City of Lafayette
Green Infrastructure Plan

August 29, 2019

Prepared in compliance with Provision C.3.j.i.(2) of the Municipal Regional NPDES Permit (No. CAS612008)

City of Lafayette
Public Works and Engineering Deparment
3675 Mount Diablo Boulevard, #210
Lafayette, CA 94549

Table of Contents

Tables

Appendices

Acronyms

µg	Microgram
µg/kg	Micrograms per kilogram
ABAG	Association of Bay Area Governments
AGOL	ArcGIS Online
BASMAA	Bay Area Stormwater Management Agencies Association
CCCFCD	Contra Costa County Flood Control District
CCCWP	Contra Costa Clean Water Program
CCW SWRP	Contra Costa Watersheds Stormwater Resource Plan
CIP	Capital Investment Program
CMP	Corrugated metal pipes
ESA	Environmentally sensitive areas
FEMA	Federal Emergency Management Agency
FY	Fiscal year
g	Gram
g/year	Grams per year
GI	Green infrastructure
GIS	Geographic Information System
kg	Kilogram
kg/year	Kilograms per year
LEED	Leadership in Energy and Environmental Design
LID	Low impact development
mg	Milligram
MRP	Municipal Regional Stormwater Permit
MS4	Municipal separate storm sewer system
MTC	Metropolitan Transportation Commission
NACTO	National Association of City Transportation Officials
NFIP	National Flood Insurance Program
ng	Nanogram
NPDES	National Pollutant Discharge Elimination System
PCBs	Polychlorinated Biphenyls
RAA	Reasonable Assurance Analysis
ROW	Right of way
RWQCB	San Francisco Bay Regional Water Quality Control Board
SCS	Soil Conservation Service
SF	Square feet
SFHA	Special Flood Hazard Area
SWRP	Stormwater Resource Plan
TMDL	Total Maximum Daily Load
USACE	U.S. Army Corps of Engineers
WLA	Waste Load Allocation

1 Introduction and Overview

1.1 Regulatory Mandate

The City of Lafayette is one of 76 local government entities subject to the requirements of the California Regional Water Quality Control Board for the San Francisco Bay Region's (RWQCB's) Municipal Regional Stormwater Permit (MRP). The MRP was last reissued in November 2015[1]. The MRP mandates implementation of a comprehensive program of stormwater control measures and actions designed to limit contributions of urban runoff pollutants to San Francisco Bay.

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

Green Infrastructure refers to the construction and retrofit of storm drainage 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 our creeks and Bay. Green infrastructure facilities include, but are not limited to, pervious pavement, infiltration basins, bioretention facilities or "rain gardens", green roofs, and rainwater harvesting systems. Green infrastructure can be incorporated into construction on new and previously developed parcels, as well as new and rebuilt streets, roads, and other infrastructure within the public right-of-way.

Water quality in San Francisco Bay is impaired by mercury and by polychlorinated biphenyls (PCBs). Sources of these pollutants include urban stormwater. By reducing and treating stormwater flows, green infrastructure reduces the quantity of these pollutants entering the Bay and will hasten the Bay's recovery.

Provisions C.11 and C.12 in the MRP require Contra Costa Permittees (Contra Costa County and its 19 cities and towns) to reduce estimated PCBs loading by 23 grams/year and estimated mercury loading by 9 grams/year using green infrastructure by June 30, 2020. Regionally, Permittees must also project the load reductions achieved via Green Infrastructure by 2020, 2030, and 2040, showing that collectively, reductions will amount to 3 kg/year PCBs and 10 kg/year mercury by 2040.

1.2 Further Background on Mercury and PCBs in San Francisco Bay

The MRP pollutant-load reduction requirements are driven by Total Maximum Daily Load

[1] Order R2-2015-0049

(TMDL) requirements adopted by the RWQCB for mercury (Resolution No. R2-2004-0082 and R2-2005-0060) and PCBs (Resolution No. R2-2008-0012). Each TMDL allocates allowable annual loads to San Francisco Bay (a Waste Load Allocation, or WLA) from identified sources, including from urban stormwater.

The mercury TMDL addresses two water quality objectives. The first, established to protect people who consume Bay fish, applies to fish large enough to be consumed by humans. The objective is 0.2 milligrams (mg) of mercury per kilogram (kg) of fish tissue (average wet weight concentration measured in the muscle tissue of fish large enough to be consumed by humans). The second objective, established to protect aquatic organisms and wildlife, applies to small fish (3-5 centimeters in length) commonly consumed by the California least tern, an endangered species. This objective is 0.03 mg mercury per kg fish (average wet weight concentration). To achieve the human health and wildlife fish tissue and bird egg monitoring targets and to attain water quality standards, the Bay-wide suspended sediment mercury concentration target is 0.2 mg mercury per kg dry sediment.

A roughly 50% decrease 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.

The PCBs TMDL was developed based on a fish tissue target of 10 nanograms (ng) of PCBs per gram (g) of fish tissue. This target is based on a cancer risk of one case per an exposed population of 100,000 for the 95th percentile San Francisco Bay Area sport and subsistence fisher consumer (32 g fish per day). A food web model was developed by San Francisco Estuary Institute (SFEI) to identify the sediment target concentration that would yield the fish tissue target; this sediment target was found to be 1 microgram (µg) of PCBs per kg of sediment.

Twenty percent of the estimated allowable PCB external load was allocated to urban stormwater runoff. The Bay Area-wide WLA for PCBs for urban stormwater is 2 kg/yr 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.

1.3 Objectives and Vision

This Plan will guide a 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 detain and treat runoff. Green infrastructure features and facilities include, but are not limited to, pervious pavement, infiltration basins, and bioretention facilities ("rain gardens"), green roofs, and rainwater harvesting systems.

As required by Provisions C.3.a. through C.3.i in the MRP, these Low Impact Development (LID) practices are currently implement on private land development projects in the City of Lafayette. Specific methods and design criteria are spelled out in the Contra Costa Clean Water Program's (CCCWP's) *Stormwater C.3 Guidebook (CCCWP, 2017)*, which the City has referenced in the Municipal Code (Storm Water Management and Discharge Control Ordinance), Chapter 5-4.

GI has also been incorporated into the new City of Lafayette public parking lot adjacent to 3311 Mount Diablo Boulevard. This 4,965 square foot parking lot was constructed in 2019 with a 220 square foot bio-retention planter to capture and treat the runoff from the parking lot.

This Plan details how similar methods will be incorporated to retrofit existing storm drainage infrastructure using GI facilities constructed on public and private parcels and within the public ROW.

1.4 Plan Context and Elements

1.4.1 Planning Context

Municipal Geography

The City of Lafayette encompasses 15.4 square miles of land and is separated from greater metropolitan areas of Berkeley and Oakland by the Berkeley Hills. The City of Lafayette is adjacent to the Town of Moraga, and the Cities of Walnut Creek and Pleasant Hill. Lafayette is characterized as a semirural community with rolling, grassy hills and valleys.

Demographics

After the tremendous growth spurt in the 1960s and 1970s Lafayette's population has stayed almost constant with limited growth especially compared to other Contra Costa cities. Its population in 1990 was 23,501 and it growing to 23,893 in 2010 (US Census). The Census reported that 23,794 people (99.6% of the population) lived in households, 38 (0.2%) lived in non-institutionalized group quarters, and 61 (0.3%) were institutionalized.

There were 9,223 households, out of which 3,262 (35.4%) had children under the age of 18 living in them, 5,871 (63.7%) were *opposite-sex married couples* living together, 651 (7.1%)

had a female householder with no husband present, 273 (3.0%) had a male householder with no wife present. There were 306 (3.3%) *unmarried opposite-sex partnerships*, and 75 (0.8%) *same-sex married couples or partnerships*. 1,916 households (20.8%) were made up of individuals and 802 (8.7%) had someone living alone who was 65 years of age or older. The average household size was 2.58. There were 6,795 *families* (73.7% of all households); the average family size was 3.01.

The population was spread out with 5,956 people (24.9%) under the age of 18, 1,220 people (5.1%) aged 18 to 24, 4,676 people (19.6%) aged 25 to 44, 8,069 people (33.8%) aged 45 to 64, and 3,972 people (16.6%) who were 65 years of age or older. The median age was 45.2 years. For every 100 females, there were 94.5 males. For every 100 females age 18 and over, there were 91.3 males.

There were 9,651 housing units at an average density of 627.2 per square mile (242.2/km²), of which 9,223 were occupied, of which 6,937 (75.2%) were owner-occupied, and 2,286 (24.8%) were occupied by renters. The homeowner vacancy rate was 0.8%; the rental vacancy rate was 5.7%. 19,025 people (79.6% of the population) lived in owner-occupied housing units and 4,769 people (20.0%) lived in rental housing units.

Household Income

The estimated median household income for Lafayette was $134,871 in 2011 (the most recent year for which data are available) compared with $79,135 for Contra Costa County (see Table 1). As shown in the table, in constant 2011 dollars, the median income has actually dropped in Lafayette, though less than the County as a whole; at least some of this decline can be attributed to the recession. Available data indicate the differences in income levels between Lafayette and the County will continue, with incomes in Lafayette remaining substantially higher.

TABLE 1 - MEDIAN HOUSEHOLD INCOME: LAFAYETTE & CONTRA COSTA COUNTY, 2000 & 2011 (IN 2011 DOLLARS)

County/City Name	2000 (1999 dollars)	2000 (2011 dollars)*	2011 (estimate) (2011 dollars)	Percent Change - 2000 to 2011
Contra Costa County Total	$63,675	$85,961	$79,135	-7.9%
Lafayette	$102,107	$137,844	$134,871	-2.2%

SOURCE: US CENSUS, 2000 CENSUS, 2007-2011 American Community Survey (ACS) (5-year estimates)

The median household income observed in the City has important effects on housing demand. The higher income households will be able to afford new housing built in the community. These households will also be able to afford to renovate and repair many of the City's existing older single-family homes. It will continue to be necessary, however, to maintain incentives for the construction of additional housing units affordable to lower-income households, given the rapid increase in the cost of housing that has occurred throughout the Bay Area.

Employment Projections 2000 To 2040

In its Projections 2013, ABAG estimates that the total number of jobs in Lafayette will increase by 25.1% between the year 2010 and the year 2040. The largest increase in projected new jobs in the City is anticipated to be in the Heath, Education and Recreation Services sector (34.2%), while Retail jobs will increase only by about 3%.

TABLE 2 - LAFAYETTE EMPLOYMENT PROJECTIONS, 2010 - 2040

Sector	2010	2040	Change, 2010 - 2040
Financial and Professional Services	2,993	3,794	26.8%
Retail	1,107	1,141	3.1%
Manufacturing/Wholesale/Transport	1,246	1,426	14.4%
Health/Education/Recreation	3,385	4,544	34.2%
Other Jobs	2,042	2,512	23.0%
Total	**10,773**	**13,417**	24.5%

SOURCE: ABAG'S MAY 2012 JOBS HOUSING CONNECTION STRATEGY AND PROJECTIONS 2013
NOTE: PROJECTIONS APPLY TO CITY AND ITS SPHERE OF INFLUENCE

A stronger increase in employment is projected by ABAG for Contra Costa County as a whole, which is anticipated to have a 35.5% increase in employment between 2010 and 2040. Although there may be variations among projected growth in employment between Lafayette and the County, the significance of these projections is that they indicate that an important structural change in the local economy is taking place. Future job creation is becoming increasingly based on the growth of the service sectors, rather than on the growth of the manufacturing industry.

The projected increase in employment will affect the balance between jobs and housing. At present there are almost as many jobs as there are employed persons (0.98 jobs to every employed resident), up from 0.84 in 2000. Still, some proportion of employed residents commute to work outside the City. Increasing the number of jobs, particularly in the retail and service sectors, may result in an increased demand for affordable housing.

Housing Characteristics

One measure of housing condition is the age of housing. As summarized in Table 7, the older the unit, the greater it can be assumed to be in need of some level of rehabilitation. A general rule in the housing industry is that structures older than 20 years begin to show signs of deterioration and require renovation to maintain their quality. Unless properly maintained, homes older than 50 years can pose health, safety and welfare problems for occupants.

Consistent with State law, Table 3 estimates the number of units in need of rehabilitation and the number of units needing replacement. Although the exact number of Lafayette units in need of rehab is not currently known, the State accepts estimates based on a formula that assumes the older the unit, the more likely the rehab need. By applying an increasing percentage to the housing stock in each age category, it is estimated that there are approximately 839 units in need of some level of rehabilitation in Lafayette, representing 9.1% of the housing stock. The range of rehabilitation needs can include anything from minor repairs to major structural replacements. It is estimated that nearly all of the units in need of rehabilitation can be repaired without replacement.

TABLE 3 - AGE OF HOUSING STOCK AND ESTIMATED REHABILITATION NEEDS, 2013

	Net Number of Units	Percent of Total	Units Needing Rehab, Percent	Units Needing Rehab, Total	
Built 2010 to 2013	76	0.8%			
Built 2000 to 2009	188	2.0%			
Built 1990 to 1999	263	2.8%	0.5%	1	
Built 1980 to 1989	630	6.7%	1%	6	
Built 1970 to 1979	1,477	15.7%	3%	44	
Built 1960 to 1969	1,968	20.9%	5%	98	
Built 1950 to 1959	3,212	34.1%	10%	321	
Built 1940 to 1949	1,154	12.2%	20%	231	
Built 1939 or earlier	456	4.8%	30%	137	
	9,424	**100.0%**		**839**	**Total Units Needing Rehab**
				9.1%	Percentage of Total Units
			99.50%	835	Units that can be repaired
			0.50%	4	Units that must be replaced

SOURCE: 2010 CENSUS AND STATE DEPARTMENT OF FINANCE DATA, 2013; CITY OF LAFAYETTE PLANNING AND BUILDING DEPARTMENT, 2013

Census tract data reveals that older housing stock is located east of Pleasant Hill Road, east of Moraga Road and south of Mt. Diablo Blvd., and certain areas north of Deer Hill Road. According to Lafayette's Code Enforcement Officer, the vast majority of housing is in good

condition and most of the complaints he processes are related to illegal vehicles, the accumulation of junk and debris and lack of property upkeep and maintenance.

The Contra Costa County Property Conservation Department provides enforcement services for Lafayette related to building and housing code issues. According to its records, the Department issued notices to comply for one complaint related to expired permits with hazardous conditions present in 2009; one notice to comply to provide pool safety and security measures in 2010; one notice to comply for unsafe structural support within an apartment building in 2011and five notices to comply for an illegal second unit, substandard building conditions, outdoor lighting without permits, residential work without permits, and improper storage of recreational vehicle in 2012. Despite the age of the houses in these areas (fifty years or older) most of the homes are well maintained. This is due to the high mean household income and high mean home value that allows property owners to afford to renovate or repair their homes. Property owners are also generally responsive when informed of code violations.

Since Lafayette is a predominantly residential community, the existing housing stock defines the character of the City and its neighborhoods. There are several policies in the Housing Element, which continue to promote the maintenance, enhancement and protection of residential neighborhoods.

Commitment and Actions for Sustainability

The City of Lafayette has a strong commitment to creating a sustainable community through protection of the environment, conservation of natural resources and reduction of greenhouse gas emissions associated with climate change. The City's Environmental Task Force is actively working to reduce greenhouse gas emissions and implement the City Council approved Climate Action Plan (CAP), which serves as a blueprint for the City's future sustainability efforts. As transportation is the single biggest contributor to GHG emissions, the City's most recent purchases of fleet vehicles has been two fully-electric Volkswagen e-Golfs. The Environmental Task Force also partners with a local NGO, Sustainable Lafayette, with like-minded sustainability goals.

The City has joined California's renewable energy movement by opting up all of its City-owned buildings and facilities to the local Community Choice Aggregation energy program, MCE's Deep Green 100% renewable electricity service. This energy is derived from California solar and wind; thereby eliminating all greenhouse gas emissions associated with its facilities' electricity use starting in July 2018.

The City of Lafayette adopted Ordinance 626 on December 8, 2014, regulating "Single-Use Carryout Bags" and "Food Packaging Recycling". The regulations require that all bags provided by retail establishments or public eating establishments for the purpose of carrying away goods from the point of sale be recycled paper carryout bags or reusable bags, beginning on July 1, 2015. The regulations also require select businesses to charge for checkout bags (compostable bags, recycled paper bags, or reusable bags) that they provide. Customers can avoid the charge by bringing their own bag.

Staffing and Scope of Sustainability Programs

Several City departments and commissions are responsible for implementing Lafayette's sustainability programs, as summarized in Table 4.

Table 4: City Divisions Managing Active Sustainability Programs

Scope of Sustainability Program	Staffing
Climate Action Plan implementation	Environmental Task Force
Product bans (plastic bags and polystyrene-based food service water)	Environmental Task Force
Deep Green Renewable Energy Initiative	Environmental Task Force
Recycling and Solid Waste Management	Central Contra Costa Solid Waste Authority (JPA)
Construction and Demolition Debris Recycling	Planning Department
Urban Runoff Pollution Prevention Program	Clean Water Program (Public Works Department)

The City of Lafayette does not employ a full-time sustainability coordinator. Multiple departments are engaged with sustainability programs and actively pursue grant funding opportunities for energy-saving, emissions-reducing capital projects such as continued energy efficiency upgrades to street lighting and buildings as technology improves, electric vehicle public charging infrastructure, etc. The City recently purchased two fully-electric Volkswagen Golf cars for staff use on official business. The City has also applied for grant monies and managed the installation of three public charging stations across the downtown.

1.4.2 Watersheds and Storm Drainage Infrastructure

Watersheds and Watershed Characteristics and Challenges

The City of Lafayette lies within the boundaries of Las Trampas Creek and Grayson Creek tributaries to the Walnut Creek watershed. According to the 2004 Contra Costa County Watershed Atlas the Walnut Creek Watershed encompasses 93,556 acres in Central Contra Costa County. Draining the west side of Mount Diablo and the east side of the East Bay Hills, Walnut Creek's major tributaries include: San Ramon Creek (18.89 miles), Bollinger Creek (6.72 miles), Las Trampas Creek (12.37 miles), Lafayette Creek (3.78 miles), Grayson Creek

(8.87 miles), Murderer's Creek (4.37 miles), Pine Creek (12.65 miles), and Galindo Creek (6.5 Miles). The watershed has an average annual rainfall of the 21 inches.

The majority of Happy Valley Creek and Lafayette Creek passing through downtown Lafayette has been significantly altered from its original morphology, due to urbanization and the increased need for flood control infrastructure.

According to the California 2014 and 2016 303(d) combined list the Lafayette Reservoir is the only water body within Lafayette that has pollutants of concern with Mercury and PCB's. Although Walnut Creek is not within the City of Lafayette it does accept the drainage from Lafayette and is listed as an impaired Water Body with diazinon as the pollutant of Concern.

Major Drainages and Major Drainage Characteristics and Challenges

The City of Lafayette's Drainage Master Plan identifies the major drainages as Lafayette Creek, Las Trampas Creek, Grizzley Creek, Reliez Creek, and Happy Valey Creek. The Drainage Master Plan indicates that the water collects initially in the tributaries and then flows through steep, V-shaped canyons in the upper reaches and small, gently sloping valleys with substantial creek-side residential development in the lower reaches. In some cases along Lafayette Creek private and commercial buildings sit on the edge of the creek banks. Elevations throughout the City range from 1100 feet along Lafayette Ridge to approximately 225 feet at lower Las Trampas Creek. Erosion continues to occur in all of the creeks as a result of the hilly topography and the creeks' natural hydraulic action.

Storm Sewer System and Challenges (pertinent to GI)

The City of Lafayette owns and maintains 57 miles of municipal separate storm sewer system (MS4), which consists of over 3,000 pipe segments. The City has developed a schematic map of the entire storm sewer system in Lafayette including all creeks and streams. These systems were hydraulically analyzed as part of the 1998 Drainage Master Plan.

The plan indicates that the storm sewer system is comprised of storm drain pipe, ditches and creeks. Some creek segments, primarily in the downtown, have been rerouted into large underground storm drain pipes or channelized. The Plan determined that 248 publically owned storm drain pipes were in need of repair or replacement due to either deteriorated condition or deficiencies in capacity. Since the adoption of this plan the majority of the deficient pipe segments have been replaced or repaired.

Storm Sewer Challenges (Pertinent to GI)

This mapping shows that the majority of the storm sewer infrastructure is located in developed residential neighborhoods. Any efforts to implement green infrastructure in the public right of way in residential neighborhoods is likely to be seen by residents as a "taking" of their landscaping. Opportunities to create attractive landscaped bioretention facilities that would be viewed as an enhancement to the landscaping in the area are limited and would require a public/private partnership to provide for the irrigation and maintenance of the landscaping associated with these improvements.

The remaining storm sewer improvements are located within the commercial areas found in downtown Lafayette where the infrastructure to maintain landscaping is present. However, construction of these facilities is likely to impact space traditionally used for parking.

Flood Zones

The Federal Emergency Management Agency (FEMA) Flood Insurance Study (FIS) revised March 21, 2017 describes the methodologies used in determining and mapping the flood zones in Lafayette. Flood zones information for specific properties in Lafayette can be found on the FEMA website at *https://msc.fema.gov/portal/home*.

According to the FIS flooding in Lafayette is caused primarily by winter rains. Severe flooding occurred in 1955, 1958, and 1963. These floods have an estimated return interval of 20 to 30 years. The greatest flood damage in Lafayette resulted from the 1958 flood when 42.8 inches of rainfall were recorded during an 8-day period, in March and April.

Areas of the city severely damaged by floods in the past include land adjacent to Happy Valley Creek, Lafayette Creek, and Old Jonas Creek. Lesser flood damage has occurred along several of the small streams, particularly along tributaries to Happy Valley Creek and Lafayette Creek.

Most of the 1 percent annual chance flood flows are contained within the channels of the streams. Overflow, mostly in the form of sheet flow, will occur along roads; and in some overbank areas due to inadequate culvert capacities along Happy Valley, Hidden Valley, Lafayette and Grizzly Creeks.

Flood Control Facilities

The majority of stormwater runoff is conveyed to creeks and streams via a series of storm drain pipes and ditches. The existing semi-rural configuration of stormwater systems in Lafayette with roadside ditches has a tendency to slow runoff velocities and in some cases provide opportunities for ponding of water. The majority of these systems are owned and

maintained by the City of Lafayette. However, the majority of the creeks and streams are located on private property. As such the maintenance of these systems is difficult to achieve without community collaboration.

Formal flood protection measures in Lafayette are limited to channel improvements on one part of Lafayette Creek. In 1956, approximately 2000 feet of Lafayette Creek between Moraga Road and Third Street was channelized. The rectangular, concrete lined channel will contain the 2 percent annual chance flood flow, but not the 1 or 0.2 percent annual chance flood flow.

Flood Control Development Policies

The City of Lafayette Municipal Code Chapter 6-18 Flood Damage Prevention states that it is the purpose of this chapter to promote the public health, safety and general welfare, and to minimize public and private losses due to flood conditions in specified area by provisions designed to:

a) Protect human life and health;
b) Minimize expenditure of public money for costly *flood*-control projects;
c) Minimize the need for rescue and relief efforts associated with *flooding* and generally undertaken at the expense of the general public;
d) Minimize prolonged business interruptions;
e) Minimize damage to public facilities and utilities such as water and gas mains; electric, telephone and sewer lines; and streets and bridges located in areas of special *flood hazard*;
f) Help maintain a stable tax base by providing for the second use and development of areas of special *flood hazard* so as to minimize future *flood* blight areas;
g) Ensure that potential buyers are notified that property is in an area of special *flood hazard*;
h) Ensure that those who occupy the areas of special *flood hazard* assume responsibility for their actions;
i) Protect persons and property along creek channels; and
j) Protect the natural environment along creeks to the extent feasible.

Storm Sewer Opportunities (Pertinent to GI)

The portion of Happy Valley Creek and Lafayette Creek traversing the commercial district of Lafayette has been studied as part of the Downtown Creeks Preservation, Restoration and Development Plan. This plan calls for the protection and enhancement of Lafayette's downtown creeks with goals of incorporating rain gardens, trails, and daylighting of culverted

creek sections. These goals will be perused as funding and redevelopment opportunities present themselves.

Recent and Planned Drainage Improvements

As part of all road maintenance and rehabilitation projects the storm drain facilities are examined not only determine if the addition of green infrastructure is possible but to repair and replace deteriorated storm drain lines.

The City is currently updating our storm drain map to identify and inspect the remaining deteriorated or hydraulically inadequate systems. A comprehensive plan for the replacement of these systems will be presented to the City Council as part of the 5 year capital improvement program in April of 2020.

Funding for Maintenance and for Capital Improvements

On April 22, 2019 the City Council adopted the 2019/2020 Capital Improvement program budget. This program calls for continued investment in the pavement infrastructure in Lafayette as well as $200,000 in funding for the Golden Gate Way and First Street Rain Garden.

1.4.3 Policies, Ordinances, and Legal Mechanisms

Element Addresses MRP Provision C.3.j.i.(4)

The following policies, ordinances, and legal mechanisms are in place relating to the implementation of goals put forth in this GI Plan:

- The City of Lafayette's GI framework was approved by the City Manager with the City Council's authorization, refer to Appendix A

City of Lafayette GI Framework

The framework approved by the City Manager in 2018 outlines the tasks, schedule, and budget necessary for the City of Lafayette to develop a Green Infrastructure Plan.

Municipal Code

Section 5-405: Stormwater Control Plan Required- 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.

Lafayette General Plan

Goal S-3: Reduce Flood Hazards

Policy S-3.1: Reduce Flood Hazards: Reduce flood risk by maintaining effective flood drainage systems and regulating construction.

Program S-3.1.1: Condition new development to maintain post development peak runoff rate and average volume similar to the predevelopment condition, to the maximum extent feasible. Consider use of alternative drainage systems that utilize on-site infiltration or slow runoff during peak periods. Where this is not feasible, the increase must be mitigated. Include clear and comprehensive mitigation measures as part of the project approvals with financial and other measures to ensure their implementation.

Program S-3.1.2: Require runoff rate/volume analysis and flow-duration analysis of projects where deemed necessary by City staff and/or required by provisions of the NPDES municipal stormwater permit.

Goal OS-5: Preserve and protect creeks, streams and other watercourses in their natural state.

Program OS-5.1.1: Ensure that new development does not increase peak flows in watercourses. Where this is not feasible, the increase must be mitigated.

Program OS-5.1.2: Encourage the use of alternative drainage systems that rely on increased retention capacity to lessen or eliminate the need for structural modifications to watercourses wherever possible.

Goal OS-6: Improve Water Quality in Watercourses

Policy OS-6.1: Reduced Watercourse Pollution: Minimize pollutants in storm water runoff.

Program OS-6.1.3: Require that new development provide for source control and reduction of pollutants in conformance with the City's Stormwater Management Program and other National Pollutant Discharge Elimination System (NPDES) criteria.

CEQA

The City of Lafayette Green Infrastructure Plan is statutorily exempted under Public Resource Code and California Administrative Code Sec. 152 et seq. because it involves feasibility or planning studies for possible future action that City Council has not approved or adopted.

Any future projects that are to be constructed as recommended by the Plan will either be determined to be exempt from CEQA or an initial study to determine potential environmental impacts will be prepared. The Green Infrastructure Plan has been determined to have no potential to general significant adverse impacts to the environment.

1.4.4 Related Regional and Countywide Plans and Planning Documents

This Plan has been coordinated with the following regional stormwater documents:

- The Contra Costa Watersheds Stormwater Resource Plan (CCW SWRP). The CCW SWRP was funded by State Water Resources Control Board under a Proposition 1 Grant, with matching contributions provided by Contra Costa municipalities individually and collectively through the CCCWP. The CCW SWRP 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. Many of the projects included in this Plan were drawn from the CCW SWRP project opportunity lists.

- The Contra Costa Countywide Reasonable Assurance Analysis (RAA). The RAA for GI is being prepared by Contra Costa municipalities collectively through the CCCWP and is consistent with guidance prepared by the Bay Area Stormwater Management Agencies Association (BASMAA). The RAA for GI uses a water quality model coupled with continuous simulation hydrologic output to estimate baseline loadings of pollutants and the reductions that might be achieved through GI implementation in 2020, 2030, and 2040 under various scenarios. Preliminary RAA modeling results were considered in the development of this Plan.

1.4.5 Related Local Planning Documents

Element Addresses MRP Provision C.3.j.i.(2)(h)

Green infrastructure can be integrated into a wide diversity of public and private projects. Public projects can incorporate green infrastructure in streets, parks, schools, and other civic properties. In order to ensure that green infrastructure is considered and supported in the range of planning and design processes for these projects, the City of Lafayette will review and/or update the following documents to appropriately incorporate green infrastructure requirements.

Table 5: City Documents and Plans to Align with the Green Infrastructure Plan

Document	Summary of Updates	Completion or Updated Date	Responsible Department
General Plan	The Plan was adopted in 2002, which provides a broad blueprint for the future of Lafayette with goals, policies and actions	Efforts to update the General Plan, including references to GI planning and implementation efforts, will begin in 2020 for adoption in 2025.	Planning & Building Department is leading the efforts with assistance from other City Divisions
Downtown Specific Plan	The Plan was adopted in 2012	The DSP will be evaluated following the adoption of the General Plan Update to determine whether updates are necessary, including with respect to Green Infrastructure.	Planning & Building Department is leading the efforts with assistance from other City Divisions
Downtown Street Improvement Master Plan	Adopted in 1988	Currently there are no plans to update the plan, which guides aesthetic improvements to the downtown streetscape.	Planning & Building Department
Downtown Design Guidelines	Adopted in 2014	The DDGs will be evaluated following the adoption of the General Plan Update to determine whether updates are necessary, including with respect to Green Infrastructure.	Planning & Building Department
Residential Design Review Guidelines	Adopted in 1990	The RDRGs will be evaluated following the adoption of the General Plan Update to determine whether updates are necessary, including with respect to Green Infrastructure.	Planning & Building Department
Lafayette Community Park Master Plan	The Plan was adopted in 1988	No updates are planned at this time	Parks, Trails and Recreation Department
Open Space Plan	The Plan was adopted in 2010	No updates are planned at this time	Parks, Trails and Recreation Department
Parks and Recreation Facilities Master	The Plan was adopted in 2009	No updates are planned at this time	Parks, Trails and Recreation Department

Plan			
Downtown Creeks Preservation, Restoration and Development Plan	The plan was adopted in 2017 and contains provisions for the inclusion of GI as part of the restoration and development creek corridors	No updates are planned at this time	Public Works and Engineering Department
Storm Drainage Master Plan	The plan was adopted in 1998	No updates are planned at this time	Public Works and Engineering Department

The update to the City's General Plan, adopted in 2002, will begin in 2020. As part of this update the City of Lafayette will endeavor to set limits on impervious coverage without stormwater mitigation measures on residential and commercial lots within Lafayette.

The City of Lafayette's Municipal Code currently requires all new development to implement Low Impact Development practices that are outlined in the Contra Costa Clean Water Program C3 Guidebook.

1.4.6 Outreach and Education

Element Addresses MRP Provision C.3.j.i.(4)

The City of Lafayette Downtown Creeks Plan development process engaged a wide variety of stakeholders, including both government staff and community members who will live, work, and play near future green infrastructure projects. Much of the information garnered from that process is relevant to this Green Infrastructure Plan and is incorporated into the guidance of this Plan or will be incorporated into future project design and implementation. Outreach efforts conducted by the City as part of the development of the Green Infrastructure Plan include:

- *The City has developed a strategy for engagement and education of municipal staff on the purposes and goals of green infrastructure, the required elements of the Plan, and the steps needed to develop and implement the Plan, including staffing CCCWP committees and participating in clean water and LID training.*
- *The City of Lafayette has previously and will continue to send staff members to seminars sponsored by the Contra Costa Clean Water Program that offer training on planning, finance, design, and maintenance green infrastructure.*
- *The City of Lafayette will participate in a countywide interagency process, convened by the CCCWP, to facilitate excellence and consistency in the design and construction of Green Infrastructure features and facilities. The City will:*

- *Share with other Contra Costa municipalities, through the CCCWP, conceptual, preliminary, and final plans and specifications developed for Green Infrastructure projects.*
- *Identify significant Green Infrastructure projects and issues encountered during design and construction of those projects and bring those projects and issues forth in online forums and in-person interagency workshops and meetings.*
- *Participate in evaluation and recommendation of design details and specifications for Green Infrastructure, where doing so furthers the purposes of countywide consistency and cost-efficiency, and quality of the built facilities.*
- *Participate, as a reviewer, in the drafting and updating of a Green Infrastructure Design Guide, the purpose of which will be to assist capital improvement projects staff in Contra costa Municipalities throughout the steps of project identification, evaluation, design, and construction.*

2 Green Infrastructure Targets

Provisions C.11 and C.12 in the MRP require Contra Costa Permittees (Contra Costa County and its 19 cities and towns) to reduce estimated PCBs loading by 23 grams/year and estimated mercury loading by 9 grams/year using green infrastructure by June 30, 2020. Regionally, Permittees must also project the load reductions achieved via green infrastructure by 2020, 2030, and 2040, showing that collectively, reductions will amount to 3 kg/year PCBs and 10 kg/year mercury by 2040.

This planning process developed and assessed projections for the square footage of impervious surface to be retrofitted and treated with green infrastructure from private projects within the City of Lafayette jurisdiction by 2020, 2030, and 2040. It also incorporates targets for the square footage of impervious surface to be retrofitted and treated with green infrastructure through potential public projects within the City of Lafayette jurisdiction by 2020, 2030, and 2040.

2.1 Private Development Projections

Element Addresses MRP Provision C.3.j.i.(2)(c)

The City of Lafayette tracks GI implemented as part of private development projects subject to MRP provision C.3.d through the CCCWP's GI tracking tool (see Section 5 of this Plan). The combined impervious area treated by GI implemented for private development from 2003 through 2018 represents a portion of the 2020 total area included in Table 6. The remainder of the 2020 total area provided in Table 6 represents projected private development project area through 2020.

To forecast private development for 2019/2020, 2021 through 2030, and 2031 through 2040, the City of Lafayette participated in a process coordinated through the CCCWP. This process utilized the outputs of UrbanSim, a model developed by the Urban Analytics Lab at the University of California under contract to the Bay Area Metropolitan Transportation Commission (MTC). UrbanSim is a modeling system developed to support the need for analyzing 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 specifically to support the development of Plan Bay Area, the Bay Area's

Sustainable Communities planning effort.

MTC forecast growth in households and jobs and uses the UrbanSim model to identify development and redevelopment sites to satisfy future demand. Model inputs include parcel-specific zoning and real estate data; model outputs show increases in households or jobs attributable to specific parcels. The methods and results of the Bay Area UrbanSim model have been approved by both MTC and 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 development or redevelopment in each Contra Costa jurisdiction at each time increment specified in the MRP (2020, 2030, and 2040)[2]. The resulting maps were reviewed by local staff for consistency with the City of Lafayette's local knowledge and local planning and economic development initiatives, and revisions were suggested. The maps were revised per the City of Lafayette's input, and each revision was documented.

It is assumed that multifamily residential and commercial/industrial developments will incorporate stormwater treatment facilities (typically bioretention) 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, and therefore the entire parcel will be subject to Provision C.3 requirements (that is, will be retrofit with Green Infrastructure), consistent with the "50% rule" requirements of MRP Provision C.3.b.

Existing impervious surface for each affected parcel was estimated using the 2011 National Land Cover Database. Estimates were spot-checked and revised based on local knowledge and available satellite imagery. The amounts of existing impervious surface retrofitted or forecasted to be retrofit with green infrastructure via private development are as shown in Table 3 were developed using these assumptions.

[2] The UrbanSim model effectively translates Bay Area-wide growth assumptions (reflecting new development and redevelopment) into specific projects by acting as a "rational" developer looking to maximize the difference between pre- and post-redevelopment property values based on a series of algorithms relying on resources such as property value estimates produced by online resources such as Zillow or Redfin. Thus the actual parcels projected to be redeveloped are approximate, but the MTC UrbaSim model outputs provided the Contra Costa Permittees with a common, defensible basis for projecting impervious area to be treated with LID due to private new development and redevelopment projects in the future.

Table 6: Estimates of Impervious Surface to be Retrofit via Private Development

Year	Treated Area – Private Development (Impervious Acres)	Comments
2020	13.8	Includes AGOL[3] C.3.d. private Regulated Projects from 2003-2019 ad UrbanSim Projections from 2019-2020.
2021-2030	5.0	Includes UrbanSim projections as corrected by Permittees in Fall 2018.
2031-2040	5.2	

2.2 Targets for Public Projects

Element Addresses MRP Provision C.3.j.i.(2)(c)

Impervious surface area retrofitted or forecasted to be retrofit via public projects by 2020, 2030, and 2040, was categorized into two categories for this Plan:

1. Estimated tributary impervious surface for Green Infrastructure Projects identified in this Plan.

2. Additional tributary impervious surface associated with projects yet to be identified. These projects are associated with general geographic areas (neighborhoods or blocks) but specific facility locations have not yet been identified. These projects are identified as projects with potential to be constructed by 2040 or beyond.

The resulting impervious surface area includes the tributary area associated with two public GI retrofit project that will be constructed by 2020 (see Section 5), along with 10 additional identified projects that are intended to be constructed by 2040, provided that funds are secured (please see Section 7 for the City's funding strategy). These public retrofit areas are summarized in Table 7.

Table 7: Estimates of Impervious Surface to be Retrofit via Public Projects

Year	Treated Area – Public CIP and GI Retrofit Projects included in this Plan (Impervious Acres)	Total Area Treated[1] (Impervious Acres)
2003-2020	0.39	14.19
2021-2030	2.96	7.96
2031-2040	3.28	8.48

[1] Includes Private Development Projects and Public CIP and GI Retrofit Projects.

2.3 Projected Load Reductions

[3] Refers to City's GI tracking system, please see section 5.

MRP Provisions C.11 and C.12 require the Contra Costa Permittees within the San Francisco Regional Water Quality Control Board region (Region 2) to collectively reduce estimated PCBs loading by 23 g/year and estimated mercury loading by 9 g/year using GI by June 30, 2020. Regionally, MRP Permittees must project the load reductions achieved via GI by 2020, 2030, and 2040 as part of the TMDL Implementation Plans due in 2020, showing that collectively, reductions will amount to 3 kg/year of PCBs and 10 kg/year of total mercury by 2040. This GI Plan includes a Draft Memorandum describing the Reasonable Assurance Analysis Countywide Attainment Strategy as Appendix E, which provides preliminary projection for load reductions achieved via GI by 2020, 2030, and 2040 at the Countywide level using the preliminary RAA model. The GI projects and project opportunities included in this Plan are accounted for in the Reasonable Assurance Analysis Countywide Attainment Strategy (Appendix E).

As part of the RAA process, the estimates of projected private development (described in Section 2.1) and the general and specific locations of public projects (summarized in Section 2.2 and detailed in Chapter 3) will be incorporated into a final water-quality model and projected pollutant load reductions will be development for 2020, 2030, and 2040. Details and methods, inputs, and model outputs will be included in the TMDL Implementation Plan and RAA Technical Report, which will be submitted to the RWQCB with the 2020 Annual Report.

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 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.

3 Public Project Identification, Prioritization, and Mapping

Element Addresses MRP Provision C.3.j.i.(2)

3.1 Tools for Public Project Identification and Prioritization

Publicly owned parcels and ROWs that could potentially be retrofit to include multi-benefit stormwater capture facilities were identified as part of the Contra Costa Watersheds Stormwater Resource Plan (SWRP) (CCCWP, 2018). These potential project locations were used as the basis for identifying future public retrofit locations within the City of Lafayette. A summary of the project identification and prioritization process conducted for the SWRP is described herein; additional details may be found in the SWRP (CCCWP, 2018).

3.1.1 SWRP Project Opportunity Identification

The SWRP identified public retrofit opportunities through a request for planned projects, sent to the Contra Costa County Permittees, along with a geographic information system (GIS)-based project opportunity analysis, conducted using data received from the Permittees through a data request. Information related to the identification of potential projects was received from 25 jurisdictions, government agencies, non-governmental organizations, and watershed groups that were contacted with potential project requests.

The desktop GIS analysis entailed screening for publicly-owned parcels and ROWs without physical feasibility constraints that would preclude implementation of a stormwater capture project. The project opportunity analysis consisted of the following steps:

1. Identify publicly-owned parcels through parcel ownership and/or tax-exempt status.

2. Screen identified publicly-owned parcels to identify those at least 0.1 acres in size; and with average slopes less than 10%.

3. Identify ROW using the county-wide roadway data layer. Roadways considered were state and county highways and connecting roads, as well as local, neighborhood, and rural roads.

4. Identify land uses associated with identified parcels and surrounding identified ROWs with a combination of ABAG land use categories and use codes provided by the Contra Costa County Assessor.

5. Screen all identified locations (i.e., parcels and ROWs) for physical feasibility. The following screening relating to physical constraints was applied to identified sites (to the extent that the necessary data had been provided or obtained):

    a. Regional facilities were not considered for parcels that were greater than 500 feet from a storm drain, due to limited feasibility in treating runoff from a larger drainage area;

    b. Parcel-based facilities were not considered for sites that were more than 50% undeveloped land uses, due to the limited potential for pollutant of concern load reduction;

    c. Parcels with significant drainage area outside of urbanized areas were removed, as these sites would not provide opportunity for significant pollutant of concern load reduction;

    d. Sites more than 50% within environmentally sensitive areas (ESAs) (designated wetlands, biologically sensitive areas) were removed so as not to disturb these habitats;

    e. Sites with more than 50% overlying landslide hazard zones were removed to avoid the potential for increasing landslide risk.

The remaining identified public parcels and ROWs were considered preliminarily feasible for installation of stormwater capture facilities and were analyzed using a metrics-based multi benefit analysis. The results of the metrics-based multi-benefit analysis provided some information helpful for consideration of GI priorities within the City of Lafayette. A summary of the project opportunity classification and scoring conducted for the SWRP is provided in the following section.

3.1.2 SWRP Project Opportunity Metrics-Based Multi-Benefit Analysis

To conduct the SWRP project opportunity metrics-based multi-benefit analysis required as part of the SWRP, additional data was analyzed and classifications were made regarding the project opportunities. First, all project opportunities (i.e., including those identified through the GIS opportunity analysis and the stakeholder potential projects process) were classified using the following information:

1. Stormwater capture project type;

2. Infiltration feasibility;

3. Facility type; and

4. Drainage area information.

Details regarding each of these classifications are provided in the following sections.

Stormwater Capture Project Type

All physically feasible project opportunities that did not include a previously defined non-GI stormwater capture facility (e.g., stream restoration projects provided by Stakeholders as part of the SWRP project request) were assumed to be feasible for GI implementation as part of the SWRP project opportunity classification. The projects identified through the GIS opportunity analysis and stakeholder stormwater capture projects process were categorized as parcel-based, regional, or ROW/green street projects, as summarized in Table 8.

Table 8: Green Infrastructure Project Types and Categorization Criteria

GI Project Type	Definition	Description
ROW/green street projects	Treating the road and portions of adjacent parcels	• All street-based projects.
Regional Projects	Treating a large area draining to the parcel	• The parcel contains at least 0.5 acre of undeveloped or pervious area (as identified through the land use class); and • The drainage area is larger than the parcel itself and the location is sufficiently close to a storm drain (i.e., within 500 feet, where storm drain pipe data is available).
Parcel-based projects	Treating the drainage area only on the identified parcel	• All other parcel locations.

Infiltration Feasibility

All SWRP project opportunity locations were categorized as feasible, infeasible, or partially feasible for infiltration, based on underlying hydrologic soil group, depth to groundwater (as data was available), nearby soil or groundwater contamination, and presence of underlying geotechnical hazards, as described in Table 9.

For the purpose of SWRP project opportunity multi-benefit scoring (i.e., the metrics-based analysis conducted), locations feasible for infiltration were assumed to retain the full water quality capture volume. At locations that are partially feasible for infiltration, it was assumed that infiltration would be promoted in the facility, but the full water quality capture volume would not be infiltrated due to poor drainage. These areas were assumed

to infiltrate to the extent possible using a raised underdrain. Locations that are hazardous for infiltration were assumed to implement non- infiltrating GI projects (i.e., lined bioretention) and were assumed to retain no volume.

Table 9: SWRP Project Opportunity Infiltration Feasibility Categorization Criteria

Infiltration Feasibility Category	Description
Hazardous/infeasible for infiltration	Projects that are located: More than 50% overlying liquefaction hazards; or Within 100 feet of a site with soil or groundwater contamination (e.g., based on proximity to active GeoTracker[4] or EnviroStor[5] sites).
Infiltration safe but only partially feasible	None of the above constraints exist, but the soil underlying the facility is relatively poorly draining (identified as hydrologic soil group [HSG] C or D).
Infiltration feasible	The site has none of the infiltration hazards present and the soil underlying the facility is relatively well draining (identified as HSG A or B).

SWRP Project Opportunity Facility Type

Each SWRP project opportunity location was assigned a facility type. For potential projects identified by the Permittees and/or stakeholders, a facility type was assigned based on the facility description or classification provided by the agency or project proponent. For project opportunities identified through the GIS analysis, the facility type was assumed to be GI, with infiltration capability defined based on the infiltration feasibility screening. The resulting SWRP multi-benefit stormwater capture project types that were considered for the GI Plan included:

- Lined Bioretention
- Unlined Bioretention
- Unlined Swale

SWRP Project Opportunity Drainage Area

For each identified project opportunity, the drainage area was identified and characterized as follows:

[4] GeoTracker is a California State Water Resources Control Board website which tracks sites with the potential to impact water quality in California, including contaminated sites (https://geotracker.waterboards.ca.gov/).

[5] EnviroStor is the Department of Toxic Substances Control's data management system for tracking cleanup, permitting, enforcement and investigation efforts at hazardous waste facilities and sites with known contamination or sites where there may be reasons to investigate further (https://www.envirostor.dtsc.ca.gov/public/).

1. All project opportunities with identified drainage areas were characterized as provided by project proponents.

2. For ROW project opportunities for which the drainage area had not been characterized, the roadway and an assumed tributary width (e.g., 50 feet per side) that extends into the adjacent parcels was considered the drainage area.

3. For parcel-based project opportunities for which the drainage area had not been characterized, the entire parcel was assumed to make up the drainage area.

4. For regional project opportunities for which the drainage area had not been characterized, the drainage area characterization (i.e., slope and land use) was approximated.

SWRP Project Opportunity Metrics-Based Multi-Benefit Analysis Scoring

Using the information compiled in the identified project opportunity database, each SWRP identified project received a score using a metrics-based multi benefit analysis. A description of each scored project component is provided below:

- Parcel area (for regional and parcel-based GI projects only) - This scoring component awarded more points for larger parcels.

- Slope – This scoring component awarded more points to flatter slopes and is related to ease of construction and implementation.

- Infiltration feasibility – More points were awarded to projects that overlie infiltrating soils.

- PCBs/mercury yield classification in project drainage area – This scoring component is related to the influent TMDL pollutant loads; higher potential load reduction achieved higher points.

- Removes pollutant loads from stormwater – Points were awarded to facilities designed as GI or treatment control facilities for this scoring component.

- Augments water supply – Increasing points were awarded based on potential water supply provided for this scoring component.

- Provides flood control benefits – Flood control facilities received points specific to providing flood control benefits for this scoring component.

- Re-establishes natural water drainage systems or develops, restores, or enhances habitat and open space – Hydromodification control, stream restoration, and habitat restoration projects received points specific to providing these environmental benefits, for this scoring component.

- Provides community enhancement and engagement – Projects that specifically provide public use areas or public education components with potential opportunities for community engagement and involvement were given points specific to providing community benefits, for this scoring component.

All classified and scored SWRP projects were compiled into a master database as part of the SWRP and organized by Permittee. The SWRP identified projects located within the City of Lafayette jurisdictional boundary were provided to the City of Lafayette for review. The project classification information and SWRP score were provided to the City of Lafayette for informational purposes.

3.2 Additional Criteria Used by Municipal Staff

3.2.1 SWRP Project Opportunity Indentification

The City of Lafayette provided preliminary input for all potential public retrofit opportunities within the City's jurisdictional boundary based on the project information, classification, and preliminary multi-benefit scores. The preliminary input by the City included a project opportunity feasibility assessment; factors considered for feasibility included space constraints, property ownership, adjacent land use, presence of existing stormwater capture facilities, access to irrigation facilities to ensure long term viability of plantings, and potential to be included in other plans.

3.3 Project Lists

The two projects identified for implementation by 2030 and 2040, should feasibility be favorable and funding be secured, are summarized in Table 10 below. The additional areas considered preliminarily feasible for retrofit by 2040 or beyond, should opportunities arise for GI implementation, are summarized in Table 4 in Section 2 of this Plan.

Table 10: Identified Projects for Implementation by 2030 and 2040

Completion Date	Project Name	Project Type	Project Description	Preliminary Impervious Acreage
2030	West Reach Catalyst Project	ROW/ Green Street	GI installed in roadway median to capture runoff	0.32
2030	Community Center Parking lot Bio-retention	Parcel-Based	GI Facility to treat parking lot runoff	0.8
2030	Community Center Park Parking lot Bio-retention	Parcel-Based	GI Facility to treat parking lot runoff	0.6
2030	Pleasant Hill Road Bio Retention (Deer Hill Rd to Springhill Rd to)	ROW/ Green Street	GI Facility on West Side	0.36
2030	Pleasant Hill Road Bio Retention (Olympic to Old Tunnel)	ROW/ Green Street	Convert medians to GI to capture runoff	2.3
2030	Gazebo Parking lot Bio-retention	Parcel-Based	GI Facility to treat parking lot runoff	0.3
2040	South Reach Moraga Road Frontage Improvements (Parking Lot)	Parcel-Based	GI Facility to treat parking lot runoff	0.4
2040	Second Street Bio-Retention Bulb Outs	ROW/ Green Street	GI Facility to street runoff	0.18
2040	Bio-retention in Buckeye Fields Parking Lot	Parcel-Based	GI Facility to treat parking lot runoff	0.60
2040	Mount Diablo Boulevard (Risa Road to El Nido Ranch Road)	ROW/ Green Street	GI Facility to street runoff	2.5

4 Early Implementation Projects

Element Addresses MRP Provision C.3.j.i.(2)(j)

4.1 Review of Capital Improvement Projects

MRP Provision C.3.j.ii. requires that City of Lafayette must prepare and maintain a list of public and private green infrastructure projects planned for implementation during the 2015- 2020 permit term, and public projects that have potential for green infrastructure measures. The City of Lafayette submitted an initial list with the FY 15-16 Annual Report to the RWQCB and updated the list in the FY 16-17 and FY 17-18 Annual Reports.

The creation and maintenance of this list is supported by guidance developed by BASMAA: "Guidance for Identifying Green Infrastructure Potential in Municipal Capital Improvement Projects" (May 6, 2016). The BASMAA Guidance is attached to this document as Appendix B.

Below is the CIP's process in reviewing planned public projects.

1. **Initial Screening**- At the beginning of the capital improvement selection process, the Engineering Services Manager and the Director of Public Works and Engineering screen out certain types of projects from further consideration. Within the City's Capital Improvement and Maintenance program projects such as storm drain repairs, building/facility maintenance, road striping, signal projects are deemed to not have GI potential.
2. We use the following categories when screening out projects:
    a. Projects with no green infrastructure potential due to limited right-of-way, safety issues, lack of storm drain infrastructure and difficulty in maintaining.
    b. Projects too early to assess due to limited information. A subsequent assessment can be performed at a latter term to determine its applicability.
    c. Projects too late to change due design stage, funding allocations or currently in construction.
    d. Projects with funding limitations.
3. **Green Infrastructure Potentials Assessment**—The remaining projects are categorized as follows:
    a. Project meets the threshold under the Provision C.3 requirements to install green infrastructure.
    b. Project already received funding to install green infrastructure.
    c. Project may have GI potential depending on additional assessment of feasibility, incremental costs and funding availability.

d. Project is deemed infeasible to install GI after additional assessment is performed.

In evaluating the potential to install GI as part of a public infrastructure project the Engineering Services Manager and Director of Public Works and Engineering considers the following steps:

- For street and landscape projects:
  - Evaluate potential opportunities to substitute pervious pavement for impervious pavement
  - Identify and locate drainage structures and pathways
- For projects that include alterations to building drainage:
  - Identify the locations of roof leaders and downspouts and where they discharge or are connected to storm drains.
  - Identify landscaped and/or paved areas adjacent to or down gradient from roofs o impervious surfaces.
- For projects that involve parking lots, streetscape and/or intersection improvements (other than signals):
  - Identify and locate drainage structures.
  - Identify and locate drainage pathways.
  - Identify landscaped areas and paved areas adjacent to or down gradient from impervious surfaces.
  - Identify and consider any barriers and conflicts that influence the project's feasibilities from the implementation and cost, such as:
    - Confirmed or potential conflicts with underground utilities
    - Known or unknown issues with property ownership or need for acquisition or easements.
    - Availability of water supply for irrigation, or lack thereof.
    - Extent to which GI would be an 'add on' vs. intergraded with the rest of the project.

4. **Preliminary Sizing and Drainage Analysis**—After identifying projects with GI potential, CIP staff use the sizing factors (facility area/tributary area) established in the BASMAA's Guidance for Sizing Green Infrastructure Facilities in Street Projects (BASMAA, 2018). The preliminary sizing factors are used to determine the potential GI facility location and whether it can be constructed within the existing right of way.
5. **Project Budget and Schedule**—In evaluating the project's feasibility, CIP staff considers the funding sources and availability for both construction and long-term maintenance costs. If schedule and funding low, staff look for opportunities to integrate GI with other planning projects (such as pedestrian or bicycle improvement projects, etc).

6. **Capital Budget Process**—When a project with GI potential is deemed to be viable, it will be presented to City management team, Capital Projects Assessment Commission, and the City Council for consideration and approval as part of the City's Budget process.

4.2 List of Projects Identified

CIP Projects with Green Infrastructure potential that were identified during 2015-2019 are listed in Table 11, along with their status.

Table 11: Capital Improvement Projects with GI Potential (identified 2015-2019)

Annual Report Year	Project Name	Project Description	Status	GI Measures Included
2018-2019	Golden Gate Way Rain Garden	The project will construct a rain garden with creek viewing areas at the intersection of Golden Gate Way and First Street	Preliminary design phase with construction in spring of 2020	Two detention basins will be constructed to treat runoff from the adjacent roadway and sidewalks

4.3 Workplan for Completion

The FY19/20 Capital Budget was adopted by the City Council on June 10, 2019 and provides for funding for the construction of the Golden Gate Way Rain Garden Project. Preliminary design on the project has begun with completion of plans and specifications anticipated in early spring 2020 and construction in the spring/summer of 2020.

5 Tracking and Mapping Public and Private Projects Over Time

Element Addresses MRP Provision C.3.j.iv.

5.1 Tools and Process

The CCCWP has developed a county-wide GIS platform for maintaining, analyzing, displaying, and reporting relevant 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.

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 CIPs. The AGOL system can be used to develop maps that can be displayed on public-facing websites or distributed to the public. These maps can be developed to contain information regarding the GI project data input 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 reduction 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. That functionality is planned to be active by the end of the current permit term.

The City of Lafayette actively engages with the AGOL tool and maintains up-to-date City project data.

5.2 Results - Tracking

A summary of all City private regulated projects and public GI projects included in the AGOL tracking system (constructed 2009 through present) are included in Tables 12 and 13.

Table 12: Private C.3.b Projects Reported in AGOL Tracking System

Project Name/Number	Location Description	Total Project Area [1] (Acres)	Construction Final Date
Whole Foods Market Off Site Parking Lot	3505 Deer Hill Road	0.73	7/7/2011
Murdin Residence	744 Grondine Road	1.25	12/28/2018
Fiesta Lane	30, 60 and 70 Lafayette Circle	0.87	4/18/2014
Woodbury	3758 Mount Diablo Blvd	2.46	6/30/2016
Merrill Gardens	3444-3454 Mount Diablo Blvd	1.21	10/22/2014
Ecovive	3800 Mount Diablo Blvd	0.64	6/30/2016
120 Promintory Lane	120 Promintory Lane	13.03	3/30/2011
Eden Housing/ Belle Terre Apt	3428 Mount Diablo Boulevard	1.23	12/23/2013
Lafayette Marquis Townhomes	1-23 Shreve Lane	1.1	10/10/2012
Contra Costa Jewish Day School	945 and 955 Risa Road	1.22	8/1/2009
Chase Bank	3603 Mount Diablo Boulevard	0.37	4/20/2019
Hoedel Subdivision	1018 Hoedel Court	2.82	10/22/2018
Town Center III	1000 Dewing Avenue	1.46	12/29/2019
Safeway	3546 Mount Diablo Boulevard	0.32	8/15/2018

[1] Calculated by the AGOL tool geospatially based on project drainage area; total area includes both pervious/ impervious acreage.

Table 13: Public C.3.b Projects Reported in AGOL Tracking System

Project Name/Number	Location Description	Total Project Area [1] (Acres)	Construction Final Date
East End Parking Lot	Mount Diablo at Carol Lane	0.11	8/1/2019

[1] Calculated by the AGOL tool geospatially based on project drainage area; total area includes both pervious/ impervious acreage.

6 Design Guidelines and Specifications

6.1 Guidelines for Streetscape and Project Design

Element Addresses MRP Provision C.3.j.i.(2)(e)

The City's current Complete Streets Policy was in completed in 2012 and incorporated into the General Plan. The City of Lafayette utilizes the Downtown Street Improvement Master Plan and the Downtown Specific Plan for streetscape design in the downtown core area. Efforts to update the Downtown Specific Plan will begin by 2022. In the interim, when determining design elements to be included in streetscape improvements and complete streets projects, project managers and designers will be directed by the City to consult the National Association of City Transportation Officials (NACTO) *Urban Street Stormwater Guide* (NACTO, , the San Mateo County *Sustainable Green Streets and Parking Lots Design Guidebook*, specifically Chapter 5: Key Design and Construction Details, and other streetscape resources available on the CCCWP website. As described above, the City also references the BASMAA *Guidance for Identifying Green Infrastructure Potential in Municipal Capital Improvement Projects* (BASMAA, 2016) during CIP project review for GI potential. These references are provided in Appendix B of this Plan.

6.2 Specifications and Typical Design Details

Element Addresses MRP Provision C.3.j.i.(2)(f)

LID features and facilities will be designed an constructed in accordance with the applicable specifications and criteria in the Contra Costa Clean Water Program's Stormwater C.3 Guidebook. Additional details and specifications, as may be needed for design of street retrofit projects, may be adapted from the San Francisco Public Utilities Commission Stormwater Requirements and Design Guidelines Appendix B (Green Infrastructure Details), the Central Coast Low Impact Development Institute Bioretention Standard Details and Specifications, or other resources compiled by the CCCWP and available through their website.

6.3 Sizing Requirements

Element Addresses MRP Provision C.3.j.i.(2)(g)

For private development and public projects that are regulated projects subject to MRP provision C.3.d, facilities will be sized to comply with the Volume Hydraulic Design Basis included in MRP provision C.3.d.i.(1). Sizing guidance to meet MRP provision C.3.d.i.(1)

requirements is available in the CCCWP Stormwater C.3 Guidebook (CCCWP, 2017).

For public GI retrofit projects, regional and parcel-based projects will be sized to meet the Volume Hydraulic Design Basis included in MRP provision C.3.d.i.(1) to the extent possible. For regional projects, sizing will be conducted on a project-specific basis and may include consideration of treatment facilities, other pollutant priorities (i.e., trash), or other factors present in the watershed.

For public GI retrofit projects located in the ROW, the City will follow the BASMAA- released Guidance for Sizing Green Infrastructure Facilities in Street Projects (BASMAA, 2018) for voluntary street retrofit projects, pending any subsequent guidance released by the RWQCB.

6.4 Design Guidelines and Specifications – Countywide Process

The City of Lafayette will participate in a countywide interagency process, convened by the CCCWP, to facilitate excellence and consistency in the design and construction of GI features and facilities throughout the county.

7 Funding Options

7.1 Funding Strategy Identification

Element addresses MRP Provision C.3.j.i.(2)

The portfolio of GI funding and implementation strategies described in this section are deemed both viable and potentially effective following a comprehensive review of possible strategies. To identify these strategies, the City first defined a set of considerations that reflected the City's unique physical, political, and financial context. These considerations (listed below) were used to inform the review of a comprehensive set of funding and implementation strategies:

- Support near-term implementation of identified GI projects within the City limits.
- Support regional strategies that may be necessary to meet county-wide PCBs and mercury load reduction performance criteria.
- Integrate GI into transportation, stream restoration, and other projects.
- Leverage the high value of developed land to fund Regional Projects that generate net environmental benefits and economic benefits.
- Avoid debt financing and forms of funding that require voter approval.
- Maximize water quality benefits per dollar invested.
- Minimize overall costs including capital, long-term operation and maintenance, inspection, and program administration costs.
- Limit administrative burden for conducting inspections and collecting special fees from property owners over time.
- Ensure adequate funding is available for the City to cover all ongoing maintenance costs.
- Limit the risks to the City for any transfer of liabilities from developers.
- Enable public-private partnerships, allowing them to arise opportunistically.

The GI funding and implementation strategies deemed viable were further evaluated by multi-departmental staff representing perspectives from the Public Works Department,

including the Clean Water Program, CIP, and Engineering Services Divisions, along with the Community and Economic Development Department. This group validated the potential viability of each strategy and assigned priorities for their implementation.

Priorities refer to the following:

- High priority strategies are strategies considered to have the greatest potential to increase the pace and effectiveness of GI implementation; and are either already being implemented or the City is actively developing the means to implement these strategies.
- Medium priority strategies are expected to be effective at supporting GI implementation, and the City anticipates developing the capabilities to use these strategies as needs arise.
- Low priority strategies may support GI implementation in certain situations, and the City will consider developing these strategies if high and medium priority strategies are not resulting in sufficient implementation of GI.

Table 14 provides a summary of the City's selected portfolio of funding and implementation strategies, showing each strategy organized by the underlying driver that makes each strategy effective. Labels identify if each strategy (1) engages private developers to fund or deliver projects, (2) engages public partners to integrate GI into projects and use public funds for implementation, or (3) uses market-based incentives with alternative project delivery approaches to engage private partners to reduce costs, share project implementation risks, and potentially access private financing.

Table 14: Funding Strategies Considered by the City of Lafayette and Resulting Priority

Driver	Funding Strategy	City Priority
Development-Driven	In-Lieu Fee	High
	Regional Compliance	High
	Alternative Compliance	Medium
	Developer Agreements to Use ROW	Low
Public Partnerships & Funding	Multi-Benefit Project Integration	High
	Grants	High
Market-Based Alternative Project Delivery	Performance Contracts	Medium
	Public-Private Partnerships	Low
Strategies Deemed Not Viable	New Tax or Fee	Not viable
	Bond Financing	Not viable
	Stormwater Fee Rebates	Not viable
	Integration of GI Maintenance Costs into Pavement or other Routine Maintenance	Not viable
	General Fund	Not viable

The strategies included in Lafayette's funding and implementation strategy portfolio are described below. Each strategy includes a basic description of how the strategy functions, anticipated benefits and limitations, and the priority for each strategy. Strategies are organized by underlying driver, including: Development-Driven, Public Partnerships and Funding, and Market-Based Alternative Project Delivery. Within each category, strategies are presented from high to low priority with one exception: alternative compliance. This is presented before the higher priority regional compliance strategy because the alternative compliance concepts are necessary to understand as a foundation for the Regional Compliance strategy.

7.2 Local Funding Strategies

The City of Lafayette does not currently have an identified funding source to implement GI. The city will pursue grant funding when available.

8 Adaptive Management

8.1 Process for Plan Updates

The City of Lafayette will amend or update this GI Plan as required by the RWQCB. Plan revisions may include updates of public and private GI projects implemented and public GI projects identified for future implementation. Components of this GI Plan will also be included in other future City planning documents, as described in section 1.4 of this Plan.

8.2 Pursuing Future Funding Sources

The City of Lafayette is a small jurisdiction and low tax city, we have extremely limited resources to dedicate to GI and pursuing future funding sources of GI. At this point in time, without a dedicated revenue stream or other revenue source from the State or BARWQCB, funding sources are limited.

9 References

BASMAA, 2016. Guidance for Identifying Green Infrastructure Potential in Municipal Capital Improvement Program Projects. Prepared by BASMAA Development Committee. May 6.

BASMAA, 2017. BASMAA Urban Greening Typical GI Details. April 14.

BASMAA, 2018. *Guidance for Sizing Green Infrastructure Facilities in Street Projects*. Prepared by Dan Cloak Environmental Consulting and EOA, Inc.. December.

CASQA and Low Impact Development Institute (LIDI), 2017. Standard LID Design Plans & Specifications. CASQA-LIDI Bioretention Details. Accessed at https://www.casqa.org/resources/california-lid-portal/standard-lid-design-plans-specifications. March 2019.

Contra Costa Clean Water Program (CCCWP), 2017. Stormwater C.3 Guidebook. May.

CCCWP, 2018. Contra Costa Watersheds Stormwater Resource Plan. Public Review Draft. August.

SFPUC, 2016. San Francisco Stormwater Management Requirements and Design Guidelines, Appendix B: Green Infrastructure Typical Details and Specifications. May.

Appendix A: City of Lafayette Approved GI Framework and City Stormwater Ordinance

Appendix A Contents:

City of Lafayette

Green Infrastructure Plan Framework

To Meet Compliance with California Regional Water Quality Control Board San Francisco Bay Region Municipal Regional Stormwater NPDES Permit Order R2-2015-0049 Provision C.3.j.i.(1)

Green Infrastructure Framework
Approved by City Manager Steven Falk **May 21, 2017**

Approved Updated Green Infrastructure Framework to Include Timeframes to Complete Tasks to Develop and Adopt Green Infrastructure Plan

Approved by

for SBF

Steven Falk

3.2.18

Date

ACRONYMS

ABAG	Association of Bay Area Governments
BASMAA	Bay Area Stormwater Management Agencies Association
CCCWP	Contra Costa Clean Water Program
CCSWRP	Contra Costa Watersheds Stormwater Resource Plan
GIS	Geographic Information System
IRWMP	Integrated Regional Water Management Plan
MRP	Municipal Regional Stormwater Permit
MTC	Metropolitan Transportation Commission
NPDES	National Pollutant Discharge Elimination System
PCBs	Polychlorinated Biphenyls
RAA	Reasonable Assurance Analysis
TMDL	Total Maximum Daily Load

TABLE OF CONTENTS

0 · Summary

To implement the Clean Water Act, and with direction from the California Regional Water Quality Control Board for the San Francisco Bay Region, Bay Area municipalities are required to incorporate green infrastructure into the development and renewal of the urban landscape.

Green infrastructure refers to the construction and retrofit of storm drainage 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 our creeks and Bay. Green infrastructure facilities include, but are not limited to, pervious pavement, infiltration basins, bioretention facilities or "raingardens", green roofs, and rainwater harvesting systems. As feasible and economically viable, green infrastructure can be incorporated into construction on new and previously developed parcels, as well as new and rebuilt streets, roads, and other infrastructure within the public right-of-way.

This Framework outlines the tasks, schedule, and budget necessary for the City of Lafayette (City) to develop a Green Infrastructure Plan (Plan). The Plan for the City is required by the San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (MRP)[1], and must be submitted to the California Regional Water Quality Control Board for the San Francisco Bay Region by September 2019.

The Framework describes required elements of the Plan, including the following:

- Staff coordination and public outreach
- Mapped and prioritized areas for potential and planned projects
- Targets for the amount of impervious surface to be retrofit over time
- A system for tracking and mapping completed projects
- Guidelines for project design, and standard designs and specifications
- Requirements for sizing green infrastructure projects
- Integration with existing planning documents
- Methods and results for estimating the load reductions to be achieved
- Evaluation of funding options

---

[1] Order R2-2015-0049.

Several of these elements will be developed collaboratively with other Contra Costa municipalities through the Contra Costa Clean Water Program (CCCWP) or regionally through the Bay Area Stormwater Management Agencies Association (BASMAA).

The City has recently spent over $150,000 preparing a draft Downtown Creeks Preservation, Restoration and Development Plan. The City's Creek Committee provided valuable expertise and assistance in development of the Downtown Plan. Creeks policies from the City's Downtown Specific Plan and Downtown Design Guidelines were used as guidance. The Plan's purpose is to further the goal of protecting and enhancing Lafayette's downtown creeks both on public and private properties. Although that plan pertains specifically to Lafayette's downtown; evaluation, guidance and implementation elements will be applied, where appropriate, to other areas of the City for green infrastructure planning and development.

1 · Purpose

1.1 Regulatory Requirements

The City is one of 76 Bay Area municipalities covered by the MRP issued by the California Regional Water Quality Control Board for the San Francisco Bay Region (Water Board).

Provision C.3.j.i. in the MRP requires that each Permittee prepare and submit a Green Infrastructure Plan. Required elements of the Plan are specified. The Plan is to be submitted with the Annual Report due September 30, 2019.

The provision further specifies that each Permittee prepare a framework or workplan that describes specific tasks and timeframes for development of the Plan. The City must approve the framework or workplan by June 30, 2017. This document fulfills that requirement.

Provisions C.11 and C.12 in the MRP requires Contra Costa Permittees (Contra Costa County and its 19 cities and towns) to reduce estimated PCB loading by 23 grams/year and estimated mercury loading by 9 grams/year using green infrastructure by June 30, 2020. Regionally, Permittees must also project the load reductions achieved via green infrastructure by 2020, 2030, and 2040, showing that collectively, reductions will amount to 3 kg/year PCBs and 10 kg/year mercury by 2040. The Plan will provide estimates of the reductions in the quantity of these pollutants based on implementation of the elements outlined in the Plan.

1.2 Purpose of the Green Infrastructure Plan

The City's Plan will guide a shift from conventional "collect and convey" storm drain infrastructure to more resilient, sustainable stormwater management that reduces runoff volumes, disperses runoff to vegetated areas, harvests and uses runoff where feasible, promotes infiltration and evapotranspiration, and uses natural processes to detain and treat runoff. Green infrastructure features and facilities include, but are not limited to, pervious pavement, infiltration basins, and bioretention facilities ("rain gardens"), green roofs, and rainwater harvesting systems.

As required by Provisions C.3.a. through C.3.i. in the MRP, these "Low Impact Development" practices are currently implemented on new, redevelopment, and addition development projects in the City. Specific methods and design criteria are spelled out in the CCCWP's *Stormwater C.3 Guidebook*, which the City has referenced in Chapter 5-4, Stormwater Management & Discharge Control, of the City's Municipal Code.

The proposed Plan will detail how similar methods will be incorporated to retrofit existing storm drainage infrastructure using facilities constructed on public and private parcels and within the public right-of-way.

To prepare the Plan, the City will:

- Review planned capital projects to identify the potential to incorporate green infrastructure and low impact development drainage design.
- Identify and prioritize areas and projects within the City to implement additional green infrastructure projects.
- Coordinate within and between the City's departments to develop concepts for integrated projects that serve multiple objectives (e.g., multi-modal transportation, recreation, streetscape improvements, and parks, as well as green infrastructure).
- Document resources and a process for completing conceptual designs.
- Document a funding strategy for future projects, including a process to pursue funding and align project funding sources and schedules to successfully build integrated projects.
- Develop and implement a system to track green infrastructure projects, including land development projects subject to the Provision C.3.a. through C.3.i. requirements, and project future implementation.
- Evaluate and predict the resulting reductions in the quantity of pollutants—including PCBs, mercury, and trash—transported to creeks and the Bay/Delta.

1.3 Countywide and Regional Collaboration

Several of the elements required for preparation of the City's Plan will be developed collaboratively through the City's participation in the CCCWP and/or regionally through participation in BASMAA.

2 · Plan Elements and Approach

2.1 Interdepartmental Coordination and Community Outreach

To be successful, the Plan must engage a wide variety of stakeholders in plan, policy, and project concept development. Planned projects with multiple benefits may be proposed for streets, parks, schools or other public parcels. A successful green infrastructure planning team will include representatives from the municipal departments who plan and implement projects on these streets and parcels.

A successful planning approach will also include a robust plan for engagement of both municipal staff and the community members who live, work, and play near proposed green infrastructure projects.

2.1.1 Interdepartmental Coordination

The City has developed a strategy for engagement and education of municipal staff on the purposes and goals of green infrastructure, the required elements of the Plan, and the steps needed to develop and implement the Plan.

The City has also begun convening an interdepartmental committee under the leadership of the City's Contra Costa Clean Water Program Liaison to oversee and implement the process of preparing the Framework and Plan.

The City's interdepartmental committee consists of department and staff representatives from City Engineering, City Planning, City Public Works, and the Lamorinda Building Department.

The interdepartmental committee met in FY 16/17 to discuss the required elements and development of the City's Framework and Plan.

2.1.2 Community Engagement and Outreach

The City will develop a comprehensive community engagement and education strategy in order to educate public stakeholders on green infrastructure benefits and requirements and to engage them in the development of the City's Plan. Such outreach will include both general outreach and targeted outreach and training for professionals involved in

infrastructure planning and design. General and targeted outreach have both been components used to draft Lafayette's Downtown Creeks Plan which includes green infrastructure. Targeted outreach and training is also ongoing and will be coordinated countywide with the CCCWP.

2.2 Green Infrastructure Project Identification and Prioritization

The Plan must describe the mechanism(s) by which the City will identify, prioritize and map potential and planned green infrastructure projects on a drainage-area-specific basis. These include public and private projects that may be implemented over the long term, with milestones for implementation by 2020, 2030, and 2040.

The Plan must also contain the outputs resulting from the identification and prioritization mechanism(s) described above, including the prioritization criteria as well as the lists and maps of prioritized projects and timeframes for implementation.

The City will use the following mechanisms to identify, prioritize, and map future green infrastructure projects:

2.2.1 Review of Capital Improvement Program Projects

The City must prepare and maintain a list of public and private green infrastructure projects planned for implementation during the permit term, and public projects that have potential for green infrastructure measures. The City has begun this process and no projects were identified in the FY 15-16 Annual Report due to the limited nature of its capital improvement program and its limited planning time horizon (5 years). Future biannual updates to the program are expected to generate potential green infrastructure candidates.

The creation and maintenance of this list is supported by guidance developed by BASMAA: "Guidance for Identifying Green Infrastructure Potential in Municipal Capital Improvement Projects" (May 6, 2016). The BASMAA Guidance is attached to this document as Appendix A.

The Plan will document current implementation of this process within the City and will identify planned changes or needed improvements. Resultant project lists will be used to provide potential projects for incorporation into the Plan. The Plan will also include a workplan to complete prioritized projects identified through this process.

2.2.2 City Tools and Processes for Project Identification and Prioritization

City staff will develop a process and resources for identifying and pursuing, on an ongoing basis, additional opportunities to construct green infrastructure projects in the City. The process and resources will be documented in the Plan and will address how multi-objective projects will be identified through a collaborative interdepartmental planning process. The City's Planning Department will initially screen all private development projects for green infrastructure opportunities and then the City's Engineering Department will review those same projects for constructability and effectiveness. Additionally, City of Lafayette's Engineering Department will look for opportunities to include green infrastructure into planned public capital improvement projects.

2.2.3 Use of Contra Costa Watersheds Stormwater Resource Plan Tools and Project Lists

The Contra Costa Clean Water Program has obtained a planning grant from the State Water Resources Control Board to develop a Stormwater Resource Plan for Contra Costa County. The Contra Costa Watersheds Stormwater Resources Plan (CCSWRP) will support the development and implementation of green infrastructure plans within the County through identification of local and regional opportunities for green infrastructure projects and the development of tools for estimating pollutant load reductions over future timeframes. The CCSWRP will identify and prioritize multi-benefit projects using a metrics based approach for quantifying project benefits such as volume of stormwater infiltrated and/or treated and quantity of pollutants removed. The metrics-based analysis will be conducted using hydrologic and pollutant load reduction models coupled with GIS resources and other tools. Potential projects will also be assessed for additional benefits such as flood control, community greening, and habitat creation. The product of these analyses will be a map of opportunity areas for green infrastructure projects throughout the County and an initial prioritized list of potential projects. The tools, maps, and list of potential projects developed through this process will be available for incorporation into the City's Plan.

2.3 Evaluating Pollutant Load Reductions

The project prioritization criteria will consider opportunities to reduce loads of trash, mercury, PCBs, and other pollutants. It is anticipated that mercury and PCB pollutant load reductions will be evaluated for each project using the regionally developed Interim Accounting Methodology which is based on watershed locations and historic land uses. A draft of this regionally developed methodology was submitted to the Water Board in the 2016 Annual Report. Furthermore, it is anticipated that a Reasonable Assurance

Analysis (RAA) will be developed in cooperation with both regional and countywide partners to demonstrate that reductions will be achieved in the time frame required by the Mercury TMDL (2006) and the PCBs TMDL (2008). The City's Plan will include a description of these two methodologies and the results of these methodologies will be incorporated into the planning process.

It is also anticipated that these two methodologies will be used to help develop and/or confirm targets for the amount of impervious surface, from both public and private projects, which will need to be converted or "retrofit" to drain to green infrastructure features, such as a vegetated area or stormwater treatment facility, or converted to pervious surfaces, by the MRP's 2020, 2030, and 2040 milestones. The City's Plan will include these targets as well as a description of the analyses used to develop them.

2.4 Projecting Green Infrastructure Implementation

To develop the RAA and generate targets for green infrastructure implementation on public and private land, the Plan will include an estimate of the pace of future green infrastructure implementation on public and private parcels.

To estimate the pace of future implementation on private parcels, the City will participate in development of a consistent countywide or regional methodology for projecting private development in future decades. The projections will likely incorporate or adapt regional scenarios created by the Association of Bay Area Governments/Metropolitan Transportation Commission (ABAG/MTC) to estimate future implementation of green infrastructure in each municipality.

2.5 Completed Project Tracking System

The Plan will describe the City's process for tracking and mapping completed public and private projects and making the information available to the public.

Through the CCCWP, the City is participating in development of a GIS that will allow spatial tracking and representation (maps) of green infrastructure projects and associated tributary drainage areas. The database will be used for tracking and reporting public projects and Regulated Projects (MRP Provision C.3.b.) including Special Projects (MRP Provision C.3.e.) and may be used for tracking operation and maintenance verification inspections of installed stormwater treatment facilities (MRP Provision C.3.h.).

The City's Plan will include an update on this countywide/regional project and the City's status and plans for integrating this tool into its processes for implementing green infrastructure.

2.6 Design Guidance and Specifications for Green Infrastructure Projects

The Plan must include general design and construction guidelines, as well as standard specifications and details (or references to those documents) for incorporating green infrastructure components into projects within the City. These guidelines and specifications should address the different street and project types within the City, as defined by its land use and transportation characteristics, and allow projects to provide a range of functions and benefits, such as stormwater management, bicycle and pedestrian mobility and safety, public green space, urban forestry, etc.

The City will collaborate with other Permittees, countywide and regionally, to compile, reference, and/or develop this design guidance. Questions to be addressed in the review and compilation period include:

- Does existing design guidance address local needs? Are there local conditions or characteristics that require different guidance?
- To what extent would additional guidance, if developed, address the needs of multiple projects? Or are the design issues presented by local green infrastructure projects so site-specific that designs must be developed individually for each project?

The results of this review, and the status of design guidance to be used in future projects, will be discussed and presented in the Plan.

2.7 Sizing Requirements for Green Infrastructure Projects

The City's Plan must include a requirement that projects be designed to meet the treatment and hydromodification sizing requirements in MRP Provisions C.3.c. and C.3.d. The Permittees may collectively propose an approach on how to proceed should project constraints in non-regulated right of way projects preclude fully meeting the C.3.d. sizing requirements.

A BASMAA project is currently underway to analyze hydrologic data and bioretention facility performance under different sizing scenarios. It is anticipated that this project will result in recommendations for sizing green infrastructure in non-regulated right of way projects. The City's Plan will describe the outcomes of BASMAA's efforts and how those outcomes have

been incorporated into local planning and design practices that will be referenced as available in future Plan documents.

3 · Integration with Existing Plans and Policies

3.1 Updates to Planning Documents

The Plan must describe its relationship to other planning documents and efforts within the City and how those planning documents have been updated or modified, if needed, to support and incorporate the green infrastructure requirements. If any necessary updates or modifications have not been accomplished by the completion of the Plan, the Plan must include a work plan and schedule to complete them.

The City will review its existing municipal planning documents and identify which documents need to be updated or modified to support and/or be consistent with the Plan.

The Plan will also describe a process or processes, including criteria, to ensure future planning documents are consistent with the Plan's policies, processes, and tasks.

Plan, Police, Ordinance	Updated/Adopted	Next Projected Update
General Plan – Element	2002	2020
Downtown Specific Plan	2012	2022
Downtown Creeks Preservation, Restoration, and Development Plan	2017	As needed
Design Review Guidelines (Downtown)	2015	2019
Design Review Guidelines (Residential)	1990	2018

3.2 Adoption of Policies, Ordinances and Other Legal Mechanisms

The City will review its existing policies, ordinances, and other legal mechanisms to identify which documents may need to be updated or modified to help implement the Plan, and the timing for those actions. All needed updates, modifications, or new mechanism(s) will be completed and adopted (if necessary) by September 30, 2019.

Staff will also collaborate with other Permittees, countywide and regionally, to ensure policies, ordinances, and other legal mechanisms are consistent with those of other Permittees countywide and regionally, while being tailored to the specific needs and characteristics of the City.

A summary of the results of an initial policy, ordinance, and legal mechanisms review and the schedule for actions will be included in the Plan.

4 · Evaluation of Funding Options

The Plan must include an evaluation of funding options for design, construction, and long-term maintenance of prioritized green infrastructure projects, considering local, state and federal funding sources. The City will analyze possible funding options to raise additional revenue for the projects that will eventually be included in the Plan, including capital and operation and maintenance (O&M) costs of public projects. The evaluation for capital costs will include, but not be limited to: alternative compliance funds, grants – including transportation project grants, new taxes or other levies, existing resources, and other sources of funds. Options for O&M funding of public projects are limited and will likely require the City to absorb the costs into the existing stormwater pollution prevention and general maintenance budgets.

5 · Task List, Timeframes, and Budget

5.1 Tasks and Timeframes

	Summary and Preliminary Schedule of Tasks to Prepare Green Infrastructure Plan	Timeframe
1	Preparation of City of Lafayette Green Infrastructure Framework	March to May 2017
2	Approval by City Manager of City Green Infrastructure Framework	May 21, 2017
3	Preparation and adoption of City of Lafayette Downtown Creeks Preservation, Restoration, and Development Plan	July 2015 to October 23, 2017
4	Submittal of Rain Garden Grant Project to East Bay Regional Park District Measure WW Urban Creeks Grant Program	February 2018
5	Review of Capital Improvement Program Projects	Completed in past fiscal years and on-going
6	Contra Costa Watershed Stormwater Resource Plan Project Opportunity Prioritization	Fiscal Year 2017/2018 in progress and on-going

7	Process for Tracking and Mapping Completed Projects	Fiscal Year 2017/2018 to September 2018
8	Green Infrastructure Project Tracking	Fiscal Year 2017/2018 to 2019
9	Update Approved City of Lafayette Green Infrastructure Framework to include timeframes to complete tasks Listed to develop and adopt City Green Infrastructure Plan	In process--complete March 2018
10	Identify and prioritize areas for potential projects for implementation by 2020, 2030, 2040	As private development and public projects arise
11	Identify or develop a methodology for projecting amount and locations of private development	June 2019
12	Prepare general guidelines for overall streetscape and project design construction so that related improvements are constructed to minimize conflicts with and incorporate green infrastructure	December 2019
13	Adopt policies, ordinances, and other appropriate legal mechanisms to ensure implementation of the Green Infrastructure Plan in accordance with Permit requirements	2020
14	Evaluate prioritized projects funding options	Ongoing
15	Amend Submittal Requirements for Private Development Applications to Require Incorporation of Green Infrastructure Plan standards	After Item 13 is completed
16	Implement Green Infrastructure outreach and education through public meetings on CIP and posting on City website	On-going

5.2 Budget

The City has already budgeted and spent over $150,000 to develop the Downtown Creeks, Preservation, Restoration, and Development Plan which includes green infrastructure for redevelopment projects and for City capital improvement projects. Although the plan covers many private parcels and will require a private property owner to redevelop the property to implement green infrastructure features, the plan also cites some projects in the public right-of way that may be used as catalyst projects that the City can build. City staff will recommend to our City Council that at least one of these catalyst projects be funded for construction within the next two years. The City will also allocate adequate staff time to incorporate the CCCWP plan input, along with Lafayette-specific input as stated earlier in this framework to complete the Green Infrastructure Plan by September 30, 2019.

BASMAA Development Committee

Guidance for Identifying Green Infrastructure Potential in Municipal Capital Improvement Program Projects
May 6, 2016

Background

In the recently reissued Municipal Regional Stormwater Permit ("MRP 2.0"), Provision C.3.j. requires Permittees to develop and implement Green Infrastructure Plans to reduce the adverse water quality impacts of urbanization on receiving waters over the long term. Provisions C.11 and C.12 require the Permittees to reduce discharges of Mercury and PCBs, and portion of these load reductions must be achieved by implementing Green Infrastructure. Specifically, Permittees collectively must implement Green Infrastructure to reduce mercury loading by 48 grams/year and PCB loading by 120 grams/year by 2020, and plan for substantially larger reductions in the following decades. Green Infrastructure on both public and private land will help to meet these load reduction requirements, improve water quality, and provide multiple other benefits as well. Implementation on private land is achieved by implementing stormwater requirements for new development and redevelopment (Provision C.3.a. through Provision C.3.i.). These requirements were carried forward, largely unchanged, from MRP 1.0.

MRP 2.0 defines Green Infrastructure as:

> Infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments. At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water.

In practical terms, most green infrastructure will take the form of diverting runoff from existing streets, roofs, and parking lots to one of two stormwater management strategies:

1. Dispersal to vegetated areas, where sufficient landscaped area is available and slopes are not too steep.
2. LID (bioretention and infiltration) facilities, built according to criteria similar to those currently required for regulated private development and redevelopment projects under Provision C.3.

In some cases, the use of tree-box-type biofilters may be appropriate[1]. In other cases, where conditions are appropriate, existing impervious pavements may be removed and replaced with pervious pavements.

In MRP 2.0, Provision C.3.j. includes requirements for Green Infrastructure planning and implementation. Provision C.3.j. has two main elements to be implemented by municipalities:

1. Preparation of a Green Infrastructure Plan for the inclusion of LID drainage design into storm drain infrastructure on public and private land, including streets, roads, storm drains, etc.
2. Early implementation of green infrastructure projects ("no missed opportunities"),

This guidance addresses the second of these requirements. The intent of the "no missed opportunities" requirement is to ensure that no major infrastructure project is built without assessing the opportunity for incorporation of green infrastructure features.

Provision C.3.j.ii. requires that each Permittee prepare and maintain a list of green infrastructure projects, public and private, that are already planned for implementation during the permit term (not including C.3-regulated projects), and infrastructure projects planned for

[1] Standard proprietary tree-box-type biofilters are considered to be non-LID treatment and will only be allowed under certain circumstances. Guidance on use and sizing of these facilities will be provided in a separate document.

implementation during the permit term that have potential for green infrastructure measures. The list must be submitted with each Annual Report, including:

> "... a summary of how each public infrastructure project with green infrastructure potential will include green infrastructure measures to the maximum extent practical during the permit term. For any public infrastructure project where implementation of green infrastructure measures is not practicable, submit a brief description for the project and the reasons green infrastructure measures were impracticable to implement".

This requirement has no specified start date; "during the permit term" means beginning January 1, 2016 and before December 31, 2020. The first Annual Report submittal date will be September 30, 2016.

Note that this guidance primarily addresses the review of proposed or planned public projects for green infrastructure opportunities. The Permittee may also be aware of proposed or planned private projects, not subject to LID treatment requirements, that may have the opportunity to incorporate green infrastructure. These should be addressed in the same way as planned public projects, as described below.

Procedure for Review of Planned Public Projects and Annual Reporting

The municipality's Capital Improvement Program (CIP) project list provides a good starting point for review of proposed public infrastructure projects. Review of other lists of public infrastructure projects, such as those proposed within separately funded special districts (e.g., lighting and landscape districts, maintenance districts, and community facilities districts), may also be appropriate. This section describes a two-part procedure for conducting the review.

Part 1 – Initial Screening

The first step in reviewing a CIP or other public project list is to screen out certain types of projects from further consideration. For example, some projects (e.g., interior remodels, traffic signal replacement) can be readily identified as having no green infrastructure potential. Other projects may appear on the list with only a title, and it may be too early to identify whether green infrastructure could be included. Still others have already progressed past the point where the design can reasonably be changed (this will vary from project to project, depending on available budget and schedule).

Some "projects" listed in a CIP may provide budget for multiple maintenance or minor construction projects throughout the jurisdiction or a portion of the jurisdiction, such as a tree planting program, curb and sidewalk repair/upgrade, or ADA curb/ramp compliance. It is recommended that these types of projects not be included in the review process described herein. The priority for incorporating green infrastructure into these types of projects needs to be assessed as part of the Permittees' development of Green Infrastructure Plans, and standard details and specifications need to be developed and adopted. During this permit term, Permittees will evaluate select projects, project types, and/or groups of projects as case studies and develop an approach as part of Green Infrastructure planning.

The projects removed through the initial screening process do not need to be reported to the Water Board in the Permittee's Annual Report. However, the process should be documented and records kept as to the reason the project was removed from further consideration. Note that projects that were determined to be too early to assess will need to be reassessed during the next fiscal year's review.

The following categories of projects may be screened out of the review process in a given fiscal year:

1. **Projects with No Potential** - The project is identified in initial screening as having no green infrastructure potential based on the type of project. For example, the project does not include any exterior work. Attachment 1 provides a suggested list of such projects that Permittees may use as a model for their own internal process.

2. **Projects Too Early to Assess** – There is not yet enough information to assess the project for green infrastructure potential, or the project is not scheduled to begin design within the permit term (January 2016 – December 2020). If the project is scheduled to begin within the permit term, an assessment will be conducted if and when the project moves forward to conceptual design.

3. **Projects Too Late to Change** – The project is under construction or has moved to a stage of design in which changes cannot be made. The stage of design at which it is too late to incorporate green infrastructure measures varies with each project, so a "percent-complete" threshold has not been defined. Some projects may have funding tied to a particular conceptual design and changes cannot be made even early in the design process, while others may have adequate budget and time within the construction schedule to make changes late in the design process. Agencies will need to make judgments on a case-by-case basis.

4. **Projects Consisting of Maintenance or Minor Construction Work Orders** – The "project" includes budgets for multiple maintenance or minor construction work orders throughout the jurisdiction or a portion of the jurisdiction. These types of projects will not be individually reviewed for green infrastructure opportunity but will be considered as part of a municipality's Green Infrastructure Plan.

Part 2 – Assessment of Green Infrastructure Potential

After the initial screening, the remaining projects either already include green infrastructure or will need to go through an assessment process to determine whether or not there is potential to incorporate green infrastructure. A recommended process for conducting the assessment is provided later in this guidance. As a result of the assessment, the project will fall into one of the following categories with associated annual reporting requirements. Attachment 2 provides the relevant pages of the FY 15-16 Annual Report template for reference.

- **Project is a C.3-regulated project and will include LID treatment.**

  Reporting: Follow current C.3 guidance and report the project in Table C.3.b.iv.(2) of the Annual Report for the fiscal year in which the project is approved.

- **Project already includes green infrastructure and is funded**.

  Reporting: List the project in "Table B-Planned Green Infrastructure Projects" in the Annual Report, indicate the planning or implementation status, and describe the green infrastructure measures to be included.

- **Project may have green infrastructure potential** pending further assessment of feasibility, incremental cost, and availability of funding.

  Reporting: If the feasibility assessment is not complete and/or funding has not been identified, list the project in "Table A-Public Projects Reviewed for Green Infrastructure" in the Annual Report. In the "GI Included?" column, state either "TBD" (to be determined) if the assessment is not complete, or "Yes" if it has been determined that green infrastructure is feasible. In the rightmost column, describe the green infrastructure measures considered and/or proposed, and note the funding and other contingencies for inclusion of green infrastructure in the project. Once funding for the project has been identified, the project should be moved to "Table B-Planned Green Infrastructure Projects" in future Annual Reports.

- **Project does not have green infrastructure potential.** A project-specific assessment has been completed, and Green Infrastructure is impracticable.

  Reporting: In the Annual Report, list the project in "Table A-Public Projects Reviewed for Green Infrastructure". In the "GI Included?" column, state "No." Briefly state the reasons for the determination in the rightmost column. Prepare more detailed documentation of the reasons for the determination and keep it in the project files.

Process for Assessing Green Infrastructure Potential of a Public Infrastructure Project

Initial Assessment of Green Infrastructure Potential

Consider opportunities that may be associated with:

- Alterations to roof drainage from existing buildings
- New or replaced pavement or drainage structures (including gutters, inlets, or pipes)
- Concrete work
- Landscaping, including tree planting
- Streetscape improvements and intersection improvements (other than signals)

Step 1: Information Collection/Reconnaissance

For projects that include alterations to building drainage, identify the locations of roof leaders and downspouts, and where they discharge or where they are connected to storm drains.

For street and landscape projects:

- Evaluate potential opportunities to substitute pervious pavements for impervious pavements.
- Identify and locate drainage structures, including storm drain inlets or catch basins.
- Identify and locate drainage pathways, including curb and gutter.

Identify landscaped areas and paved areas that are adjacent to, or down gradient from, roofs or pavement. These are potential facility locations. *If there are any such locations, continue to the next step.* Note that the project area boundaries may be, but are not required to be, expanded to include potential green infrastructure facilities.

Step 2: Preliminary Sizing and Drainage Analysis

Beginning with the potential LID facility locations that seem most feasible, identify possible pathways to direct drainage from roofs and/or pavement to potential LID facility locations—by sheet flow, valley gutters, trench drains, or (where gradients are steeper) via pipes, based on existing grades and drainage patterns. Where existing grades constrain natural drainage to potential facilities, the use of pumps may be considered (as a less preferable option).

Delineate (roughly) the drainage area tributary to each potential LID facility location. Typically, this requires site reconnaissance, which may or may not include the use of a level to measure relative elevations.

Use the following preliminary sizing factor (facility area/tributary area) for the potential facility location and determine which of the following could be constructed within the existing right-of-way or adjacent vacant land. Note that these sizing factors are guidelines (not strict rules, but targets):

- Sizing factor ≥ 0.5 for dispersal to landscape or pervious pavement[2] (i.e., a maximum 2:1 ratio of impervious area to pervious area)
- Sizing factor ≥ 0.04 for bioretention
- Sizing factor ≥ 0.004 (or less) for tree-box-type biofilters

For bioretention facilities requiring underdrains and tree-box-type biofilters, note if there are potential connections from the underdrain to the storm drain system (typically 2.0 feet below soil surface for bioretention facilities, and 3.5 feet below surface for tree-box-type biofilters).

---

[2] Note that pervious pavement systems are typically designed to infiltrate only the rain falling on the pervious pavement itself, with the allowance for small quantities of runoff from adjacent impervious areas. If significant runoff from adjacent areas is anticipated, preliminary sizing considerations should include evaluation of the depth of drain rock layer needed based on permeability of site soils.

If, in this step, you have confirmed there may be feasible potential facility locations, *continue to the next step.*

Step 3: Barriers and Conflicts

Note that barriers and conflicts do not necessarily mean implementation is infeasible; however, they need to be identified and taken into account in future decision-making, as they may affect cost or public acceptance of the project.

Note issues such as:

- Confirmed or potential conflicts with subsurface utilities
- Known or unknown issues with property ownership, or need for acquisition or easements
- Availability of water supply for irrigation, or lack thereof
- Extent to which green infrastructure is an "add on" vs. integrated with the rest of the project

Step 4: Project Budget and Schedule

Consider sources of funding that may be available for green infrastructure. It is recognized that lack of budget may be a serious constraint for the addition of green infrastructure in public projects. For example, acquisition of additional right-of-way or easements for roadway projects is not always possible. Short and long term maintenance costs also need to be considered, and jurisdictions may not have a funding source for landscape maintenance, especially along roadways. The objective of this process is to identify opportunities for green infrastructure, so that if and when funding becomes available, implementation may be possible.

Note any constraints on the project schedule, such as a regulatory mandate to complete the project by a specific date, grant requirements, etc., that could complicate aligning a separate funding stream for the green infrastructure element. Consider whether cost savings could be achieved by integrating the project with other planned projects, such as pedestrian or bicycle safety improvement projects, street beautification, etc., if the schedule allows.

Step 5: Assessment—Does the Project Have Green Infrastructure Potential?

Consider the ancillary benefits of green infrastructure, including opportunities for improving the quality of public spaces, providing parks and play areas, providing habitat, urban forestry, mitigating heat island effects, aesthetics, and other valuable enhancements to quality of life.

Based on the information above, would it make sense to include green infrastructure into this project—*if funding were available for the potential incremental costs of including green infrastructure in the project?* Identify any additional conditions that would have to be met for green infrastructure elements to be constructed consequent with the project.

Attachment 1

Examples of Projects with No Potential for Green Infrastructure

- ☐ Projects with no exterior work (e.g., interior remodels)
- ☐ Projects involving exterior building upgrades or equipment (e.g., HVAC, solar panels, window replacement, roof repairs and maintenance)
- ☐ Projects related to development and/or continued funding of municipal programs or related organizations
- ☐ Projects related to technical studies, mapping, aerial photography, surveying, database development/upgrades, monitoring, training, or update of standard specs and details
- ☐ Construction of new streetlights, traffic signals or communication facilities
- ☐ Minor bridge and culvert repairs/replacement
- ☐ Non-stormwater utility projects (e.g., sewer or water main repairs/replacement, utility undergrounding, treatment plant upgrades)
- ☐ Equipment purchase or maintenance (including vehicles, street or park furniture, equipment for sports fields and golf courses, etc.)
- ☐ Irrigation system installation, upgrades or repairs

Attachment 2

Excerpts from the C.3 Section of the FY 15-16 Annual Report Template:
Tables for Reporting C.3-Regulated Projects and Green Infrastructure Projects

C.3.b.iv.(2) ▶ Regulated Projects Reporting Table (part 1) – Projects Approved During the Fiscal Year Reporting Period

Project Name Project No.	Project Location[9], Street Address	Name of Developer	Project Phase No.[10]	Project Type & Description[11]	Project Watershed[12]	Total Site Area (Acres)	Total Area of Land Disturbed (Acres)	Total New Impervious Surface Area (ft^2)[13]	Total Replaced Impervious Surface Area (ft^2)[14]	Total Pre-Project Impervious Surface Area[15] (ft^2)	Total Post-Project Impervious Surface Area[16] (ft^2)
Private Projects											
Public Projects											

Comments:
Guidance: If necessary, provide any additional details or clarifications needed about listed projects in this box. Do not leave any cells blank.

[9]Include cross streets
[10]If a project is being constructed in phases, indicate the phase number and use a separate row entry for each phase. If not, enter "NA"
[11]Project Type is the type of development (i.e., new and/or redevelopment). Example descriptions of development are: 5-story office building, residential with 160 single-family homes with five 4-story buildings to contain 200 condominiums, 100 unit 2-story shopping mall, mixed use retail and residential development (apartments), industrial warehouse
[12]State the watershed(s) in which the Regulated Project is located. Downstream watershed(s) may be included, but this is optional
[13]All impervious surfaces added to any area of the site that was previously existing pervious surface
[14]All impervious surfaces added to any area of the site that was previously existing impervious surface
[15]For redevelopment projects, state the pre-project impervious surface area
[16]For redevelopment projects, state the post-project impervious surface area

C.3.b.iv.(2) ▶Regulated Projects Reporting Table (part 2) – Projects Approved During the Fiscal Year Reporting Period (public projects)

Project Name Project No.	Approval Date[29]	Date Construction Scheduled to Begin	Source Control Measures[30]	Site Design Measures[31]	Treatment Systems Approved[32]	Operation & Maintenance Responsibility Mechanism[33]	Hydraulic Sizing Criteria[34]	Alternative Compliance Measures[35/36]	Alternative Certification[37]	HM Controls[38/39]
Public Projects										

Comments:

Guidance: If necessary, provide any additional details or clarifications needed about listed projects in this box. Note that MRP Provision C.3.c. contains specific requirements for LID site design and source control measures, as well as treatment measures, for <u>all</u> Regulated Projects. Entries in these columns should not be "None" or "NA". Do not leave any cells blank.

[29]For public projects, enter the plans and specifications approval date.
[30]List source control measures approved for the project. Examples include: properly designed trash storage areas; storm drain stenciling or signage; efficient landscape irrigation systems; etc.
[31]List site design measures approved for the project. Examples include: minimize impervious surfaces; conserve natural areas, including existing trees or other vegetation, and soils; construct sidewalks, walkways, and/or patios with permeable surfaces, etc.
[32]List all approved stormwater treatment system(s) to be installed onsite or at a joint stormwater treatment facility (e.g., flow through planter, bioretention facility, infiltration basin, etc.)
[33]List the legal mechanism(s) (e.g., maintenance plan for O&M by public entity, etc...) that have been or will be used to assign responsibility for the maintenance of the post-construction stormwater treatment systems.
[34]See Provision C.3.d.i. "Numeric Sizing Criteria for Stormwater Treatment Systems" for list of hydraulic sizing design criteria. Enter the corresponding provision number of the appropriate criterion (i.e., 1.a., 1.b., 2.a., 2.b., 2.c., or 3).
[35]For Alternative Compliance at an offsite location in accordance with Provision C.3.e.i.(1), on a separate page, give a discussion of the alternative compliance site including the information specified in Provision C.3.b.v.(1)(m)(i) for the offsite project.
[36]For Alternative Compliance by paying in-lieu fees in accordance with Provision C.3.e.i.(2), on a separate page, provide the information specified in Provision C.3.b.v.(1)(m)(ii) for the Regional Project.
[37]Note whether a third party was used to certify the project design complies with Provision C.3.d.
[38]If HM control is not required, state why not.
[39]If HM control is required, state control method used (e.g., method to design and size device(s) or method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), biodetention unit(s), regional detention basin, or in-stream control)

C.3.j.ii.(2) ▶ Table A - Public Projects Reviewed for Green Infrastructure

Project Name and Location[43]	Project Description	Status[44]	GI Included?[45]	Description of GI Measures Considered and/or Proposed or Why GI is Impracticable to Implement[46]
EXAMPLE: Storm drain retrofit, Stockton and Taylor	**Installation of new storm drain to accommodate the 10-yr storm event**	**Beginning planning and design phase**	**TBD**	**Bioretention cells (i.e., linear bulb-outs) will be considered when street modification designs are incorporated**

C.3.j.ii.(2) ▶ Table B - Planned Green Infrastructure Projects

Project Name and Location[47]	Project Description	Planning or Implementation Status	Green Infrastructure Measures Included
EXAMPLE: Martha Gardens Green Alleys Project	**Retrofit of degraded pavement in urban alleyways lacking good drainage**	**Construction completed October 17, 2015**	**The project drains replaced concrete pavement and existing adjacent structures to a center strip of pervious pavement and underlying infiltration trench.**

[43] List each public project that is going through your agency's process for identifying projects with green infrastructure potential.
[44] Indicate status of project, such as: beginning design, under design (or X% design), projected completion date, completed final design date, etc.
[45] Enter "Yes" if project will include GI measures, "No" if GI measures are impracticable to implement, or "TBD" if this has not yet been determined.
[46] Provide a summary of how each public infrastructure project with green infrastructure potential will include green infrastructure measures to the maximum extent practicable during the permit term. If review of the project indicates that implementation of green infrastructure measures is not practicable, provide the reasons why green infrastructure measures are impracticable to implement.
[47] List each planned (and expected to be funded) public and private green infrastructure project that is not also a Regulated Project as defined in Provision C.3.b.ii. Note that funding for green infrastructure components may be anticipated but is not guaranteed to be available or sufficient.

BEFORE THE CITY COUNCIL OR THE CITY OF LAFAYETTE
IN THE MATTER OF:

Amending Chapter 5-4 of the Lafayette	)	
Municipal Code for Stormwater Pollution Prevention	)	Ordinance No. 628

The City Council of the City of Lafayette does ordain as follows:

Section 1. Chapter 5-4 of the Lafayette Municipal Code is hereby deleted and replaced in its entirety to read as follows:

Chapter 5-4. Stormwater Management and Discharge Control

Sections:

Section 5-401 Intent and Purpose.

(a) The intent of this chapter is to protect and enhance the water quality in the City of Lafayette's watercourses pursuant to, and consistent with the Porter-Cologne Water Quality Control Act (Water Code section 13000 et seq.) and the Federal Clean Water Act (33 U.S.C. section 1251 et seq.).

(b) This chapter also carries out the conditions in the City's National Pollutant Discharge Elimination System (NPDES) permit that require implementation of appropriate source control and site design measures and stormwater treatment measures for development projects.

(c) It is the purpose of the City Council in enacting this chapter to protect the health, safety and general welfare of Lafayette'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.

Section 5-402 Definitions.

The following words and phrases when used in this chapter shall be as defined herein. Words and phrases in this chapter and not otherwise defined shall be interpreted as defined in the regulations issued by the U.S. Environmental Protection Agency to implement the provisions of the Federal Clean Water Act, and as defined by the State Water Resources Control Board to implement the Porter-Cologne Act:

(a) ***Best management practices or "BMP"*** are structural devices, measures, stormwater management facilities, activities, prohibitions, or practices; general good housekeeping, pollution prevention practices, maintenance procedures, and other management practices, to prevent or reduce the discharge of pollutants directly or indirectly to watercourses, water bodies, and wetlands.

(b) ***City's NPDES permit*** shall mean the NPDES permit issued to the City of Lafayette, Permit No. CAS612008 and any subsequent amendment, reissuance or successor to this NPDES permit.

(c) ***Development runoff requirements*** shall mean the provisions in the City's NPDES permit that contain performance standards to address both the construction and post-construction phase impacts of new projects and redeveloped projects on stormwater quality.

(d) ***Director*** shall mean the Public Works Director of the City of Lafayette or his or her designee.

(e) ***Enforcement officer or Officer*** shall mean those individuals designated by the Director to act as authorized enforcement officers.

(f) ***Guidebook*** shall mean the most recent version of the Contra Costa Clean Water Program Stormwater C.3. Guidebook.

(g) ***Non-stormwater discharge*** is any addition of any pollutant to the City's stormwater system, except discharges pursuant to a NPDES permit, or discharges further exempted in Section 5-406 (c) and (d) of this chapter.

(h) ***Pollutant*** shall mean any material other than stormwater including, but not limited to, petroleum products or by-products, solid waste, incinerator residue, sewage, sewage sludge, heat, chemical waste, biological materials, radioactive materials, wrecked or discarded equipment, rock, sand, soil and industrial, municipal or agricultural waste discharged into the water or stormwater system.

(i) ***Premises*** shall mean any land, building, structure, facility, or installation, (including a building's grounds or other appurtenances), and adjacent sidewalks and parking strips.

(j) ***Responsible person*** shall mean the owner or occupant of any premises or who engages in or permits any activity from which there is or may be a non-stormwater discharge or any person who releases pollutants to the City's stormwater system.

(k) ***Stormwater*** shall mean flow on the surface of the ground resulting from precipitation.

(l) ***Stormwater control plan*** shall mean a plan that meets those criteria contained in the most recent version of the Contra Costa Clean Water Program Stormwater C.3. Guidebook.

(m) ***Stormwater management facility*** shall mean any device that utilizes detention, retention, filtration, harvest for reuse, evapotranspiration or infiltration to provide treatment (and/or control volume, flows, and durations) of stormwater for purposes of compliance with development runoff requirements.

(n) ***Stormwater system*** is that system of facilities by which stormwater may be conveyed to any stream, watercourse, other body of water or wetlands, including flood control channels, any roads with drainage systems, city streets, catch basins, curbs, gutters, ditches, improved channels, storm drains or storm drain system, which are not part of a Publicly Owned Treatment Works ("POTW") as that term is defined in 40 CFR section 122.2.

Section 5-403 Responsibility for Administration.

The Director or his designee shall administer this chapter for the City.

Section 5-404 Construction and Application.

This chapter shall be construed consistent with the requirements of the Federal Clean Water Act and amendments thereto or applicable implementing regulations and the City's NPDES permit.

Section 5-405 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.

(b) Implementation of an approved stormwater control plan and submittal of an approved stormwater control operation and maintenance plan by the applicant shall be a condition precedent to the issuance of a certificate of occupancy for a project subject to this section.

(c) All stormwater management facilities shall be designed in a manner to minimize the need for maintenance and reduce the chances of failure. Design guidelines are outlined in the Guidebook.

(d) All stormwater management facilities shall be maintained according to the Guidebook and the approved stormwater control operation and maintenance plan. The person(s) or organization(s) responsible for maintenance shall be designated in the stormwater control operation and maintenance plan. Unless a different time period is provided for in the plan, those responsible for maintenance shall inspect the stormwater management facility at least annually. The stormwater operation and maintenance plan shall also describe how the maintenance costs will be funded. Upon the failure of a responsible person to maintain a stormwater management facility in accordance with this chapter or the plan, the City may perform the maintenance and recover its costs from the responsible person as provided in sections 5-417 and 5-418.

(e) For access to stormwater management facilities for inspections and maintenance, recorded covenants or easements shall be provided by the property owner for access by the City, the Contra Costa Mosquito and Vector Control District, and the Regional Water Quality Control Board.

Section5-406 Prohibited Discharges.

(a) The release of non-stormwater discharges to the City stormwater system is prohibited.

(b) The discharge of stormwater from premises or an activity that causes or contributes to a violation of receiving water limitations in the City's NPDES permit is prohibited.

(c) The following discharges are exempt from the prohibition set forth in subsection (a) above, unless determined by the Director to be a source of pollutants to or from the stormwater system or to receiving waters:

(1) any discharge in compliance with a NPDES permit issued to the discharger.

(2) flows from riparian habitats and wetlands, diverted stream flows, flows from natural springs, rising ground waters, uncontaminated and unpolluted groundwater infiltration, single-family homes' pumped groundwater, foundation drains, and water from crawl space pumps and footing drains, and pumped groundwater from drinking water aquifers.

(d) The following discharges are exempt from the prohibition set forth in subsection (a) above if and only if the director identifies such discharge as not being a source of any pollutant to the stormwater system or to a receiving water or if control measures required by the Director are implemented and discharges are in accordance with conditions, including but not limited to specific conditions, for each type of discharge set forth in Section C.15 of the City's NPDES permit: pumped groundwater from non-drinking-water aquifers; pumped groundwater from other sources, foundation drains, and water from crawl space pumps and footing drains; air conditioning condensate; planned discharges from routine operation and maintenance activities in the potable water distribution system; unplanned discharges from breaks, leaks, overflows, fire hydrant shearing, or emergency flushing of the potable water distribution system; emergency discharges of the potable water distribution system as a result of firefighting, unauthorized hydrant openings, or natural or man-made disasters; individual residential car washing; swimming pool, hot tub, spa, and fountain water discharges, and discharges from irrigation water, landscape irrigation, and lawn or garden watering.

Section 5-407 Discharge in Violation of NPDES Permit.

Any discharge that would result in or contribute to a violation of the City's NPDES permit either separately considered or when combined with other discharges, is prohibited. Liability for any such discharge shall be the responsibility of the person causing or responsible for the discharge, and such person shall defend, indemnify and hold harmless the City in any administrative or judicial enforcement action relating to such discharge.

Section 5-408 Unlawful Discharge and Unlawful Connections.

(a) It is unlawful to establish, use, maintain or continue unauthorized drainage connections to the City's stormwater system, and to commence or continue any unauthorized discharges to the City's stormwater system.

(b) No discharge shall cause the following conditions, create a nuisance, or adversely affect beneficial uses of waters of the State:

(1) floating, suspended or deposited macroscopic matter or foam;

(2) bottom deposits or aquatic growth;

(3) alterations of temperature, sediment load, nutrient load, or dissolved oxygen, which cause significant adverse impacts to native aquatic biota;

(4) visible, floating, suspended or deposited oil or products of petroleum origin; or,

(5) substances present in concentrations or quantities which cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption.

Section 5-409 Best Management Practices and Standards.

(a) ***Generally.*** Any person owning or operating premises that may contribute pollutants to the City's stormwater system shall undertake best management practices to reduce the potential for pollutants entering the system to the maximum extent practicable. Examples of such premises include, but are not limited to, parking lots, gasoline stations, industrial facilities, and other commercial enterprises. Examples of best management practices include, but are not limited to, those described in publications by the United States Environmental Protection Agency, the California Water Boards, the California Stormwater Quality Association, the Bay Area Stormwater Management Agencies Association, the Contra Costa Clean Water Program, and, the City of Lafayette.

(b) ***Litter.*** No person shall throw, deposit, leave, keep or permit to be thrown, deposited, placed, left or maintained, any refuse, rubbish, garbage or other discarded or abandoned objects, articles or other litter in or upon any street, alley, sidewalk, business place, creek, stormwater system, fountain, pool, lake, stream, river or any other body of water, or upon any public or private parcel of land so that the same might become a pollutant, except in containers or in lawfully established waste disposal facilities.

(c) ***Sidewalks.*** The occupant or tenant, or in the absence of occupant or tenant, the owner or proprietor of any real property in front of which there is a paved sidewalk shall maintain said sidewalk free of dirt or litter to the maximum extent practicable. Sweepings from the sidewalk shall not be swept or otherwise made or allowed to go into the gutter or roadway, but shall be disposed of in receptacles maintained as required for the disposal of solid waste. This section constitutes an alternative procedure and shall not limit or restrict the City from the civil, criminal or administrative enforcement of this or other city ordinances in any other matter provided by law.

(d) ***Maintenance of Facilities and Landscaped Areas.*** Best Management Practices shall be implemented to minimize the release of pesticides, fertilizers, herbicides, and other related materials used to maintain landscaping and facilities.

(e) ***Parking Lots, Paved Areas and Related Stormwater Systems.*** Persons owning, operating or maintaining a paved parking lot, the paved areas of a gasoline station, a paved private street or road, or similar structure, and related stormwater systems shall clean those premises as frequently and thoroughly as practicable in a manner that does not result in the discharge of pollutants to the City's stormwater system. The Director may require installation and maintenance of BMPs, devices, or facilities to prevent the discharge of trash or other pollutants from private parking lots, streets, roads, and drainage facilities into the stormwater system. Failure or refusal to comply with such requirement is prohibited and shall constitute a violation of this Chapter.

(f) ***Construction Activities.*** All construction projects shall incorporate site-specific BMPs, which can be a combination of BMPs from the California BMP Handbook, Construction, January 2003, the Caltrans Stormwater Quality Handbooks, Construction Site Best Management Practices Manual, March 2003, the San Francisco Bay Regional Water Quality Control Board Erosion and Sediment Control Field Manual, 2002, the City's grading and erosion control ordinance and other generally accepted engineering practices for erosion control as required by the director. The Director may establish controls on the rate, volume, and duration of stormwater runoff from new developments as may be appropriate to minimize the discharge and transport of pollutants.

(g) ***Notification of Intent and Compliance with General Permits.*** Each discharger associated with construction activity or other discharger described in any general stormwater permit addressing discharges, as may be adopted by the United States Environmental Protection Agency, the State Water Resources Control Board, or the California Regional Water Quality Control Board, San Francisco Bay Region, shall provide the Director with the notice of intent, comply with and undertake all other activities required by any general stormwater permit applicable to such dischargers. Each discharger identified in an individual NPDES permit relating to stormwater discharges shall comply with and undertake all activities required by the permit.

(h) ***Development Runoff Requirements***. For each new development project subject to the development runoff requirements, every applicant will submit a stormwater control plan and implement conditions of approval that reduce stormwater pollutant discharges through the construction, operation and maintenance of treatment measures and other appropriate source control and site design measures. Similarly, increases in runoff volume, flows, and durations shall be managed in accordance with the development runoff requirements.

(i) ***Stormwater Pollution Prevention Plan.*** The Director may require any business or utility in the City that is engaged in activities that may result in non-stormwater discharges or runoff pollutants to develop and implement a stormwater pollution prevention plan, which must include an employee training program. Business activities which may require a stormwater pollution prevention plan include maintenance, storage, manufacturing, assembly, equipment operations, vehicle loading, fueling, vehicle maintenance, food handling or processing, or cleanup procedures, carried out partially or wholly out of doors.

(j) ***Coordination with Hazardous Material Release Response and Inventory Plans.*** Any business subject to the Hazardous Material Release Response and Inventory Plan, Division 20, chapter 6.95 of the California Health and Safety Code (commencing with section 25500), shall include, in that Plan, provision for compliance with this chapter, including the prohibitions of non-stormwater discharges and the requirement to reduce release of pollutants to the maximum extent practicable.

Section 5-410 Authority to Inspect.

(a) ***Generally.*** The director shall have the authority to enter property and make an inspection to enforce and carry out the provisions of the Chapter. Routine or scheduled inspections shall be based upon as reasonable a selection process as may be deemed necessary to carry out the intent of this chapter, including, but not limited to, random sampling or sampling in

areas with evidence of stormwater contamination, evidence of the discharge of non-stormwater to the stormwater system, inspection of stormwater treatment and flow-control facilities for proper operation and evidence of routine and corrective maintenance, or similar activities. Inspections may also be conducted in conjunction with routine or scheduled inspections conducted by other public agencies or special districts, including but not limited to the Central Contra Costa Sanitary District, the Contra Costa County Fire Protection District, County Environmental Health Department, the Contra Costa Mosquito and Vector Control District, or the Regional Water Quality Control Board. The City Council may by resolution establish a schedule of fees for inspections.

(b) ***Authority to Sample and Establish Sampling Devices.*** With the consent of the owner or occupant, or pursuant to a search or inspection warrant, any Officer may establish on any property such devices as are reasonably necessary to conduct sampling or metering operations. During all authorized inspections, the Officer may take any sample deemed necessary to aid in the pursuit of the inquiry or in the recordation of the activities on site.

(c) ***Notification of Spills.*** All persons in charge of the premises or responsible for emergency response for the premises have a responsibility to train premises' personnel and maintain notification procedures to ensure that immediate notification is provided to the City of any suspected, confirmed or unconfirmed release of pollutants creating a risk of non-stormwater discharge into the City stormwater system.

As soon as any person in charge of the premises or responsible for emergency response for the premises has knowledge of any suspected, confirmed or unconfirmed release of non-stormwater discharge entering the City stormwater system, such person shall take all necessary steps to ensure the detection and containment and clean up of such release and shall notify the City of the occurrence by telephoning the Director. This notification requirement is in addition to and not in lieu of other required notifications.

(d) ***Requirement to Test or Monitor.*** Any Officer may require that any person engaged in any activity or owning or operating any premises that may cause or contribute to non-stormwater discharges, undertake such monitoring activities or analysis and furnish such reports as the Officer may specify. The burden, including costs of these activities, analysis and reports shall bear a reasonable relationship to the need for the monitoring, analysis and reports and the benefits to be obtained. The recipient of such request shall undertake and provide the monitoring, analysis and reports required.

Section 5-411 Violations

(a) The violation of any provision of this chapter, or failure to comply with any of the mandatory requirements of this article shall constitute a misdemeanor, except that notwithstanding any other provisions of this article, any violation constituting a misdemeanor under this chapter may, at the discretion of the Officer or city attorney, be charged and prosecuted as an infraction.

(b) Any person required to perform monitoring, analysis, reporting or corrective activity pursuant to this Chapter by any Officer may be informed of such decision, in writing, by a notice of violation. Any person aggrieved by the decision of the Officer, may file a written

appeal of the notice of violation to the Director or his or her designee within 10 (ten) days following the date of the notice of violation. Upon receipt of such request, the Director shall request a report and recommendation from the Officer and shall set the matter for hearing at the earliest practical date. At said hearing, all evidence and testimony deemed relevant and admissible by the Director shall be considered, and the Director may reject, affirm, or modify the Officer's decision. Formal rules of evidence shall not apply. The decisions of the Director shall be final. Failure to request a hearing or appear at the hearing shall constitute a waiver and failure to exhaust administrative remedies.

(c) In addition to the penalties and procedures provided herein, any condition caused or permitted to exist in violation of any of the provisions of this chapter is a threat to the public health, safety and welfare. Such condition is hereby declared and deemed to be a nuisance, which may be abated as provided in Chapter 8-21 Code Enforcement of this Code including the assessment of the costs of abatement which may be collected at the same time and in the same manner as ordinary municipal taxes as provided by Government Code section 38773.5, and by civil action to abate, enjoin or otherwise compel the cessation of such nuisance by the City Attorney.

Section 5-412 Penalties for Violation.

(a) Upon conviction of a misdemeanor, a person shall be subject to payment of a fine, or imprisonment, or both, not to exceed the limits set forth in California Government Code section 36901.

(b) Upon conviction of an infraction, a person shall be subject to payment of a fine, not to exceed the limits set forth in California Government Code section 36900.

Section 5-413 Continuing Violation.

Every day that any violation of this chapter shall continue shall constitute a separate offense.

Section 5-414 Concealment.

Concealing, aiding or abetting a violation of any provision of this chapter shall constitute a violation of such provision.

Section 5-415 Acts Potentially Resulting in Violation of the Federal Clean Water Act or Porter-Cologne Act.

Any person who violates any provision of this chapter, or the provisions of any permit issued pursuant to this chapter, or who releases a non-stormwater discharge, or who violates any cease and desist order, prohibition or effluent limitation, may also be in violation of the Federal Clean Water Act or the Porter-Cologne Act and may be subject to the enforcement provisions of those acts, including civil and criminal penalties. Any enforcement actions authorized pursuant to this chapter may also include notice to the violator of such potential liability pursuant to federal or state law.

Section 5-416 Civil Actions.

(a) In addition to any other remedies provided in this chapter, any violation of this chapter may be enforced by civil action brought by the City. In any such action, the City may seek, as appropriate, any and all of the following remedies:

(1) a temporary restraining order, preliminary injunction and permanent injunction;

(2) an action for an unlawful business practice pursuant to Business and Professions Code section 17206;

(b) In addition any person violating this chapter shall be liable for:

(1) reimbursement for the costs of any investigation, inspection or monitoring which led to the discovery of the violation;

(2) costs incurred in removing, correcting, or terminating the adverse effect(s) resulting from the violation;

(3) compensatory damages for the loss of, or destruction to, water quality, wildlife, fish or aquatic life. Costs and damages under this subsection shall be paid to the City and shall be used exclusively for costs associated with monitoring and establishing a stormwater discharge pollution control system and implementing or enforcing the provisions of this chapter;

(4) the cost of maintenance and repair of any BMP or stormwater management facility that is not maintained in accordance with the guidebook or the stormwater control plan;

(5) the reasonable costs of preparing and bringing administrative action under this chapter.

Section 5-417 Administrative Remedies

In addition to any other remedies provided in this chapter, any violation of this chapter may be enforced through administrative remedies, including any of the following:

(a) Stop Work Order. The director may issue a stop work order to the owner and contractors on a construction site, by posting the order at the construction site and distributing the order to all city departments whose decisions may affect any activity at the site. Unless express written exception is made, the stop work order shall prohibit any further construction activity at the site and shall bar any further inspection or approval necessary to commence or continue construction or to assume occupancy at the site until written authorization to continue is received from the director. A cease and desist order shall accompany the stop work order, and shall define the compliance requirements.

In addition to other enforcement powers and remedies established by this chapter, an authorized enforcement officer may issue a cease and desist order:

(b) Cease and Desist Order. When an authorized enforcement officer finds that an illicit discharge has taken place or is likely to take place, the officer may issue a written order to cease and desist the illicit discharge, practice or operation likely to cause the illicit discharge and direct that a person, business, corporation or other entity subject to the cease and desist order shall comply with one or more of the following:

(1) Take appropriate immediate remedial action to stop and prevent further contamination of the city's stormwater system;

(2) Take immediate action to remove any and all contaminates from the city's stormwater system;

(3) Develop and implement an plan or controls required by the City;

(4) Comply with a time schedule for compliance.

The cease and desist order shall identify:

(1) The name of the responsible person;

(2) The date and location of the violation;

(3) A description of the violation;

(4) Actions that must be taken by the responsible person to remedy the violation;

(5) The deadline within which the required actions must be completed;

(6) Enforcement actions that may be taken by the city.

(c) Administrative Citation. Designated enforcement personnel may issue an administrative citation for any violation of this chapter as allowed by Chapter 1-9 of this code.

(d) Abatement of a Violation on Private Property. The city's authorized representatives are authorized to enter upon private property and to take any and all measures required to remediate any violation of this code. Any expense related to such remediation undertaken by the city shall be fully reimbursed by the property owner and/or responsible party. Any relief obtained under this section shall not prevent the city from seeking other and further relief authorized by this code.

(d) Requirement to Test and/or Monitor. Director or designated enforcement personnel may require that a person, business, corporation or other entity engaged in an activity or owning or operating a facility that may cause or contribute to an illicit discharge, shall monitor activity and/or undertake an analysis, and furnish a report as required. The property owner's burden including the cost of this activity, analysis and report shall bear a reasonable relationship to the need for monitoring, analysis and report and the benefit to be obtained as defined by the director.

(e) Termination of Utility Services. After lawful notice to the customer and property owner concerning the proposed disconnection, the director shall have the authority to order the disconnection of water, sanitary sewer and/or sanitation services, upon a finding by the director that the disconnection of utility services will remove a violation of this chapter that poses a public health hazard or environmental hazard.

5-418 - Fees, charges, fines, penalties, recovery of cost to city to abate, special assessment.

(a) Fees and charges for administration and enforcement of the provisions of this chapter shall be as specified by Chapter 1-6 of this code and as further specified herein.

(b) Any expense related to administration, enforcement and abatement pursuant to the provisions of this chapter by the city shall be fully reimbursed by the owner, business, contractor, utility company or entity.

(c) Within 90 days after abatement by city representatives, the director shall notify the property owner of the costs of abatement, including administrative costs, legal fees, and the deadline for payment. The property owner may protest the amount of the abatement cost before the city council. The written protest must be received by the city manager's office within 15 days of the date of the notification. A hearing on the matter will be scheduled before the city council. The decision of the city council shall be final.

(d) If the amount due is not paid within the protest period or within ten days following of the decision of the city council, a special assessment shall be filed against the property and shall constitute a lien on the property for the amount of the assessment. A copy of the resolution shall be turned over to the county clerk so that the clerk may enter the amounts of the assessment against the parcel as it appears on the current assessment roll, and the treasurer shall include the amount of the assessment on the bill for taxes levied against the parcel of land.

Section 5-419 Remedies Not Exclusive.

The remedies identified in this chapter are in addition to, and do not supersede or limit, any and all other remedies, administrative, civil or criminal. The remedies provided for herein shall be cumulative and not exclusive.

Section 5-420 Judicial Review.

The provisions of Code of Civil Procedure section 1094.5 are applicable to judicial review of determinations made by the Director pursuant to this chapter.

Section 2. Conflicting Ordinances Repealed. Any ordinance or part thereof, or regulations in conflict with the provisions of this ordinance are hereby repealed. The provisions of this ordinance shall control with regard to any provision of the Lafayette Municipal Code that may be inconsistent with the provisions of this ordinance.

Section 3. Severability. If any section, subsection, subdivision, paragraph, sentence, clause or phrase added by this ordinance, or any part thereof, is for any reason held to be unconstitutional or invalid or ineffective by any court of competent jurisdiction, such decision shall not affect the

validity or effectiveness of the remaining portions of this ordinance or any part thereof. The City Council hereby declares that it would have passed each section, subsection, subdivision, paragraph, sentence, clause or phrase thereof irrespective of the fact that any or more subsections, subdivisions, paragraphs, sentences, clauses or phrases are declared unconstitutional, invalid or ineffective.

Section 4. Effective Date. This ordinance shall take effect on the 31st day following its adoption.

Section 5. CEQA. The City Council finds that adoption of this ordinance is not a "project," as defined in the California Environmental Quality Act because it does not have a potential for resulting in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment and concerns general policy and procedure making.

Section 6. Publication. The City Clerk shall either (a) have this ordinance published in a newspaper of general circulation once within fifteen (15) days after its adoption, or (b) have a summary of this ordinance published twice in a newspaper of general circulation, once five (5) days before its adoption and again within fifteen (15) days after adoption, including the names of the council members who voted for and against its passage.

The foregoing ordinance was introduced at a regular meeting of the City Council of the City of Lafayette held on March 10, 2014 and was adopted at a regular meeting of the City Council held on March 24, 2014 by the following vote:

AYES: B. Andersson, M. Anderson, Mitchell and Reilly
NOES: None
ABSTAIN: None
ABSENT: Tatzin

ATTEST:

Joanne Robbins, City Clerk

APPROVED:

Don Tatzin, Mayor

Appendix B: Green Infrastructure Guidelines for Streetscape and Project Design

Appendix B Contents:

BASMAA Development Committee

Guidance for Identifying Green Infrastructure Potential
in Municipal Capital Improvement Program Projects
May 6, 2016

Background

In the recently reissued Municipal Regional Stormwater Permit ("MRP 2.0"), Provision C.3.j. requires Permittees to develop and implement Green Infrastructure Plans to reduce the adverse water quality impacts of urbanization on receiving waters over the long term. Provisions C.11 and C.12 require the Permittees to reduce discharges of Mercury and PCBs, and portion of these load reductions must be achieved by implementing Green Infrastructure. Specifically, Permittees collectively must implement Green Infrastructure to reduce mercury loading by 48 grams/year and PCB loading by 120 grams/year by 2020, and plan for substantially larger reductions in the following decades. Green Infrastructure on both public and private land will help to meet these load reduction requirements, improve water quality, and provide multiple other benefits as well. Implementation on private land is achieved by implementing stormwater requirements for new development and redevelopment (Provision C.3.a. through Provision C.3.i.). These requirements were carried forward, largely unchanged, from MRP 1.0.

MRP 2.0 defines Green Infrastructure as:

> Infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments. At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water.

In practical terms, most green infrastructure will take the form of diverting runoff from existing streets, roofs, and parking lots to one of two stormwater management strategies:

1. Dispersal to vegetated areas, where sufficient landscaped area is available and slopes are not too steep.
2. LID (bioretention and infiltration) facilities, built according to criteria similar to those currently required for regulated private development and redevelopment projects under Provision C.3.

In some cases, the use of tree-box-type biofilters may be appropriate[1]. In other cases, where conditions are appropriate, existing impervious pavements may be removed and replaced with pervious pavements.

In MRP 2.0, Provision C.3.j. includes requirements for Green Infrastructure planning and implementation. Provision C.3.j. has two main elements to be implemented by municipalities:

1. Preparation of a Green Infrastructure Plan for the inclusion of LID drainage design into storm drain infrastructure on public and private land, including streets, roads, storm drains, etc.
2. Early implementation of green infrastructure projects ("no missed opportunities"),

This guidance addresses the second of these requirements. The intent of the "no missed opportunities" requirement is to ensure that no major infrastructure project is built without assessing the opportunity for incorporation of green infrastructure features.

Provision C.3.j.ii. requires that each Permittee prepare and maintain a list of green infrastructure projects, public and private, that are already planned for implementation during the permit term (not including C.3-regulated projects), and infrastructure projects planned for

[1] Standard proprietary tree-box-type biofilters are considered to be non-LID treatment and will only be allowed under certain circumstances. Guidance on use and sizing of these facilities will be provided in a separate document.

implementation during the permit term that have potential for green infrastructure measures. The list must be submitted with each Annual Report, including:

> "… a summary of how each public infrastructure project with green infrastructure potential will include green infrastructure measures to the maximum extent practical during the permit term. For any public infrastructure project where implementation of green infrastructure measures is not practicable, submit a brief description for the project and the reasons green infrastructure measures were impracticable to implement".

This requirement has no specified start date; "during the permit term" means beginning January 1, 2016 and before December 31, 2020. The first Annual Report submittal date will be September 30, 2016.

Note that this guidance primarily addresses the review of proposed or planned public projects for green infrastructure opportunities. The Permittee may also be aware of proposed or planned private projects, not subject to LID treatment requirements, that may have the opportunity to incorporate green infrastructure. These should be addressed in the same way as planned public projects, as described below.

Procedure for Review of Planned Public Projects and Annual Reporting

The municipality's Capital Improvement Program (CIP) project list provides a good starting point for review of proposed public infrastructure projects. Review of other lists of public infrastructure projects, such as those proposed within separately funded special districts (e.g., lighting and landscape districts, maintenance districts, and community facilities districts), may also be appropriate. This section describes a two-part procedure for conducting the review.

Part 1 – Initial Screening

The first step in reviewing a CIP or other public project list is to screen out certain types of projects from further consideration. For example, some projects (e.g., interior remodels, traffic signal replacement) can be readily identified as having no green infrastructure potential. Other projects may appear on the list with only a title, and it may be too early to identify whether green infrastructure could be included. Still others have already progressed past the point where the design can reasonably be changed (this will vary from project to project, depending on available budget and schedule).

Some "projects" listed in a CIP may provide budget for multiple maintenance or minor construction projects throughout the jurisdiction or a portion of the jurisdiction, such as a tree planting program, curb and sidewalk repair/upgrade, or ADA curb/ramp compliance. It is recommended that these types of projects not be included in the review process described herein. The priority for incorporating green infrastructure into these types of projects needs to be assessed as part of the Permittees' development of Green Infrastructure Plans, and standard details and specifications need to be developed and adopted. During this permit term, Permittees will evaluate select projects, project types, and/or groups of projects as case studies and develop an approach as part of Green Infrastructure planning.

The projects removed through the initial screening process do not need to be reported to the Water Board in the Permittee's Annual Report. However, the process should be documented and records kept as to the reason the project was removed from further consideration. Note that projects that were determined to be too early to assess will need to be reassessed during the next fiscal year's review.

The following categories of projects may be screened out of the review process in a given fiscal year:

1. **Projects with No Potential -** The project is identified in initial screening as having no green infrastructure potential based on the type of project. For example, the project does not include any exterior work. Attachment 1 provides a suggested list of such projects that Permittees may use as a model for their own internal process.

2. **Projects Too Early to Assess –** There is not yet enough information to assess the project for green infrastructure potential, or the project is not scheduled to begin design within the permit term (January 2016 – December 2020). If the project is scheduled to begin within the permit term, an assessment will be conducted if and when the project moves forward to conceptual design.
3. **Projects Too Late to Change –** The project is under construction or has moved to a stage of design in which changes cannot be made. The stage of design at which it is too late to incorporate green infrastructure measures varies with each project, so a "percent-complete" threshold has not been defined. Some projects may have funding tied to a particular conceptual design and changes cannot be made even early in the design process, while others may have adequate budget and time within the construction schedule to make changes late in the design process. Agencies will need to make judgments on a case-by-case basis.
4. **Projects Consisting of Maintenance or Minor Construction Work Orders –** The "project" includes budgets for multiple maintenance or minor construction work orders throughout the jurisdiction or a portion of the jurisdiction. These types of projects will not be individually reviewed for green infrastructure opportunity but will be considered as part of a municipality's Green Infrastructure Plan.

Part 2 – Assessment of Green Infrastructure Potential

After the initial screening, the remaining projects either already include green infrastructure or will need to go through an assessment process to determine whether or not there is potential to incorporate green infrastructure. A recommended process for conducting the assessment is provided later in this guidance. As a result of the assessment, the project will fall into one of the following categories with associated annual reporting requirements. Attachment 2 provides the relevant pages of the FY 15-16 Annual Report template for reference.

- **Project is a C.3-regulated project and will include LID treatment.**

  Reporting: Follow current C.3 guidance and report the project in Table C.3.b.iv.(2) of the Annual Report for the fiscal year in which the project is approved.

- **Project already includes green infrastructure and is funded**.

  Reporting: List the project in "Table B-Planned Green Infrastructure Projects" in the Annual Report, indicate the planning or implementation status, and describe the green infrastructure measures to be included.

- **Project may have green infrastructure potential** pending further assessment of feasibility, incremental cost, and availability of funding.

  Reporting: If the feasibility assessment is not complete and/or funding has not been identified, list the project in "Table A-Public Projects Reviewed for Green Infrastructure" in the Annual Report. In the "GI Included?" column, state either "TBD" (to be determined) if the assessment is not complete, or "Yes" if it has been determined that green infrastructure is feasible. In the rightmost column, describe the green infrastructure measures considered and/or proposed, and note the funding and other contingencies for inclusion of green infrastructure in the project. Once funding for the project has been identified, the project should be moved to "Table B-Planned Green Infrastructure Projects" in future Annual Reports.

- **Project does not have green infrastructure potential.** A project-specific assessment has been completed, and Green Infrastructure is impracticable.

  Reporting: In the Annual Report, list the project in "Table A-Public Projects Reviewed for Green Infrastructure". In the "GI Included?" column, state "No." Briefly state the reasons for the determination in the rightmost column. Prepare more detailed documentation of the reasons for the determination and keep it in the project files.

Process for Assessing Green Infrastructure Potential of a Public Infrastructure Project

Initial Assessment of Green Infrastructure Potential

Consider opportunities that may be associated with:

- Alterations to roof drainage from existing buildings
- New or replaced pavement or drainage structures (including gutters, inlets, or pipes)
- Concrete work
- Landscaping, including tree planting
- Streetscape improvements and intersection improvements (other than signals)

Step 1: Information Collection/Reconnaissance

For projects that include alterations to building drainage, identify the locations of roof leaders and downspouts, and where they discharge or where they are connected to storm drains.

For street and landscape projects:

- Evaluate potential opportunities to substitute pervious pavements for impervious pavements.
- Identify and locate drainage structures, including storm drain inlets or catch basins.
- Identify and locate drainage pathways, including curb and gutter.

Identify landscaped areas and paved areas that are adjacent to, or down gradient from, roofs or pavement. These are potential facility locations. *If there are any such locations, continue to the next step.* Note that the project area boundaries may be, but are not required to be, expanded to include potential green infrastructure facilities.

Step 2: Preliminary Sizing and Drainage Analysis

Beginning with the potential LID facility locations that seem most feasible, identify possible pathways to direct drainage from roofs and/or pavement to potential LID facility locations—by sheet flow, valley gutters, trench drains, or (where gradients are steeper) via pipes, based on existing grades and drainage patterns. Where existing grades constrain natural drainage to potential facilities, the use of pumps may be considered (as a less preferable option).

Delineate (roughly) the drainage area tributary to each potential LID facility location. Typically, this requires site reconnaissance, which may or may not include the use of a level to measure relative elevations.

Use the following preliminary sizing factor (facility area/tributary area) for the potential facility location and determine which of the following could be constructed within the existing right-of-way or adjacent vacant land. Note that these sizing factors are guidelines (not strict rules, but targets):

- Sizing factor ≥ 0.5 for dispersal to landscape or pervious pavement[2] (i.e., a maximum 2:1 ratio of impervious area to pervious area)
- Sizing factor ≥ 0.04 for bioretention
- Sizing factor ≥ 0.004 (or less) for tree-box-type biofilters

For bioretention facilities requiring underdrains and tree-box-type biofilters, note if there are potential connections from the underdrain to the storm drain system (typically 2.0 feet below soil surface for bioretention facilities, and 3.5 feet below surface for tree-box-type biofilters).

[2] Note that pervious pavement systems are typically designed to infiltrate only the rain falling on the pervious pavement itself, with the allowance for small quantities of runoff from adjacent impervious areas. If significant runoff from adjacent areas is anticipated, preliminary sizing considerations should include evaluation of the depth of drain rock layer needed based on permeability of site soils.

If, in this step, you have confirmed there may be feasible potential facility locations, *continue to the next step*.

Step 3: Barriers and Conflicts

Note that barriers and conflicts do not necessarily mean implementation is infeasible; however, they need to be identified and taken into account in future decision-making, as they may affect cost or public acceptance of the project.

Note issues such as:

- Confirmed or potential conflicts with subsurface utilities
- Known or unknown issues with property ownership, or need for acquisition or easements
- Availability of water supply for irrigation, or lack thereof
- Extent to which green infrastructure is an "add on" vs. integrated with the rest of the project

Step 4: Project Budget and Schedule

Consider sources of funding that may be available for green infrastructure. It is recognized that lack of budget may be a serious constraint for the addition of green infrastructure in public projects. For example, acquisition of additional right-of-way or easements for roadway projects is not always possible. Short and long term maintenance costs also need to be considered, and jurisdictions may not have a funding source for landscape maintenance, especially along roadways. The objective of this process is to identify opportunities for green infrastructure, so that if and when funding becomes available, implementation may be possible.

Note any constraints on the project schedule, such as a regulatory mandate to complete the project by a specific date, grant requirements, etc., that could complicate aligning a separate funding stream for the green infrastructure element. Consider whether cost savings could be achieved by integrating the project with other planned projects, such as pedestrian or bicycle safety improvement projects, street beautification, etc., if the schedule allows.

Step 5: Assessment—Does the Project Have Green Infrastructure Potential?

Consider the ancillary benefits of green infrastructure, including opportunities for improving the quality of public spaces, providing parks and play areas, providing habitat, urban forestry, mitigating heat island effects, aesthetics, and other valuable enhancements to quality of life.

Based on the information above, would it make sense to include green infrastructure into this project—*if funding were available for the potential incremental costs of including green infrastructure in the project?* Identify any additional conditions that would have to be met for green infrastructure elements to be constructed consequent with the project.

Attachment 1

Examples of Projects with No Potential for Green Infrastructure

- ☐ Projects with no exterior work (e.g., interior remodels)
- ☐ Projects involving exterior building upgrades or equipment (e.g., HVAC, solar panels, window replacement, roof repairs and maintenance)
- ☐ Projects related to development and/or continued funding of municipal programs or related organizations
- ☐ Projects related to technical studies, mapping, aerial photography, surveying, database development/upgrades, monitoring, training, or update of standard specs and details
- ☐ Construction of new streetlights, traffic signals or communication facilities
- ☐ Minor bridge and culvert repairs/replacement
- ☐ Non-stormwater utility projects (e.g., sewer or water main repairs/replacement, utility undergrounding, treatment plant upgrades)
- ☐ Equipment purchase or maintenance (including vehicles, street or park furniture, equipment for sports fields and golf courses, etc.)
- ☐ Irrigation system installation, upgrades or repairs

Attachment 2

Excerpts from the C.3 Section of the FY 15-16 Annual Report Template:
Tables for Reporting C.3-Regulated Projects and Green Infrastructure Projects

C.3.b.iv.(2) ►Regulated Projects Reporting Table (part 1) – Projects Approved During the Fiscal Year Reporting Period

Project Name Project No.	Project Location[9], Street Address	Name of Developer	Project Phase No.[10]	Project Type & Description[11]	Project Watershed[12]	Total Site Area (Acres)	Total Area of Land Disturbed (Acres)	Total New Impervious Surface Area (ft^2)[13]	Total Replaced Impervious Surface Area (ft^2)[14]	Total Pre-Project Impervious Surface Area[15](ft^2)	Total Post-Project Impervious Surface Area[16](ft^2)
Private Projects											
Public Projects											

Comments:

Guidance: If necessary, provide any additional details or clarifications needed about listed projects in this box. Do not leave any cells blank.

[9]Include cross streets
[10]If a project is being constructed in phases, indicate the phase number and use a separate row entry for each phase. If not, enter "NA".
[11]Project Type is the type of development (i.e., new and/or redevelopment). Example descriptions of development are: 5-story office building, residential with 160 single-family homes with five 4-story buildings to contain 200 condominiums, 100 unit 2-story shopping mall, mixed use retail and residential development (apartments), industrial warehouse.
[12]State the watershed(s) in which the Regulated Project is located. Downstream watershed(s) may be included, but this is optional.
[13]All impervious surfaces added to any area of the site that was previously existing pervious surface.
[14]All impervious surfaces added to any area of the site that was previously existing impervious surface.
[15]For redevelopment projects, state the pre-project impervious surface area.
[16]For redevelopment projects, state the post-project impervious surface area.

C.3.b.iv.(2) ►Regulated Projects Reporting Table (part 2) – Projects Approved During the Fiscal Year Reporting Period (public projects)

Project Name Project No.	Approval Date[29]	Date Construction Scheduled to Begin	Source Control Measures[30]	Site Design Measures[31]	Treatment Systems Approved[32]	Operation & Maintenance Responsibility Mechanism[33]	Hydraulic Sizing Criteria[34]	Alternative Compliance Measures[35/36]	Alternative Certification[37]	HM Controls[38/39]
Public Projects										

Comments:

Guidance: If necessary, provide any additional details or clarifications needed about listed projects in this box. Note that MRP Provision C.3.c. contains specific requirements for LID site design and source control measures, as well as treatment measures, for all Regulated Projects. Entries in these columns should not be "None" or "NA". Do not leave any cells blank.

[29]For public projects, enter the plans and specifications approval date.
[30]List source control measures approved for the project. Examples include: properly designed trash storage areas; storm drain stenciling or signage; efficient landscape irrigation systems; etc.
[31]List site design measures approved for the project. Examples include: minimize impervious surfaces; conserve natural areas, including existing trees or other vegetation, and soils; construct sidewalks, walkways, and/or patios with permeable surfaces, etc.
[32]List all approved stormwater treatment system(s) to be installed onsite or at a joint stormwater treatment facility (e.g., flow through planter, bioretention facility, infiltration basin, etc.).
[33]List the legal mechanism(s) (e.g., maintenance plan for O&M by public entity, etc…) that have been or will be used to assign responsibility for the maintenance of the post-construction stormwater treatment systems.
[34]See Provision C.3.d.i. "Numeric Sizing Criteria for Stormwater Treatment Systems" for list of hydraulic sizing design criteria. Enter the corresponding provision number of the appropriate criterion (i.e., 1.a., 1.b., 2.a., 2.b., 2.c., or 3).
[35]For Alternative Compliance at an offsite location in accordance with Provision C.3.e.i.(1), on a separate page, give a discussion of the alternative compliance site including the information specified in Provision C.3.b.v.(1)(m)(i) for the offsite project.
[36]For Alternative Compliance by paying in-lieu fees in accordance with Provision C.3.e.i.(2), on a separate page, provide the information specified in Provision C.3.b.v.(1)(m)(ii) for the Regional Project.
[37]Note whether a third party was used to certify the project design complies with Provision C.3.d.
[38]If HM control is not required, state why not.
[39]If HM control is required, state control method used (e.g., method to design and size device(s) or method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), biodetention unit(s), regional detention basin, or in-stream control).

C.3.j.ii.(2) ► Table A - Public Projects Reviewed for Green Infrastructure

Project Name and Location[43]	Project Description	Status[44]	GI Included?[45]	Description of GI Measures Considered and/or Proposed or Why GI is Impracticable to Implement[46]
EXAMPLE: Storm drain retrofit, Stockton and Taylor	Installation of new storm drain to accommodate the 10-yr storm event	Beginning planning and design phase	TBD	Bioretention cells (i.e., linear bulb-outs) will be considered when street modification designs are incorporated

C.3.j.ii.(2) ► Table B - Planned Green Infrastructure Projects

Project Name and Location[47]	Project Description	Planning or Implementation Status	Green Infrastructure Measures Included
EXAMPLE: Martha Gardens Green Alleys Project	Retrofit of degraded pavement in urban alleyways lacking good drainage	Construction completed October 17, 2015	The project drains replaced concrete pavement and existing adjacent structures to a center strip of pervious pavement and underlying infiltration trench.

[43] List each public project that is going through your agency's process for identifying projects with green infrastructure potential.
[44] Indicate status of project, such as: beginning design, under design (or X% design), projected completion date, completed final design date, etc.
[45] Enter "Yes" if project will include GI measures, "No" if GI measures are impracticable to implement, or "TBD" if this has not yet been determined.
[46] Provide a summary of how each public infrastructure project with green infrastructure potential will include green infrastructure measures to the maximum extent practicable during the permit term. If review of the project indicates that implementation of green infrastructure measures is not practicable, provide the reasons why green infrastructure measures are impracticable to implement.
[47] List each planned (and expected to be funded) public and private green infrastructure project that is not also a Regulated Project as defined in Provision C.3.b.ii. Note that funding for green infrastructure components may be anticipated but is not guaranteed to be available or sufficient.

Appendix C: Memorandum describing the Reasonable Assurance Analysis Countywide Attainment Strategy

Appendix C Contents:

Contra Costa Clean Water Program Draft Memorandum describing the Reasonable Assurance Analysis Countywide Attainment Strategy

Geosyntec consultants

1111 Broadway, 6th Floor
Oakland, California 94607
PH 510.836.3034
FAX 510.836.3036
www.geosyntec.com

Memorandum

Date:	August 7, 2019
To:	Courtney Riddle, Karin Graves, 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: LA0540

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 planning[1].

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 AGOL[2] project data, and
    b. UrbanSim[3] 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**	**1,587.0**
		NPDES	779.6
		Phase 2	13.7
	Above Dam	MRP	41.4
		NPDES	0.1
		Phase 2	0
Region 5	Below Dam	MRP	134.8
		NPDES	14.8
		Phase 2	0.6
	Above Dam	MRP	1.0
		NPDES	0
		Phase 2	0
		Total	2,572.9

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_{goal} = Baseline – WLA (kg/yr)

Where:

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

Baseline = The baseline pollutant loading as calculated through the RAA

WLA = 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 1.287 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:

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

The adjusted countywide PCBs load reduction goal through GI by 2040 was calculated to be 0.268 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 be 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 (0.268 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)
0.268	0.120	0.158	0.235	0.033

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 treated[4], 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 additional public GI projects by 2040 of 33 grams per year would require treating, at a minimum, 189 acres of the highest-PCBs-yield project area in 90 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

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
Clayton	2	ROW_4341	ROW Opportunity	26.22	12.29	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_13231	ROW Opportunity	0.44	0.23	52%	0.006	0.010
Clayton	2	ROW_19397	ROW Opportunity	5.73	2.58	45%	0.001	0.010
Clayton	2	Parcel_283215	Parcel-Based Opportunity	7.37	3.04	41%	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	20.61	13.29	64%	0.010	0.755
Concord	2	Parcel_244879	Parcel-Based Opportunity	66.94	3.41	5%	0.003	0.722
Concord	2	Parcel_192657	Parcel-Based Opportunity	5.89	3.00	51%	0.029	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	0.331
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	1.89	1.36	72%	0.026	0.205
Concord	2	ROW_7624	ROW Opportunity	6.85	4.66	68%	0.008	0.204
Concord	2	ROW_9455	ROW Opportunity	4.16	2.79	67%	0.012	0.190
Concord	2	ROW_3954	ROW Opportunity	1.94	1.42	73%	0.024	0.185
Concord	2	ROW_21113	ROW Opportunity	48.14	24.36	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	Parcel_242414	Parcel-Based Opportunity	4.67	2.72	58%	0.007	0.121
Concord	2	ROW_16782	ROW Opportunity	10.40	5.35	51%	0.004	0.119
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	ROW_14842	ROW Opportunity	15.90	7.68	48%	0.002	0.108
Concord	2	Parcel_232269	Parcel-Based Opportunity	3.76	2.45	65%	0.008	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	ROW_21494	ROW Opportunity	29.51	15.04	51%	0.001	0.101
Concord	2	Parcel_203140	Parcel-Based Opportunity	3.46	2.29	66%	0.008	0.100
Concord	2	ROW_18045	ROW Opportunity	13.09	7.24	55%	0.003	0.099
Concord	2	ROW_14001	ROW Opportunity	12.47	6.86	55%	0.003	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_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	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	Parcel_247239	Regional Opportunity	2.44	1.71	70%	0.009	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	18.26	9.24	51%	0.002	0.073
Concord	2	Parcel_231090	Parcel-Based Opportunity	3.71	1.58	43%	0.006	0.073
Concord	2	Parcel_206355	Regional Opportunity	2.18	1.80	83%	0.010	0.073
Concord	2	ROW_1577	ROW Opportunity	2.98	1.51	51%	0.007	0.071
Concord	2	ROW_13705	ROW Opportunity	11.05	5.52	50%	0.002	0.071
Concord	2	ROW_4609	ROW Opportunity	1.62	1.09	67%	0.011	0.067
Concord	2	Parcel_192425	Parcel-Based Opportunity	0.48	0.28	58%	0.033	0.067
Concord	2	ROW_1474	ROW Opportunity	7.02	3.51	50%	0.003	0.066
Concord	2	Parcel_291299	Parcel-Based Opportunity	40.01	16.11	40%	0.001	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

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
Concord	2	ROW_4514	ROW Opportunity	4.22	2.32	55%	0.005	0.062
Concord	2	ROW_15146	ROW Opportunity	4.67	2.45	52%	0.004	0.059
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
Concord	2	ROW_11820	ROW Opportunity	2.06	1.02	50%	0.008	0.057
Concord	2	Parcel_214703	Parcel-Based Opportunity	3.81	1.22	32%	0.004	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_376302	Parcel-Based Opportunity	42.06	12.85	31%	0.001	0.054
Concord	2	Parcel_251412	Parcel-Based Opportunity	3.12	1.06	34%	0.005	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	ROW_20635	ROW Opportunity	5.04	2.60	52%	0.003	0.048
Concord	2	planned_203	Planned Creek/Marsh Restoration	131.53	18.22	14%	0.000	0.048
Concord	2	Parcel_290823	Regional Opportunity	1.29	1.10	85%	0.010	0.048
Concord	2	ROW_7731	ROW Opportunity	2.11	1.48	70%	0.007	0.047
Concord	2	Parcel_214282	Parcel-Based Opportunity	30.73	11.51	37%	0.001	0.047
Concord	2	ROW_1445	ROW Opportunity	15.65	7.47	48%	0.001	0.044
Concord	2	ROW_6856	ROW Opportunity	15.51	7.43	48%	0.001	0.044
Concord	2	Parcel_233711	Regional Opportunity	1.41	1.00	71%	0.009	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_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_8633	ROW Opportunity	2.16	1.19	55%	0.005	0.038
Concord	2	ROW_1496	ROW Opportunity	9.68	4.76	49%	0.002	0.037
Concord	2	Parcel_206674	Regional Opportunity	1.53	0.90	59%	0.007	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_15145	ROW Opportunity	3.60	1.90	53%	0.003	0.034
Concord	2	ROW_14485	ROW Opportunity	3.31	1.63	49%	0.003	0.034
Concord	2	ROW_8996	ROW Opportunity	1.59	0.86	54%	0.006	0.033
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	Parcel_143398	Parcel-Based Opportunity	17.79	8.05	45%	0.001	0.032
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_7347	ROW Opportunity	1.22	0.93	76%	0.007	0.030
Concord	2	planned_422	Planned Unlined Bioretention	2.14	1.20	56%	0.004	0.030
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_189589	Regional Opportunity	1.31	0.64	49%	0.006	0.029
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_215855	Regional Opportunity	1.37	0.61	45%	0.006	0.028
Concord	2	ROW_14000	ROW Opportunity	1.10	0.63	57%	0.007	0.027
Concord	2	ROW_9635	ROW Opportunity	3.66	1.68	46%	0.003	0.027
Concord	2	Parcel_231516	Regional Opportunity	1.44	0.59	41%	0.005	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_16608	ROW Opportunity	10.91	5.23	48%	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	ROW_6347	ROW Opportunity	1.81	0.91	50%	0.004	0.026
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_208247	Regional Opportunity	0.79	0.57	72%	0.009	0.025
Concord	2	ROW_7875	ROW Opportunity	8.98	4.45	50%	0.001	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_9740	ROW Opportunity	9.01	4.21	47%	0.001	0.024
Concord	2	Parcel_228202	Regional Opportunity	0.75	0.54	72%	0.009	0.024
Concord	2	ROW_12595	ROW Opportunity	1.04	0.64	62%	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
Concord	2	ROW_8121	ROW Opportunity	8.21	3.76	46%	0.001	0.023

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
Concord	2	Parcel_214996	Parcel-Based Opportunity	8.68	5.91	68%	0.001	0.023
Concord	2	ROW_1178	ROW Opportunity	4.47	2.20	49%	0.002	0.022
Concord	2	ROW_686	ROW Opportunity	3.00	1.51	50%	0.003	0.022
Concord	2	ROW_7635	ROW Opportunity	2.74	1.32	48%	0.003	0.022
Concord	2	planned_421	Planned Unlined Bioretention	2.87	1.58	55%	0.003	0.022
Concord	2	Parcel_231203	Parcel-Based Opportunity	14.55	5.28	36%	0.001	0.022
Concord	2	Parcel_196927	Regional Opportunity	0.93	0.65	70%	0.007	0.022
Concord	2	Parcel_140573	Parcel-Based Opportunity	9.15	5.56	61%	0.001	0.022
Concord	2	ROW_1480	ROW Opportunity	1.83	1.01	55%	0.004	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_148570	Parcel-Based Opportunity	10.29	5.19	50%	0.001	0.021
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_4353	ROW Opportunity	9.22	4.47	48%	0.001	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_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_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_12594	ROW Opportunity	0.92	0.55	60%	0.006	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_220285	Parcel-Based Opportunity	9.96	4.72	47%	0.001	0.019
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_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_209956	Regional Opportunity	0.66	0.42	64%	0.008	0.018
Concord	2	Parcel_202503	Parcel-Based Opportunity	5.94	4.60	77%	0.001	0.018
Concord	2	Parcel_186686	Regional Opportunity	0.75	0.45	60%	0.007	0.018
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_238207	Parcel-Based Opportunity	9.03	4.20	47%	0.001	0.017
Concord	2	Parcel_204041	Parcel-Based Opportunity	0.49	0.42	86%	0.010	0.017
Concord	2	Parcel_288737	Regional Opportunity	0.93	0.40	43%	0.005	0.017
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	ROW_18426	ROW Opportunity	5.82	3.22	55%	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_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	ROW_6349	ROW Opportunity	6.66	3.55	53%	0.001	0.016
Concord	2	Parcel_231117	Parcel-Based Opportunity	9.30	3.93	42%	0.001	0.016
Concord	2	Parcel_209201	Regional Opportunity	0.96	0.36	38%	0.005	0.016
Concord	2	Parcel_189945	Parcel-Based Opportunity	9.41	4.05	43%	0.001	0.016
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_200676	Parcel-Based Opportunity	5.03	3.86	77%	0.001	0.015
Concord	2	Parcel_193540	Parcel-Based Opportunity	7.39	3.59	49%	0.001	0.015
Concord	2	Parcel_228429	Parcel-Based Opportunity	8.15	3.64	45%	0.001	0.015
Concord	2	Parcel_211022	Parcel-Based Opportunity	7.84	3.86	49%	0.001	0.015
Concord	2	Parcel_210557	Regional Opportunity	0.59	0.34	58%	0.007	0.015
Concord	2	Parcel_149994	Parcel-Based Opportunity	10.00	3.69	37%	0.001	0.015
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
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	planned_423	Planned Unlined Bioretention	0.45	0.32	71%	0.009	0.014
Concord	2	Parcel_212241	Parcel-Based Opportunity	10.42	3.26	31%	0.001	0.014

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
Concord	2	Parcel_306186	Regional Opportunity	9.66	3.42	35%	0.001	0.014
Concord	2	Parcel_205796	Regional Opportunity	0.51	0.35	69%	0.008	0.014
Concord	2	Parcel_198111	Regional Opportunity	1.88	0.30	16%	0.003	0.014
Concord	2	Parcel_245777	Regional Opportunity	0.52	0.31	60%	0.008	0.014
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	ROW_9426	ROW Opportunity	0.94	0.51	54%	0.004	0.013
Concord	2	Parcel_202662	Parcel-Based Opportunity	4.54	3.47	76%	0.001	0.013
Concord	2	Parcel_207366	Parcel-Based Opportunity	0.44	0.35	80%	0.009	0.013
Concord	2	Parcel_283640	Parcel-Based Opportunity	8.85	3.17	36%	0.001	0.013
Concord	2	Parcel_198956	Regional Opportunity	1.88	0.31	16%	0.002	0.013
Concord	2	Parcel_200446	Regional Opportunity	1.06	0.59	56%	0.004	0.013
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_245349	Parcel-Based Opportunity	0.50	0.29	58%	0.007	0.013
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_304455	Parcel-Based Opportunity	9.99	2.87	29%	0.001	0.012
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_205395	Parcel-Based Opportunity	0.41	0.29	71%	0.008	0.011
Concord	2	ROW_10061	ROW Opportunity	4.84	2.42	50%	0.001	0.010
Concord	2	ROW_10733	ROW Opportunity	0.86	0.41	48%	0.004	0.010
Concord	2	ROW_11044	ROW Opportunity	5.41	2.45	45%	0.001	0.010
Concord	2	ROW_11477	ROW Opportunity	5.28	2.53	48%	0.001	0.010
Concord	2	ROW_12831	ROW Opportunity	4.96	2.38	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_16114	ROW Opportunity	4.93	2.46	50%	0.001	0.010
Concord	2	ROW_17227	ROW Opportunity	3.24	2.61	81%	0.001	0.010
Concord	2	ROW_18522	ROW Opportunity	0.90	0.41	46%	0.003	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_21082	ROW Opportunity	4.97	2.38	48%	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_7056	ROW Opportunity	5.25	2.45	47%	0.001	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
Concord	2	Parcel_219241	Parcel-Based Opportunity	5.43	2.56	47%	0.001	0.010
Concord	2	Parcel_170641	Parcel-Based Opportunity	4.76	2.42	51%	0.001	0.010
Danville	2	ROW_16936	ROW Opportunity	26.82	15.17	57%	0.009	0.751
Danville	2	ROW_3153	ROW Opportunity	22.64	11.45	51%	0.005	0.352
Danville	2	ROW_19015	ROW Opportunity	21.59	9.08	42%	0.004	0.262
Danville	2	ROW_10363	ROW Opportunity	15.43	7.12	46%	0.006	0.253
Danville	2	ROW_8645	ROW Opportunity	6.20	3.01	49%	0.012	0.251
Danville	2	ROW_15495	ROW Opportunity	5.54	2.78	50%	0.013	0.239
Danville	2	ROW_5779	ROW Opportunity	28.86	11.93	41%	0.003	0.236
Danville	2	GIP_00587 / Parcel_5799	Parcel-Based Opportunity (aspirational)	2.40	1.78	74%	0.019	0.151
Danville	2	ROW_6494	ROW Opportunity	13.53	5.65	42%	0.003	0.123
Danville	2	ROW_7569	ROW Opportunity	4.71	1.79	38%	0.008	0.114
Danville	2	ROW_20439	ROW Opportunity	5.20	2.53	49%	0.007	0.105
Danville	2	ROW_6553	ROW Opportunity	22.66	7.42	33%	0.002	0.101
Danville	2	GIP_00586 / Parcel_5515	Parcel-Based Opportunity (aspirational)	2.95	1.12	38%	0.010	0.098
Danville	2	GIP_00584 / Parcel_5309	Parcel-Based Opportunity (aspirational)	1.65	1.09	66%	0.017	0.092
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	GIP_00600	Regional Opportunity (aspirational)	1.39	0.89	64%	0.016	0.078
Danville	2	ROW_16231	ROW Opportunity	1.44	0.71	49%	0.013	0.064
Danville	2	ROW_2419	ROW Opportunity	1.41	0.74	52%	0.014	0.063
Danville	2	ROW_11030	ROW Opportunity	4.70	1.68	36%	0.005	0.062
Danville	2	GIP_00589 / Parcel_8214	Parcel-Based Opportunity (aspirational)	2.13	1.25	59%	0.009	0.061
Danville	2	ROW_15065	ROW Opportunity	3.27	1.45	44%	0.006	0.061
Danville	2	Parcel_84842	Regional Opportunity	2.50	1.28	51%	0.007	0.061

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
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	GIP_00599	Regional Opportunity (aspirational)	2.00	1.28	64%	0.007	0.048
Danville	2	GIP_00585 / Parcel_5364	Parcel-Based Opportunity (aspirational)	0.86	0.57	66%	0.016	0.047
Danville	2	ROW_7541	ROW Opportunity	4.06	1.59	39%	0.004	0.043
Danville	2	ROW_4229	ROW Opportunity	0.99	0.46	46%	0.013	0.042
Danville	2	ROW_8647	ROW Opportunity	1.24	0.61	49%	0.011	0.042
Danville	2	Parcel_5421	Regional Opportunity	0.73	0.42	58%	0.015	0.036
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	GIP_00590 / Parcel_10789	Parcel-Based Opportunity (aspirational)	8.03	1.22	15%	0.001	0.031
Danville	2	Parcel_5684	Regional Opportunity	0.63	0.35	56%	0.015	0.031
Danville	2	ROW_17662	ROW Opportunity	4.65	1.54	33%	0.003	0.030
Danville	2	ROW_20482	ROW Opportunity	4.31	1.27	29%	0.002	0.028
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_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
Danville	2	ROW_14380	ROW Opportunity	10.15	3.63	36%	0.001	0.025
Danville	2	ROW_2772	ROW Opportunity	8.64	2.88	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	3.31	0.71	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	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	Parcel_7023	Parcel-Based Opportunity	4.47	2.08	47%	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	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_2847	Parcel-Based Opportunity	0.35	0.16	46%	0.012	0.015
Danville	2	ROW_3111	ROW Opportunity	6.77	1.67	25%	0.001	0.014
Danville	2	ROW_7016	ROW Opportunity	3.23	0.99	31%	0.002	0.014
Danville	2	Parcel_2825	Parcel-Based Opportunity	0.35	0.14	40%	0.011	0.014
Danville	2	ROW_10801	ROW Opportunity	10.16	3.65	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	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	1.37	0.97	71%	0.003	0.011
Danville	2	Parcel_7198	Regional Opportunity	2.07	1.46	71%	0.003	0.011
Danville	2	Parcel_2786	Parcel-Based Opportunity	0.34	0.13	38%	0.009	0.011
Danville	2	ROW_16953	ROW Opportunity	3.02	0.93	31%	0.001	0.010
Danville	2	ROW_19866	ROW Opportunity	6.13	2.19	36%	0.001	0.010
Danville	2	ROW_2262	ROW Opportunity	4.67	1.69	36%	0.001	0.010
Danville	2	ROW_3224	ROW Opportunity	6.67	2.37	36%	0.001	0.010
Danville	2	Parcel_8521	Regional Opportunity	0.89	0.19	21%	0.003	0.010
El Cerrito	2	ROW_57	ROW Opportunity	20.16	12.24	61%	0.008	0.501
El Cerrito	2	ROW_15171	ROW Opportunity	5.98	3.48	58%	0.010	0.215
El Cerrito	2	ROW_55	ROW Opportunity	8.61	5.54	64%	0.008	0.212
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	0.082
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	planned_122	Planned Unlined Bioretention	2.79	1.19	43%	0.006	0.060
El Cerrito	2	Parcel_120393	Parcel-Based Opportunity	2.79	1.19	43%	0.006	0.060
El Cerrito	2	ROW_9949	ROW Opportunity	8.99	5.41	60%	0.003	0.055
El Cerrito	2	ROW_6997	ROW Opportunity	2.01	1.26	63%	0.008	0.053
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_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	ROW_9950	ROW Opportunity	2.05	1.31	64%	0.006	0.035

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
El Cerrito	2	planned_389	Planned Creek/Marsh Restoration	1.00	0.66	66%	0.011	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_2251	ROW Opportunity	4.66	2.74	59%	0.003	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	Parcel_118487	Parcel-Based Opportunity	1.00	0.55	55%	0.008	0.027
El Cerrito	2	ROW_20541	ROW Opportunity	1.08	0.66	61%	0.008	0.026
El Cerrito	2	planned_89	Planned Unlined Bioretention	80.88	5.47	7%	0.000	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	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	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_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
El Cerrito	2	ROW_539	ROW Opportunity	6.98	3.97	57%	0.001	0.021
El Cerrito	2	ROW_20328	ROW Opportunity	4.46	2.50	56%	0.002	0.020
El Cerrito	2	ROW_3523	ROW Opportunity	5.21	2.90	56%	0.002	0.020
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_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_6691	ROW Opportunity	7.35	4.29	58%	0.001	0.017
El Cerrito	2	ROW_6694	ROW Opportunity	6.59	3.78	57%	0.001	0.017
El Cerrito	2	ROW_16809	ROW Opportunity	4.87	2.71	56%	0.001	0.016
El Cerrito	2	ROW_6234	ROW Opportunity	1.67	0.95	57%	0.003	0.016
El Cerrito	2	ROW_6911	ROW Opportunity	3.73	2.13	57%	0.002	0.016
El Cerrito	2	ROW_6998	ROW Opportunity	2.36	1.37	58%	0.003	0.016
El Cerrito	2	planned_130	Planned Unlined Bioretention	0.45	0.37	82%	0.011	0.016
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	Parcel_134601	Parcel-Based Opportunity	5.18	3.92	76%	0.001	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_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	ROW_5917	ROW Opportunity	4.58	2.67	58%	0.001	0.013
El Cerrito	2	ROW_10802	ROW Opportunity	4.97	2.88	58%	0.001	0.012
El Cerrito	2	ROW_10953	ROW Opportunity	4.85	2.82	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_6511	ROW Opportunity	3.16	1.88	59%	0.002	0.012
El Cerrito	2	ROW_9947	ROW Opportunity	0.92	0.61	66%	0.005	0.012
El Cerrito	2	Parcel_376467	Parcel-Based Opportunity	5.15	2.93	57%	0.001	0.012
El Cerrito	2	ROW_6968	ROW Opportunity	0.48	0.36	75%	0.007	0.011
El Cerrito	2	ROW_10930	ROW Opportunity	3.54	2.10	59%	0.001	0.011
El Cerrito	2	ROW_9065	ROW Opportunity	2.03	1.20	59%	0.002	0.011
El Cerrito	2	Parcel_140018	Parcel-Based Opportunity	0.39	0.05	13%	0.008	0.011
El Cerrito	2	ROW_16823	ROW Opportunity	1.58	1.02	65%	0.003	0.010
El Cerrito	2	ROW_15090	ROW Opportunity	4.58	2.54	55%	0.001	0.010
El Cerrito	2	ROW_16543	ROW Opportunity	1.22	0.85	70%	0.003	0.010
El Cerrito	2	ROW_1711	ROW Opportunity	2.35	1.03	44%	0.002	0.010
El Cerrito	2	ROW_17280	ROW Opportunity	3.75	2.18	58%	0.001	0.010
El Cerrito	2	ROW_9952	ROW Opportunity	1.53	0.87	57%	0.003	0.010
El Cerrito	2	Parcel_120884	Regional Opportunity	0.59	0.21	36%	0.005	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	10.93	4.33	40%	0.013	0.535
Hercules	2	ROW_15756	ROW Opportunity	4.43	2.04	46%	0.028	0.520
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	5.26	1.32	25%	0.016	0.333
Hercules	2	ROW_16634	ROW Opportunity	3.21	1.39	43%	0.022	0.290
Hercules	2	Parcel_257979	Parcel-Based Opportunity	5.28	1.19	23%	0.013	0.283
Hercules	2	ROW_16909	ROW Opportunity	15.95	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	2.95	0.60	20%	0.014	0.167
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

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
Hercules	2	Parcel_257429	Regional Opportunity	1.90	0.43	23%	0.015	0.111
Hercules	2	ROW_1748	ROW Opportunity	1.51	0.39	26%	0.018	0.109
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	0.96	0.22	23%	0.015	0.059
Hercules	2	ROW_1791	ROW Opportunity	1.59	0.35	22%	0.009	0.058
Hercules	2	ROW_6380	ROW Opportunity	0.41	0.24	59%	0.033	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_1079	ROW Opportunity	0.90	0.39	43%	0.010	0.033
Hercules	2	ROW_11067	ROW Opportunity	7.42	2.66	36%	0.002	0.033
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	ROW_19683	ROW Opportunity	0.49	0.17	35%	0.010	0.019
Hercules	2	Parcel_260776	Parcel-Based Opportunity	11.52	2.65	23%	0.001	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
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	2.52	1.23	49%	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	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	Parcel_40931	Parcel-Based Opportunity	6.84	3.62	53%	0.002	0.029
Lafayette	2	Parcel_376452	Parcel-Based Opportunity	9.70	3.28	34%	0.001	0.029
Lafayette	2	Parcel_43618	Parcel-Based Opportunity	7.13	3.51	49%	0.002	0.029
Lafayette	2	ROW_13640	ROW Opportunity	2.39	0.70	29%	0.004	0.028
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	planned_546	Planned Creek/Marsh Restoration	2.12	0.60	28%	0.005	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	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	Parcel_41948	Regional Opportunity	0.54	0.21	39%	0.011	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	ROW_7898	ROW Opportunity	7.71	1.06	14%	0.001	0.014
Lafayette	2	Parcel_40526	Parcel-Based Opportunity	0.40	0.12	30%	0.010	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	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_43103	Parcel-Based Opportunity	8.38	2.44	29%	0.001	0.012
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

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
Lafayette	2	ROW_9365	ROW Opportunity	3.71	1.19	32%	0.001	0.011
Lafayette	2	Parcel_104404	Parcel-Based Opportunity	7.73	0.73	9%	0.001	0.011
Lafayette	2	ROW_13133	ROW Opportunity	4.17	0.92	22%	0.001	0.010
Lafayette	2	ROW_16620	ROW Opportunity	4.96	0.85	17%	0.001	0.010
Lafayette	2	ROW_2059	ROW Opportunity	4.09	0.70	17%	0.001	0.010
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%	0.044	0.843
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	0.431
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%	0.035	0.299
Martinez	2	Parcel_224745	Parcel-Based Opportunity	12.27	5.56	45%	0.006	0.273
Martinez	2	Parcel_256618	Regional Opportunity	1.53	1.15	75%	0.042	0.270
Martinez	2	ROW_9751	ROW Opportunity	3.94	1.30	33%	0.016	0.263
Martinez	2	ROW_1704	ROW Opportunity	2.43	1.03	42%	0.026	0.261
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	0.237
Martinez	2	ROW_2610	ROW Opportunity	2.98	0.86	29%	0.018	0.218
Martinez	2	ROW_6722	ROW Opportunity	3.14	1.29	41%	0.017	0.214
Martinez	2	ROW_7179	ROW Opportunity	6.38	3.19	50%	0.008	0.192
Martinez	2	ROW_14509	ROW Opportunity	5.63	2.94	52%	0.009	0.176
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
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%	0.031	0.141
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	0.136
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	53.05	7.73	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	0.100
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	0.081
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_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_20611	ROW Opportunity	5.57	3.21	58%	0.004	0.066
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	0.69	0.24	35%	0.021	0.061
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%	0.040	0.058
Martinez	2	Parcel_259114	Parcel-Based Opportunity	9.40	2.23	24%	0.002	0.057
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	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	Parcel_232523	Regional Opportunity	1.40	0.76	54%	0.007	0.039
Martinez	2	ROW_610	ROW Opportunity	15.31	6.60	43%	0.001	0.034
Martinez	2	ROW_3856	ROW Opportunity	20.44	8.96	44%	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	ROW_6905	ROW Opportunity	1.95	0.94	48%	0.005	0.030
Martinez	2	Parcel_222314	Regional Opportunity	1.35	0.61	45%	0.006	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	ROW_6891	ROW Opportunity	7.35	3.61	49%	0.002	0.027
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	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	ROW_7604	ROW Opportunity	2.87	1.45	51%	0.003	0.023
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_256502	Parcel-Based Opportunity	0.42	0.31	74%	0.014	0.023
Martinez	2	Parcel_253818	Parcel-Based Opportunity	13.01	5.66	44%	0.001	0.023
Martinez	2	ROW_20289	ROW Opportunity	7.12	3.17	45%	0.001	0.022
Martinez	2	ROW_14857	ROW Opportunity	17.86	8.48	47%	0.000	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

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
Martinez	2	ROW_2025	ROW Opportunity	9.51	4.84	51%	0.001	0.020
Martinez	2	Parcel_243866	Parcel-Based Opportunity	14.00	5.43	39%	0.001	0.020
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_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_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_255585	Regional Opportunity	0.57	0.42	74%	0.009	0.018
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_225041	Regional Opportunity	0.74	0.35	47%	0.007	0.017
Martinez	2	planned_376	Planned Unlined Bioretention	0.53	0.37	70%	0.009	0.016
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	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	Parcel_225722	Parcel-Based Opportunity	0.34	0.06	18%	0.011	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	ROW_4933	ROW Opportunity	2.81	1.45	52%	0.002	0.013
Martinez	2	ROW_12005	ROW Opportunity	1.77	0.96	54%	0.003	0.013
Martinez	2	Parcel_255587	Parcel-Based Opportunity	0.37	0.29	78%	0.010	0.013
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_214775	Parcel-Based Opportunity	9.97	2.81	28%	0.001	0.012
Martinez	2	Parcel_238844	Parcel-Based Opportunity	14.31	3.94	28%	0.000	0.012
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	planned_373	Planned Unlined Bioretention	1.59	0.50	31%	0.002	0.011
Martinez	2	Parcel_240285	Parcel-Based Opportunity	11.54	3.74	32%	0.000	0.011
Martinez	2	Parcel_256903	Parcel-Based Opportunity	0.23	0.11	48%	0.012	0.011
Martinez	2	Parcel_255494	Parcel-Based Opportunity	0.28	0.25	89%	0.011	0.011
Martinez	2	Parcel_252998	Parcel-Based Opportunity	8.29	4.83	58%	0.000	0.011
Martinez	2	ROW_12318	ROW Opportunity	2.07	1.11	54%	0.002	0.010
Martinez	2	ROW_19347	ROW Opportunity	0.79	0.42	53%	0.004	0.010
Martinez	2	ROW_3406	ROW Opportunity	5.91	2.42	41%	0.001	0.010
Martinez	2	ROW_8404	ROW Opportunity	1.34	0.67	50%	0.003	0.010
Martinez	2	Parcel_224976	Parcel-Based Opportunity	0.45	0.21	47%	0.006	0.010
Martinez	2	Parcel_255781	Parcel-Based Opportunity	0.46	0.23	50%	0.006	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	ROW_19295	ROW Opportunity	9.79	2.99	31%	0.001	0.030
Moraga	2	Parcel_6384	Parcel-Based Opportunity	9.48	3.19	34%	0.002	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	ROW_3874	ROW Opportunity	4.29	1.72	40%	0.001	0.013
Moraga	2	Parcel_12154	Parcel-Based Opportunity	7.49	1.19	16%	0.001	0.013
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_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_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_9225	Parcel-Based Opportunity	6.43	1.25	19%	0.001	0.011
Moraga	2	ROW_12598	ROW Opportunity	3.52	1.17	33%	0.001	0.010
Moraga	2	ROW_21343	ROW Opportunity	3.59	1.02	28%	0.001	0.010
Moraga	2	Parcel_3748	Parcel-Based Opportunity	8.12	0.56	7%	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	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	Parcel_29088	Parcel-Based Opportunity	6.41	1.86	29%	0.001	0.018
Orinda	2	ROW_19957	ROW Opportunity	9.06	1.12	12%	0.001	0.017

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
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	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	Parcel_245383	Regional Opportunity	0.65	0.49	75%	0.010	0.022
Pinole	2	ROW_5599	ROW Opportunity	1.98	1.15	58%	0.004	0.021
Pinole	2	ROW_15034	ROW Opportunity	1.70	0.94	55%	0.004	0.020
Pinole	2	Parcel_243023	Parcel-Based Opportunity	9.49	5.01	53%	0.001	0.020
Pinole	2	ROW_13497	ROW Opportunity	6.04	3.06	51%	0.002	0.019
Pinole	2	ROW_17159	ROW Opportunity	7.51	3.24	43%	0.001	0.019
Pinole	2	ROW_5886	ROW Opportunity	4.30	2.40	56%	0.002	0.018
Pinole	2	Parcel_219618	Parcel-Based Opportunity	13.15	4.37	33%	0.001	0.018
Pinole	2	Parcel_247475	Parcel-Based Opportunity	0.12	0.08	67%	0.038	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	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	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_14440	ROW Opportunity	1.13	0.42	37%	0.003	0.011
Pinole	2	ROW_1021	ROW Opportunity	1.11	0.49	44%	0.003	0.011
Pinole	2	ROW_4571	ROW Opportunity	5.72	2.53	44%	0.001	0.011
Pinole	2	ROW_15889	ROW Opportunity	0.51	0.20	39%	0.006	0.010
Pinole	2	ROW_646	ROW Opportunity	4.57	2.48	54%	0.001	0.010
Pinole	2	Parcel_249605	Parcel-Based Opportunity	4.61	0.72	16%	0.001	0.010
Pinole	2	Parcel_246543	Parcel-Based Opportunity	0.40	0.23	58%	0.008	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	0.891
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_3090	ROW Opportunity	5.95	3.72	63%	0.014	0.342
Pittsburg	2	ROW_11359	ROW Opportunity	13.31	7.75	58%	0.007	0.342
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

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
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	ROW_21076	ROW Opportunity	0.54	0.34	63%	0.033	0.078
Pittsburg	2	Parcel_367785	Regional Opportunity	1.98	1.79	90%	0.011	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	ROW_5091	ROW Opportunity	19.64	10.50	53%	0.001	0.072
Pittsburg	2	Parcel_361465	Parcel-Based Opportunity	9.00	2.11	23%	0.002	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	ROW_1336	ROW Opportunity	3.78	2.22	59%	0.005	0.068
Pittsburg	2	Parcel_362407	Regional Opportunity	2.93	1.49	51%	0.006	0.068
Pittsburg	2	Parcel_371128	Parcel-Based Opportunity	14.11	3.86	27%	0.002	0.067
Pittsburg	2	ROW_7571	ROW Opportunity	10.34	5.77	56%	0.002	0.063
Pittsburg	2	Parcel_362118	Regional Opportunity	2.29	1.41	62%	0.008	0.063
Pittsburg	2	ROW_15487	ROW Opportunity	2.36	1.45	61%	0.007	0.062
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_5206	ROW Opportunity	3.75	2.42	65%	0.005	0.057
Pittsburg	2	ROW_1284	ROW Opportunity	0.36	0.25	69%	0.036	0.057
Pittsburg	2	ROW_15053	ROW Opportunity	2.48	1.28	52%	0.006	0.055
Pittsburg	2	ROW_18482	ROW Opportunity	0.42	0.22	52%	0.029	0.054
Pittsburg	2	Parcel_374906	Parcel-Based Opportunity	6.68	4.37	65%	0.003	0.054
Pittsburg	2	Parcel_356104	Regional Opportunity	2.28	1.53	67%	0.007	0.053
Pittsburg	2	ROW_6195	ROW Opportunity	6.47	3.95	61%	0.003	0.052
Pittsburg	2	Parcel_370086	Regional Opportunity	1.37	1.18	86%	0.010	0.052
Pittsburg	2	ROW_434	ROW Opportunity	0.36	0.23	64%	0.033	0.051
Pittsburg	2	Parcel_362426	Regional Opportunity	1.89	1.15	61%	0.007	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	ROW_16768	ROW Opportunity	0.36	0.19	53%	0.028	0.044
Pittsburg	2	Parcel_363463	Regional Opportunity	2.26	0.96	42%	0.005	0.044
Pittsburg	2	ROW_810	ROW Opportunity	0.26	0.18	69%	0.037	0.043
Pittsburg	2	Parcel_363309	Parcel-Based Opportunity	6.78	2.01	30%	0.002	0.043
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	Parcel_371346	Parcel-Based Opportunity	0.24	0.18	75%	0.039	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	ROW_18594	ROW Opportunity	8.91	5.04	57%	0.002	0.035
Pittsburg	2	Parcel_372570	Regional Opportunity	1.35	0.77	57%	0.007	0.035
Pittsburg	2	ROW_18048	ROW Opportunity	4.41	2.71	61%	0.003	0.034
Pittsburg	2	Parcel_374691	Parcel-Based Opportunity	11.06	5.22	47%	0.001	0.034
Pittsburg	2	ROW_1733	ROW Opportunity	1.96	0.93	47%	0.005	0.033
Pittsburg	2	Parcel_368250	Parcel-Based Opportunity	0.32	0.18	56%	0.024	0.033
Pittsburg	2	ROW_2115	ROW Opportunity	1.76	0.97	55%	0.005	0.032
Pittsburg	2	Parcel_348794	Parcel-Based Opportunity	20.29	7.64	38%	0.001	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	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_361545	Parcel-Based Opportunity	18.57	6.68	36%	0.001	0.028
Pittsburg	2	ROW_2172	ROW Opportunity	3.63	2.26	62%	0.003	0.027
Pittsburg	2	ROW_4032	ROW Opportunity	2.50	1.16	46%	0.003	0.027
Pittsburg	2	Parcel_374956	Parcel-Based Opportunity	7.22	2.76	38%	0.002	0.027
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	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	ROW_6217	ROW Opportunity	1.01	0.70	69%	0.007	0.025
Pittsburg	2	Parcel_342146	Parcel-Based Opportunity	12.50	6.01	48%	0.001	0.025
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_372876	Regional Opportunity	1.32	0.53	40%	0.005	0.024

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
Pittsburg	2	Parcel_373402	Regional Opportunity	1.03	0.53	51%	0.006	0.024
Pittsburg	2	Parcel_348459	Parcel-Based Opportunity	12.96	5.96	46%	0.001	0.024
Pittsburg	2	ROW_11872	ROW Opportunity	2.97	1.69	57%	0.003	0.023
Pittsburg	2	ROW_11358	ROW Opportunity	1.06	0.49	46%	0.006	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_6219	ROW Opportunity	1.46	0.92	63%	0.005	0.023
Pittsburg	2	Parcel_362344	Parcel-Based Opportunity	14.44	5.98	41%	0.001	0.023
Pittsburg	2	Parcel_352244	Parcel-Based Opportunity	10.05	5.65	56%	0.001	0.023
Pittsburg	2	ROW_894	ROW Opportunity	4.26	2.49	58%	0.002	0.022
Pittsburg	2	Parcel_366285	Parcel-Based Opportunity	26.81	4.81	18%	0.000	0.022
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_357792	Regional Opportunity	1.23	1.04	85%	0.006	0.021
Pittsburg	2	Parcel_336890	Parcel-Based Opportunity	9.19	5.25	57%	0.001	0.021
Pittsburg	2	ROW_6805	ROW Opportunity	0.65	0.36	55%	0.008	0.020
Pittsburg	2	ROW_12237	ROW Opportunity	8.69	4.66	54%	0.001	0.020
Pittsburg	2	Parcel_372224	Regional Opportunity	0.54	0.37	69%	0.010	0.020
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	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_20795	ROW Opportunity	3.72	2.00	54%	0.002	0.018
Pittsburg	2	ROW_14011	ROW Opportunity	0.79	0.44	56%	0.006	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_11370	ROW Opportunity	0.33	0.21	64%	0.013	0.017
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_374571	Regional Opportunity	0.54	0.38	70%	0.009	0.017
Pittsburg	2	Parcel_372393	Regional Opportunity	0.60	0.37	62%	0.008	0.017
Pittsburg	2	Parcel_348698	Regional Opportunity	0.48	0.40	83%	0.010	0.017
Pittsburg	2	ROW_13380	ROW Opportunity	0.48	0.23	48%	0.009	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_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_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_349343	Regional Opportunity	1.12	0.32	29%	0.004	0.015
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_368854	Parcel-Based Opportunity	0.36	0.31	86%	0.010	0.014
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	planned_431	Planned Unlined Bioretention	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	Parcel_361603	Parcel-Based Opportunity	0.48	0.31	65%	0.008	0.013
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	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_20374	ROW Opportunity	3.94	2.27	58%	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_372099	Parcel-Based Opportunity	0.41	0.26	63%	0.008	0.012
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_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
Pittsburg	2	Parcel_353346	Parcel-Based Opportunity	7.56	2.47	33%	0.001	0.011
Pittsburg	2	ROW_1165	ROW Opportunity	4.72	2.45	52%	0.001	0.010
Pittsburg	2	ROW_12867	ROW Opportunity	0.70	0.47	67%	0.004	0.010
Pittsburg	2	ROW_13887	ROW Opportunity	2.43	1.42	58%	0.002	0.010
Pittsburg	2	ROW_15076	ROW Opportunity	9.04	4.91	54%	0.000	0.010
Pittsburg	2	ROW_16855	ROW Opportunity	4.74	2.54	54%	0.001	0.010
Pittsburg	2	ROW_18551	ROW Opportunity	4.33	2.37	55%	0.001	0.010
Pittsburg	2	ROW_20409	ROW Opportunity	3.61	2.22	61%	0.001	0.010
Pittsburg	2	ROW_21513	ROW Opportunity	0.70	0.42	60%	0.004	0.010

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
Pittsburg	2	ROW_3332	ROW Opportunity	0.46	0.24	52%	0.006	0.010
Pittsburg	2	ROW_7648	ROW Opportunity	1.98	1.11	56%	0.002	0.010
Pleasant Hill	2	Parcel_149659	Parcel-Based Opportunity	4.69	2.66	57%	0.032	0.628
Pleasant Hill	2	ROW_19233	ROW Opportunity	3.15	2.26	72%	0.039	0.523
Pleasant Hill	2	Parcel_154099	Regional Opportunity	2.85	1.61	56%	0.031	0.380
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	3.52	1.89	54%	0.013	0.171
Pleasant Hill	2	ROW_20243	ROW Opportunity	2.99	1.93	65%	0.013	0.148
Pleasant Hill	2	ROW_12076	ROW Opportunity	2.33	1.37	59%	0.012	0.111
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_4673	ROW Opportunity	4.72	2.27	48%	0.006	0.103
Pleasant Hill	2	ROW_4671	ROW Opportunity	5.14	2.67	52%	0.006	0.098
Pleasant Hill	2	Parcel_150985	Regional Opportunity	0.77	0.41	53%	0.030	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	ROW_13734	ROW Opportunity	8.72	3.90	45%	0.003	0.079
Pleasant Hill	2	Parcel_186000	Parcel-Based Opportunity	4.15	1.73	42%	0.005	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_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	ROW_13554	ROW Opportunity	6.29	2.86	45%	0.002	0.039
Pleasant Hill	2	Parcel_142400	Regional Opportunity	1.85	0.83	45%	0.006	0.039
Pleasant Hill	2	ROW_14564	ROW Opportunity	7.82	3.13	40%	0.002	0.035
Pleasant Hill	2	Parcel_185980	Regional Opportunity	1.25	0.79	63%	0.008	0.035
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_131105	Regional Opportunity	1.45	0.72	50%	0.007	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	ROW_13741	ROW Opportunity	1.00	0.63	63%	0.008	0.028
Pleasant Hill	2	Parcel_156974	Parcel-Based Opportunity	9.89	3.33	34%	0.001	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_187984	Parcel-Based Opportunity	23.59	5.41	23%	0.000	0.024
Pleasant Hill	2	Parcel_131108	Regional Opportunity	0.82	0.54	66%	0.008	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	7.46	3.16	42%	0.001	0.020
Pleasant Hill	2	Parcel_168841	Regional Opportunity	0.97	0.44	45%	0.006	0.020
Pleasant Hill	2	ROW_17703	ROW Opportunity	4.38	1.92	44%	0.002	0.019
Pleasant Hill	2	ROW_15029	ROW Opportunity	3.85	1.58	41%	0.002	0.019
Pleasant Hill	2	ROW_5754	ROW Opportunity	1.34	0.80	60%	0.004	0.019
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_4886	ROW Opportunity	1.05	0.56	53%	0.005	0.018
Pleasant Hill	2	ROW_6669	ROW Opportunity	1.68	0.82	49%	0.003	0.018
Pleasant Hill	2	Parcel_167223	Parcel-Based Opportunity	10.92	4.29	39%	0.001	0.018
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	Parcel_155751	Regional Opportunity	1.57	0.26	17%	0.003	0.017
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	1.63	0.72	44%	0.003	0.016
Pleasant Hill	2	ROW_3210	ROW Opportunity	7.82	3.31	42%	0.001	0.016
Pleasant Hill	2	ROW_533	ROW Opportunity	2.07	0.90	43%	0.003	0.016
Pleasant Hill	2	Parcel_155321	Regional Opportunity	0.56	0.36	64%	0.008	0.016
Pleasant Hill	2	ROW_5966	ROW Opportunity	3.55	1.52	43%	0.002	0.015
Pleasant Hill	2	ROW_5767	ROW Opportunity	2.66	1.19	45%	0.002	0.015
Pleasant Hill	2	Parcel_178916	Parcel-Based Opportunity	3.76	2.58	69%	0.002	0.015
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

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
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_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	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_160193	Parcel-Based Opportunity	7.87	2.98	38%	0.001	0.012
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_156885	Regional Opportunity	1.48	0.76	51%	0.003	0.011
Pleasant Hill	2	Parcel_140820	Parcel-Based Opportunity	6.41	2.61	41%	0.001	0.011
Pleasant Hill	2	ROW_1108	ROW Opportunity	6.39	2.49	39%	0.001	0.010
Pleasant Hill	2	ROW_18658	ROW Opportunity	4.86	2.26	47%	0.001	0.010
Pleasant Hill	2	ROW_4523	ROW Opportunity	0.73	0.35	48%	0.004	0.010
Pleasant Hill	2	ROW_5248	ROW Opportunity	3.52	1.52	43%	0.001	0.010
Pleasant Hill	2	Parcel_176573	Parcel-Based Opportunity	4.87	2.62	54%	0.001	0.010
Pleasant Hill	2	Parcel_165486	Parcel-Based Opportunity	11.72	2.14	18%	0.000	0.010
Pleasant Hill	2	Parcel_182562	Parcel-Based Opportunity	5.49	2.50	46%	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	3.037
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_00492 / ROW_8576	ROW Opportunity (aspirational)	15.12	9.82	65%	0.028	1.643
Richmond	2	GIP_00339 / 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_00340 / planned_175	Parcel-Based Opportunity (aspirational)	12.22	6.77	55%	0.026	1.248
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	1.137
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%	0.026	1.046
Richmond	2	GIP_00338 / planned_469	Parcel-Based Opportunity (aspirational)	7.99	4.10	51%	0.030	0.967
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	0.897
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
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	0.735
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	0.601
Richmond	2	ROW_14144	ROW Opportunity	3.21	2.59	81%	0.045	0.587
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_00482 / 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	0.536
Richmond	2	ROW_20886	ROW Opportunity	2.41	1.89	78%	0.053	0.513
Richmond	2	ROW_15749	ROW Opportunity	4.75	2.94	62%	0.027	0.506
Richmond	2	ROW_16532	ROW Opportunity	3.19	2.11	66%	0.039	0.499
Richmond	2	ROW_7809	ROW Opportunity	11.56	3.25	28%	0.011	0.495
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	0.468
Richmond	2	ROW_8456	ROW Opportunity	2.87	1.60	56%	0.040	0.458
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	0.411
Richmond	2	Parcel_159148	Regional Opportunity	2.48	1.76	71%	0.041	0.407
Richmond	2	ROW_6275	ROW Opportunity	3.46	1.24	36%	0.029	0.402
Richmond	2	ROW_1342	ROW Opportunity	12.99	5.89	45%	0.009	0.401
Richmond	2	ROW_16455	ROW Opportunity	2.53	1.71	68%	0.038	0.384
Richmond	2	GIP_00357 / Parcel_152787	Regional Opportunity (aspirational)	2.53	1.64	65%	0.037	0.380
Richmond	2	ROW_4530	ROW Opportunity	3.12	1.81	58%	0.030	0.380
Richmond	2	Parcel_171579	Parcel-Based Opportunity	3.65	2.87	79%	0.027	0.380
Richmond	2	ROW_4590	ROW Opportunity	2.11	1.33	63%	0.044	0.377
Richmond	2	ROW_20441	ROW Opportunity	5.49	3.04	55%	0.018	0.374
Richmond	2	GIP_00335 / 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

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
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	0.305
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	0.294
Richmond	2	planned_496	Planned Creek/Marsh Restoration	3.90	2.25	58%	0.020	0.294
Richmond	2	GIP_00336 / 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	0.274
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	ROW_6828	ROW Opportunity	1.71	1.18	69%	0.038	0.261
Richmond	2	Parcel_167791	Parcel-Based Opportunity	3.42	2.71	79%	0.020	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%	0.044	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%	0.043	0.226
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
Richmond	2	ROW_18395	ROW Opportunity	2.05	0.89	43%	0.026	0.213
Richmond	2	ROW_16535	ROW Opportunity	2.13	1.38	65%	0.025	0.211
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_16488	ROW Opportunity	1.32	0.96	73%	0.039	0.209
Richmond	2	Parcel_110613	Regional Opportunity	1.25	0.72	58%	0.041	0.209
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	ROW_16441	ROW Opportunity	2.29	1.59	69%	0.023	0.202
Richmond	2	planned_531	Planned Water Quality Basin	75.78	38.92	51%	0.001	0.202
Richmond	2	ROW_5443	ROW Opportunity	1.01	0.88	87%	0.049	0.200
Richmond	2	ROW_4125	ROW Opportunity	2.29	1.49	65%	0.022	0.197
Richmond	2	Parcel_111210	Regional Opportunity	1.27	0.90	71%	0.040	0.197
Richmond	2	ROW_6857	ROW Opportunity	1.59	0.64	40%	0.031	0.196
Richmond	2	ROW_1468	ROW Opportunity	2.21	1.56	71%	0.023	0.196
Richmond	2	ROW_13349	ROW Opportunity	1.13	0.84	74%	0.043	0.195
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%	0.043	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_00295 / 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	ROW_11890	ROW Opportunity	0.99	0.79	80%	0.046	0.181
Richmond	2	Parcel_134412	Parcel-Based Opportunity	4.34	3.50	81%	0.012	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	ROW_2766	ROW Opportunity	1.36	0.86	63%	0.032	0.174
Richmond	2	Parcel_166327	Regional Opportunity	2.29	1.75	76%	0.020	0.174
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	ROW_15468	ROW Opportunity	1.02	0.75	74%	0.042	0.170
Richmond	2	ROW_17298	ROW Opportunity	0.91	0.59	65%	0.046	0.169
Richmond	2	ROW_161	ROW Opportunity	1.86	1.31	70%	0.024	0.169
Richmond	2	Parcel_169252	Regional Opportunity	1.01	0.72	71%	0.042	0.169
Richmond	2	ROW_1749	ROW Opportunity	0.97	0.72	74%	0.044	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

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
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_238663	Parcel-Based Opportunity	50.69	7.21	14%	0.001	0.157
Richmond	2	Parcel_169551	Parcel-Based Opportunity	3.47	2.76	80%	0.013	0.157
Richmond	2	ROW_3740	ROW Opportunity	1.92	1.15	60%	0.021	0.156
Richmond	2	ROW_16482	ROW Opportunity	1.10	0.73	66%	0.035	0.154
Richmond	2	Parcel_120883	Regional Opportunity	0.95	0.54	57%	0.040	0.154
Richmond	2	ROW_9124	ROW Opportunity	8.76	4.50	51%	0.006	0.153
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	ROW_176	ROW Opportunity	0.99	0.68	69%	0.037	0.147
Richmond	2	Parcel_112907	Regional Opportunity	2.04	0.43	21%	0.018	0.147
Richmond	2	ROW_16976	ROW Opportunity	0.83	0.62	75%	0.044	0.145
Richmond	2	Parcel_193343	Parcel-Based Opportunity	0.62	0.27	44%	0.058	0.145
Richmond	2	ROW_20689	ROW Opportunity	0.90	0.49	54%	0.040	0.143
Richmond	2	planned_527	Planned Unlined Bioretention	4.44	3.26	73%	0.010	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	ROW_2543	ROW Opportunity	0.87	0.46	53%	0.039	0.137
Richmond	2	Parcel_144553	Parcel-Based Opportunity	4.24	3.16	75%	0.010	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_00322 / planned_535	Parcel-Based Opportunity (aspirational)	4.59	3.21	70%	0.009	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	Parcel_225180	Parcel-Based Opportunity	4.05	3.00	74%	0.010	0.133
Richmond	2	ROW_3965	ROW Opportunity	0.72	0.47	65%	0.046	0.132
Richmond	2	ROW_16559	ROW Opportunity	0.85	0.56	66%	0.038	0.129
Richmond	2	Parcel_172178	Parcel-Based Opportunity	3.68	2.88	78%	0.010	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_17258	ROW Opportunity	0.77	0.43	56%	0.040	0.125
Richmond	2	ROW_16531	ROW Opportunity	3.40	2.29	67%	0.011	0.125
Richmond	2	ROW_20486	ROW Opportunity	4.18	2.56	61%	0.009	0.124
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	Parcel_155701	Regional Opportunity	0.77	0.53	69%	0.039	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_17301	ROW Opportunity	0.65	0.48	74%	0.043	0.112
Richmond	2	ROW_15989	ROW Opportunity	4.07	2.72	67%	0.008	0.112
Richmond	2	ROW_291	ROW Opportunity	0.71	0.46	65%	0.038	0.110
Richmond	2	ROW_168	ROW Opportunity	5.27	3.69	70%	0.007	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%	0.040	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_1732	ROW Opportunity	0.52	0.33	63%	0.046	0.096
Richmond	2	ROW_11062	ROW Opportunity	2.50	1.26	50%	0.011	0.096
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	planned_463	Planned Unlined Bioretention	3.35	2.09	62%	0.008	0.095
Richmond	2	Parcel_212172	Parcel-Based Opportunity	3.35	2.09	62%	0.008	0.095
Richmond	2	Parcel_163884	Regional Opportunity	0.60	0.41	68%	0.039	0.095
Richmond	2	Parcel_129221	Regional Opportunity	0.56	0.33	59%	0.042	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_00367 / 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	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	planned_199	Planned Creek/Marsh Restoration	3.43	1.93	56%	0.008	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_16486	ROW Opportunity	0.67	0.40	60%	0.033	0.088
Richmond	2	ROW_3103	ROW Opportunity	0.47	0.38	81%	0.047	0.088
Richmond	2	ROW_254	ROW Opportunity	7.15	4.85	68%	0.004	0.088
Richmond	2	ROW_16465	ROW Opportunity	0.60	0.44	73%	0.036	0.087
Richmond	2	Parcel_119238	Parcel-Based Opportunity	3.39	1.91	56%	0.008	0.087
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	Parcel_170769	Regional Opportunity	2.46	1.96	80%	0.010	0.085
Richmond	2	Parcel_110802	Regional Opportunity	0.82	0.25	30%	0.026	0.085

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
Richmond	2	ROW_16552	ROW Opportunity	3.51	2.33	66%	0.007	0.084
Richmond	2	ROW_6721	ROW Opportunity	0.50	0.36	72%	0.041	0.083
Richmond	2	ROW_16445	ROW Opportunity	1.04	0.70	67%	0.021	0.083
Richmond	2	Parcel_155487	Regional Opportunity	3.02	1.80	60%	0.008	0.083
Richmond	2	ROW_21198	ROW Opportunity	0.41	0.29	71%	0.050	0.082
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_15197	ROW Opportunity	0.50	0.35	70%	0.040	0.081
Richmond	2	Parcel_119884	Regional Opportunity	0.64	0.27	42%	0.031	0.081
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	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	Parcel_165219	Regional Opportunity	1.77	1.40	79%	0.013	0.078
Richmond	2	GIP_00323 / 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_16496	ROW Opportunity	4.37	2.90	66%	0.006	0.076
Richmond	2	ROW_13581	ROW Opportunity	0.59	0.26	44%	0.032	0.075
Richmond	2	ROW_16467	ROW Opportunity	2.66	1.79	67%	0.009	0.075
Richmond	2	Parcel_375479	Parcel-Based Opportunity	68.51	8.98	13%	0.000	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	ROW_2164	ROW Opportunity	1.27	0.90	71%	0.015	0.070
Richmond	2	Parcel_144098	Regional Opportunity	1.08	0.98	91%	0.018	0.070
Richmond	2	Parcel_115970	Regional Opportunity	0.55	0.12	22%	0.032	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	ROW_16544	ROW Opportunity	4.83	3.31	69%	0.005	0.068
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_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_2163	ROW Opportunity	3.05	2.15	70%	0.007	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	ROW_11623	ROW Opportunity	5.63	3.78	67%	0.004	0.066
Richmond	2	ROW_17728	ROW Opportunity	0.42	0.22	52%	0.039	0.065
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_20751	ROW Opportunity	0.72	0.52	72%	0.023	0.064
Richmond	2	ROW_16504	ROW Opportunity	0.99	0.61	62%	0.017	0.064
Richmond	2	ROW_8571	ROW Opportunity	3.24	2.28	70%	0.006	0.064
Richmond	2	GIP_00456 / ROW_16561	ROW Opportunity (aspirational)	4.64	3.09	67%	0.005	0.063
Richmond	2	ROW_17527	ROW Opportunity	9.09	4.79	53%	0.003	0.063
Richmond	2	Parcel_117968	Regional Opportunity	0.56	0.24	43%	0.028	0.063
Richmond	2	ROW_21231	ROW Opportunity	0.41	0.21	51%	0.037	0.062
Richmond	2	ROW_147	ROW Opportunity	0.82	0.56	68%	0.020	0.062
Richmond	2	GIP_00345 / planned_138	Parcel-Based Opportunity (aspirational)	39.35	14.16	36%	0.001	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_105	ROW Opportunity	2.41	1.61	67%	0.008	0.061
Richmond	2	ROW_6864	ROW Opportunity	0.36	0.26	72%	0.042	0.061
Richmond	2	planned_174	Planned Unlined Swale	0.69	0.47	68%	0.023	0.061
Richmond	2	Parcel_154186	Parcel-Based Opportunity	0.39	0.26	67%	0.039	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	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	Parcel_118569	Parcel-Based Opportunity	0.46	0.19	41%	0.031	0.059
Richmond	2	ROW_1794	ROW Opportunity	0.32	0.25	78%	0.046	0.058
Richmond	2	ROW_20453	ROW Opportunity	0.55	0.39	71%	0.027	0.058
Richmond	2	ROW_19952	ROW Opportunity	0.87	0.59	68%	0.018	0.058
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	Parcel_133667	Parcel-Based Opportunity	25.54	14.75	58%	0.001	0.057
Richmond	2	Parcel_116468	Parcel-Based Opportunity	0.74	0.29	39%	0.019	0.057
Richmond	2	ROW_4147	ROW Opportunity	0.75	0.48	64%	0.020	0.056
Richmond	2	ROW_16475	ROW Opportunity	2.52	1.67	66%	0.007	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%	0.029	0.055
Richmond	2	ROW_18476	ROW Opportunity	1.55	1.08	70%	0.010	0.054
Richmond	2	ROW_13891	ROW Opportunity	0.41	0.18	44%	0.032	0.053
Richmond	2	Parcel_150073	Regional Opportunity	1.80	1.20	67%	0.009	0.053
Richmond	2	ROW_18074	ROW Opportunity	3.67	2.41	66%	0.005	0.052
Richmond	2	Parcel_176154	Parcel-Based Opportunity	27.12	13.35	49%	0.001	0.052
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_236849	Parcel-Based Opportunity	260.54	3.37	1%	0.000	0.051
Richmond	2	Parcel_118639	Parcel-Based Opportunity	0.45	0.10	22%	0.028	0.050
Richmond	2	ROW_21154	ROW Opportunity	2.44	1.79	73%	0.007	0.049
Richmond	2	ROW_13905	ROW Opportunity	3.58	2.15	60%	0.005	0.049

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
Richmond	2	Parcel_150614	Regional Opportunity	2.05	1.74	85%	0.008	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	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	Parcel_255238	Parcel-Based Opportunity	611.35	20.49	3%	0.000	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	ROW_5190	ROW Opportunity	0.35	0.14	40%	0.031	0.044
Richmond	2	ROW_9939	ROW Opportunity	0.37	0.14	38%	0.029	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_785	ROW Opportunity	6.19	3.83	62%	0.003	0.044
Richmond	2	planned_326	Planned Creek/Marsh Restoration	2.22	0.57	26%	0.006	0.044
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	GIP_00377 / Parcel_133196	Regional Opportunity (aspirational)	1.20	1.00	83%	0.011	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	planned_296	Planned Creek/Marsh Restoration	83.80	11.53	14%	0.000	0.043
Richmond	2	GIP_00429 / Parcel_143826	Regional Opportunity (aspirational)	1.04	0.89	86%	0.012	0.042
Richmond	2	GIP_00480 / ROW_3507	ROW Opportunity (aspirational)	9.06	5.66	62%	0.002	0.042
Richmond	2	ROW_16211	ROW Opportunity	8.14	5.41	66%	0.002	0.042
Richmond	2	ROW_13417	ROW Opportunity	5.44	3.72	68%	0.003	0.042
Richmond	2	ROW_175	ROW Opportunity	3.50	2.49	71%	0.004	0.042
Richmond	2	Parcel_188482	Parcel-Based Opportunity	7.05	3.25	46%	0.002	0.042
Richmond	2	ROW_16208	ROW Opportunity	2.13	1.44	68%	0.006	0.041
Richmond	2	ROW_16555	ROW Opportunity	3.26	2.17	67%	0.004	0.041
Richmond	2	Parcel_211565	Regional Opportunity	1.57	0.88	56%	0.008	0.041
Richmond	2	Parcel_149904	Regional Opportunity	1.45	0.91	63%	0.008	0.041
Richmond	2	Parcel_166751	Regional Opportunity	1.09	0.95	87%	0.011	0.041
Richmond	2	Parcel_113228	Parcel-Based Opportunity	0.23	0.14	61%	0.044	0.041
Richmond	2	GIP_00372 / Parcel_152927	Regional Opportunity (aspirational)	3.09	1.99	64%	0.005	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_139167	Regional Opportunity	0.87	0.70	80%	0.013	0.040
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	Parcel_116652	Parcel-Based Opportunity	0.23	0.13	57%	0.042	0.039
Richmond	2	ROW_126	ROW Opportunity	1.73	1.12	65%	0.007	0.038
Richmond	2	ROW_11363	ROW Opportunity	9.37	6.08	65%	0.002	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
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_00304 / planned_486	Parcel-Based Opportunity (aspirational)	5.73	3.84	67%	0.003	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_375480	Parcel-Based Opportunity	39.00	23.68	61%	0.000	0.037
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_126574	Regional Opportunity	0.58	0.15	26%	0.016	0.036
Richmond	2	ROW_3755	ROW Opportunity	0.29	0.11	38%	0.030	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	Parcel_146294	Parcel-Based Opportunity	14.14	9.02	64%	0.001	0.035
Richmond	2	Parcel_137626	Regional Opportunity	1.25	0.75	60%	0.008	0.035
Richmond	2	Parcel_133977	Regional Opportunity	1.28	0.66	52%	0.008	0.035
Richmond	2	Parcel_195923	Parcel-Based Opportunity	0.15	0.06	40%	0.059	0.035
Richmond	2	ROW_17021	ROW Opportunity	0.48	0.20	42%	0.019	0.034
Richmond	2	ROW_191	ROW Opportunity	1.49	1.10	74%	0.007	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_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_234570	Parcel-Based Opportunity	21.31	2.72	13%	0.001	0.034
Richmond	2	ROW_12145	ROW Opportunity	8.53	5.57	65%	0.002	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	0.57	68%	0.011	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	Parcel_111332	Parcel-Based Opportunity	0.26	0.11	42%	0.032	0.033
Richmond	2	GIP_00302 / 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	Parcel_119762	Regional Opportunity	1.08	0.35	32%	0.008	0.032
Richmond	2	Parcel_125511	Parcel-Based Opportunity	0.17	0.11	65%	0.046	0.032
Richmond	2	GIP_00314 / planned_488	Parcel-Based Opportunity (aspirational)	2.69	1.81	67%	0.004	0.031

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
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	Parcel_207080	Parcel-Based Opportunity	11.36	4.54	40%	0.001	0.031
Richmond	2	Parcel_142243	Regional Opportunity	0.79	0.65	82%	0.012	0.031
Richmond	2	ROW_5978	ROW Opportunity	1.46	0.86	59%	0.007	0.030
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_80	ROW Opportunity	0.96	0.68	71%	0.009	0.030
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_21089	ROW Opportunity	2.88	1.39	48%	0.004	0.029
Richmond	2	Parcel_198527	Parcel-Based Opportunity	7.70	0.55	7%	0.002	0.029
Richmond	2	GIP_00329 / planned_519	Parcel-Based Opportunity (aspirational)	7.69	5.20	68%	0.002	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	Parcel_150301	Regional Opportunity	0.90	0.66	73%	0.009	0.028
Richmond	2	Parcel_120253	Parcel-Based Opportunity	0.33	0.14	42%	0.021	0.028
Richmond	2	GIP_00306 / planned_517	Parcel-Based Opportunity (aspirational)	6.85	4.64	68%	0.002	0.027
Richmond	2	ROW_11010	ROW Opportunity	5.76	3.76	65%	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	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_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_190	ROW Opportunity	1.00	0.73	73%	0.008	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_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	Parcel_227484	Parcel-Based Opportunity	150.23	0.93	1%	0.000	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_00387 / Parcel_132965	Regional Opportunity (aspirational)	0.59	0.46	78%	0.011	0.023
Richmond	2	GIP_00396 / Parcel_133558	Regional Opportunity (aspirational)	0.63	0.52	83%	0.011	0.023
Richmond	2	GIP_00301 / planned_468	Parcel-Based Opportunity (aspirational)	18.01	5.20	29%	0.001	0.023
Richmond	2	GIP_00310 / planned_186	Parcel-Based Opportunity (aspirational)	18.01	5.20	29%	0.001	0.023
Richmond	2	GIP_00308 / planned_521	Parcel-Based Opportunity (aspirational)	5.57	3.75	67%	0.002	0.023
Richmond	2	ROW_59	ROW Opportunity	1.06	0.68	64%	0.007	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_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_00390 / Parcel_133528	Regional Opportunity (aspirational)	0.61	0.50	82%	0.011	0.022
Richmond	2	GIP_00341 / planned_529	Parcel-Based Opportunity (aspirational)	8.35	3.96	47%	0.001	0.022
Richmond	2	ROW_6276	ROW Opportunity	0.11	0.08	73%	0.051	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_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	planned_187	Planned Unlined Bioretention	0.48	0.29	60%	0.013	0.022
Richmond	2	planned_514	Planned Unlined Swale	0.26	0.17	65%	0.022	0.022
Richmond	2	Parcel_231444	Parcel-Based Opportunity	9.82	5.16	53%	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	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_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_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	Parcel_136865	Regional Opportunity	0.56	0.40	71%	0.011	0.021
Richmond	2	ROW_13418	ROW Opportunity	2.49	1.71	69%	0.003	0.020

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
Richmond	2	ROW_4128	ROW Opportunity	0.53	0.40	75%	0.011	0.020
Richmond	2	ROW_7747	ROW Opportunity	4.04	2.68	66%	0.002	0.020
Richmond	2	ROW_12816	ROW Opportunity	5.38	3.23	60%	0.002	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_9126	ROW Opportunity	1.07	0.38	36%	0.005	0.020
Richmond	2	Parcel_164500	Regional Opportunity	1.15	0.45	39%	0.005	0.020
Richmond	2	GIP_00330 / planned_141	Parcel-Based Opportunity (aspirational)	18.40	3.20	17%	0.000	0.019
Richmond	2	ROW_16534	ROW Opportunity	1.86	1.27	68%	0.004	0.019
Richmond	2	ROW_12536	ROW Opportunity	2.88	1.31	45%	0.002	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	Parcel_196851	Parcel-Based Opportunity	4.96	0.08	2%	0.002	0.019
Richmond	2	GIP_00364 / Parcel_140096	Parcel-Based Opportunity (aspirational)	6.62	4.81	73%	0.001	0.018
Richmond	2	GIP_00296 / planned_511	Parcel-Based Opportunity (aspirational)	2.00	1.36	68%	0.003	0.018
Richmond	2	GIP_00299 / planned_522	Parcel-Based Opportunity (aspirational)	5.90	4.00	68%	0.001	0.018
Richmond	2	ROW_6066	ROW Opportunity	0.37	0.11	30%	0.013	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_67	ROW Opportunity	1.78	1.28	72%	0.004	0.018
Richmond	2	Parcel_126885	Regional Opportunity	1.12	0.39	35%	0.005	0.018
Richmond	2	Parcel_152942	Regional Opportunity	0.52	0.42	81%	0.010	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	ROW_16524	ROW Opportunity	0.17	0.12	71%	0.027	0.017
Richmond	2	ROW_16453	ROW Opportunity	4.49	2.90	65%	0.002	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	planned_489	Planned Unlined Bioretention	1.91	1.34	70%	0.003	0.017
Richmond	2	Parcel_209985	Parcel-Based Opportunity	7.78	4.24	54%	0.001	0.017
Richmond	2	GIP_00311 / planned_480	Parcel-Based Opportunity (aspirational)	3.92	2.68	68%	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
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	planned_94	Planned Creek/Marsh Restoration	4.16	2.12	51%	0.002	0.016
Richmond	2	Parcel_50787	Parcel-Based Opportunity	0.13	0.09	69%	0.033	0.016
Richmond	2	Parcel_150106	Parcel-Based Opportunity	0.47	0.36	77%	0.010	0.016
Richmond	2	GIP_00344 / planned_137	Parcel-Based Opportunity (aspirational)	9.66	3.71	38%	0.001	0.015
Richmond	2	ROW_12101	ROW Opportunity	1.93	1.31	68%	0.003	0.015
Richmond	2	ROW_81	ROW Opportunity	1.73	1.19	69%	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_20316	ROW Opportunity	2.89	1.90	66%	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%	0.001	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_93	ROW Opportunity	5.91	3.85	65%	0.001	0.015
Richmond	2	Parcel_160376	Parcel-Based Opportunity	4.81	4.00	83%	0.001	0.015
Richmond	2	ROW_16611	ROW Opportunity	1.02	0.78	76%	0.005	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_19951	ROW Opportunity	4.44	2.66	60%	0.001	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	Parcel_375481	Parcel-Based Opportunity	4.63	2.18	47%	0.002	0.014
Richmond	2	Parcel_139599	Parcel-Based Opportunity	5.30	3.53	67%	0.001	0.014
Richmond	2	Parcel_143637	Regional Opportunity	0.71	0.32	45%	0.006	0.014
Richmond	2	Parcel_143456	Parcel-Based Opportunity	0.42	0.32	76%	0.010	0.014
Richmond	2	Parcel_139156	Regional Opportunity	2.90	1.37	47%	0.002	0.014
Richmond	2	Parcel_136418	Regional Opportunity	0.51	0.31	61%	0.008	0.014
Richmond	2	Parcel_47763	Parcel-Based Opportunity	4.66	2.90	62%	0.001	0.014
Richmond	2	Parcel_191941	Parcel-Based Opportunity	7.01	0.25	4%	0.000	0.014
Richmond	2	GIP_00461 / ROW_17569	ROW Opportunity (aspirational)	2.96	1.75	59%	0.002	0.013
Richmond	2	GIP_00315 / planned_171	Parcel-Based Opportunity (aspirational)	16.16	2.93	18%	0.000	0.013
Richmond	2	GIP_00317 / planned_475	Parcel-Based Opportunity (aspirational)	16.16	2.93	18%	0.000	0.013
Richmond	2	GIP_00303 / planned_508	Parcel-Based Opportunity (aspirational)	3.47	2.33	67%	0.002	0.013

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
Richmond	2	ROW_12140	ROW Opportunity	0.81	0.58	72%	0.005	0.013
Richmond	2	ROW_2595	ROW Opportunity	1.07	0.42	39%	0.004	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_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	Parcel_155750	Parcel-Based Opportunity	0.43	0.30	70%	0.009	0.013
Richmond	2	Parcel_112290	Regional Opportunity	1.12	0.16	14%	0.005	0.013
Richmond	2	GIP_00297 / planned_520	Parcel-Based Opportunity (aspirational)	2.35	1.60	68%	0.002	0.012
Richmond	2	ROW_14369	ROW Opportunity	0.27	0.09	33%	0.012	0.012
Richmond	2	ROW_281	ROW Opportunity	0.38	0.28	74%	0.010	0.012
Richmond	2	ROW_6101	ROW Opportunity	4.34	2.67	62%	0.001	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_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_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_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_6558	ROW Opportunity	1.87	1.00	53%	0.002	0.012
Richmond	2	ROW_9680	ROW Opportunity	2.49	1.58	63%	0.002	0.012
Richmond	2	Parcel_225370	Parcel-Based Opportunity	25.07	3.05	12%	0.000	0.012
Richmond	2	Parcel_199669	Parcel-Based Opportunity	5.58	1.49	27%	0.001	0.012
Richmond	2	Parcel_211418	Parcel-Based Opportunity	9.02	2.38	26%	0.001	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_375470	Parcel-Based Opportunity	57.79	1.88	3%	0.000	0.012
Richmond	2	GIP_00312 / planned_193	Parcel-Based Opportunity (aspirational)	0.97	0.27	28%	0.004	0.011
Richmond	2	GIP_00320 / planned_509	Parcel-Based Opportunity (aspirational)	3.02	2.04	68%	0.002	0.011
Richmond	2	GIP_00327 / planned_510	Parcel-Based Opportunity (aspirational)	2.11	1.43	68%	0.002	0.011
Richmond	2	ROW_11660	ROW Opportunity	0.34	0.18	53%	0.010	0.011
Richmond	2	ROW_14811	ROW Opportunity	0.29	0.19	66%	0.011	0.011
Richmond	2	ROW_20469	ROW Opportunity	2.29	1.56	68%	0.002	0.011
Richmond	2	ROW_111	ROW Opportunity	3.22	2.10	65%	0.002	0.011
Richmond	2	ROW_13123	ROW Opportunity	1.20	0.83	69%	0.003	0.011
Richmond	2	ROW_14072	ROW Opportunity	1.98	1.16	59%	0.002	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
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_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	Parcel_243861	Parcel-Based Opportunity	33.58	2.75	8%	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_149557	Parcel-Based Opportunity	0.35	0.25	71%	0.009	0.011
Richmond	2	Parcel_145759	Parcel-Based Opportunity	0.34	0.25	74%	0.010	0.011
Richmond	2	Parcel_167393	Parcel-Based Opportunity	4.98	2.79	56%	0.001	0.011
Richmond	2	Parcel_152538	Parcel-Based Opportunity	0.37	0.26	70%	0.009	0.011
Richmond	2	Parcel_150416	Parcel-Based Opportunity	0.32	0.27	84%	0.011	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	GIP_00374 / Parcel_135904	Parcel-Based Opportunity (aspirational)	8.78	2.30	26%	0.001	0.010
Richmond	2	ROW_12330	ROW Opportunity	0.08	0.04	50%	0.032	0.010
Richmond	2	ROW_16763	ROW Opportunity	0.59	0.37	63%	0.005	0.010
Richmond	2	ROW_17322	ROW Opportunity	0.62	0.22	35%	0.005	0.010
Richmond	2	ROW_106	ROW Opportunity	2.85	1.90	67%	0.002	0.010
Richmond	2	ROW_12120	ROW Opportunity	3.47	1.90	55%	0.001	0.010
Richmond	2	ROW_16210	ROW Opportunity	1.50	0.99	66%	0.003	0.010
Richmond	2	ROW_16841	ROW Opportunity	3.01	1.97	65%	0.002	0.010
Richmond	2	ROW_16843	ROW Opportunity	2.85	1.68	59%	0.002	0.010
Richmond	2	ROW_17073	ROW Opportunity	3.30	2.03	62%	0.002	0.010
Richmond	2	ROW_17749	ROW Opportunity	3.83	2.47	64%	0.001	0.010
Richmond	2	ROW_215	ROW Opportunity	3.95	2.54	64%	0.001	0.010
Richmond	2	ROW_3014	ROW Opportunity	0.11	0.07	64%	0.025	0.010
Richmond	2	ROW_342	ROW Opportunity	0.85	0.53	62%	0.004	0.010
Richmond	2	ROW_3511	ROW Opportunity	1.82	1.16	64%	0.002	0.010
Richmond	2	ROW_5040	ROW Opportunity	3.33	2.12	64%	0.001	0.010
Richmond	2	ROW_5698	ROW Opportunity	4.79	2.31	48%	0.001	0.010
Richmond	2	planned_490	Planned Unlined Bioretention	3.29	2.20	67%	0.001	0.010
Richmond	2	Parcel_233025	Parcel-Based Opportunity	7.10	2.14	30%	0.001	0.010
Richmond	2	Parcel_199702	Parcel-Based Opportunity	3.99	2.43	61%	0.001	0.010
San Pablo	2	GIP_00051 / 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	7.80	5.26	67%	0.005	0.127
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

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
San Pablo	2	planned_304	Planned Creek/Marsh Restoration	28.94	14.49	50%	0.002	0.105
San Pablo	2	GIP_00059 / 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_00049 / 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	0.061
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	0.036
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	ROW_16014	ROW Opportunity	5.29	3.53	67%	0.003	0.035
San Pablo	2	GIP_00050 / 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	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	Parcel_177888	Regional Opportunity	0.72	0.48	67%	0.009	0.021
San Pablo	2	ROW_52	ROW Opportunity	3.36	1.97	59%	0.002	0.020
San Pablo	2	ROW_21121	ROW Opportunity	4.48	2.81	63%	0.002	0.020
San Pablo	2	ROW_10495	ROW Opportunity	2.74	1.83	67%	0.003	0.019
San Pablo	2	ROW_4471	ROW Opportunity	1.20	0.64	53%	0.005	0.019
San Pablo	2	planned_155	Planned Creek/Marsh Restoration	0.31	0.18	58%	0.016	0.019
San Pablo	2	Parcel_188525	Regional Opportunity	0.59	0.44	75%	0.010	0.019
San Pablo	2	Parcel_174149	Regional Opportunity	1.30	0.40	31%	0.004	0.019
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	planned_325	Planned Unlined Bioretention	5.36	1.64	31%	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	ROW_14830	ROW Opportunity	3.59	2.40	67%	0.002	0.015
San Pablo	2	ROW_108	ROW Opportunity	3.27	2.07	63%	0.002	0.015
San Pablo	2	ROW_170	ROW Opportunity	4.03	2.63	65%	0.002	0.015
San Pablo	2	Parcel_190737	Parcel-Based Opportunity	11.43	3.64	32%	0.001	0.015
San Pablo	2	ROW_19776	ROW Opportunity	2.43	1.55	64%	0.002	0.014
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	planned_303	Planned Creek/Marsh Restoration	2.48	1.06	43%	0.002	0.013
San Pablo	2	planned_172	Planned Unlined Swale	2.97	1.38	46%	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_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	ROW_14301	ROW Opportunity	3.39	2.13	63%	0.002	0.011
San Pablo	2	ROW_114	ROW Opportunity	2.62	1.66	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	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_2774	ROW Opportunity	0.12	0.08	67%	0.022	0.010
San Pablo	2	ROW_11348	ROW Opportunity	1.55	1.05	68%	0.003	0.010
San Pablo	2	ROW_178	ROW Opportunity	1.53	0.99	65%	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 Pablo	2	ROW_76	ROW Opportunity	3.81	2.44	64%	0.001	0.010
San Pablo	2	Parcel_177537	Parcel-Based Opportunity	0.35	0.23	66%	0.009	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

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
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	1.38	0.83	60%	0.016	0.076
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_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_9268	ROW Opportunity	1.05	0.64	61%	0.013	0.044
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	ROW_14030	ROW Opportunity	3.62	2.17	60%	0.004	0.039
San Ramon	2	Parcel_1440	Regional Opportunity	2.20	0.24	11%	0.005	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	13.93	6.98	50%	0.001	0.036
San Ramon	2	Parcel_54308	Regional Opportunity	1.18	0.65	55%	0.008	0.032
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_73130	Regional Opportunity	1.30	0.32	25%	0.007	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	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_54147	Parcel-Based Opportunity	11.94	4.08	34%	0.001	0.019
San Ramon	2	ROW_5148	ROW Opportunity	0.88	0.42	48%	0.007	0.018
San Ramon	2	Parcel_56925	Parcel-Based Opportunity	10.03	3.99	40%	0.001	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_1309	Planned Unlined Swale	33.51	13.65	41%	0.014	1.864
Unincorporated	2	planned_911	Planned Unlined Bioretention	4.69	2.66	57%	0.032	0.628
Unincorporated	2	planned_426	Planned Creek/Marsh Restoration	11.94	3.37	28%	0.012	0.589
Unincorporated	2	Parcel_253891	Parcel-Based Opportunity	31.99	2.26	7%	0.005	0.466
Unincorporated	2	planned_912	Planned Unlined Bioretention	2.85	1.61	56%	0.031	0.380
Unincorporated	2	ROW_15886	ROW Opportunity	10.92	5.78	53%	0.009	0.339
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_15469	ROW Opportunity	1.87	1.03	55%	0.032	0.241
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	ROW_4127	ROW Opportunity	4.13	2.65	64%	0.012	0.180
Unincorporated	2	planned_1251	Planned Unlined Bioretention	6.65	3.60	54%	0.008	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	ROW_336	ROW Opportunity	1.33	0.82	62%	0.031	0.166
Unincorporated	2	planned_813	Planned Unlined Bioretention	6.43	3.65	57%	0.007	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	ROW_3884	ROW Opportunity	4.07	2.27	56%	0.007	0.098
Unincorporated	2	planned_910	Planned Unlined Bioretention	0.77	0.41	53%	0.030	0.098
Unincorporated	2	ROW_278	ROW Opportunity	8.71	4.86	56%	0.004	0.097
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%	0.004	0.090
Unincorporated	2	ROW_15893	ROW Opportunity	2.97	1.65	56%	0.008	0.078
Unincorporated	2	ROW_7816	ROW Opportunity	1.63	0.34	21%	0.011	0.074
Unincorporated	2	planned_841	Planned Unlined Bioretention	2.18	1.80	83%	0.010	0.073
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	ROW_9938	ROW Opportunity	0.86	0.53	62%	0.019	0.061
Unincorporated	2	Parcel_373409	Regional Opportunity	46.53	17.47	38%	0.001	0.061
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_212559	Regional Opportunity	2.98	1.31	44%	0.005	0.057
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	Parcel_234658	Regional Opportunity	1.95	1.27	65%	0.008	0.056
Unincorporated	2	planned_1145	Planned Unlined Bioretention	1.80	1.30	72%	0.008	0.053

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
Unincorporated	2	planned_950	Planned Unlined Bioretention	1.69	1.17	69%	0.008	0.052
Unincorporated	2	Parcel_238562	Regional Opportunity	12.03	6.43	53%	0.002	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	planned_1234	Planned Unlined Bioretention	2.16	1.04	48%	0.006	0.046
Unincorporated	2	Parcel_183600	Regional Opportunity	2.16	1.04	48%	0.006	0.046
Unincorporated	2	ROW_8370	ROW Opportunity	3.43	2.12	62%	0.004	0.042
Unincorporated	2	planned_965	Planned Unlined Bioretention	6.89	2.96	43%	0.002	0.042
Unincorporated	2	planned_1291	Planned Unlined Bioretention	1.09	0.95	87%	0.011	0.041
Unincorporated	2	planned_949	Planned Unlined Bioretention	1.37	0.93	68%	0.008	0.041
Unincorporated	2	Parcel_227359	Regional Opportunity	1.61	0.86	53%	0.007	0.041
Unincorporated	2	ROW_17780	ROW Opportunity	2.96	1.24	42%	0.004	0.040
Unincorporated	2	planned_1160	Planned Unlined Bioretention	1.68	0.89	53%	0.007	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_13	Planned Lined Bioretention	2.14	0.72	34%	0.005	0.035
Unincorporated	2	planned_1295	Planned Unlined Bioretention	1.25	0.75	60%	0.008	0.035
Unincorporated	2	ROW_18461	ROW Opportunity	1.29	0.56	43%	0.007	0.033
Unincorporated	2	planned_1161	Planned Unlined Bioretention	1.41	0.66	47%	0.006	0.032
Unincorporated	2	ROW_6054	ROW Opportunity	1.16	0.07	6%	0.006	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_218901	Regional Opportunity	1.82	1.15	63%	0.005	0.030
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	Parcel_40021	Regional Opportunity	17.61	7.00	40%	0.001	0.029
Unincorporated	2	Parcel_251699	Regional Opportunity	1.25	0.63	50%	0.007	0.029
Unincorporated	2	planned_818	Planned Unlined Bioretention	1.37	0.61	45%	0.006	0.028
Unincorporated	2	planned_714	Planned Unlined Bioretention	18.57	6.68	36%	0.001	0.028
Unincorporated	2	ROW_302	ROW Opportunity	4.48	2.58	58%	0.002	0.027
Unincorporated	2	planned_1252	Planned Unlined Bioretention	0.14	0.10	71%	0.043	0.024
Unincorporated	2	planned_955	Planned Unlined Bioretention	0.82	0.54	66%	0.008	0.024
Unincorporated	2	planned_1132	Planned Unlined Bioretention	1.16	0.53	46%	0.006	0.024
Unincorporated	2	planned_947	Planned Unlined Bioretention	0.86	0.49	57%	0.008	0.023
Unincorporated	2	planned_1249	Planned Unlined Bioretention	8.27	3.84	46%	0.001	0.023
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_1297	Planned Unlined Bioretention	0.62	0.12	19%	0.010	0.021
Unincorporated	2	planned_843	Planned Unlined Bioretention	0.97	0.44	45%	0.006	0.020
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	planned_1188	Planned Unlined Bioretention	2.05	0.21	10%	0.003	0.019
Unincorporated	2	planned_1056	Planned Unlined Bioretention	2.73	1.12	41%	0.003	0.019
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_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_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_211551	Regional Opportunity	0.70	0.38	54%	0.007	0.017
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_260347	Regional Opportunity	13.69	3.71	27%	0.001	0.017
Unincorporated	2	Parcel_248771	Regional Opportunity	8.72	4.17	48%	0.001	0.017
Unincorporated	2	planned_1232	Planned Unlined Bioretention	0.67	0.37	55%	0.007	0.016
Unincorporated	2	planned_827	Planned Unlined Bioretention	0.82	0.32	39%	0.005	0.016
Unincorporated	2	planned_1099	Planned Unlined Bioretention	7.57	4.06	54%	0.001	0.016
Unincorporated	2	planned_817	Planned Unlined Bioretention	9.30	3.93	42%	0.001	0.016
Unincorporated	2	Parcel_214683	Regional Opportunity	0.82	0.32	39%	0.005	0.016
Unincorporated	2	Parcel_261278	Regional Opportunity	7.57	4.06	54%	0.001	0.016
Unincorporated	2	Parcel_234760	Regional Opportunity	10.17	3.71	36%	0.001	0.016
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_363962	Regional Opportunity	8.03	3.75	47%	0.001	0.016
Unincorporated	2	planned_820	Planned Unlined Bioretention	0.59	0.34	58%	0.007	0.015
Unincorporated	2	planned_1047	Planned Unlined Bioretention	4.54	1.79	39%	0.002	0.015
Unincorporated	2	Parcel_259820	Regional Opportunity	8.72	3.46	40%	0.001	0.015
Unincorporated	2	Parcel_221126	Regional Opportunity	7.83	3.50	45%	0.001	0.015
Unincorporated	2	Parcel_373937	Regional Opportunity	9.10	4.03	44%	0.001	0.015
Unincorporated	2	planned_838	Planned Unlined Bioretention	0.51	0.35	69%	0.008	0.014
Unincorporated	2	Parcel_25124	Regional Opportunity	10.84	2.77	26%	0.001	0.014
Unincorporated	2	Parcel_262723	Regional Opportunity	10.53	3.23	31%	0.001	0.014
Unincorporated	2	Parcel_260232	Regional Opportunity	0.64	0.31	48%	0.006	0.014
Unincorporated	2	Parcel_236835	Regional Opportunity	11.70	2.62	22%	0.001	0.014
Unincorporated	2	ROW_19675	ROW Opportunity	4.36	2.48	57%	0.001	0.013
Unincorporated	2	planned_905	Planned Unlined Bioretention	0.92	0.52	57%	0.004	0.013
Unincorporated	2	planned_1065	Planned Unlined Bioretention	7.95	2.46	31%	0.001	0.013
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_1231	Planned Unlined Bioretention	0.53	0.28	53%	0.007	0.012
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	ROW_10414	ROW Opportunity	5.41	0.94	17%	0.001	0.011
Unincorporated	2	ROW_14235	ROW Opportunity	1.05	0.63	60%	0.004	0.011
Unincorporated	2	planned_1134	Planned Unlined Bioretention	0.23	0.11	48%	0.012	0.011
Unincorporated	2	planned_1281	Planned Unlined Bioretention	0.34	0.25	74%	0.010	0.011
Unincorporated	2	planned_953	Planned Unlined Bioretention	0.38	0.06	16%	0.008	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_1026	Planned Unlined Bioretention	7.74	2.72	35%	0.001	0.011
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_1176	Planned Unlined Bioretention	0.40	0.23	58%	0.008	0.010

Jurisdiction	Permit	Project ID	Project Type	Area (Acres)	Impervious Area (Acres)	Percent Impervious	PCBs Yield (g/acre)	PCBs Mass reduced (g/yr)
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_1101	Planned Unlined Bioretention	5.42	2.20	41%	0.001	0.010
Unincorporated	2	planned_1049	Planned Unlined Bioretention	5.32	1.53	29%	0.001	0.010
Unincorporated	2	planned_842	Planned Unlined Bioretention	4.76	2.42	51%	0.001	0.010
Unincorporated	2	Parcel_244216	Regional Opportunity	2.77	1.14	41%	0.002	0.010
Unincorporated	2	Parcel_222704	Regional Opportunity	4.35	2.44	56%	0.001	0.010
Walnut Creek	2	ROW_13263	ROW Opportunity	1.31	0.40	31%	0.019	0.104