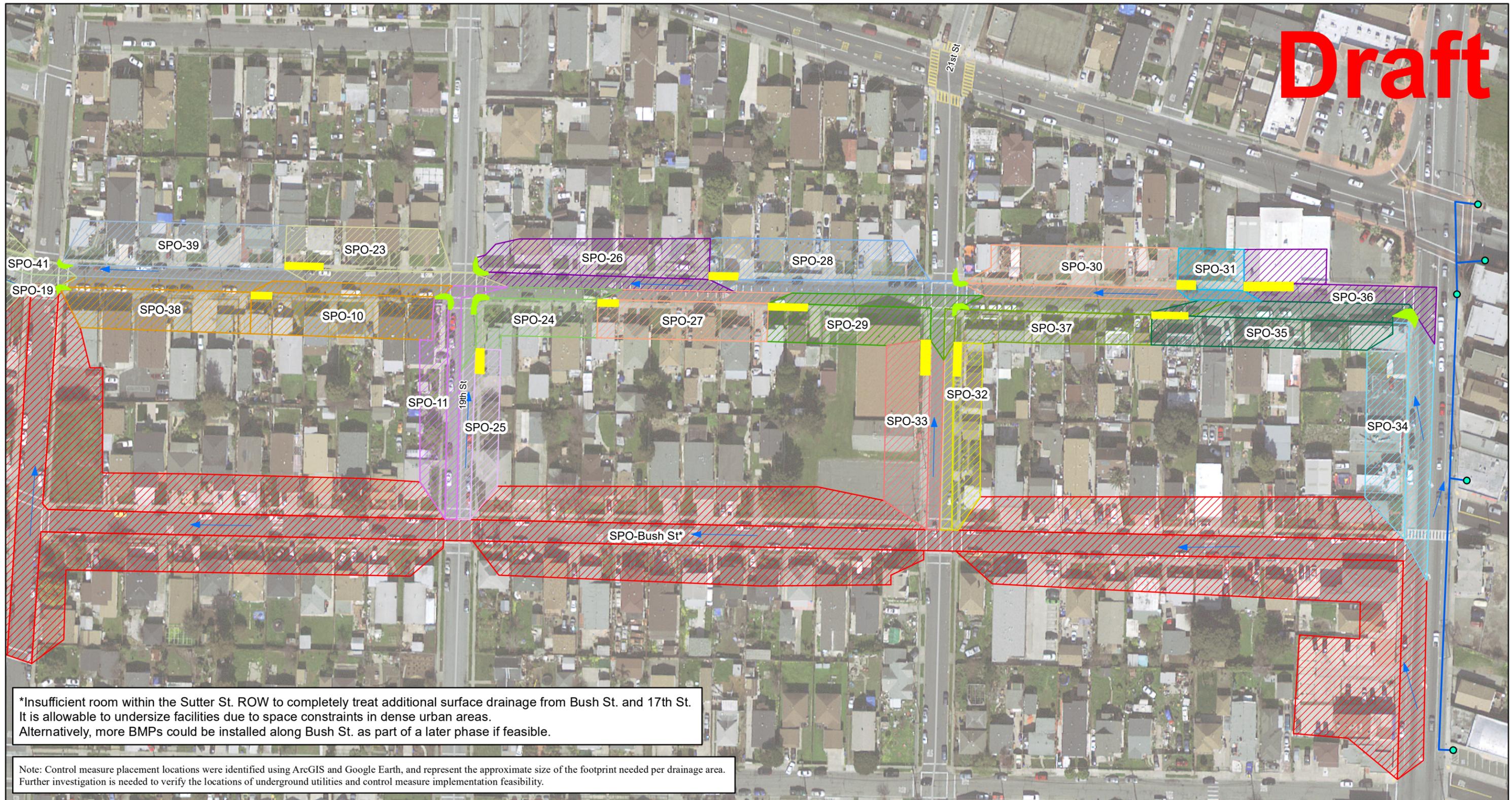
Contra Costa Watersheds Stormwater Resource Plan
 Sutter Avenue Green Street Retrofits
 10% Conceptual Design
 Detail Panel 1
 San Pablo, CA

Geosyntec consultants

WW2371 | May 2018

Figure D - 42

Draft



*Insufficient room within the Sutter St. ROW to completely treat additional surface drainage from Bush St. and 17th St. It is allowable to undersize facilities due to space constraints in dense urban areas. Alternatively, more BMPs could be installed along Bush St. as part of a later phase if feasible.

Note: Control measure placement locations were identified using ArcGIS and Google Earth, and represent the approximate size of the footprint needed per drainage area. Further investigation is needed to verify the locations of underground utilities and control measure implementation feasibility.

Legend

Existing Stormwater Infrastructure Control Measure Drainage Areas

- Inlet
- Surface Flow Direction
- Storm Drain

SPO-10	SPO-24	SPO-28	SPO-32	SPO-36
SPO-11	SPO-25	SPO-29	SPO-33	SPO-37
SPO-19	SPO-26	SPO-30	SPO-34	SPO-38
SPO-23	SPO-27	SPO-31	SPO-35	SPO-39

Proposed Control Measures

- Silva Cells Under Permeable Paving
- Bioretention Without Underdrain
- Bush St*

0 110 Feet

Contra Costa Watersheds Stormwater Resource Plan
 Sutter Avenue Green Street Retrofits
 10% Conceptual Design
 Detail Panel 2
 San Pablo, CA

Geosyntec consultants

CONTRA COSTA CLEAN WATER PROGRAM

Figure D - 43

WW2371 May 2018

Bioretention Facility

Cross-section
Not to Scale

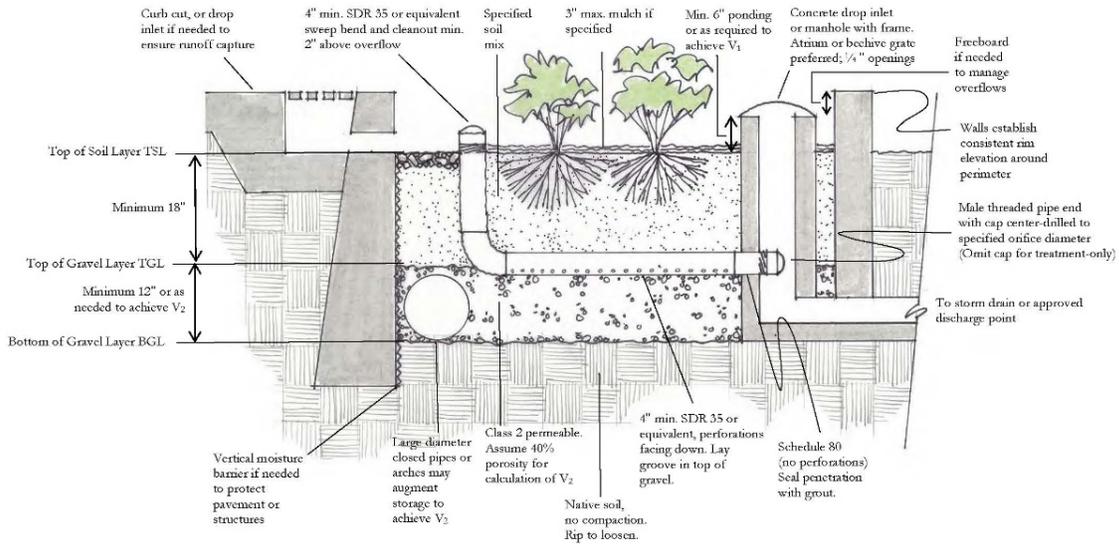


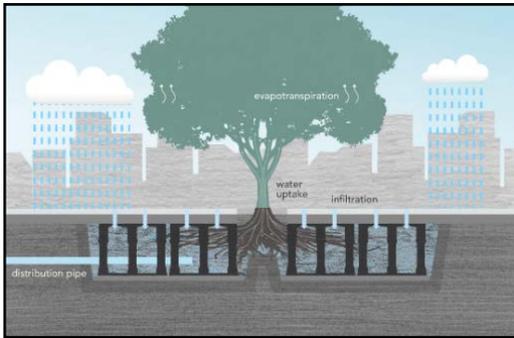
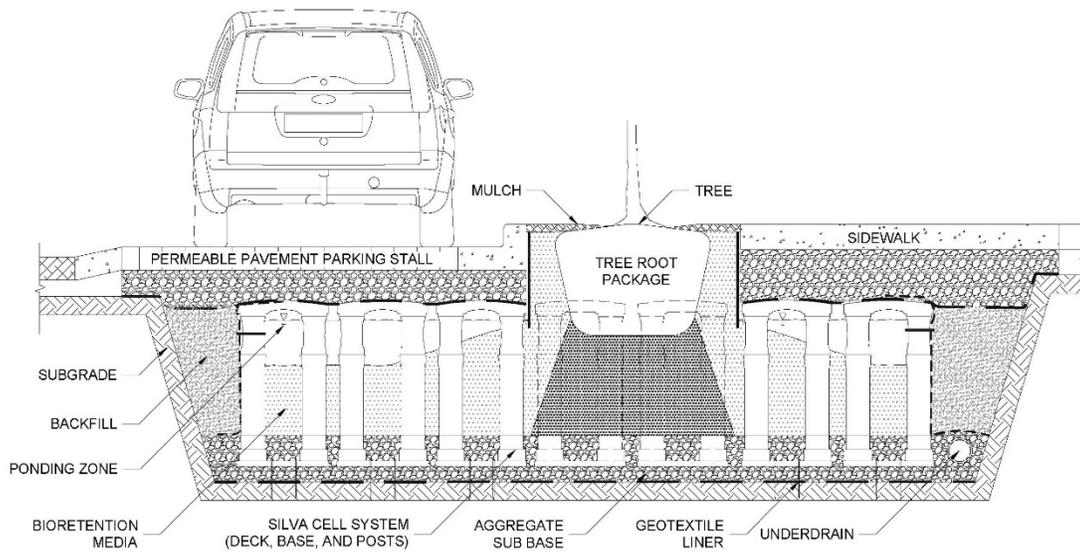
Figure D-44
Bioretention Profile Schematic and Examples

April 2018

Contra Costa Watersheds
Stormwater Resource Plan

Geosyntec
consultants

CROSS SECTION



**Figure D-45
Silva Cell Profile Schematic and Examples**

April 2018

Contra Costa Watersheds
Stormwater Resource Plan

Geosyntec
consultants

Appendix 7

City of San Pablo

Typical Details and Specifications

Appendix 7.1: Slope-Sided Bioretention Facility 123

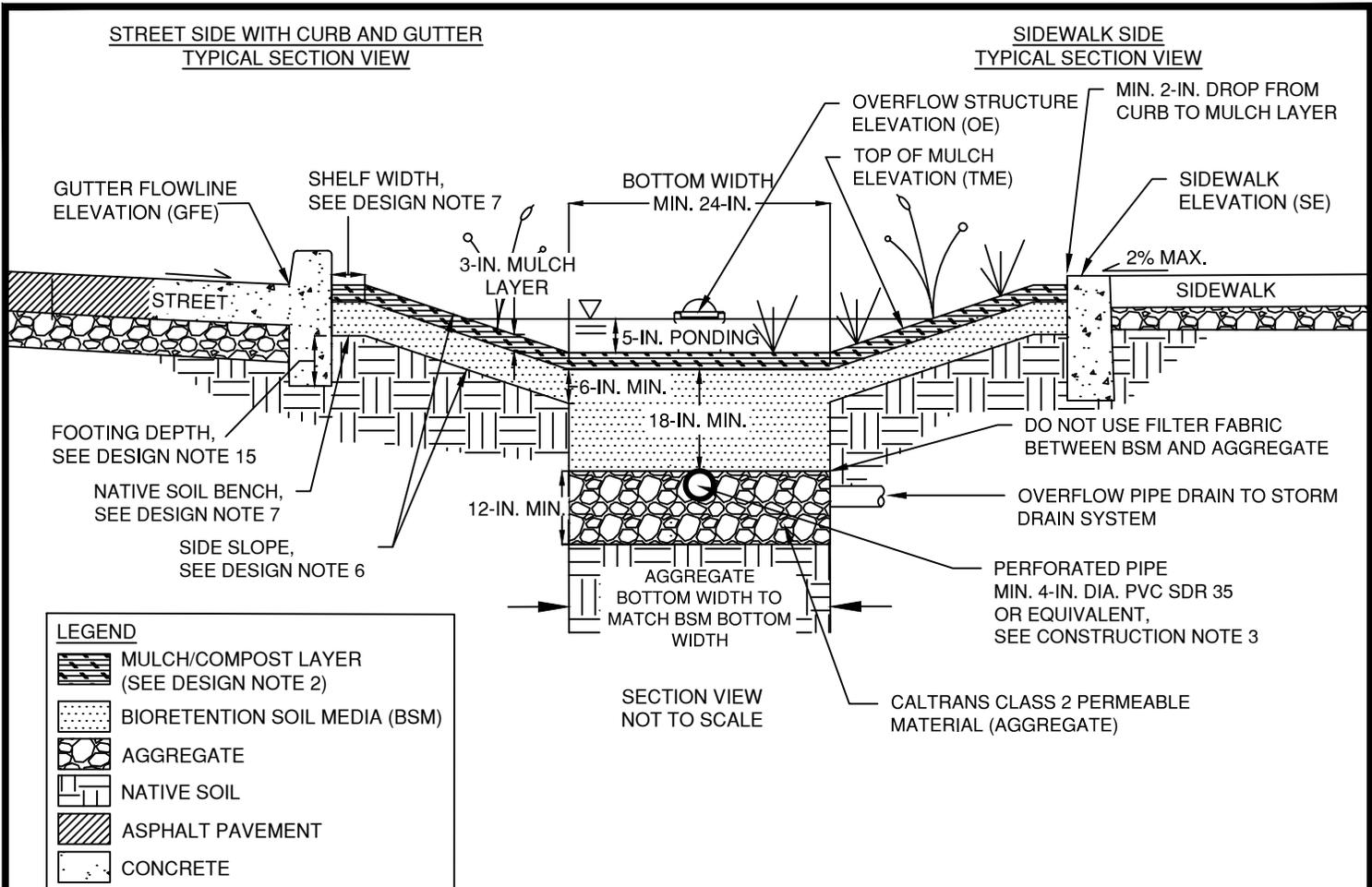
Appendix 7.2: Planter Box Bioretention Facility..... 125

Appendix 7.3: Curb-Cut Inlet 127

Appendix 7.4: Curb and Gutter 128

Appendix 7.5: Concrete Check Dam 129

Appendix 7.6: Permeable Pavers 130



CONSTRUCTION NOTES

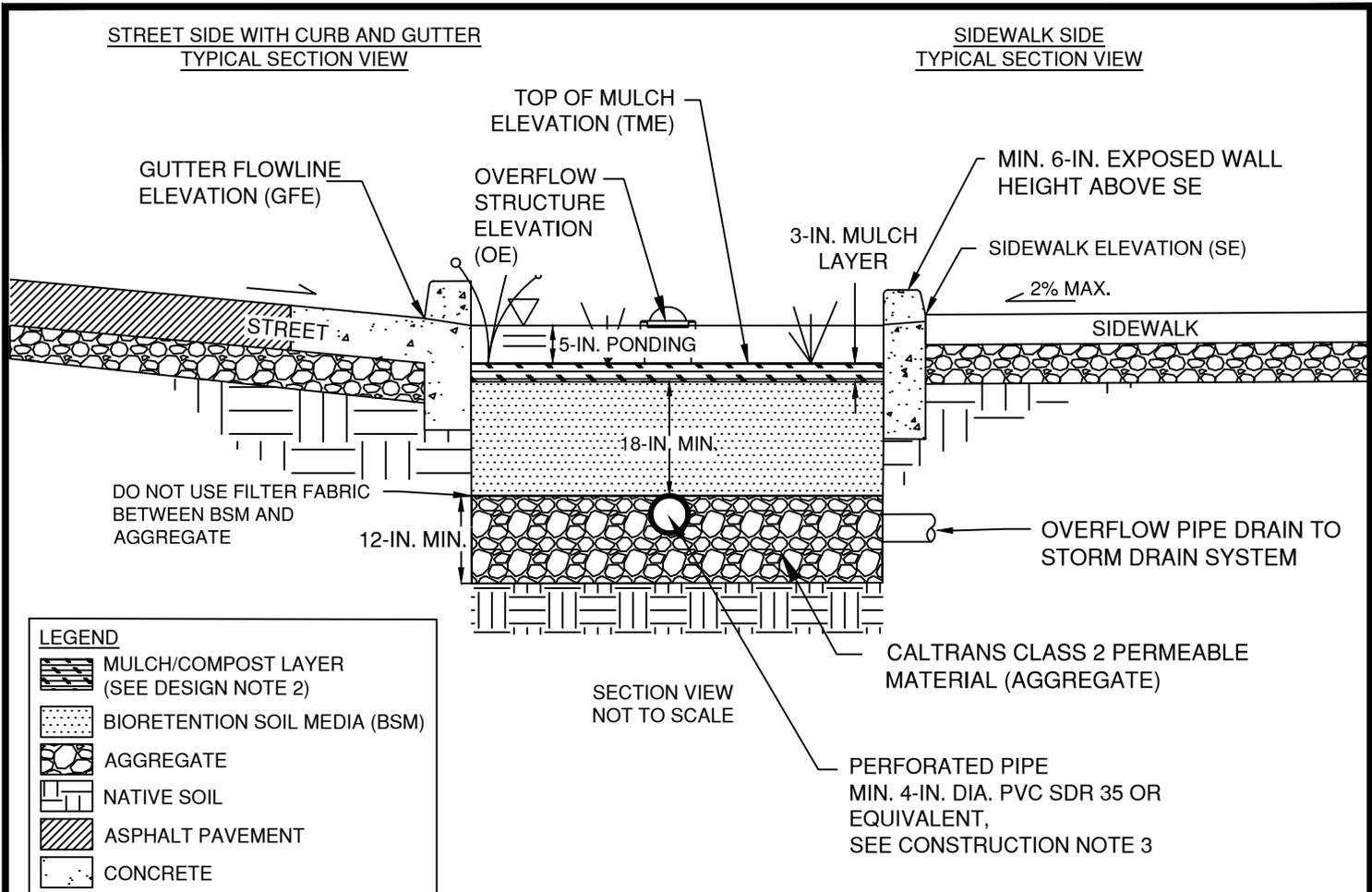
1. MAINTAIN UNDISTURBED NATIVE SOIL BENCH TO SUPPORT ADJACENT SIDEWALK AND STREET. SEQUENCE WORK TO CONSTRUCT CURBS BEFORE EXCAVATING BIORETENTION AREA FOR AGGREGATE AND BSM.
2. SCARIFY SUBGRADE A MINIMUM OF 6-IN. WITHIN BIORETENTION FACILITY BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BSM. DO NOT COMPACT SUBGRADE, AGGREGATE OR BSM.
3. INSTALL PERFORATED PIPE WITH HOLES FACING DOWN. SLOPE TO DRAIN TOWARD OVERFLOW STRUCTURE/PIPE.
4. DO NOT WORK WITHIN BIORETENTION AREA DURING RAIN OR UNDER WET CONDITIONS.
5. KEEP HEAVY MACHINERY AND CONSTRUCTION MATERIALS OUTSIDE BIORETENTION AREA LIMITS.
6. STORMWATER SHALL BE DIRECTED AWAY FROM BIORETENTION AREA UNTIL CONSTRUCTION IS COMPLETE.
7. AN APPROVED PRE-MIXED BSM SHALL BE INSTALLED. BSM MAY BE SUBJECT TO TESTING.
8. CITY INSPECTOR WRITTEN APPROVAL REQUIRED AT ALL KEY STAGES IDENTIFIED ON CITY STORMWATER TREATMENT FACILITIES INSPECTION CHECKLIST.
9. DRIP IRRIGATION RECOMMENDED. SPRAY HEAD IRRIGATION SYSTEM SHALL BE POSITIONED TO AVOID DIRECT SPRAY INTO OUTLET STRUCTURES OR CURB CUT INLETS.
10. NO FERTILIZER SHALL BE ADDED.

 CITY OF SAN PABLO <i>City of New Directions</i>	 San Pablo All-America City NATIONAL COUNCIL	GREEN INFRASTRUCTURE STANDARD DETAILS ADAPTED FROM LIDI CASQA PROPOSITION 84 GRANT	CITY OF SAN PABLO PUBLIC WORKS DEPT. 13831 SAN PABLO AVE BUILDING 3 SAN PABLO, CA 94806 TEL: (510) 215-3030
		SLOPE-SIDED BIORETENTION FACILITY	
PREPARED BY: <u>JIMMY ZHOU</u>		VERSION: <u>5/20/2019</u>	APPROVED BY: _____ PUBLIC WORKS DIRECTOR / CITY ENGINEER
		DATE: _____	SHEET 1 OF 2

DESIGN NOTES

1. BIORETENTION FACILITIES TO MEET CONTRA COSTA CLEAN WATER PROGRAM STORMWATER C.3 GUIDEBOOK GUIDELINES.
2. BIORETENTION SOIL MEDIA (BSM), MULCH AND PLANT SELECTION TO FOLLOW CONTRA COSTA CLEAN WATER PROGRAM STORMWATER C.3 GUIDEBOOK. NO TREES SHALL BE PLANTED IN BIORETENTION FACILITIES.
3. PROVIDE SPOT ELEVATIONS AT CURB CUT INLETS AND OVERFLOW STRUCTURES ON CIVIL PLANS (TME, OE, GFE, SE).
4. LONGITUDINAL ELEVATION SHALL BE SLOPED AT A MAXIMUM OF 4% OR WITH WRITTEN EXCEPTION FROM CITY ENGINEER.
5. CONCRETE CHECK DAMS SHALL BE PLACED FOR EVERY 4-IN. TO 6-IN. OF LONGITUDINAL ELEVATION CHANGE (DETAIL GI-5).
6. SIDE SLOPE 4:1 (H:V) PREFERRED, 3:1 MINIMUM WITH SHELF OR WITH WRITTEN EXCEPTION FROM CITY ENGINEER.
7. SHELF WIDTH SHOULD BE SAME WIDTH AS NATIVE SOIL BENCH BELOW. FOR INSTALLATIONS IN NEW STREETS, MINIMUM SHELF WIDTH IS 12-IN. OR WITH EXCEPTION FROM CITY ENGINEER. FOR INSTALLATIONS IN EXISTING STREETS, SHELF WIDTH MAY BE DECREASED WITH AN INCREASED FOOTING DEPTH OF THE BIORETENTION CURB AND GUTTER.
8. BIORETENTION FACILITY DESIGN SHALL OPTIMIZE THE FLAT BOTTOM DIMENSIONS TO MAXIMIZE THE FUNCTIONAL AREA OF THE FACILITY. MINIMUM 2-FT. WIDE FLAT BOTTOM OR WITH WRITTEN EXCEPTION FROM CITY ENGINEER.
9. DEPTH OF AGGREGATE DETERMINED BY SITE SPECIFIC REQUIREMENTS. MINIMUM DEPTH OF 12-IN. UNLESS HYDROMODIFICATION IS REQUIRED. HYDROMODIFICATION DEPTH PER WRITTEN APPROVAL BY CITY ENGINEER.
10. SLOPE PERFORATED PIPES AND OTHER UNDERDRAIN PIPES TOWARD THE OVERFLOW STRUCTURE OR CLEANOUT. OVERFLOW STRUCTURE AND CLEANOUT SHALL DRAIN TO STORM DRAIN SYSTEM.
11. DO NOT USE FILTER FABRIC BETWEEN BSM AND AGGREGATE.
12. PROVIDE A MINIMUM OF ONE CLEAN-OUT/OBSERVATION PORT IN EACH FACILITY.
13. CURB CUT INLET PER DETAIL GI-3.
14. CURB AND GUTTER PER DETAIL GI-4.
15. FOR BIORETENTION FACILITIES ADJACENT TO PARKING LOTS, CURB STOPS (BUMPERS) ARE REQUIRED. PARKING LOT BIORETENTION FACILITIES WITHOUT CURB STOPS ARE REQUIRED TO FOLLOW "STREET SIDE WITH CURB AND GUTTER TYPICAL SECTION VIEW" STANDARD.
16. LOCATE CURB CUTS AND GUTTER MODIFICATIONS TO AVOID ACCESSIBILITY CONFLICTS (E.G. LOCATE OUTSIDE OF CROSSWALKS). PROVIDE PEDESTRIAN CROSSINGS THROUGH BIORETENTION FACILITIES AS APPROPRIATE.
17. BIORETENTION FACILITIES TO AVOID UTILITY CONFLICTS. CONSULT WITH CITY ENGINEER TO ADDRESS UTILITY CONFLICTS IF NEEDED.

 CITY OF SAN PABLO <i>City of New Directions</i>	 San Pablo All-America City <small>NATIONAL COUNCIL</small> 2014	GREEN INFRASTRUCTURE STANDARD DETAILS <small>ADAPTED FROM LIDI CASQA PROPOSITION 84 GRANT</small>		CITY OF SAN PABLO PUBLIC WORKS DEPT. 13831 SAN PABLO AVE BUILDING 3 SAN PABLO, CA 94806 TEL: (510) 215-3030
		SLOPE-SIDED BIORETENTION FACILITY		
PREPARED BY: <u>JIMMY ZHOU</u> VERSION: <u>5/20/2019</u>		APPROVED BY: _____ PUBLIC WORKS DIRECTOR / CITY ENGINEER DATE _____		GI-1
				SHEET 2 OF 2



LEGEND

	MULCH/COMPOST LAYER (SEE DESIGN NOTE 2)
	BIORETENTION SOIL MEDIA (BSM)
	AGGREGATE
	NATIVE SOIL
	ASPHALT PAVEMENT
	CONCRETE

CONSTRUCTION NOTES

1. MAINTAIN UNDISTURBED NATIVE SOIL BENCH TO SUPPORT ADJACENT SIDEWALK AND STREET. SEQUENCE WORK TO CONSTRUCT CURBS BEFORE EXCAVATING BIORETENTION AREA FOR AGGREGATE AND BSM.
2. SCARIFY SUBGRADE A MINIMUM OF 6-IN. WITHIN BIORETENTION FACILITY BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BSM. DO NOT COMPACT SUBGRADE, AGGREGATE OR BSM.
3. INSTALL PERFORATED PIPE WITH HOLES FACING DOWN. SLOPE TO DRAIN TOWARD OVERFLOW STRUCTURE/PIPE.
4. DO NOT WORK WITHIN BIORETENTION AREA DURING RAIN OR UNDER WET CONDITIONS.
5. KEEP HEAVY MACHINERY AND CONSTRUCTION MATERIALS OUTSIDE BIORETENTION AREA LIMITS.
6. STORMWATER SHALL BE DIRECTED AWAY FROM BIORETENTION AREA UNTIL CONSTRUCTION IS COMPLETE.
7. AN APPROVED PRE-MIXED BSM SHALL BE INSTALLED. BSM MAY BE SUBJECT TO TESTING.
8. CITY INSPECTOR WRITTEN APPROVAL REQUIRED AT ALL KEY STAGES IDENTIFIED ON CITY STORMWATER TREATMENT FACILITIES INSPECTION CHECKLIST.
9. DRIP IRRIGATION RECOMMENDED. SPRAY HEAD IRRIGATION SYSTEM SHALL BE POSITIONED TO AVOID DIRECT SPRAY INTO OUTLET STRUCTURES OR CURB CUT INLETS.
10. NO FERTILIZER SHALL BE ADDED.

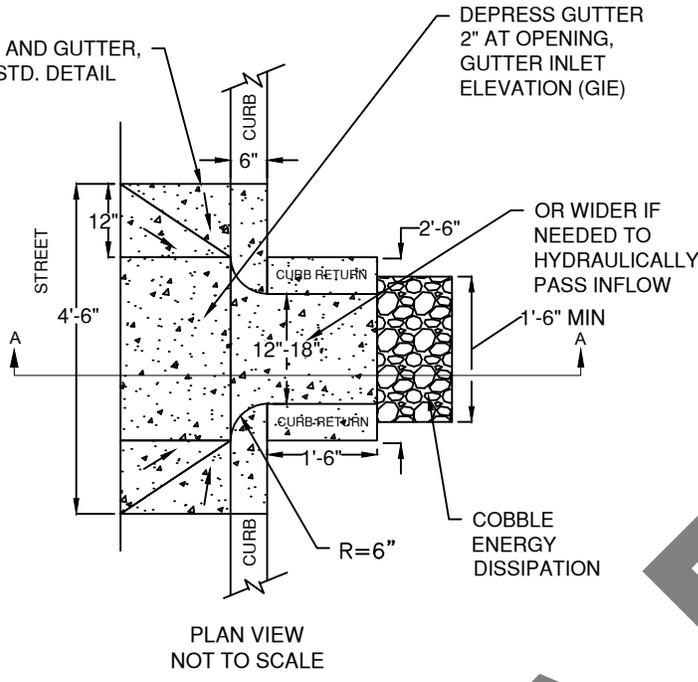
<p>CITY OF SAN PABLO City of New Directions</p>	<p>San Pablo All-America City NATIONAL COUNCIL</p> <p>2014</p>	GREEN INFRASTRUCTURE STANDARD DETAILS ADAPTED FROM LIDI CASQA PROPOSITION 84 GRANT		CITY OF SAN PABLO PUBLIC WORKS DEPT. 13831 SAN PABLO AVE BUILDING 3 SAN PABLO, CA 94806 TEL: (510) 215-3030
		PLANTER BOX BIORETENTION FACILITY		
PREPARED BY: <u>JIMMY ZHOU</u>		VERSION: <u>5/20/2019</u>	APPROVED BY: _____	GI-2
			PUBLIC WORKS DIRECTOR / CITY ENGINEER _____ DATE _____	

DESIGN NOTES

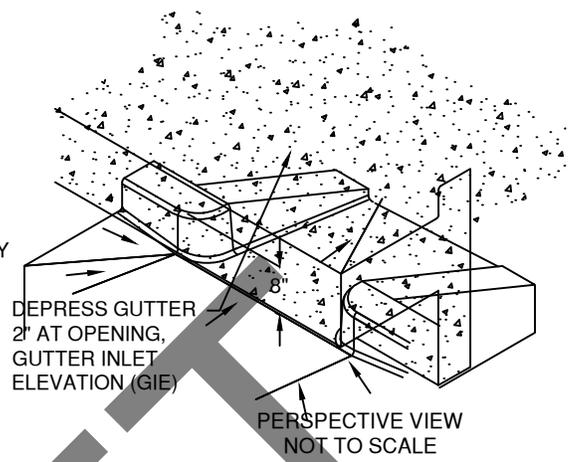
1. BIORETENTION FACILITIES TO MEET CONTRA COSTA CLEAN WATER PROGRAM STORMWATER C.3 GUIDEBOOK GUIDELINES.
2. BIORETENTION SOIL MEDIA (BSM), MULCH AND PLANT SELECTION TO FOLLOW CONTRA COSTA CLEAN WATER PROGRAM STORMWATER C.3 GUIDEBOOK. NO TREES SHALL BE PLANTED IN BIORETENTION FACILITIES.
3. PROVIDE SPOT ELEVATIONS AT CURB CUT INLETS AND OVERFLOW STRUCTURES ON CIVIL PLANS (TME, OE, GFE, SE).
4. LONGITUDINAL ELEVATION SHALL BE SLOPED AT A MAXIMUM OF 4% OR WITH WRITTEN EXCEPTION FROM CITY ENGINEER.
5. CONCRETE CHECK DAMS SHALL BE PLACED FOR EVERY 4-IN. TO 6-IN. OF LONGITUDINAL ELEVATION CHANGE (DETAIL GI-5).
6. BIORETENTION FACILITY DESIGN SHALL OPTIMIZE THE FLAT BOTTOM DIMENSIONS TO MAXIMIZE THE FUNCTIONAL AREA OF THE FACILITY. MINIMUM 2-FT. WIDE FLAT BOTTOM OR WITH WRITTEN EXCEPTION FROM CITY ENGINEER.
7. DEPTH OF AGGREGATE DETERMINED BY SITE SPECIFIC REQUIREMENTS. MINIMUM DEPTH OF 12-IN. UNLESS HYDROMODIFICATION IS REQUIRED. HYDROMODIFICATION DEPTH PER WRITTEN APPROVAL BY CITY ENGINEER.
8. SLOPE PERFORATED PIPES AND OTHER UNDERDRAIN PIPES TOWARD THE OVERFLOW STRUCTURE OR CLEANOUT. OVERFLOW STRUCTURE AND CLEANOUT SHALL DRAIN TO STORM DRAIN SYSTEM.
9. DO NOT USE FILTER FABRIC BETWEEN BSM AND AGGREGATE.
10. PROVIDE A MINIMUM OF ONE CLEAN-OUT/OBSERVATION PORT IN EACH FACILITY.
11. CURB CUT INLET PER DETAIL GI-3.
12. CURB AND GUTTER PER DETAIL GI-4.
13. FOR BIORETENTION FACILITIES ADJACENT TO PARKING LOTS, CURB STOPS (BUMPERS) ARE REQUIRED. PARKING LOT BIORETENTION FACILITIES WITHOUT CURB STOPS ARE REQUIRED TO FOLLOW "STREET SIDE WITH CURB AND GUTTER TYPICAL SECTION VIEW" STANDARD.
14. LOCATE CURB CUTS AND GUTTER MODIFICATIONS TO AVOID ACCESSIBILITY CONFLICTS (E.G. LOCATE OUTSIDE OF CROSSWALKS). PROVIDE PEDESTRIAN CROSSINGS THROUGH BIORETENTION FACILITIES AS APPROPRIATE.
15. BIORETENTION FACILITIES TO AVOID UTILITY CONFLICTS. CONSULT WITH CITY ENGINEER TO ADDRESS UTILITY CONFLICTS IF NEEDED.

 CITY OF SAN PABLO <i>City of New Directions</i>	 San Pablo All-America City <small>NATIONAL COUNCIL</small> 2014	GREEN INFRASTRUCTURE STANDARD DETAILS <small>ADAPTED FROM LIDI CASQA PROPOSITION 84 GRANT</small>		CITY OF SAN PABLO PUBLIC WORKS DEPT. 13831 SAN PABLO AVE BUILDING 3 SAN PABLO, CA 94806 TEL: (510) 215-3030
		PLANTER BOX BIORETENTION FACILITY		
PREPARED BY: <u>JIMMY ZHOU</u> VERSION: <u>5/20/2019</u>		APPROVED BY: _____ _____ PUBLIC WORKS DIRECTOR / CITY ENGINEER DATE		GI-2
				SHEET 2 OF 2

CURB AND GUTTER,
CITY STD. DETAIL



PLAN VIEW
NOT TO SCALE



PERSPECTIVE VIEW
NOT TO SCALE

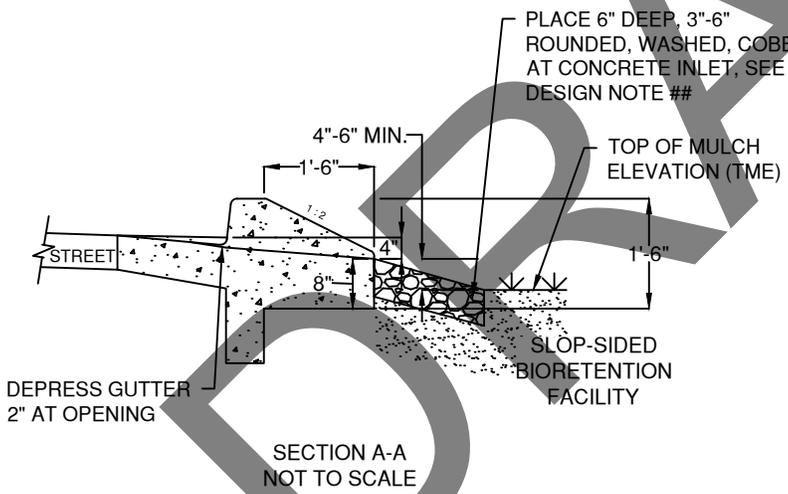
DESIGN NOTES

1. DESIGN NUMBER AND SPACING OF CURB CUT INLETS TO CALCULATE HYDRAULIC FLOW. SUBJECT TO CHANGE BY CITY ENGINEER.
2. PROVIDE SPOT ELEVATIONS ON PLANS (TME, OE, GFE, IE). SEE DETAIL SW-1 AND SW-2.
3. WHERE INLET FLOW VELOCITY IS HIGH, EXTEND COBBLE INTO FACILITY, BUT AVOID EXCESSIVE USE.
4. CURB HEIGHT MAY BE REDUCED TO 4" WHERE ADJACENT TO A SIDEWALK. SEE CITY STANDARD DETAILS.
5. DO NOT LOCATE PLANTS AT INLETS. CONSIDER MATURE GROWTH TO DETERMINE PLANTING LAYOUT AND AVOID FUTURE BLOCKAGE OF INLETS BY PLANTS.
6. POSITION CURB CUT INLETS TO BE OFFSET FROM OVERFLOW STRUCTURE.

CONSTRUCTION NOTES

1. AFTER CONSTRUCTION, PLACE SAND BAGS AT GUTTER OPENINGS TO KEEP STORM FLOWS FROM ENTERING FACILITY UNTIL VEGETATION IS PLANTED.

PLACE 6" DEEP, 3"-6" ROUNDED, WASHED, COBBLE AT CONCRETE INLET, SEE DESIGN NOTE ##



SECTION A-A
NOT TO SCALE

GREEN INFRASTRUCTURE STANDARD DETAILS
ADAPTED FROM LIDI CASQA PROPOSITION 84 GRANT

CURB CUT INLET

CITY OF SAN PABLO
PUBLIC WORKS DEPT.
13831 SAN PABLO AVE
BUILDING 3
SAN PABLO, CA 94806
TEL: (510) 215-3030

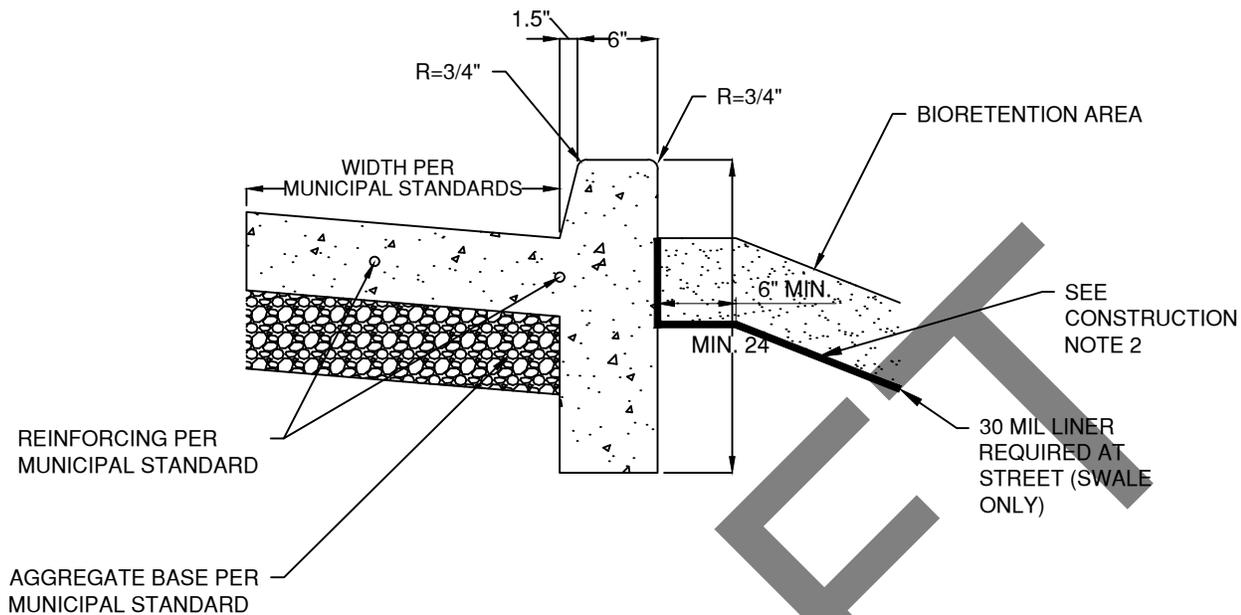


PREPARED BY: JIMMY ZHOU
VERSION: 5/20/2019

APPROVED BY: _____
PUBLIC WORKS DIRECTOR / CITY ENGINEER
DATE _____

GI-3

SHEET 1 OF 1



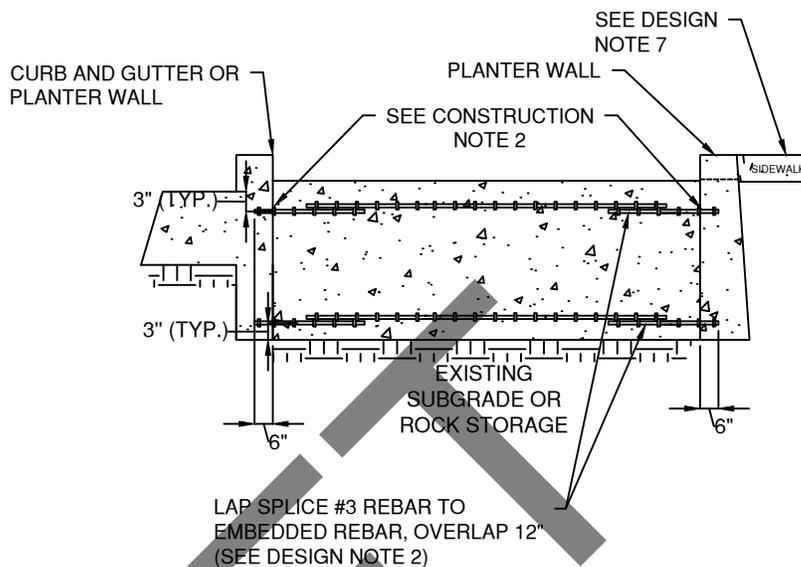
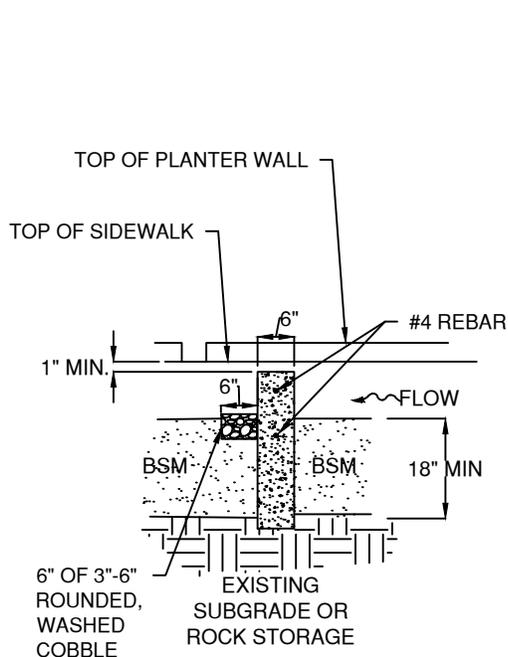
DESIGN NOTES

1. SPECIAL DESIGN CONSIDERATION OR STRUCTURAL REVIEW MAY BE REQUIRED FOR LONGER PLANTER WALL SPANS. STEEL REINFORCEMENT OR ADDITIONAL CONCRETE CHECK DAMS MAY BE NEEDED FOR STABILITY.
2. EDGE CONDITION WILL VARY FOR NEW AND RETROFIT PROJECTS. CURB, GUTTER, AND WALL DETAILS MAY BE MODIFIED BY CIVIL AND GEOTECHNICAL ENGINEERS SUBJECT TO APPROVAL BY CITY ENGINEER.
3. CONCRETE AND EXPANSION JOINTS SHALL MEET THE REQUIREMENTS OF THE MUNICIPALITY.
4. STEEL REINFORCEMENT OR ADDITIONAL CONCRETE CHECK DAMS MAY BE NEEDED FOR STABILITY.

CONSTRUCTION NOTES

1. FINISH ALL EXPOSED CONCRETE SURFACES.
2. LAYBACK SLOPE AS FLAT AS POSSIBLE UNTIL TOP WIDTH PRODUCES 1:1 SLOPE & 24" BOTTOM WIDTH. AS PLANTER GETS WIDER MAINTAIN 1:1 SLOPE AND INCREASE BOTTOM WIDTH WIDER THAN 24". ALTERNATIVE TRENCH WALL CONFIGURATIONS MAY BE PROPOSED BY THE PROJECT GEOTECHNICAL ENGINEER (I.E. VERTICAL SHORING, REINFORCED TRENCH SIDEWALL) THAT DO NOT REQUIRE SIDEWALK SUPPORT FROM THE LIGHTLY COMPACTED BSM.

 CITY OF SAN PABLO <i>City of New Directions</i>	 San Pablo All-America City <small>NATIONAL COUNCIL</small> 2014	GREEN INFRASTRUCTURE STANDARD DETAILS <small>ADAPTED FROM LIDI CASQA PROPOSITION 84 GRANT</small>		CITY OF SAN PABLO PUBLIC WORKS DEPT. 13831 SAN PABLO AVE BUILDING 3 SAN PABLO, CA 94806 TEL: (510) 215-3030
		CURB AND GUTTER		
PREPARED BY: <u>JIMMY ZHOU</u>		VERSION: <u>5/20/2019</u>	APPROVED BY: _____	GI-4
			PUBLIC WORKS DIRECTOR / CITY ENGINEER _____ DATE _____	



BIORETENTION DESIGN NOTES

1. FOR USE WITH BIORETENTION PLANTERS OR SLOPED SIDED SWALES/RAIN GARDENS.
2. FOR CHECK DAMS LONGER THAN 12' SPECIFY REBAR OVERLAP LENGTH.
3. SPACE CHECK DAMS TO MAXIMIZE PONDING ACROSS CELLS.
4. CHECK DAMS SHOULD BE PLACED FOR EVERY 4 - 6" OF LONGITUDINAL ELEVATION CHANGE.
5. PROVIDE ELEVATIONS AND STATIONING AND/OR DIMENSIONING FOR CHECK DAMS.
6. ENSURE THAT CHECK DAM ELEVATIONS DO NOT CAUSE STORMWATER TO OVERFLOW TO SIDEWALK.
7. SHOW PLANTER WALL EMBEDDED IN EXISTING SUBGRADE OR DRAINROCK.
8. PREFERRED DESIGN IS TO CONSTRUCT TOP OF SIDEWALK AT GRADE WITH TOP OF PLANTER WALL TO ALLOW RUNOFF TO SHEETFLOW INTO BIORETENTION PLANTER. IF CURB IS NEEDED, USE ALTERNATE DESIGN AND ENSURE TOP OF CONCRETE CHECK DAM IS A MINIMUM OF 1" BELOW BOTTOM OF CURB NOTCH.

CONSTRUCTION NOTES

1. EMBED #3 REBAR 6" INTO CURB AND PLANTER WALL.
2. DO NOT WORK DURING RAIN OR UNDER WET CONDITIONS.
3. KEEP ALL HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.

GREEN INFRASTRUCTURE STANDARD DETAILS
ADAPTED FROM LIDI CASQA PROPOSITION 84 GRANT

CONCRETE CHECK DAM

**CITY OF SAN PABLO
PUBLIC WORKS DEPT.**
13831 SAN PABLO AVE
BUILDING 3
SAN PABLO, CA 94806
TEL: (510) 215-3030



PREPARED BY: JIMMY ZHOU VERSION: 5/20/2019

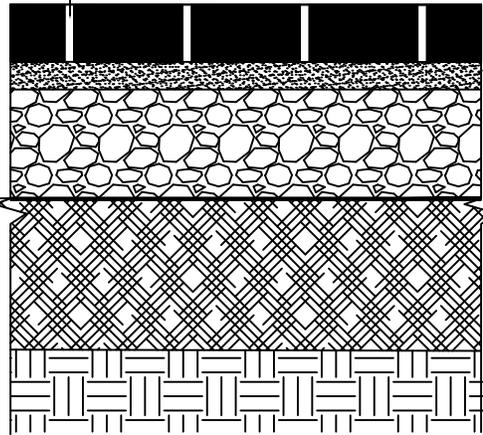
APPROVED BY: _____
PUBLIC WORKS DIRECTOR / CITY ENGINEER DATE

GI-5

SHEET 1 OF 1

3/8-IN. GAP (MAX. 1/2-IN.)
FILL WITH WASHED ASTM NO. 8,
OR 9 AGGREGATE

GEOTEXTILE IF SPECIFIED



PERMEABLE UNIT PAVERS
(SEE TABLE FOR THICKNESS)

1-1/2-IN. TO 2-IN. ASTM NO. 8
BEDDING LAYER

BASE COURSE: WASHED 4-IN. ASTM
NO. 57 BASE OR SIMILAR CRUSHED
AGGREGATE OVER ASTM NO. 2, 3, OR 4
AGGREGATE SUBBASE - THICKNESS
VARIES WITH WATER STORAGE AND
TRAFFIC LOAD.

SUBGRADE, COMPACTION
REQUIREMENTS DETERMINED BY
GEOTECHNICAL OR CITY
ENGINEER,

NATIVE SOIL

SECTION VIEW
NOT TO SCALE

DESIGN NOTES:

PERMEABLE PAVERS REQUIREMENT:

	RESIDENTIAL DRIVEWAY OR PEDESTRIAN ONLY	PRIVATE STREET, PARKING LOT, OTHER
PERMEABLE INTERLOCKING PAVERS THICKNESS	2-3/8-IN. MIN.	3-7/8-IN. MIN.
ENGINEERING REQ'D, SEE DESIGN NOTE 4	NO	YES
COMPACTION REQ'D	NO	YES

- PAVER DESIGN AND/OR GRADING DESIGN SHALL INCORPORATE MANAGEMENT OF STORMWATER FLOWS TO AVOID LOCAL FLOODING.
- ADD UNDERDRAIN 3-IN. ABOVE THE BOTTOM OF THE BASE COURSE TO DRAIN WATER THAT CANNOT BE INFILTRATED WITHIN 72 HOURS.
- UNDERDRAIN AND ORIFICE CONFIGURATION SHALL BE BASED ON ENGINEERED DESIGN.
- DESIGNS SHALL BE SIGNED & STAMPED BY A GEOTECHNICAL AND/OR CIVIL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA, OR WITH WRITTEN EXCEPTION FROM CITY ENGINEER.
- GEOTEXTILE USE AND SELECTION MAY BE DETERMINED BY A GEOTECHNICAL ENGINEER PER AASHTO M-288.
- WRITTEN APPROVAL FROM CITY ENGINEER REQUIRED IF SLOPE IS GREATER THAN 2%.

 CITY OF SAN PABLO <i>City of New Directions</i>	 San Pablo All-America City <small>NATIONAL LEAGUE</small> 2014	GREEN INFRASTRUCTURE STANDARD DETAILS <small>ADAPTED FROM LIDI CASQA PROPOSITION 84 GRANT</small>	CITY OF SAN PABLO PUBLIC WORKS DEPT. 13831 SAN PABLO AVE BUILDING 3 SAN PABLO, CA 94806 TEL: (510) 215-3030
		PERMEABLE PAVERS	
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			SHEET 1 OF 1