

# GREEN INFRASTRUCTURE PLAN



**OAKLEY**  
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**CALIFORNIA**

December 8, 2020

Version 1.0

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## Acronyms

|                 |   |
|-----------------|---|
| <b>ABAG</b>     | Association of Bay Area Governments                               |
| <b>BASMAA</b>   | Bay Area Stormwater Management Agencies Association               |
| <b>CCCFCWCD</b> | Contra Costa County Flood Control and Water Conservation District |
| <b>CCCWP</b>    | Contra Costa Clean Water Program                                  |
| <b>CCW SWRP</b> | Contra Costa Watersheds Stormwater Resource Plan                  |
| <b>CEQA</b>     | California Environmental Quality Act                              |
| <b>CIP</b>      | Capital Improvement Program                                       |
| <b>EBRPD</b>    | East Bay Regional Park District                                   |
| <b>FEMA</b>     | Federal Emergency Management Agency                               |
| <b>FIRM</b>     | Flood Insurance Rate Map  |
| <b>FIS</b>      | Flood Insurance Study   |
| <b>GI</b>       | Green Infrastructure  |
| <b>GIS</b>      | Geographic Information System                                     |
| <b>IRWMP</b>    | Integrated Regional Water Management Plan                         |
| <b>LID</b>      | Low Impact Development  |
| <b>MRP</b>      | Municipal Regional Stormwater Permit                              |
| <b>MTC</b>      | Metropolitan Transportation Commission                            |
| <b>NPDES</b>    | National Pollutant Discharge Elimination System                   |
| <b>PCBs</b>     | Polychlorinated Biphenyls   |
| <b>RWQCB</b>    | Regional Water Quality Control Board                              |
| <b>TMDL</b>     | Total Maximum Daily Load  |



# 1 Introduction and Overview

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## 1.1 Regulatory Mandate

The City of Oakley (City) is one of 81 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<sup>1</sup> and was amended in February 2019<sup>2</sup> to add the cities of Antioch, Brentwood, and Oakley in East Contra Costa County as Permittees.

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.

Provision C.16.5.a. in the amended MRP requires that the City to prepare a Green Infrastructure Plan, to be submitted by December 31, 2020.

Green Infrastructure (GI) 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. 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.

MRP Provisions C.11 and C.12 require Permittees in the San Francisco Bay Region—including the municipalities in most of Contra Costa County—to reduce estimated stormwater loading of PCBs and mercury to the Bay using green infrastructure. However, the Cities of Antioch, Brentwood, and Oakley are exempted from Provisions C.11 and C.12. Therefore, the City of Oakley’s Plan is oriented toward maximizing the multiple benefits, including water-

***“The MRP was last reissued in November 2015<sup>1</sup> and was amended in February 2019<sup>2</sup> to add the cities of Antioch, Brentwood, and Oakley in East Contra Costa County as Permittees.”***

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<sup>1</sup> Order R2-2015-0049

<sup>2</sup> Order R2-2019-0004

quality benefits, that can be obtained through Green Infrastructure, and does not have a specific focus on reducing PCBs and mercury.

## 1.2 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” practices are currently implemented on land development projects in the City. Specific methods and design criteria are spelled out in the Contra Costa Clean Water Program’s (CCCWP’s) *Stormwater C.3 Guidebook*, which the City has referenced in Chapter 11, Stormwater Management and Discharge Control, of the City’s Municipal Code.

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

## 1.3 Plan Context and Elements

### 1.3.1 Planning Context

#### ➤ *Municipal geography*

Oakley’s west border is Highway 160, which provides access to Oakland, San Francisco, San Jose, Sacramento, and the Central Valley. The City of Antioch adjoins Oakley on the west, the city of Brentwood adjoins Oakley on the south, and Bethel Island lies to the east. The Sacramento-San Joaquin Delta forms the northern boundary. The southwestern skyline is dominated by Mt. Diablo.

#### ➤ *Demographics*

As reported in the Demographic Profile on the City’s website, the City of Oakley has a population of 38,075. The population density was 2,356.8 people per square mile. The Demographic Profile reports 12,465 households as of the 2010 Census.

The population was spread out with 29% under the age of 18, 11% aged 19 to 25, 20% aged 26 to 40, 23% aged 41 to 55, 10% aged 56 to 65, 6% aged 66 to 80, and 1% who were over 80 years of age. The median age is 33 years.

The average household income is reported as \$89,268, with 51% of household incomes over \$75,000.

➤ *Economic and Social Trends*

According to the City's Economic Development Work Plan, "The City of Oakley has experienced steady growth since its incorporation in 1999 and many steps have been taken to help with the overall economic development of the community. Along with the dozens and dozens of capital projects and other programs to foster economic development over the last 16 years, there have been some specific policy documents developed: In 2002, the City adopted an Economic Development General Plan Element; In 2009, the City completed an Economic Development Assessment; and in 2010, the City adopted an Economic Development Work Plan.

"In 2014, the City hired a full-time Economic Development Manager and created a 2014 – 2015 Economic Development Work Plan. As Oakley has continued to grow and develop, an updated 2016 – 2017 Work Plan is needed to meet the current needs of the community and businesses in Oakley."

➤ *Development and Redevelopment Trends*

The housing development in the City of Oakley has been on a steady increase over the last six years. With housing prices being affordable relative the core Bay Area housing prices, there has been an increase with younger families looking to establish in our City.

➤ *Commitment and Actions for Sustainability*

The City will further explore sustainability issues as we update the General Plan scheduled to be completed in the spring of 2021.

➤ *Staffing and Scope of Sustainability Programs*

The City of Oakley General Plan addresses sustainability issues. Planning staff is engaged in addressing sustainability through the General Plan goals and policies.

➤ *CEQA*

According to Chapter 1, Zoning, of the City's Municipal Code, the Community Development Director is responsible for conducting the City's environmental review process in accordance with the State Environmental Quality Act.

The City has prepared a Development Application Process handout available on the City's website, which states that a Planner would be assigned as a development project's "Project Leader" and will review for any environmental issues associated with the project, as required by the California Environmental Quality Act (CEQA). The handout notes that all discretionary projects require an Environmental Review. The project leader will determine the applicable process for the project which may require the submittal of various technical studies depending on the type of project and the intensity of the project. Some projects may require a Traffic Impact Study, a Biological Assessment, a Noise Study or other studies as determined by local, state and federal laws. It may become evident during the review of a project that other studies will be required to fully evaluate a project and to conduct the CEQA review, as mentioned above.

### 1.3.2 Watersheds and Storm Drainage Infrastructure

#### ➤ *Watersheds and Watershed Characteristics and Challenges*

##### **East and West Antioch Creek Watersheds**

According to the Contra Costa Watersheds Stormwater Resource Plan, “the East and West Antioch Creek watersheds are located in the northeastern region of the County. The larger creek system in this area drains from the hills south of Antioch to the Sacramento-San Joaquin Delta. Both watersheds fall primarily within the City of Antioch, though the southwestern region lies in unincorporated County and the eastern boundaries fall within the Cities of Brentwood and Oakley.

“East Antioch Creek flows from headwaters near Lone Tree Way in Antioch. A number of detention basins and levees have been constructed along the creek to prevent flooding into the Marsh Creek drainage area. Land uses in the East Antioch Creek watershed consist of 87% urban lands and 13% open space, parks and recreation areas, and water.

“Markley Canyon Creek and other unnamed tributaries feed into West Antioch Creek before it discharges into the Sacramento-San Joaquin Delta. The main stem of West Antioch Creek remains above ground for most of its length, though it flows through a constructed channel in its lower half. Large sections of its tributaries have been routed underground through more developed areas to provide flood protection and drainage. Land uses in the West Antioch Creek watershed consist of 5% agricultural lands; 47% urban lands; and 48% open space, parks and recreation areas, and water.

“Two reservoirs within the West Antioch Creek watershed, Antioch Municipal Reservoir and Contra Loma Reservoir, provide drinking water storage. Both reservoirs are fed by the Contra Costa Canal, which diverts water from the Sacramento-San Joaquin Delta at Rock Slough (Contra Costa Water District, 2017 and City of Antioch, 2017).

“The East and West Antioch Creek watersheds do not contain any water bodies that have been identified in the State’s 303(d) list of Impaired Water Bodies (CVRWQCB, 2016).”

##### **Marsh Creek Watershed**

According to the Contra Costa Watersheds Stormwater Resource Plan, “Marsh Creek’s headwaters are located in the eastern Mount Diablo foothills, from which the Creek and its tributaries flow across the northeastern portion of the County and drain into the Sacramento-San Joaquin Delta. The upper watershed contains protected open space areas, including Mount Diablo State Park, and EBRPD’s Round Valley and Morgan Territory Regional Preserves. Marsh Creek is the second largest watershed in the County, at 60,066 acres. The Marsh Creek watershed is primarily located in unincorporated County, with portions located within the Cities of Antioch, Brentwood, and Oakley.

“Marsh Creek and a tributary, Briones Creek, feed the Marsh Creek Reservoir on the eastern edge of the watershed. Farmers and flood control authorities have altered Marsh Creek’s historical path through the

alluvial plain north of Marsh Creek Reservoir to protect agricultural resources. Changes have included the building of levees, detention basins, and dams, as well as culverting, straightening, and the creation of concrete-lined channels. These changes have led to reduced riparian habitat and vegetation, as well as the intended alteration of flow.

“More recent projects have been countering historic changes by restoring natural watershed processes and improving water quality. Some examples of projects underway or completed include:

- The Three Creeks Parkway Restoration project commenced in 2016 to widen and improve an approximately 4,000-foot section of Marsh Creek in the City of Brentwood to provide additional flood conveyance capacity and restore riparian habitat along the creek. The project is a cooperative effort of American Rivers and the Flood Control District.
- In 2013 a flood protection and habitat restoration project commenced in the Upper Sand Creek Basin. The project expanded the basin capacity to enhance flood control, restored a stretch of the creek and planted native willows, created 10 acres of wetlands, and installed trash capture devices.

Land uses in the Marsh Creek watershed consist of 44% agricultural lands; 24% urban lands; and 32% open space, parks and recreation areas, and water.

Marsh Creek has a TMDL for diazinon while a number of associated water bodies are identified on the state’s 303(d) list of impaired water bodies. Water quality impairments include:

- Marsh Creek Reservoir for mercury,
- Dunn Creek (Mount Diablo Mine to Marsh Creek) for mercury and metals,
- Marsh Creek (Dunn Creek to Marsh Creek Reservoir) for mercury and metals,
- Marsh Creek (Marsh Creek Reservoir to San Joaquin River) for indicator bacteria, mercury, and toxicity, and
- Sand Creek (tributary to Marsh Creek) for DDE, DDT, dieldrin, disulfoton, indicator bacteria, salinity, specific conductivity, and toxicity (CVRWQCB, 2016).
- Sand Creek was listed for chlorpyrifos and diazinon, but these are identified as addressed by a non-TMDL action.

### **East County Delta Drainages**

According to the Contra Costa Watersheds Stormwater Resource Plan, “The East County Delta Drainages are located in the eastern-most portion of the County. Ninety-one percent of the land in the East County Delta Drainages region is unincorporated, with the remainder falling within the Cities of Antioch, Oakley, and Brentwood.

“Water that falls in California’s Central Valley ultimately flows to the Pacific Ocean through the Sacramento-San Joaquin Delta. More than half of California’s water needs are met with water pumped from the Delta in the East County Delta Drainages.

“The bays located along the County shoreline and the East County Delta Drainages are tidally influenced. Peripheral levees have been built to protect Delta islands that have subsided below sea level, and previous major levee breaks have created new water bodies in this region.

“Sediment deposits in this flood-prone region produced soil that attracted agriculture to the area. Flood control infrastructure and irrigation canals were subsequently constructed to protect the farmland and to provide water to it. Land uses in the East County Delta Drainages consist of 67% agricultural lands; 21% urban lands; and 12% open space, parks and recreation areas, and water.

Old River is 303(d) listed as impaired for chlorpyrifos, electrical conductivity, low dissolved oxygen, and total dissolved solids. Delta Waterways (southern portion) are impaired for chlorpyrifos, DDT, diazinon, electrical conductivity, pesticides, invasive species, mercury, and toxicity (CVRWQCB, 2016).

➤ *Major Drainages and Major Drainage Characteristics and Challenges*

The City includes the following drainages:

- Marsh Creek – the Marsh Creek watershed is primarily located in unincorporated County, with portions located within the Cities of Antioch, Brentwood, and Oakley.
- East County Delta Drainages – the overwhelming majority of the land in the East County Delta Drainages region (91%) is unincorporated, with the remainder falling within the Cities of Antioch, Oakley, and Brentwood
- East Antioch Creek – the eastern boundaries fall within the Cities of Brentwood and Oakley. Although East Antioch Creek does not flow into the City of Oakley, there is a small area of flooding created by this creek that does affect the western portion of the City. The creek runs through private properties within drainage easements.
- San Joaquin River – The northern portion of the City Oakley is subject to delta flooding via the San Joaquin River.

➤ *Storm Drain System*

The City of Oakley has a network of storm drainage infrastructure that collects and conveys stormwater. The northwesterly area of our City drains directly towards the Delta. The southern portion of our City primarily drains to Marsh Creek which is maintained by the Contra Costa Flood Control District. The remainder eastern portion of our City are protected by levees or remains in an unformed drainage area or within the floodplain. A majority of the eastern portion of our City with unformed drainage areas are currently agricultural lands.

➤ *Storm Drain Challenges (Pertinent to GI)*

The City of Oakley has a mixture of old and new communities. The newer developments are regulated to install LID facilities. For the implementation of green infrastructure in older areas with existing storm drain infrastructure, the biggest challenge is finding the necessary right of way to install such facilities. Areas that do offer additional right of way are something not ideal due to its location relative to the drainage pattern of the area. Furthermore, the funding for the installation and maintenance for such

green infrastructure projects are undefined due to its nature that it is not associated with a private development project that could help fund such facilities.

➤ *Flood Zones*

The **Floodplain Boundaries** section of the current (2017) Flood Insurance Study (FIS) provided by the Federal Emergency Management Agency, states, that in order “to provide a national standard without regional discrimination, the 1-percent annual chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent annual chance flood is employed to indicate additional areas of flood risk in the community. For the stream studied in detail, the 1- and 0.2- percent annual chance floodplains have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale and a contour interval as shown on Table 12, ‘Topographic Map Information.’

“The 1- and 0.2-percent annual chance floodplain boundaries are shown on the FIRM (Published Separately). On this map, the 1-percent annual chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE), and the 0.2-percent annual chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1- and 0.2-percent annual chance floodplain boundaries are close together, only the 1-percent annual chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

“For the streams studied by approximate methods, only the 1-percent annual chance floodplain boundary is shown on the FIRM (Published Separately).

“Approximate 1-percent annual chance floodplain boundaries were taken originally from the Flood Hazard Boundary Map for the unincorporated areas of Contra Costa County (Reference 119).”

The **Floodways** section of the current (2017) FIS states that: “Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent annual chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1-percent annual chance flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as a minimum standard that can be adopted directly or that can be used as a basis for additional floodway studies.”

Further, the **Floodways** section of the current FIS states that, “No floodways were computed for streams within the City of Oakley.”

Oakley’s **Principal Flood Problems** as described in the current (2017) FIS are that: “Flooding in Contra Costa County is predominantly confined within traditional riverine valleys. Locally, natural or manmade levees separate channels from flood plains and cause independent overland flow paths. Occasionally, railroad, highway, or canal embankments form barriers, resulting in ponding or diversion of the flow. The delta area has been reclaimed by about 1,100 miles of levees along natural and manmade waterways that segregate it into about 120 tracts locally known as islands. The entire region of approximately 700,000 acres is under the influence of the tides and a large part of the land surface is lower than the water on the opposite side of the levees. Many of the islands are 15 to 25 feet below sea level due to the subsidence of the peat land structure. Flooding of the delta islands has usually resulted from structural failure of the levees prior to overtopping (Reference 12). The northern portion of the City Oakley is subject to delta flooding via the San Joaquin River.”

➤ *Flood Control Facilities*

The current (2107) FIS describes the existing flood protection measures in the City as follows:

“The CCCFCWCD, with the assistance of the NRCS, have completed a number of projects throughout the county. Among these are the Marsh-Kellogg Watershed Plan (Reference 5) in the eastern, or delta, region. This consists primarily of the Marsh Creek flood detention reservoir located at the edge of the foothills south of Brentwood and improvement of 36 miles of channel on Marsh, Sand, and Deer Creeks. These channels were designed to carry the 2-percent annual chance flood. The lower reaches of Marsh Creek Channel flow through the City of Oakley.”

➤ *Flood Control Development Policies*

The City has adopted Chapter 12 of the Municipal Code entitled Floodplain Management. The purpose of this section is to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by legally enforceable regulations applied uniformly throughout the community to all publicly and privately-owned land within flood prone areas.

➤ *Storm Drain Opportunities (Pertinent to GI)*

Smaller Flood Control basins can be an area of opportunity to evaluate if green infrastructure can be implemented. One of the locations we have identified to be a potential project to implement, will serve an older part of our downtown area that can be challenging to redevelop with limited right of way. This basin is approximately 2.5 acres and currently has not been constructed. This could be an opportunity for our City to reevaluate the drainage pattern for this area and work with the Contra Costa Flood Control District to identify if this basin can be designed with flood control purposes while meeting the goals of green infrastructure.

➤ *Recent and Planned Drainage Improvements*

The SD Projects listed in the Adopted CIP Budget 18-19 (5-year improvement plan):



- Bethel Island Road Culvert Rehabilitation Project
- Piper Lane Drainage Channel Trash Capture Device Project


➤ *Funding for Maintenance and for Capital Improvements*

Every year the City adopts a Capital Improvement Program (CIP), a 5-year improvement plan designed to develop and identify projects and the associated funds required to adequately develop and maintain the city's infrastructure and future capital projects.

Maintenance for improvements will be primarily included as part of the Operating Budget for Public Works, using existing funding sources. The funding for construction of Capital Improvement projects would derive from various sources, including but limited to grants, partnerships, one-time monies, annual storm water capital budget outlays, and potential future tax or bond measures.

### 1.3.3 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 Contra Costa Clean Water Program (CCCWP). The CCW SWRP identified and prioritized potential multi-benefit stormwater management projects, including green infrastructure 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 Green Infrastructure is being prepared by Contra Costa municipalities collectively through the CCCWP and is consistent with guidance prepared by BASMAA. The RAA for Green Infrastructure 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 green infrastructure implementation in 2020, 2030, and 2040 under various scenarios, which include implementation of projects identified in this Plan. Results pertinent to green infrastructure planning and implementation are discussed in Section 2 of this Plan.
  - The City of San Pablo and the City of Richmond have embarked on a Grant for Alternative Compliance/Water Quality Trading in Contra Costa County. As of this writing, the grant process is ongoing and the status of developing a successful alternative compliance system is unknown.

### 1.3.4 Related Local Planning Documents

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 has identified the following planning documents that will be updated to appropriately incorporate green infrastructure requirements. As the process to update the identified documents is lengthy and involved, the City plans to update the plans per their respective and previously determined update schedule. Until that time, it has been determined that GI can be properly implemented by means of this Green Infrastructure Plan, duly considered by the City Council and approved. Additionally, City staff has confirmed that each of the identified plans has adequate language allowing for incorporation of new or updated plans.

| <b>Document</b>                   | <b>Scheduled Update</b>                                      |
|-----------------------------------|--|
| General Plan                      | Update anticipated to be completed spring 2021               |
| Storm Drainage Master Plan        | To be updated FY 2021/2022                                   |
| Standard Details & Specifications | Revisions ongoing. Next revision to be issued spring of 2021 |

It is noted that low impact development is already well engrained in the project review process as it has been required since the inclusion of C.3.d in the Permit.

### 1.3.5 Outreach and Education

The City's Green Infrastructure 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. The City also intends to engage relevant government staff and community members as projects move forward towards design and implementation.

The City's GI efforts have been ongoing since 2016. A brief timeline of the efforts is provided below:

- FY 2015-16 – City staff began utilizing BASMAA's May 6, 2016 document, "Guidance for Identifying Green Infrastructure Potential in Municipal Capital Improvement Projects" to review Early Implementation of Green Infrastructure Projects and No Missed Opportunities.
- FY 2015-16 – City staff listed and submitted on their Cleanwater Annual Report each public project going through their process for identifying potential projects with green infrastructure potential including the status.
- June 28, 2016 – City staff made a presentation on Green Infrastructure to the City Council.

- FY 2016-17 – During FY16-17, Oakley’s local outreach focused on interdepartmental education and coordination with the numerous internal stakeholders – those involved with the plan, policy, and project concept development as well as those ultimately responsible to plan and implement the projects.
- FY 2016-17 – City staff continued utilizing BASMAA’s May 6, 2016 document, “Guidance for Identifying Green Infrastructure Potential in Municipal Capital Improvement Projects” to review Early Implementation of Green Infrastructure Projects and No Missed Opportunities.
- FY 2016-17 – City staff listed and submitted on their Cleanwater Annual Report each public project going through their process for identifying potential projects with green infrastructure potential including the status.
- FY 2017-18 – During FY17-18, Oakley’s local outreach focused on continued interdepartmental education and coordination with the numerous internal stakeholders – those involved with the plan, policy, and project concept development as well as those ultimately responsible to plan and implement the projects.
- FY 2017-18 – City staff continued utilizing BASMAA’s May 6, 2016 document, “Guidance for Identifying Green Infrastructure Potential in Municipal Capital Improvement Projects” to review Early Implementation of Green Infrastructure Projects and No Missed Opportunities.
- FY 2017-18 – City staff listed and submitted on their Cleanwater Annual Report each public project going through their process for identifying potential projects with green infrastructure potential including the status.
- June 26, 2018 – City staff presented the Green Infrastructure Framework Document to the City Council at a regularly scheduled public meeting. The Document was duly considered and approved.
- September 26, 2018 – City Engineering and Planning staff participated in the Green Infrastructure Planning Workshop for Permittees. Oakley’s on-call stormwater consultants also participated in the workshop.
- FY 2018-19 – During FY18-19, Oakley’s local outreach has focused on continued interdepartmental education and coordination with the numerous internal stakeholders – those involved with the plan, policy, and project concept development as well as those ultimately responsible to plan and implement the projects.
- FY 2018-19 – The City initiated an effort to amend their General Plan. The City intends to combine the public outreach and education efforts for Green Infrastructure with the efforts for the General Plan Amendment. The City will emphasize Green Infrastructure as a Community Goal and encourage stakeholders to prioritize Green Infrastructure throughout the public process.
- FY 2018-19 – City staff continued utilizing BASMAA’s May 6, 2016 document, “Guidance for Identifying Green Infrastructure Potential in Municipal Capital Improvement Projects” to review Early Implementation of Green Infrastructure Projects and No Missed Opportunities.
- FY 2018-19 – City staff listed and submitted on their Cleanwater Annual Report each public project going through their process for identifying potential projects with green infrastructure potential including the status.
- 2019 – The City participated 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:
  - Reviewed with other Contra Costa municipalities, through the CCCWP, conceptual, preliminary, and final plans and specifications developed for Green Infrastructure projects.

- Identified significant Green Infrastructure projects and issues encountered during design and construction of those projects and brought those projects and issues forward during in-person interagency workshops and meetings.
- Participated 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.
- Participated, 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 through the steps of project identification, evaluation, design, and construction.
- 2019-20 – City engineering staff, supported by staff from numerous City departments, drafted the City's Green Infrastructure Plan (this document).
- December 8, 2020 – The City Engineer will present this GI Plan to the public and the City Council for consideration and adoption at the regularly scheduled Council meeting.

#### **1.3.6 Policies, Ordinances, and Legal Mechanisms**

The City Attorney has determined that the Green Infrastructure Plan could be approved by City Council and implemented as a Plan.

It is noted that this Green Infrastructure Plan was considered through its development and approval by the City Council.

- Green Infrastructure was presented to the City Council on June 28, 2016.
- The Green Infrastructure Framework was presented for further consideration by the City Council on June 26, 2018 where it was approved.
- This Green Infrastructure Plan (this plan) was presented for further consideration by the City Council on December 8, 2020 where it was duly considered and approved.

This Plan can be found on Oakley's Green Infrastructure webpage.

## 2 Green Infrastructure Targets

This City of Oakley’s 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’s 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’s jurisdiction by 2020, 2030, and 2040.

For the purposes of creating the local GI Plan, Oakley prioritized their GI projects based on achieving other multiple benefits including controlling other stormwater pollutants, preserving and enhancing local stream hydrology, reducing localized flooding, 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.



### 2.1 Private Development Projections

To forecast private development, the City participated in a regional process coordinated through the CCCWP and shared with BASMAA member agencies. 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 forecasts 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 Association of Bay Area Government (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). The resulting maps were reviewed by local staff for consistency with the City’s local knowledge and local planning and economic development initiatives. The maps were revised, and each revision 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.

Based on these assumptions and the revised maps, the amounts of existing impervious surface forecast to be retrofit with green infrastructure via private development are as shown in Table 2.

| <b>Table 2. Estimates of Impervious Surface to Be Retrofit via Private Development</b> |                             |  |
|--|-----------------------------|--|
| <b>Year</b>  | <b>Total Square Footage</b> | <b>Comments</b>  |
| Through 2020   | 1,603,381                   | Includes completed private projects included in AGOL as well as private projects projected to be completed by end of 2020 in UrbanSim. |
| 2021-2030  | 4,241,846                   | Includes private projects projected to be completed by end of 2030 in UrbanSim.  |
| 2031-2040  | 827,824                     | Includes private projects projected to be completed by end of 2040 in UrbanSim.  |

## 2.2 Targets for Public Projects

Forecasted impervious surface to be retrofit via public projects is in two categories:

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 forecasts are summarized in Table 3.

| <b>Table 3. Estimates of Impervious Surface to Be Retrofit via Public Projects</b> |  |  |              |
|--|--|--|--------------|
| <b>Year</b>  | <b>Square footage tributary to GI Projects included in this Plan</b> | <b>Additional square footage associated with projects yet to be identified</b> | <b>Total</b> |
| Through 2020   | 23,365   | 0  | 23,365       |
| 2021-2030  | 0  | 0  | 0            |
| 2031-2040  | 0 <sup>3</sup>   | 0  | 0            |

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<sup>3</sup> The City of Oakley's GI plan identifies seven (7) potential GI projects. These projects are currently preliminary and associated treatment areas have not yet been calculated.

## 3 Public Project Identification, Prioritization, and Mapping

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### 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. 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.
1. Screen identified publicly-owned parcels to identify those at least 0.1 acres in size; and with average slopes less than 10%.
2. 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.
3. 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.
4. 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. 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 4.

| <b>GI Project Type</b>    | <b>Definition</b>  | <b>Description</b>   |
|---------------------------|--|--|
| ROW/green street projects | Treating the road and portions of adjacent parcels       | <ul style="list-style-type: none"> <li>All street-based projects.</li> </ul>   |
| Regional Projects         | Treating a large area draining to the parcel             | <ul style="list-style-type: none"> <li>The parcel contains at least 0.5 acre of undeveloped or pervious area (as identified through the land use class); and</li> <li>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).</li> </ul> |
| 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 5.

| <b>Infiltration Feasibility Category</b>      | <b>Description</b>   |
|---|--|
| Hazardous/infeasible for infiltration         | Projects that are located: <ul style="list-style-type: none"> <li>More than 50% overlying liquefaction hazards; or</li> <li>Within 100 feet of a site with soil or groundwater contamination (e.g., based on proximity to active GeoTracker<sup>4</sup> or EnviroStor<sup>5</sup> sites).</li> </ul> |
| 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).   |

<sup>4</sup> 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/>).

<sup>5</sup> 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/>).

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.

#### *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:

- Capture and Reuse
- Constructed Wetland
- Lined Bioretention
- Unlined Bioretention
- Unlined Swale
- Water Quality Basin

#### *SWRP Project Opportunity Drainage Area*

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

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’s jurisdictional boundary were provided to the City for review. The project classification information and SWRP score were provided to the City for informational purposes.

#### **3.1.3 Local staff identification of additional projects**

Through a review of the City’s storm drain system, in addition to a GIS review of public parcels with potential for redevelopment, staff identified opportunity projects for consideration. In addition, existing and unfunded CIP projects were re-examined to assess the possible expansion to include GI.

#### **3.1.4 Integration of GI Projects with the Storm Drain Master Plan**

The City does not have a formal Storm Drain Master Plan. However, proposed improvements to the Storm Drain system are scoped and prioritized in the 5-Year Capital Improvement Program.

### 3.1.5 Integration with Capital Improvement Project planning process

Individual CIP projects are assessed for inclusion of GI, prioritized according to Council initiatives, and then recommended for funding, pending available resources and City Council approval. Approved projects are subsequently added to the CIP plan.

### 3.1.6 Integration with Complete Streets and other transportation planning processes

Complete streets projects are typically initiated through Transportation, according to the City's adopted Bicycle, Pedestrian, and Safe Routes to Transit Master Plan. As part of the scope of each study, an assessment of GI potential is included.

## 3.2 Maps and Project Lists

The list of projects currently determined by the City to be feasible for inclusion in this GI Plan are included on Table 6 below. Associated maps are included in Appendix A.

| <b>Description</b>                         | <b>2020</b> | <b>2030</b> | <b>2040</b> |
|--|-------------|-------------|-------------|
| Detention Basin DA29E                      |             |             | X           |
| E Cypress Rd – Main St to Bethel Island Rd |             |             | X           |
| Main St – Honey Ln to Simoni Ranch Rd      |             |             | X           |
| Main St – W Cypress Rd to Clearwood Dr     |             |             | X           |
| Main St – Fifth St to Bayside Way          |             |             | X           |
| Main St – Gardenia Ave to Vintage Pkwy     |             |             | X           |
| Main St – SR160 to Carol Ln                |             |             | X           |

## 4 Early Implementation Projects

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### 4.1 Review of Capital Improvement Projects

MRP Provision C.3.j.ii. requires that the City 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 submitted an initial list with the FY 15-16 Annual Report to the RWQCB and reviews and updates the list with each subsequent Annual Report.

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 F and can be found on the City’s GI webpage.

*“The City submitted an initial list with the FY 15-16 Annual Report to the RWQCB and reviews and updates the list with each subsequent Annual Report.”*

The list is revisited continuously, and updated and reported annually, with new opportunities:

- All new construction and substantial upgrades to City facilities, including public buildings, offices, stations, parking lots, and corporation yards, incorporate LID features and facilities in accordance with the New Development and Redevelopment (Provision C.3) requirements of the Municipal Regional Stormwater Permit. When the project includes street frontage improvements, and where feasible, the project is also designed so that street runoff is directed to LID facilities within the site or in the adjacent public right of way.
- All transportation projects for which the City is a sponsor or participant, including roadway widening or reconstruction, streetscape improvements, “complete streets” projects, traffic calming, safe routes to schools, and other projects that involve roadway reconfiguration, are evaluated for the potential to incorporate LID features and facilities.
- All storm drain projects are evaluated for the potential to incorporate LID features and facilities to treat stormwater and manage flows before discharge to streams or the municipal separate storm sewer system. Where appropriate, LID facilities are incorporated into projects to daylight or restore urban streams.
- The City has an ongoing process, affirmed in each adopted budget, to proactively review aspects of its storm drainage system to identify additional opportunities to incorporate LID features and facilities, with an emphasis on exceptional or low-cost opportunities.
- The City receives and adds to the list where appropriate Green Infrastructure opportunities identified by the public.

Where implementation of LID facilities has been found to be infeasible, an opportunity may be removed from the prioritized list.

#### 4.2 List of Projects Identified

CIP Projects with Green Infrastructure potential that were identified during 2015-2019 are listed in Table 7, along with their status.

| <b>Table 7. Capital Improvement Projects with Green Infrastructure Potential (identified 2015-2019)</b> |   |   |                                |  |
|---|---|---|--------------------------------|--|
| <b>Project Name</b>   | <b>Description</b>  | <b>Potential Tributary Impervious Area (SF)</b> | <b>Project Status</b>          | <b>Included in Green Infrastructure Plan (Y/N)</b>   |
| CIP 165 – Main Street Downtown improvements; Norcross Lane to 2nd Street                                | Install median w/landscaping, sidewalks and curb ramps.   | NA  | Construction Completed FY17-18 | N – Project design was nearly complete and total impervious surface was reduced from installation of medians with landscaping. |
| CIP 165B - Main Street Downtown improvements; 2 <sup>nd</sup> Street to 5 <sup>th</sup> Street          | Install median w/landscaping, sidewalks and curb ramps.   | NA  | Construction Completed FY17-18 | N – This project included GI but was completed as part of Early Implementation   |
| CIP 176 – Oakley Community Park Project   | Community Park with various facilities                    | TBD   | Conceptual Plan                | TBD  |
| CIP 191 - Laurel and Rose intersection improvements   | Signalization, curb ramps, sidewalk and pavement widening | NA  | Construction Completed FY18-19 | N – This project included GI but was completed as part of Early Implementation   |
| CIP 194 - Oakley Recreation Project   | Recreational building, athletic field, parking            | NA  | Construction Completed FY18-19 | N – This project included GI but was completed as part of Early Implementation   |
| CIP 196 - Laurel Road Widening  | Pavement widening, sidewalks and landscape medians        | NA  | Construction Completed FY18-19 | N – This project included GI but was completed as part of Early Implementation   |
| CIP 205 – Downtown Train Platform Station & Parking Lot Phase 1 Project                                 | Train Platform and Parking Lot                            | TBD   | Conceptual Plan                | TBD  |

*Evaluation of Listed Opportunities for Green Infrastructure Retrofits*

For new and substantial upgrades to City facilities, transportation projects, and storm drainage projects, whenever doing so can be made consistent with the project objectives, would be reasonably cost-effective, and would be technically feasible, the City will incorporate LID features and facilities into the preliminary design of the project. LID features will be incorporated in project final designs unless the incremental costs would prevent the project from being constructed.

The City has an ongoing process, affirmed in each adopted budget, to evaluate opportunities on the list and to seek funding, including submittal of grant applications, for implementation.

**4.3 Workplan for Completion**

The complete list of potential public projects is generated by overall needs of the City. The City has added a prioritization factor to projects with green infrastructure potential based on guidance developed by BASMAA: “Guidance for Identifying Green Infrastructure Potential in Municipal Capital Improvement Program Projects” (May 6, 2016), attached to this document as Appendix F and available on the City’s GI website. While prioritizing projects, the City is still considering the overall needs of the City in finalizing its 5-year capital project lists.



## 5 Tracking and Mapping Public and Private Projects Over Time

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### 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 required of most Contra Costa Permittees). 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.

### 5.2 Results

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 actively engages with the AGOL tool and maintains up-to-date project data for the City of Oakley. The City currently conducts updates of the AGOL tool at an annual frequency.

## 6 Design Guidelines and Specifications

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### 6.1 Guidelines for Streetscape and Project Design

When determining design elements to be included in streetscape improvements and complete streets projects, project managers and designers will consult the National Association of City Transportation Officials (NACTO) Urban Street Stormwater Guide, the San Mateo County Sustainable Green Streets and Parking Lots Design Guidebook, and other resources available on the CCCWP website:

<https://www.cccleanwater.org/construction-business/green-infrastructure/resources>

### 6.2 Specifications and Typical Design Details

Low Impact Development features and facilities will be designed and 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

The City uses the sizing guidelines generated by the Bay Area Stormwater Management Agencies Association (BASMAA) report, Guidance for Sizing Green Infrastructure Facilities in Street Projects, attached as Appendix D.

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

## 7 Funding Options

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### 7.1 Funding Strategies Developed Regionally

The City is committed to the implementation of green infrastructure in future development, but also in retrofitting the existing infrastructure to move away from existing “gray” infrastructure. To that end the City will be working collaboratively with its co-permittees in the pursuit of funding and project opportunities that are aimed at creating green infrastructure. The primary purpose in participating in the Contra Costa Watersheds Stormwater Resources Plan (SWRP) development was to be eligible for state grant funds by having all potential projects in the SWRP. The BASMAA Roadmap for Funding of Sustainable Streets will be an important tool in the quest for funding.

BASMAA’s “Roadmap of Funding Solutions for Sustainable Streets,” April 26, 2018, attached as Appendix C, states: (The) “Roadmap, was developed to identify and remedy obstacles to funding for Sustainable Street projects, which are defined as projects that include both Complete Street improvements and green stormwater infrastructure, and that are maintained in a state of good or fair condition. The specific actions included in the Roadmap are designed to improve the capacity – both statewide and in the San Francisco Bay Area -- to fund Sustainable Street projects that support compliance with regional permit requirements to reduce pollutant loading to San Francisco Bay, while also helping to achieve the region’s greenhouse gas reduction targets.

“To date, Sustainable Streets have faced funding obstacles due to the restrictions of various funding programs – which may not recognize the potential for overall cost savings that local agencies may achieve through multi-benefit Sustainable Streets projects. Some transportation grants may fund only some aspects of a Sustainable Street project, while resource grants may fund other aspects – and assembling multiple funding sources brings new challenges and costs to a project.

“Over the next 20 to 30 years, cities throughout the Bay Area, and in other parts of California, are required to invest in widespread construction of infrastructure projects that remove pollutants from stormwater runoff, in order to achieve water quality goals for San Francisco Bay. The cost is anticipated to parallel the costs to meet similar requirements in other parts of the state. For example, City of Los Angeles alone, over the next 20 to 30 years, has estimated that \$7 to \$9 billion dollars will be needed to implement the city’s Water Quality Compliance Master Plan for Urban Runoff (Farfing and Watson 2014). Sustainable Streets are designed to cost effectively deliver multiple benefits, including: climate change mitigation, air quality improvement, water quality improvement, localized flood control, and community benefits.

(The) “Roadmap presents specific actions intended to ease the financial burden local governments are facing by maximizing available resources and/or identifying new funding streams. The specific actions to fund Sustainable Streets are scheduled for the following timeframes:

- Immediate actions, such as addressing Sustainable Streets in grant solicitations
- Short-term actions, such as reviewing policies for better ways to fund Sustainable Streets
- Long-term solutions, including legislative engagement and/or advocacy regarding Sustainable Street”

## 7.2 Local Funding Strategies

It is noted that per the Permit Requirements, the sources of funding which the City is currently pursuing or will pursue for GI Project development should include an evaluation of prioritized funding options, including, but not limited to, alternative compliance funds, grant monies, new taxes and other levies, and other municipal/Permittee resources.

A first step to evaluating potential local funding strategies would be to work with the CCCWP to investigate the legislative constraints for the use of Contra Costa Transportation Authority sales tax revenue. An initial review indicates that the language of Public Utilities Code Division 19, Chapter 1, Section 180001 (e) stating that the funding is "...to be used to supplement and not replace existing local revenues for transportation purpose" would seem to exclude a Clean Water Act purpose of using the funds used for green infrastructure in conjunction with the pavement maintenance mandate. A second step would be to get a ruling from MTC if the Highway User Gas Tax Account (HUTA), Street and Highways Code Section 2101, could be used for Green Infrastructure. Those are the top priorities.

To fund projects, they are recommended for consideration based on the needs of the various operating departments and divisions (Entities). Each Entity is to provide a prioritized list along with any funding or grant information that may applicable. This is important because all projects compete for scarce funds. General Fund money is typically not available to any Capital Projects as those funds are dedicated to the operation of the general government, including Police operations.

Given the various sources of funds, projects are typically ranked by: 1. health and safety need, 2. maintenance of current facilities, 3. expansion of existing programs and 4. new programs. This ranking is evaluated together with sources of funding, so a project that otherwise may not have a high a priority, has funding that cannot be used elsewhere is funded. This is true for transportation projects that variously have, Gas Tax, Measure C or J, traffic mitigation fee revenue or developer mitigation fees. The most flexible funding is saved to be committed last and restricted funds are programmed first. The flexible funds are used to fill in at the end in their applicable category.

In that context, projects have a scope of work developed and a preliminary plan, sometimes only schematic, is developed. For street projects the scope is based on the need and purpose of the project. If the project is a complete streets project, or a street beautification project, green infrastructure will be considered for incorporation considering a number of factors. First is the need being addressed, the second is whether there is eligible funding for the scope of work. The third is the available right-of-way for the project. Many projects in the developed commercial area are constrained to pavement rehabilitation.

## 8 Adaptive Management

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### 8.1 Process for Plan Updates

The process to update the plan will be to review what has happened and what has changed as the City moves into the budgeting period. This will be the time to:

- Update the new development commitments that are subject to C.3
- Make any necessary changes to the UrbanSim model to reflect more current future projections
- Add any completed public projects
- Update the CIP list for newly developed desired projects
- Approval by the City Manager

### 8.2 Pursuing Future Funding Sources

Pursuing future funding resources will have challenges. As the BASMAA “Roadmap” reports:

“Because each funding program has historically focused on only one or a few of the multiple benefits provided by Sustainable Streets, local agencies have encountered challenges in funding Sustainable Streets projects including:

- **Ineligible components of Sustainable Streets projects:** Green infrastructure may be ineligible for funding by transportation grants; transportation facilities may be ineligible for funding by resource agency grants.
- **Ineligible activities:** Some grants may not cover all project phases, such as planning or short-term maintenance.
- **Inability to use other grants as matching funds:** Matching funds must cover eligible activities; therefore, grant funding for GI components of a Sustainable Street project may not “count” as a match for a transportation grant, and vice versa.
- **Funding cycles of grants are not coordinated:** Projects that must assemble funding from multiple grants may have difficulty finding two applicable grants that will be available at the same time.
- **Costs of tracking and applying for grants:** Local agencies often lack the resources to track grant opportunities, prepare applications, and “repackage” the same project to apply for multiple grants.
- **Costs of administering and reporting on grants:** Obtaining multiple grants for a single project adds substantial administrative requirements due to separate record-keeping and reporting.
- **Scoring approaches may penalize multiple-benefit projects:** Sustainable Streets projects may not score competitively for grants that seek the most cost-effective transportation solution, due to the inclusion of ineligible costs.”

With guidance of the Roadmap, a Roadmap Committee will follow three pathways; Pathway 1 – Prioritize Sustainable Street in Funding Resources, Pathway 2 – Improve Conditions for Projects that Are Funded by Multiple Grants, and Pathway 3 – Pursue Additional Funding Options.

Pathway 1 is to “... maximize the ability of each funding source to fund both transportation and green stormwater infrastructure improvements -- reflecting the integration of transportation and resource benefits in Sustainable

Streets .... A number of the actions are specific to the State Water Resources Control Board’s Storm Water Grant Program (SWGPP) and the Metropolitan Transportation Commission’s One Bay Area Grant Program (OBAG).” The Pathway also looks to “... recommend requirements for interagency collaboration and or participation by key agencies in actions that promote widespread implementation of sustainable streets, recognizing that requirements have been needed for interagency collaboration ...”

Pathway 2 seeks to improve conditions for projects with multiple funding sources. The goal is to remove obstacles that agencies have encountered to obtain multiple grants for a single sustainable streets project.

Pathway 3 is intended to find ways to “... improve conditions for local agencies to fund Sustainable Streets projects with a range of funding options, including fees and loans, and the funding of pavement rehabilitation projects, through sources identified in Senate Bill 1 (SB 1), the Road Repair and Accountability Act of 2017, which was signed into law on April 28, 2017.”

### **8.3 Alternative Compliance and Credit Trading Investigations**

Alternative compliance will need to be carefully reviewed for both the opportunity to achieve compliance but also to be aware of funding use restraints when working collaboratively. Determining whether the Permittees would collectively pursue Alternative Compliance will be a lengthy process requiring a comprehensive dialogue in the public forum lead by the elected officials. Further, commitment to the implementation of any alternative compliance scenarios would necessarily require overall agreement and is beyond the scope of this plan.

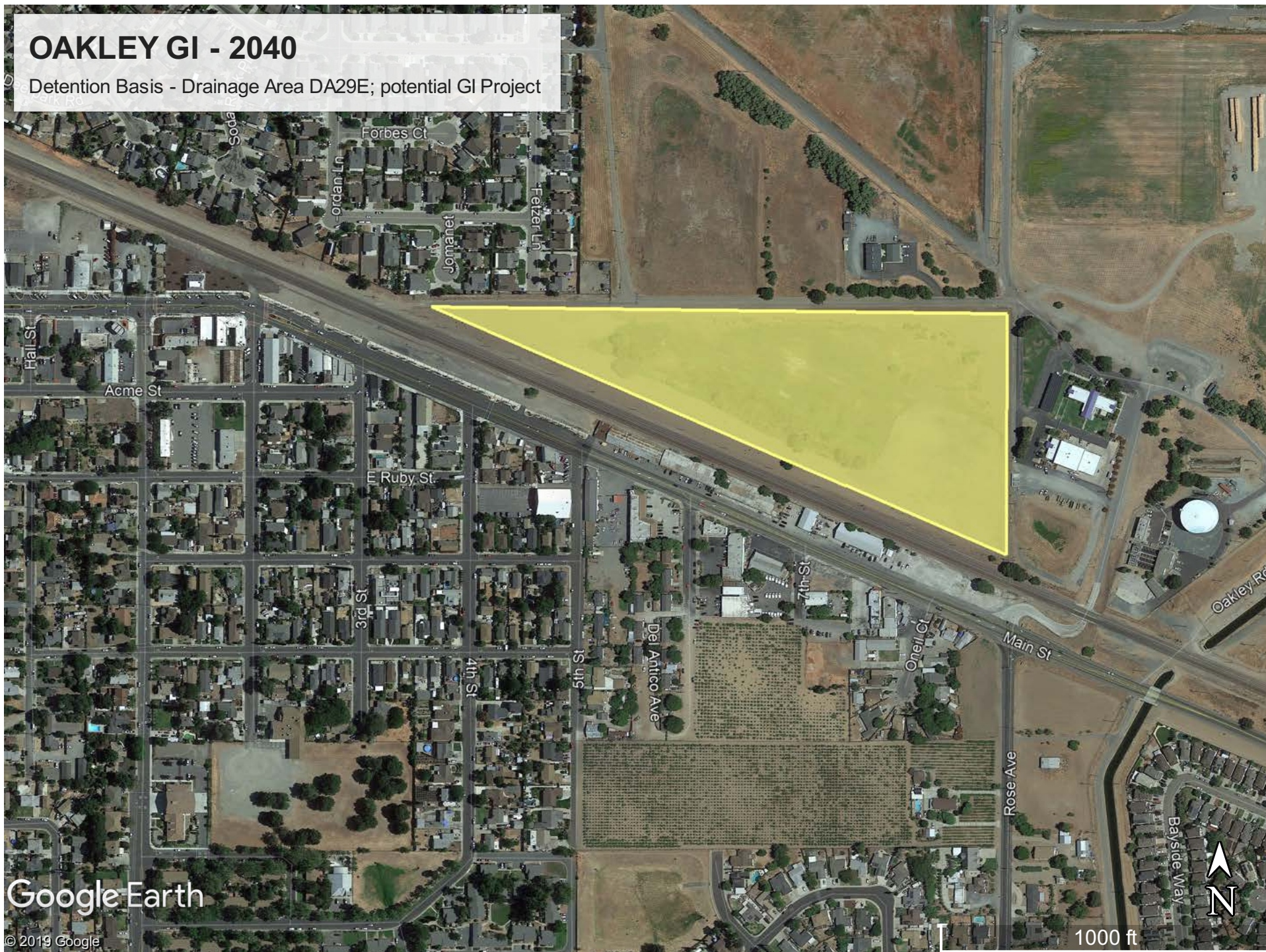
Nonetheless, the Geosyntec Consultants May 1, 2019 memo to the CCCWP entitled “Reasonable Assurance Analysis Countywide Attainment Strategy” details preliminary findings, a countywide attainment scenario and strategy. The memo is attached as Appendix B.

**APPENDIX A**  
**PUBLIC PROJECT MAPS**



# OAKLEY GI - 2040

Detention Basis - Drainage Area DA29E; potential GI Project



Google Earth

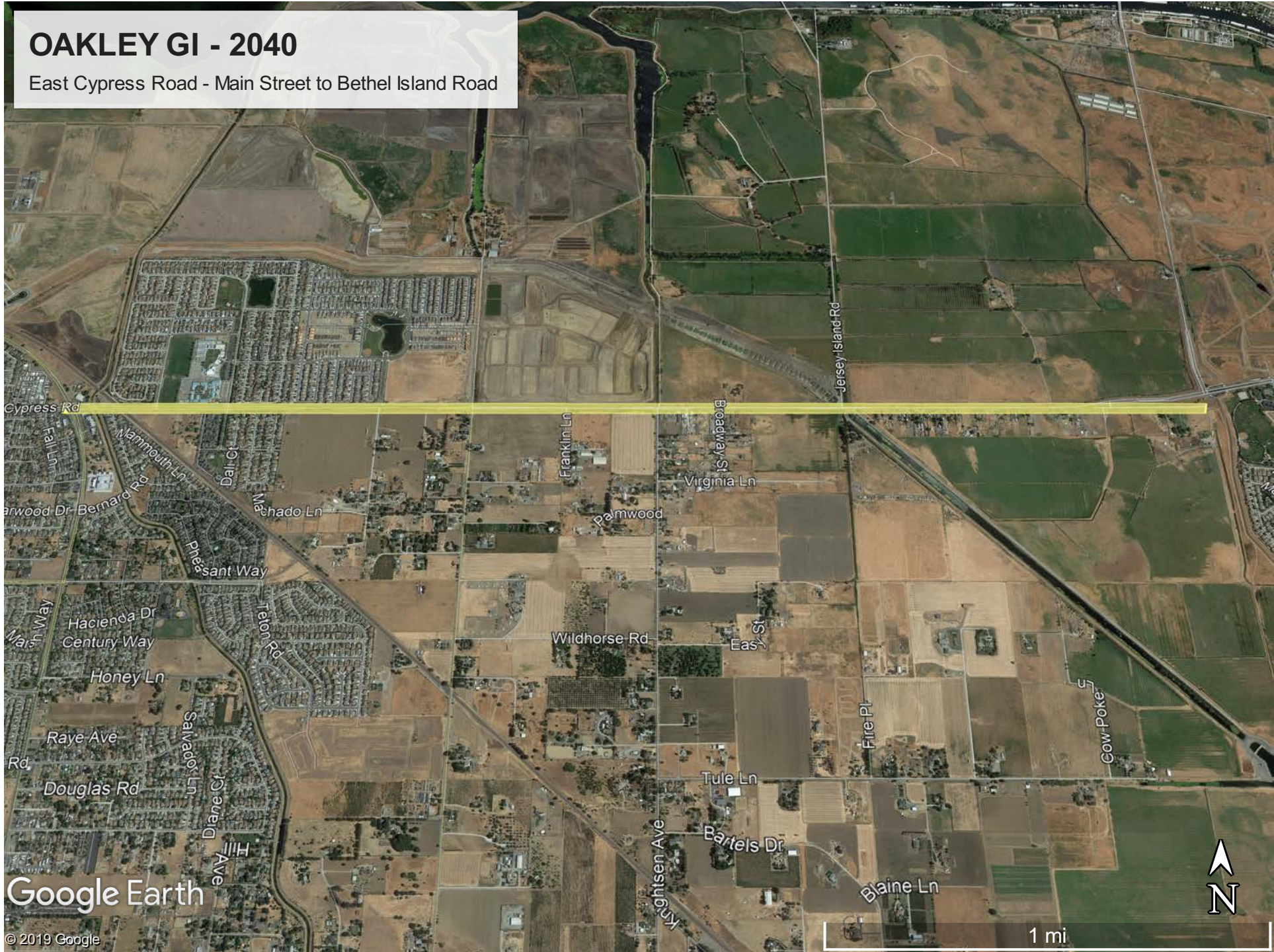
© 2019 Google

1000 ft



# OAKLEY GI - 2040

East Cypress Road - Main Street to Bethel Island Road



Google Earth

© 2019 Google

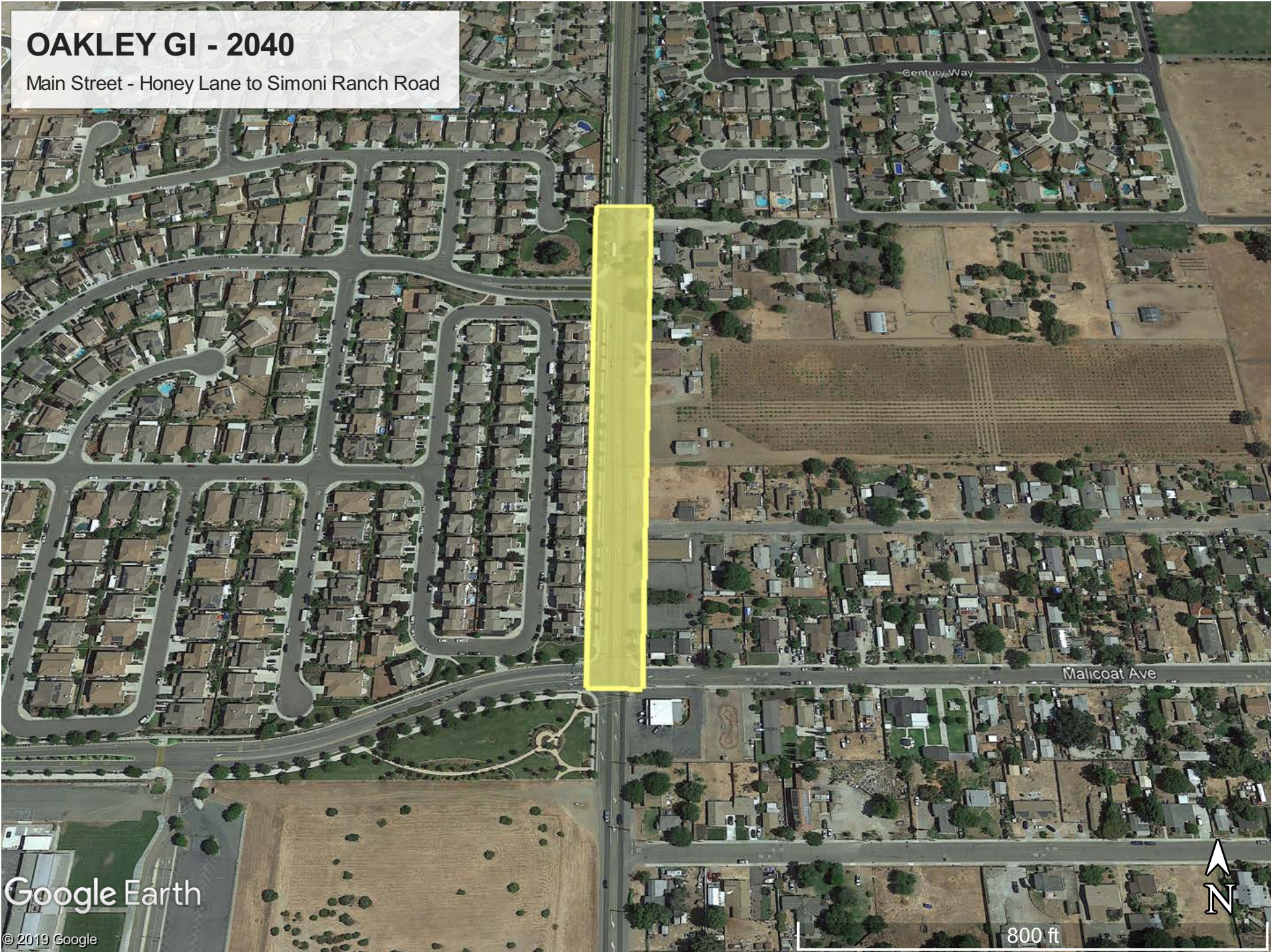
1 mi





# OAKLEY GI - 2040

Main Street - Honey Lane to Simoni Ranch Road



Google Earth

© 2019 Google

800 ft





# OAKLEY GI - 2040

Main Street - W Cypress Rd to Clearwood Dr



Google Earth

© 2019 Google



# OAKLEY GI - 2040

Main Street - Fifth Street to Bayside Way





# OAKLEY GI - 2040

Main Street - Gardenia Ave to Vintage Parkway



Google Earth

© 2019 Google

400 ft



# OAKLEY GI - 2040

Main Street - SR 160 Ramp to Carol Lane



Google Earth

© 2019 Google

1000 ft



## **APPENDIX B**

# **REASONABLE ASSURANCE ANALYSIS COUNTYWIDE ATTAINMENT STRATEGY**

## **DRAFT Memorandum**

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

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### **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<sup>1</sup>.

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

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<sup>1</sup> 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<sup>2</sup> project data, and
  - b. UrbanSim<sup>3</sup> 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.

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<sup>2</sup> 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.

<sup>3</sup> 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       | <b>MRP</b> | <b>1,581.0</b>             |
|              |                 | NPDES      | 776.7                      |
|              |                 | Phase 2    | 13.7                       |
|              | Above Dam       | MRP        | 41.4                       |
|              |                 | NPDES      | 0.1                        |
|              |                 | Phase 2    | 0                          |
| Region 5     | Below Dam       | MRP        | 133.0                      |
|              |                 | NPDES      | 14.8                       |
|              |                 | Phase 2    | 0.6                        |
|              | Above Dam       | MRP        | 1.0                        |
|              |                 | NPDES      | 0                          |
|              |                 | Phase 2    | 0                          |
|              |                 | Total      | 2,562.2                    |

### 2.3 Load Reduction Goal Calculations

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

#### TMDL Attainment Load Reduction (2030)

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

Where:

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

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

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

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

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

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

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

#### MRP Load Reduction through GI by 2040

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

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

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

### 2.4 Finalize GIS Inputs for Existing and Future Redevelopment

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

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

## 2.5 Develop Countywide Attainment Scenario

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

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

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

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

## 3. COUNTYWIDE ATTAINMENT SCENARIO RESULTS

The modeled load reduction associated with each project opportunity from the CCW SWRP that is not included as a planned GI project in a Permittee’s GI Plan are listed in the table included in Attachment 1. This table only includes those projects achieving at least 0.01 grams of PCBs load reduction per year, based on the model output. For each project opportunity, the total area and impervious area treated<sup>4</sup>, baseline PCBs yield, and PCBs loads reduced are presented.

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

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

#### **4. COUNTYWIDE ATTAINMENT STRATEGY**

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

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

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

#### **5. REFERENCES**

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

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

\* \* \* \* \*

# Attachment 1

## Countywide Attainment Scenario

### Load Reduction Results Table



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

| Jurisdiction  | Permit | Project ID              | Project Type                            | Area (Acres) | Impervious Area (Acres) | Percent Impervious | PCBs Yield (g/acre) | PCBs Mass reduced (g) |
|---------------|--------|-------------------------|---|--------------|-------------------------|--------------------|---------------------|-----------------------|
| Pleasant Hill | 2      | ROW 14564               | ROW Opportunity                         | 7.82         | 3.13                    | 40%                | 0.002               | 0.035                 |
| Pleasant Hill | 2      | Parcel 1311105          | Regional Opportunity                    | 1.45         | 0.72                    | 50%                | 0.007               | 0.034                 |
| Pleasant Hill | 2      | ROW 17048               | ROW Opportunity                         | 1.65         | 0.76                    | 46%                | 0.006               | 0.034                 |
| Pleasant Hill | 2      | ROW 7753                | ROW Opportunity                         | 3.18         | 1.28                    | 40%                | 0.003               | 0.034                 |
| Pleasant Hill | 2      | ROW 9560                | ROW Opportunity                         | 0.50         | 0.19                    | 38%                | 0.017               | 0.034                 |
| Pleasant Hill | 2      | Parcel 185990           | Regional Opportunity                    | 1.68         | 0.71                    | 42%                | 0.005               | 0.032                 |
| Pleasant Hill | 2      | ROW 11390               | ROW Opportunity                         | 7.82         | 3.29                    | 42%                | 0.002               | 0.031                 |
| Pleasant Hill | 2      | ROW 9880                | ROW Opportunity                         | 3.49         | 1.47                    | 42%                | 0.003               | 0.029                 |
| Pleasant Hill | 2      | Parcel 156974           | Parcel-Based Opportunity                | 9.89         | 3.33                    | 34%                | 0.001               | 0.028                 |
| Pleasant Hill | 2      | ROW 13741               | ROW Opportunity                         | 1.00         | 0.63                    | 63%                | 0.008               | 0.028                 |
| Pleasant Hill | 2      | ROW 13736               | ROW Opportunity                         | 4.01         | 1.82                    | 45%                | 0.002               | 0.027                 |
| Pleasant Hill | 2      | ROW 19478               | ROW Opportunity                         | 1.79         | 0.76                    | 42%                | 0.004               | 0.027                 |
| Pleasant Hill | 2      | ROW 6668                | ROW Opportunity                         | 4.38         | 1.90                    | 43%                | 0.002               | 0.027                 |
| Pleasant Hill | 2      | Parcel 149937           | Regional Opportunity                    | 2.29         | 1.03                    | 45%                | 0.004               | 0.026                 |
| Pleasant Hill | 2      | Parcel 1311108          | Regional Opportunity                    | 0.82         | 0.54                    | 66%                | 0.008               | 0.024                 |
| Pleasant Hill | 2      | Parcel 187984           | Parcel-Based Opportunity                | 23.59        | 5.41                    | 23%                | 0.000               | 0.024                 |
| Pleasant Hill | 2      | ROW 20206               | ROW Opportunity                         | 11.06        | 5.11                    | 46%                | 0.001               | 0.023                 |
| Pleasant Hill | 2      | ROW 2045                | ROW Opportunity                         | 2.31         | 1.12                    | 48%                | 0.003               | 0.022                 |
| Pleasant Hill | 2      | ROW 4500                | ROW Opportunity                         | 3.13         | 1.84                    | 59%                | 0.003               | 0.022                 |
| Pleasant Hill | 2      | ROW 6670                | ROW Opportunity                         | 1.70         | 0.79                    | 46%                | 0.004               | 0.022                 |
| Pleasant Hill | 2      | ROW 11085               | ROW Opportunity                         | 3.49         | 1.68                    | 48%                | 0.002               | 0.021                 |
| Pleasant Hill | 2      | ROW 12762               | ROW Opportunity                         | 3.17         | 1.40                    | 44%                | 0.002               | 0.021                 |
| Pleasant Hill | 2      | ROW 287                 | ROW Opportunity                         | 1.37         | 0.44                    | 32%                | 0.004               | 0.021                 |
| Pleasant Hill | 2      | ROW 4178                | ROW Opportunity                         | 7.51         | 3.18                    | 42%                | 0.001               | 0.021                 |
| Pleasant Hill | 2      | Parcel 168841           | Regional Opportunity                    | 0.97         | 0.44                    | 45%                | 0.006               | 0.020                 |
| Pleasant Hill | 2      | ROW 15029               | ROW Opportunity                         | 3.85         | 1.58                    | 41%                | 0.002               | 0.019                 |
| Pleasant Hill | 2      | ROW 17703               | ROW Opportunity                         | 4.38         | 1.92                    | 44%                | 0.002               | 0.019                 |
| Pleasant Hill | 2      | ROW 5754                | ROW Opportunity                         | 1.34         | 0.80                    | 60%                | 0.004               | 0.019                 |
| Pleasant Hill | 2      | Parcel 167223           | Parcel-Based Opportunity                | 10.92        | 4.29                    | 39%                | 0.001               | 0.018                 |
| Pleasant Hill | 2      | ROW 12009               | ROW Opportunity                         | 2.27         | 1.14                    | 50%                | 0.003               | 0.018                 |
| Pleasant Hill | 2      | ROW 17057               | ROW Opportunity                         | 2.52         | 1.13                    | 45%                | 0.002               | 0.018                 |
| Pleasant Hill | 2      | ROW 4611                | ROW Opportunity                         | 0.64         | 0.40                    | 63%                | 0.008               | 0.018                 |
| Pleasant Hill | 2      | ROW 6669                | ROW Opportunity                         | 1.68         | 0.82                    | 49%                | 0.003               | 0.018                 |
| Pleasant Hill | 2      | Parcel 155751           | Regional Opportunity                    | 1.57         | 0.26                    | 17%                | 0.003               | 0.017                 |
| Pleasant Hill | 2      | ROW 15355               | ROW Opportunity                         | 0.64         | 0.38                    | 59%                | 0.008               | 0.017                 |
| Pleasant Hill | 2      | ROW 15358               | ROW Opportunity                         | 3.11         | 1.40                    | 45%                | 0.002               | 0.017                 |
| Pleasant Hill | 2      | ROW 3210                | ROW Opportunity                         | 7.85         | 3.33                    | 42%                | 0.001               | 0.017                 |
| Pleasant Hill | 2      | Parcel 155321           | Regional Opportunity                    | 0.56         | 0.36                    | 64%                | 0.008               | 0.016                 |
| Pleasant Hill | 2      | ROW 11244               | ROW Opportunity                         | 6.29         | 2.71                    | 43%                | 0.001               | 0.016                 |
| Pleasant Hill | 2      | ROW 12046               | ROW Opportunity                         | 9.42         | 3.82                    | 41%                | 0.001               | 0.016                 |
| Pleasant Hill | 2      | ROW 1343                | ROW Opportunity                         | 1.64         | 0.72                    | 44%                | 0.003               | 0.016                 |
| Pleasant Hill | 2      | ROW 533                 | ROW Opportunity                         | 2.07         | 0.90                    | 43%                | 0.003               | 0.016                 |
| Pleasant Hill | 2      | Parcel 178916           | Parcel-Based Opportunity                | 3.76         | 2.58                    | 69%                | 0.002               | 0.015                 |
| Pleasant Hill | 2      | ROW 5767                | ROW Opportunity                         | 2.66         | 1.19                    | 45%                | 0.002               | 0.015                 |
| Pleasant Hill | 2      | ROW 5966                | ROW Opportunity                         | 3.55         | 1.52                    | 43%                | 0.002               | 0.015                 |
| Pleasant Hill | 2      | planned 144             | Planned Unlined Swale                   | 13.98        | 6.95                    | 50%                | 0.000               | 0.014                 |
| Pleasant Hill | 2      | planned 145             | Planned Unlined Swale                   | 13.97        | 6.95                    | 50%                | 0.000               | 0.014                 |
| Pleasant Hill | 2      | planned 146             | Planned Unlined Bioretention            | 13.97        | 6.95                    | 50%                | 0.000               | 0.014                 |
| Pleasant Hill | 2      | ROW 13223               | ROW Opportunity                         | 1.24         | 0.62                    | 50%                | 0.004               | 0.014                 |
| Pleasant Hill | 2      | ROW 1583                | ROW Opportunity                         | 0.88         | 0.41                    | 47%                | 0.005               | 0.014                 |
| Pleasant Hill | 2      | ROW 1578                | ROW Opportunity                         | 0.11         | 0.06                    | 55%                | 0.028               | 0.013                 |
| Pleasant Hill | 2      | ROW 21619               | ROW Opportunity                         | 0.42         | 0.30                    | 71%                | 0.009               | 0.013                 |
| Pleasant Hill | 2      | ROW 9265                | ROW Opportunity                         | 3.88         | 1.63                    | 42%                | 0.001               | 0.013                 |
| Pleasant Hill | 2      | ROW 9827                | ROW Opportunity                         | 0.83         | 0.55                    | 66%                | 0.005               | 0.013                 |
| Pleasant Hill | 2      | Parcel 160193           | Parcel-Based Opportunity                | 7.87         | 2.98                    | 38%                | 0.001               | 0.012                 |
| Pleasant Hill | 2      | ROW 16415               | ROW Opportunity                         | 6.78         | 2.96                    | 44%                | 0.001               | 0.012                 |
| Pleasant Hill | 2      | ROW 19765               | ROW Opportunity                         | 5.47         | 2.26                    | 41%                | 0.001               | 0.012                 |
| Pleasant Hill | 2      | ROW 20458               | ROW Opportunity                         | 1.53         | 0.73                    | 48%                | 0.003               | 0.012                 |
| Pleasant Hill | 2      | ROW 20779               | ROW Opportunity                         | 1.73         | 0.65                    | 38%                | 0.002               | 0.012                 |
| Pleasant Hill | 2      | ROW 6601                | ROW Opportunity                         | 2.26         | 1.12                    | 50%                | 0.002               | 0.012                 |
| Pleasant Hill | 2      | Parcel 140820           | Parcel-Based Opportunity                | 6.41         | 2.61                    | 41%                | 0.001               | 0.011                 |
| Pleasant Hill | 2      | Parcel 156885           | Regional Opportunity                    | 1.48         | 0.76                    | 51%                | 0.003               | 0.011                 |
| Pleasant Hill | 2      | ROW 20849               | ROW Opportunity                         | 6.60         | 2.63                    | 40%                | 0.001               | 0.011                 |
| Pleasant Hill | 2      | ROW 4526                | ROW Opportunity                         | 1.86         | 0.90                    | 48%                | 0.002               | 0.011                 |
| Pleasant Hill | 2      | ROW 5980                | ROW Opportunity                         | 2.92         | 1.23                    | 42%                | 0.002               | 0.011                 |
| Pleasant Hill | 2      | ROW 6634                | ROW Opportunity                         | 6.62         | 2.81                    | 42%                | 0.001               | 0.011                 |
| Pleasant Hill | 2      | Parcel 176573           | Parcel-Based Opportunity                | 4.87         | 2.62                    | 54%                | 0.001               | 0.010                 |
| Pleasant Hill | 2      | Parcel 182562           | Parcel-Based Opportunity                | 5.49         | 2.50                    | 46%                | 0.001               | 0.010                 |
| Pleasant Hill | 2      | ROW 1108                | ROW Opportunity                         | 6.39         | 2.49                    | 39%                | 0.001               | 0.010                 |
| Richmond      | 2      | ROW 20822               | ROW Opportunity                         | 39.83        | 15.26                   | 38%                | 0.035               | 5.536                 |
| Richmond      | 2      | Parcel 129049           | Parcel-Based Opportunity                | 22.09        | 16.69                   | 76%                | 0.043               | 3.838                 |
| Richmond      | 2      | Parcel 127810           | Parcel-Based Opportunity                | 42.57        | 8.26                    | 19%                | 0.018               | 3.044                 |
| Richmond      | 2      | ROW 3504                | ROW Opportunity                         | 23.46        | 15.79                   | 67%                | 0.030               | 2.744                 |
| Richmond      | 2      | ROW 7696                | ROW Opportunity                         | 16.17        | 10.80                   | 67%                | 0.034               | 2.163                 |
| Richmond      | 2      | Parcel 123788           | Parcel-Based Opportunity                | 11.85        | 7.18                    | 61%                | 0.042               | 1.971                 |
| Richmond      | 2      | Parcel 120807           | Parcel-Based Opportunity                | 9.67         | 6.99                    | 72%                | 0.049               | 1.882                 |
| Richmond      | 2      | Parcel 124519           | Parcel-Based Opportunity                | 19.03        | 5.78                    | 30%                | 0.024               | 1.772                 |
| Richmond      | 2      | GIP 00181 / ROW 8576    | ROW Opportunity (aspirational)          | 15.12        | 9.82                    | 65%                | 0.028               | 1.643                 |
| Richmond      | 2      | GIP 00144 / planned 485 | Parcel-Based Opportunity (aspirational) | 17.80        | 11.62                   | 65%                | 0.022               | 1.526                 |
| Richmond      | 2      | ROW 11830               | ROW Opportunity                         | 12.26        | 7.59                    | 62%                | 0.029               | 1.377                 |
| Richmond      | 2      | GIP 00128 / planned 175 | Parcel-Based Opportunity (aspirational) | 12.22        | 6.77                    | 55%                | 0.026               | 1.249                 |
| Richmond      | 2      | planned 499             | Planned Creek/Marsh Restoration         | 14.17        | 5.11                    | 36%                | 0.022               | 1.243                 |
| Richmond      | 2      | Parcel 128990           | Parcel-Based Opportunity                | 6.86         | 5.17                    | 75%                | 0.043               | 1.191                 |
| Richmond      | 2      | Parcel 125155           | Parcel-Based Opportunity                | 6.08         | 4.04                    | 66%                | 0.047               | 1.140                 |
| Richmond      | 2      | Parcel 163241           | Parcel-Based Opportunity                | 7.34         | 4.87                    | 66%                | 0.038               | 1.127                 |
| Richmond      | 2      | ROW 13188               | ROW Opportunity                         | 10.46        | 6.45                    | 62%                | 0.024               | 0.978                 |
| Richmond      | 2      | GIP 00136 / planned 469 | Parcel-Based Opportunity (aspirational) | 7.99         | 4.10                    | 51%                | 0.030               | 0.968                 |
| Richmond      | 2      | ROW 7811                | ROW Opportunity                         | 7.27         | 4.20                    | 58%                | 0.031               | 0.908                 |
| Richmond      | 2      | ROW 21445               | ROW Opportunity                         | 6.74         | 4.73                    | 70%                | 0.034               | 0.902                 |
| Richmond      | 2      | ROW 20428               | ROW Opportunity                         | 8.97         | 5.45                    | 61%                | 0.026               | 0.900                 |
| Richmond      | 2      | ROW 16598               | ROW Opportunity                         | 5.68         | 3.88                    | 68%                | 0.038               | 0.858                 |
| Richmond      | 2      | ROW 13906               | ROW Opportunity                         | 10.89        | 7.33                    | 67%                | 0.021               | 0.852                 |
| Richmond      | 2      | ROW 20478               | ROW Opportunity                         | 5.90         | 3.53                    | 60%                | 0.035               | 0.838                 |
| Richmond      | 2      | ROW 15751               | ROW Opportunity                         | 5.55         | 3.33                    | 60%                | 0.037               | 0.817                 |

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



**APPENDIX C**

**ROADMAP OF FUNDING SOLUTIONS  
FOR SUSTAINABLE STREETS**

# ROADMAP OF FUNDING SOLUTIONS FOR SUSTAINABLE STREETS



Prepared by the  
Bay Area Stormwater Management Agencies Association  
for the Urban Greening Bay Area Initiative  
Final April 26, 2018





## Credits

This Roadmap of Funding Solutions for Sustainable Streets was prepared as part of the Regional Roundtable on Sustainable Streets led by the Bay Area Stormwater Management Agencies Association (BASMAA) with grant funding from the US Environmental Protection Agency's San Francisco Bay Water Quality Improvement Fund, as part of the Urban Greening Bay Area initiative managed by the San Francisco Estuary Partnership.

BASMAA wishes to acknowledge the following individuals, agencies and firms that developed the Roadmap:

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### **Additional Reviewers**

This Roadmap incorporates input provided by attendees of the September 19, 2017, Regional Roundtable, as identified in Appendix G, List of Participating Agencies and Organizations.

### **Photo and Image Credits**

Several images included in the Roadmap were provided the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) or by the following consultants to SMCWPPP, Nevue Ngan Associates and Bottomley Urban Design.

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- B: Potential Sources of Funding for Sustainable Streets
- C: Solutions Considered and Withdrawn
- D: Checklist for Identifying Opportunities to Improve Funding of Sustainable Streets
- E: Case Studies
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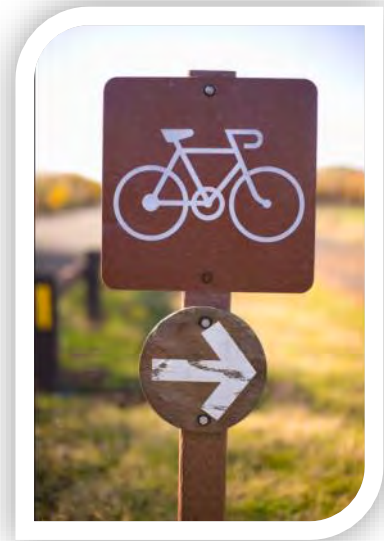
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## Executive Summary

This report, the Roadmap, was developed to identify and remedy obstacles to funding for Sustainable Street projects, which are defined as **projects that include both Complete Street improvements and green stormwater infrastructure, and that are maintained in a state of good or fair condition.**

The specific actions included in this Roadmap are designed to improve the capacity – both statewide and in the San Francisco Bay Area -- to fund Sustainable Street projects that support compliance with regional permit requirements to reduce pollutant loading to San Francisco Bay, while also helping to achieve the region’s greenhouse gas reduction targets.



*Sustainable Street in the City of San Mateo; stormwater runoff flows into a “bioretention area” or rain garden that reduces the crossing length for pedestrians near a local school (Source: SMCWPPP).*

### Challenges for Sustainable Streets

To date, Sustainable Streets have faced funding obstacles due to the restrictions of various funding programs – which may not recognize the potential for overall cost savings that local agencies may achieve through multi-benefit Sustainable Streets projects. Some transportation grants may fund only some aspects of a Sustainable Street project, while resource grants may fund other aspects – and assembling multiple funding sources brings new challenges and costs to a project.

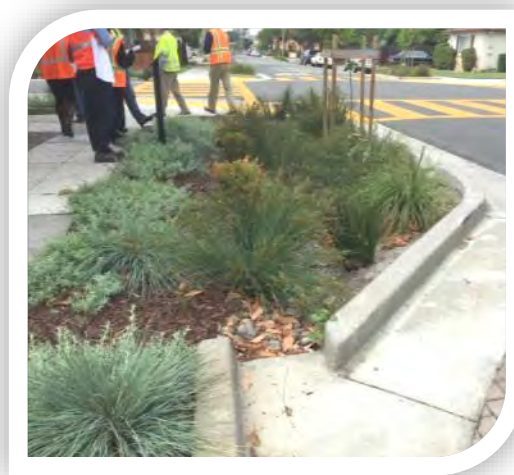
### Financial Needs and Benefits

Over the next 20 to 30 years, cities throughout the Bay Area, and in other parts of California, are required to invest in widespread construction of infrastructure projects that remove pollutants from stormwater runoff, in order to achieve water quality goals for San Francisco Bay. The cost is anticipated to parallel the costs to meet similar requirements in other parts of the state. For example, City of Los Angeles alone, over the next 20 to 30 years, has estimated that \$7 to \$9 billion dollars will be needed to implement the city’s Water Quality Compliance Master Plan for Urban Runoff (Farfing and Watson 2014). Sustainable Streets are designed to cost effectively deliver multiple benefits, including: climate change mitigation, air quality improvement, water quality improvement, localized flood control, and community benefits.

## Specific Actions to Address Challenges

This Roadmap presents specific actions intended to ease the financial burden local governments are facing by maximizing available resources and/or identifying new funding streams. The specific actions to fund Sustainable Streets are scheduled for the following timeframes:

- **Immediate actions**, such as addressing Sustainable Streets in grant solicitations
- **Short-term actions**, such as reviewing policies for better ways to fund Sustainable Streets
- **Long-term solutions**, including legislative engagement and/or advocacy regarding Sustainable Street



*This Sustainable Street project in Union City incorporates a bioretention area and pervious paving with curb extensions (Source: Horizon).*

## How You Can Help

Public agencies that fund transportation, water, and climate change mitigation and adaptation investments are collaborating to implement specific actions related to their funding programs. Implementation agencies and non-governmental organizations (NGOs) are leading additional specific actions to fund Sustainable Streets, including legislative engagement and/or advocacy. A Roadmap Committee will continue to provide support throughout the implementation of the Roadmap, to spread the word about successes achieved when there is investment in these recommended actions.

A sample of specific actions to fund Sustainable Streets is provided below:

| Specific Action No. | Description  | Lead Entity                                  | Support Entity(ies)   |
|---------------------|--|--|---|
| 1-2                 | <b>Update One Bay Area Grant Guidance</b> - Develop guidance clarifying eligibility of green stormwater infrastructure (GSI) elements in federally funded (One Bay Area Grant - OBAG) transportation projects, for inclusion in guidance materials that MTC will provide county's for OBAG's third round of funding.   | Metropolitan Transportation Commission (MTC) | Caltrans  |
| 1-4                 | <b>Identify Opportunities to More Fully Fund Sustainable Streets</b> - Each identified agency will review policy documents for its applicable grant program(s) to identify opportunities to more fully fund Sustainable Streets projects, using a checklist provided in Appendix D.  | Funding agencies identified on page 7        | None  |
| 1-7                 | <b>Develop State Legislative Program</b> - Develop and implement an initiative to inform and/or influence future state propositions, related legislation and incorporation into state law – that provides a clear path for full eligibility of Sustainable Streets, and coordinates application requirements among grant programs that fund Sustainable Streets. | San Francisco Estuary Partnership            | BASMAA, State Water Board, Regional Water Board Trust for Public Land, Save the Bay |



# 1. Purpose and Need

## Funding Sustainable Streets

The purpose of this Roadmap is to identify specific actions to fund Sustainable Street projects, which are defined as **projects that include both Complete Streets improvements and green stormwater infrastructure, such as rain gardens and pervious paving, and that are maintained in a state of good or fair condition**, based on the Good-to-Poor rating system adopted by the California Transportation Commission (Caltrans 2016). The funding of Sustainable Streets projects has proven challenging, due to the tendency for various funding programs to focus only on one or a few of the multiple benefits provided by Sustainable Streets.

Investments in Sustainable Streets will help meet needs for stormwater permit compliance, greenhouse gas (GHG) reduction, and road maintenance. Sustainable Streets support stormwater compliance, by addressing the water quality impacts of cars and trucks, the fact that stormwater runoff from adjacent properties is often routed to roadways, and the integration of storm drain systems into streets and roads. Sustainable Streets sequester carbon and encourage alternative modes of travel, supporting the San Francisco Bay Area’s GHG reduction targets. Sustainable Streets can help maintain roadways in good or fair condition, which is important for maintaining the safety of the traveling public, and has been challenging, as gas tax revenues have declined, due to improved vehicle efficiency and efforts to reduce single occupancy vehicle travel. It may be possible to achieve economies of scale by including active transportation, pavement rehabilitation, and water grant funding to fully fund a Sustainable Streets project.

This Roadmap is an output of a Regional Roundtable process that convened meetings of representatives from federal, state, regional, and local agencies to identify and seek to resolve obstacles to funding Sustainable Streets projects. The specific actions for funding Sustainable Streets listed in Section 2 are based primarily on information presented at meetings of the Regional Roundtable. Agencies and organizations participating in the Regional Roundtable were provided an opportunity to review and comment on the Roadmap. There is a close correspondence between the agencies and organizations participating in the Roadmap and the Regional Roundtable. More information on the Regional Roundtable is available at <http://www.sfestuary.org/urban-greening-bay-area/#planning>.



*This Sustainable Street in City of San Mateo incorporates a bicycle lane and a “bioretention area” or rain garden that removes pollutants from stormwater runoff (Source: SMCWPPP).*



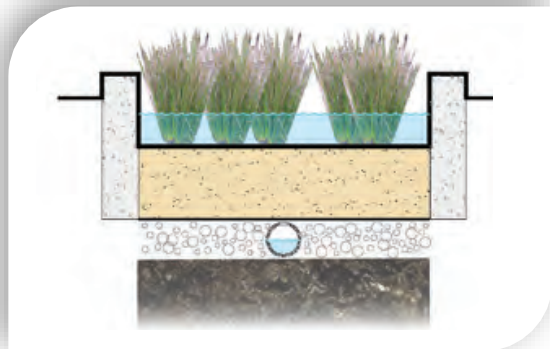
## Financial Needs and Benefits

Municipalities throughout the Bay Area are required to change the way they manage stormwater runoff, due to green infrastructure planning requirements in the Municipal Regional Stormwater Permit (San Francisco Bay Regional Water Quality Control Board 2015), as well as green infrastructure components of the San Francisco Public Utilities Commission's 20-year Sewer System Improvement Program (SFPUC 2017). These planning processes call for a transition from traditional "gray" infrastructure to an increase in green stormwater infrastructure, in order to improve water quality in San Francisco Bay over the coming decades.



*Green stormwater infrastructure is designed to mimic natural processes. This photo shows how landscaped bioretention areas help to detain and slow the flow of stormwater runoff to the storm drain system (Source: Nevue Ngan).*

The cost is anticipated to parallel costs to meet similar requirements in Southern California. The City of Los Angeles alone, over the next 20 to 30 years, estimated \$7 to \$9 billion will be needed to implement the city's Water Quality Compliance Master Plan for Urban Runoff (Farfing and Watson 2014).

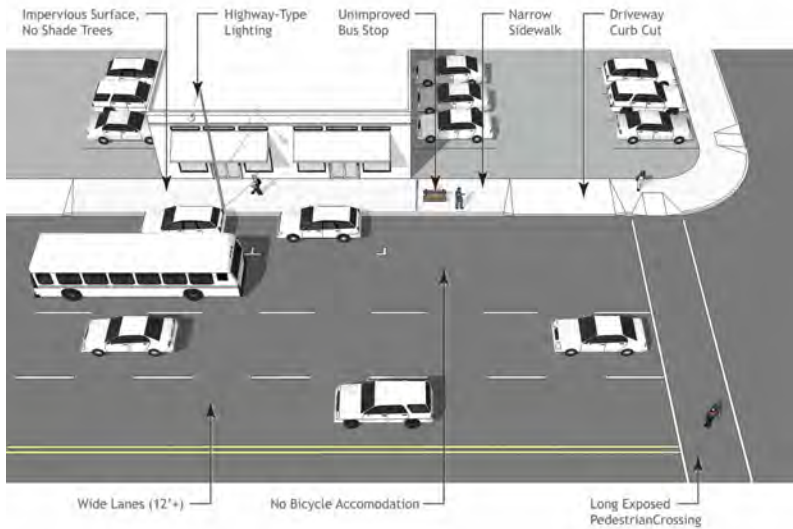


*Cut-away view of a bioretention area. Natural processes remove pollutants from stormwater runoff as it filters through biotreatment soil. Some of the treated water will infiltrate into native soils; some will enter the underdrain and go to the storm drain*

Union City prepared a preliminary capital cost estimate in the range of \$72 million to \$126 million, in 2017 dollars, to implement GSI in accordance with the estimated local share of mercury and PCB pollutant load reduction targets (Ruark 2017). With a population of 72,155 and geographical area of 19.3 square miles, representing just 1.5 percent of the Bay Area's urbanized land, Union City's GSI program represents a small percentage of the anticipated capital investments that will be needed from the 76 local agencies subject to the Municipal Regional Stormwater Permit to comply with the GSI planning requirements. Efforts to further quantify the need for investment in GI are currently underway as part of developing jurisdiction-specific GI Plans.

In the coming decades, state and regional transportation agencies are seeking to mitigate climate change and improve mobility in the Bay Area through large-scale funding of transportation projects that emphasize bicycle, pedestrian, and public transit facilities. The Transportation Investment Strategy of the Draft Plan Bay Area 2040 anticipates over \$5 billion in funding for complete streets and active transportation projects over the next 24 years (MTC 2017d). The following sequence of three images shows how Complete Streets plus GSI equal Sustainable Streets.

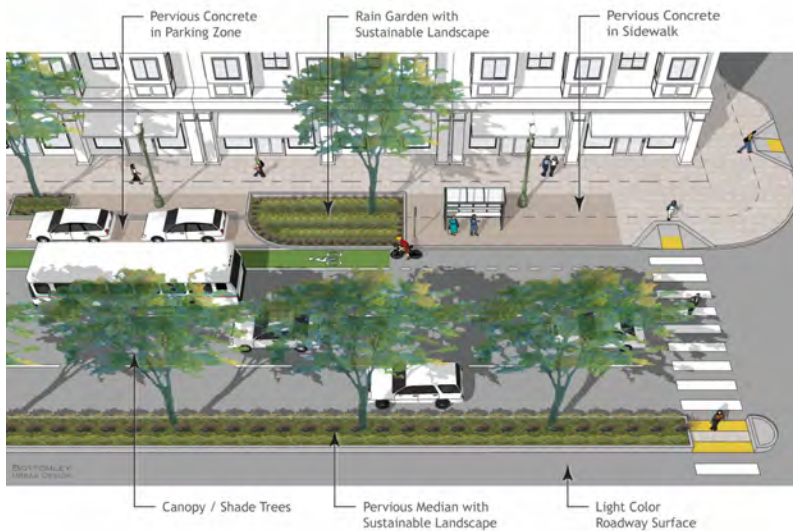
# Roadmap of Funding Solutions for Sustainable Streets



*Conventional Street*



*Complete Street*



*Complete Street  
+  
Green Infrastructure  
=  
Sustainable Street*

*Source: Bottomley Urban Design*

Sustainable Streets are designed to cost effectively deliver multiple benefits, including:

- **Climate change mitigation** – Sustainable street designs encourage bicycling, walking, and the use of public transportation to help reduce carbon emissions from motor vehicles. Trees and landscaping are planted to sequester carbon.
- **Air quality improvement** – By encouraging bicycling, walking, and the use of public transportation, Sustainable Streets can help reduce particulate matter and other pollutants from motor vehicles that can adversely affect human health.
- **Water quality improvement** – Pollutants in stormwater runoff are removed by capturing and treating stormwater in specially designed landscape areas.
- **Localized flood control** – Directing stormwater runoff to landscaping can help address local flooding problems.
- **Water supply reliability** – In areas that rely on groundwater supplies, directing stormwater runoff to landscaping can help support water supply reliability by recharging groundwater.
- **Community benefits** – Planting trees and landscaping enhances public spaces, which can increase property values and improve community cohesiveness, improving quality of life and better accommodating an increasing number of Bay Area residents.
- **Public health** – Construction of bicycle and pedestrian facilities encourages active living.
- **Climate change adaptation** – Green infrastructure designs can help improve the resilience of transportation infrastructure to withstand high intensity storms and rising sea levels.

### Challenges to Funding Sustainable Streets

Because each funding programs has historically focused on only one or a few of the multiple benefits provided by Sustainable Streets, local agencies have encountered challenges in funding Sustainable Streets projects including:

- **Ineligible components of Sustainable Streets projects:** Green infrastructure may be ineligible for funding by transportation grants; transportation facilities may be ineligible for funding by resource agency grants.
- **Ineligible activities:** Some grants may not cover all project phases, such as planning or short-term maintenance.
- **Inability to use other grants as matching funds:** Matching funds must cover eligible activities; therefore, grant funding for GSI components of a Sustainable Street project may not “count” as a match for a transportation grant, and vice versa.
- **Funding cycles of grants are not coordinated:** Projects that must assemble funding from multiple grants may have difficulty finding two applicable grants that will be available at the same time.

- **Costs of tracking and applying for grants:** Local agencies often lack the resources to track grant opportunities, prepare applications, and “repackage” the same project to apply for multiple grants.
- **Costs of administering and reporting on grants:** Obtaining multiple grants for a single project adds substantial administrative requirements due to separate record-keeping and reporting.
- **Scoring approaches may penalize multiple-benefit projects:** Sustainable Streets projects may not score competitively for grants that seek the most cost-effective transportation solution, due to the inclusion of ineligible costs.

**Case Studies: Opportunities to Improve Funding of Sustainable Streets**

At the Regional Roundtable meeting on May 23, 2017, two case studies were presented, identifying opportunities to improve funding of Sustainable Streets under the Metropolitan Transportation Committee’s One Bay Area Grant (OBAG) program and the State Water Resources Control Board’s Storm Water Grant Program (SWGP). These case studies led to the development of several Specific Actions included in the Roadmap. Appendix E presents the results of the review of policy documents for these grant programs, using a checklist format.

This Roadmap has been developed to address these challenges, in order to achieve funding of Sustainable Streets projects.

## 2. Specific Actions

This section of the Roadmap identifies Specific Actions for implementation by federal, state, regional, and local agencies – including agencies in the water resources and transportation sectors – to improve conditions for funding Sustainable Street projects. All agencies face certain limitations in their roles. For example, transportation agencies are subject to various requirements to specifically focus on addressing transportation needs, while water resource agencies must address their own legislative mandates. The Specific Actions described below seek to maximize collaboration across sectors, as possible given the limitations of the respective agencies' roles.

### Categories and Timeframes for Specific Actions

The Roadmap includes three pathways, based on three categories of specific actions to fund Sustainable Streets, as follows:

- Pathway 1, Prioritize Sustainable Streets in Funding Sources
- Pathway 2, Improve Conditions for Projects that Are Funded by Multiple Grants
- Pathway 3, Additional Funding Options

Each specific action will be conducted by a lead entity, and, in some cases, supporting entities. The specific actions included in each pathway are organized by timeframe (immediate, short-term, and long-term). Some of the Specific Actions have statewide implications, and some have potential to involve Integrated Regional Water Management groups. Therefore, the Roadmap Committee may coordinate some Specific Actions with applicable provisions of the California Water Action Plan, and the Committee may recommend reaching out to local agencies from other regions and/or IRWM groups to collaborate on some Specific Actions. The Roadmap Committee may also identify needs for workgroups to implement various Specific Actions. Immediate tasks are anticipated to be initiated in 2018, and are likely to conclude in 2019. Short-term tasks are anticipated to be initiated in 2019, and are likely to conclude in 2020. Long-term tasks may begin as early as 2019 and are likely to continue for a period of years. Within each timeframe, actions are alphabetized by lead entity name.

### Pathway 1: Prioritize Sustainable Streets in Funding Sources

Pathway 1 seeks to prioritize Sustainable Street project activities in funding sources managed by both transportation and resource agencies. The goal of this pathway is to maximize the ability of each funding source to fund both transportation and green stormwater infrastructure improvements -- reflecting the integration of transportation and resource benefits in Sustainable Streets.

Table 1 lists specific actions and participation by agencies and organizations to prioritize Sustainable Streets in funding sources. A number of the actions are specific to the State Water Resources Control Board's Storm Water Grant Program (SWGP) and the Metropolitan Transportation Commission's One Bay Area Grant Program (OBAG), based on case studies that were prepared for these programs as part of the Regional Roundtable on Sustainable Streets. Other funding agencies will conduct similar reviews of applicable grant programs, under Specific Action 1-4.



Specific Action 1-7, Develop State Legislative Program, does not specify particular legislative initiatives, which will be identified as part of this Specific Action. The State Legislative Program may recommend requirements for interagency collaboration and/or participation by key agencies in actions that promote widespread implementation of Sustainable Streets, recognizing that requirements have been needed for interagency collaboration such as the Integrated Regional Water Management program. The State Legislative Program may also review other Specific Actions, and recommendations that emerge from Specific Actions, to identify items that would be best implemented through legislation.

**Table 1**  
**Specific Actions to Prioritize Sustainable Streets in Funding Sources**

| Specific Action No.       | Entities Lead Support                          |   | Description of Action  |
|---------------------------|--|---|--|
| <b>Immediate Actions</b>  |  |   |  |
| 1-1                       | Caltrans<br>Local Assist.                      | FHWA<br>MTC                                     | <b>Clarify GSI Eligibility in Federal Transportation Grants</b> - Provide clarification of the eligibility of GSI elements in federally funded transportation projects.  |
| 1-2                       | MTC  | Caltrans<br>Div. of Local Assist.               | <b>Update OBAG Guidance</b> - Develop guidance clarifying eligibility of GSI elements in federally funded (One Bay Area Grant - OBAG) transportation projects, for inclusion in guidance materials that MTC will provide to counties for OBAG's third round of funding.  |
| 1-3                       | California<br>Transportation<br>Commission     | Caltrans,<br>MTC                                | <b>Clarify GSI Eligibility in the Local Streets and Roads Program</b> – As guidelines are developed for this program, in accordance with SB 1 of 2017, clarify the eligibility of GSI elements in pavement rehabilitation and other applicable projects.   |
| <b>Short-Term Actions</b> |  |   |  |
| 1-4                       | Applicable<br>funding<br>agencies <sup>1</sup> | --  | <b>Identify Opportunities to More Fully Fund Sustainable Streets</b> - Each identified agency will review policy documents for its applicable grant program(s) to identify opportunities to more fully fund Sustainable Streets projects, using a checklist provided in Appendix D.  |
| 1-5                       | Regional Water<br>Board staff                  | BASMAA,<br>countywide<br>stormwater<br>programs | <b>Regional Water Board Staff to Review the Completed Checklists Prepared in Specific Action 1-4.</b> Water Board staff will identify opportunities to more fully fund Sustainable Streets. The purpose of this review would be to help funding agencies identify opportunities to further support GI implementation. This review of the completed checklists will provide an opportunity to suggest changes to eligibility requirements, potentially including modifications that would make it easier for small agencies to obtain funding for GI. |

<sup>1</sup> **Agencies implementing Action 1-4**

ACTC, CCTA, SMCTA, VTA  
 ACTC, C/CAG, CCTA, VTA  
 BAAQMD  
 Caltrans  
 CNRA  
 DWR, SCC  
 FEMA  
 SFBRA, SCC  
 SGC

**Applicable grant programs**

Transportation half-cent sales tax measure programs  
 Congestion Management Agency programs  
 Transportation Fund for Clean Air  
 Active Transportation Program, Cooperative Implementation Agreements  
 Urban Greening grants  
 Proposition 1 grants  
 Emergency Management Performance Grant  
 Measure AA Program  
 Affordable Housing and Sustainable Communities Program

| Table 1<br>Specific Actions to Prioritize Sustainable Streets in Funding Sources |                           |   |  |
|--|---------------------------|---|--|
| Specific Action No.  | Entities Lead Support     |   | Description of Action  |
| <b>Actions to Achieve Long-Term Solutions</b>                                    |                           |   |  |
| 1-6  | BASMAA                    | SFEP, TPL, SFBRWQCB                                 | <b>Identify Opportunities to Influence Federal Policy</b> - Identify opportunities to support efforts by others to influence eligibility of GSI in federal surface transportation programs, maintaining communication with MTC on legislative engagement and/or advocacy.  |
| 1-7  | SFEP <sup>2</sup>         | State Water Board, RWQCB<br>BASMAA, TPL, STB        | <p><b>Develop State Legislative Program</b> - Develop and implement a strategy to inform and/or influence future state propositions, related legislation, and incorporation into state law – that provides a clear path for full eligibility of Sustainable Streets, and coordinates application requirements among grant programs that fund Sustainable Streets. This is anticipated to include reports to legislators about the types of designs and co-benefits (including green jobs) that resonate with communities. Topics to consider incorporating into the State Legislative Program include:</p> <ul style="list-style-type: none"> <li>• Recommendations regarding bond measures, language about match and eligibility, and other issues that were discussed in case studies presented at Roundtable meeting -- which may include tracking the funding for a future iteration of the Storm Water Grant Program (after Prop 1 is complete) and participating in the stakeholder outreach workshops.</li> <li>• Requirements for interagency collaboration and/or for participation by key agencies in actions that promote widespread implementation of Sustainable Streets.</li> <li>• Review other Specific Actions and recommendations that emerge from Specific Actions, in order to identify items that would be best implemented through legislation.</li> </ul> <p>To help demonstrate the need for legislative fixes, potentially identify the ideal state to modernize roadways, and then compare that effort to the effort needed to maintain the facilities that we have now.</p> |
| 1-8  | Caltrans stormwater staff | State Water Board staff, Regional Water Board staff | <b>Address Caltrans Stormwater Treatment Credit</b> - Prepare proposal for providing credit to Caltrans for GI that is funded as part of Caltrans' transportation grants to local agencies.  |

### Pathway 2: Improve Conditions for Using Multiple Grants

Pathway 2 seeks to improve conditions for projects that are funded with multiple grants. The goal of Pathway 2 is to remove obstacles that local agencies have encountered when attempting to obtain and manage multiple grants for a single Sustainable Streets project. The specific actions for this pathway are listed in Table 2.

<sup>2</sup> The legislative work done by public agencies would consist of educating lawmakers on issues and opportunities.

| Table 2<br>Specific Actions to Improve Conditions for Using Multiple Grants |  |                            |   |
|---|--|----------------------------|---|
| Specific Action No.   | Entities Lead Support                    |                            | Description of Action   |
| <b>Immediate Actions</b>  |  |                            |   |
| 2-1   | SWRCB                                    | Other funding agencies     | <b>Coordinate to Publicize Solicitations</b> - Coordinate with other agencies to join SWRCB in participating in funding fairs and the California Financing Coordinating Committee website.  |
| 2-2   | Applicable funding agencies <sup>3</sup> | --                         | <b>Inform other agencies of solicitations</b> - Identify and add staff from applicable agencies to the list of parties to notify regarding schedules of future solicitations for applicable grant programs.   |
| <b>Short-Term Actions</b>   |  |                            |   |
| 2-3   | BASMAA                                   | Funding agencies, SFBRWQCB | <p><b>Offer Training on Obtaining Grants</b> - Develop and offer training to assist local agencies in the San Francisco Bay Area in identifying funding sources and preparing grant applications for Sustainable Streets projects, seeking to help local agencies build capacity to be able to apply for grants and follow through with the requirements for project planning, public involvement, tracking of results, and funding of maintenance. This will include consideration how to address the needs of disadvantaged communities. Examples of grants to address include Caltrans' Cooperative Implementation Program and Financial Contribution Only Program. Potentially include in the training:</p> <ul style="list-style-type: none"> <li>• Nuts and bolts of obtaining funding,</li> <li>• How to gauge the competitiveness of a project and be strategic in efforts to seek funding,</li> <li>• How to find the flexibility in a funding program and tailor the applications accordingly,</li> <li>• Case studies of how cities have succeeded in winning grants and keeping the grant funds that they won – especially when there were multiple sources of funding.</li> </ul> <p>(Note: this action also applies to Pathway 1, Prioritize Sustainable Streets in Funding Sources.)</p> |

<sup>3</sup> **Agencies implementing Action 2-2**

ACTC, CCTA, SMCTA, VTA  
 ACTC, C/CAG, CCTA, VTA  
 BAAQMD  
 Caltrans  
 CNRA  
 DWR, SCC  
 FEMA  
 MTC  
 SFBRA, SCC  
 SGC  
 SWRCB

**Applicable grant programs**

Transportation half-cent sales tax measure programs  
 Congestion Management Agency programs  
 Transportation Fund for Clean Air  
 Active Transportation Program, Cooperative Implementation Agreements  
 Urban Greening grants  
 Proposition 1 grants  
 Emergency Management Performance Grant  
 One Bay Area Grants  
 Measure AA Program  
 Affordable Housing and Sustainable Communities Program  
 Storm Water Grant Program



| Table 2<br>Specific Actions to Improve Conditions for Using Multiple Grants |  |                          |   |
|---|--|--------------------------|---|
| Specific Action No.   | Entities Lead Support                    |                          | Description of Action   |
| 2-4   | BASMAA                                   | Funding agencies, CASQA  | <p><b>Prepare Guidance for Packaging Projects</b> - Prepare statewide guidance on how to “package” Sustainable Streets projects for specific grants, which may be incorporated in future grant guidelines and will consider the needs of disadvantaged communities. Examples of grants to address include in the guidance encompass Caltrans’ Cooperative Implementation Program and Financial Contribution Only Program. Potentially include in the training:</p> <ul style="list-style-type: none"> <li>• Information on coordination, match requirements of different grants, how to demonstrate multiple benefits of GSI components in transportation projects,</li> <li>• Successful strategies to seek funding,</li> <li>• Guidance on how GI can be considered functional landscaping per Caltrans definitions, and</li> <li>• Recommendations from funding agencies on how to find the flexibility in the programs they are applying for and tailor applications to meet the requirements identified in the grant solicitation.</li> </ul> <p>(Note: this action also applies to Pathway 1, Prioritize Sustainable Streets in Funding Sources.)</p> |
| 2-5   | SFEP                                     | BASMAA                   | <p><b>Track Upcoming Solicitations</b> - Develop and maintain a database to track upcoming solicitations for grants and applicable loans, such as the State Revolving Fund, that fund Sustainable Streets.</p>  |
| 2-6   | SFEP                                     | Funding agencies, BASMAA | <p><b>Identify Opportunities to Coordinate Reporting</b> - Compare reporting requirements among grant programs and identify opportunities to coordinate reporting schedule, format, etc. – for example, SWRCB allows grant recipients to establish some milestone dates.</p>  |
| Actions to Achieve Long-Term Solutions                                      |  |                          |   |
| 2-7   | Applicable funding agencies <sup>4</sup> | --                       | <p><b>Consider Linkages to Other Programs</b> - Funding agencies will consider aspects of other related grant programs (timing, criteria, etc.) in the development of future grant programs, and will coordinate with other grant programs where feasible.</p>  |

<sup>4</sup> **Agencies implementing Action 2-7**

ACTC, CCTA, SMCTA, VTA  
 ACTC, C/CAG, CCTA, VTA  
 BAAQMD  
 Caltrans  
 CNRA  
 DWR, SCC  
 FEMA  
 MTC  
 SFBRA, SCC  
 SGC  
 SWRCB

**Applicable grant programs**

Transportation half-cent sales tax measure programs  
 Congestion Management Agency programs  
 Transportation Fund for Clean Air  
 Active Transportation Program, Cooperative Implementation Agreements  
 Urban Greening grants  
 Proposition 1 grants  
 Emergency Management Performance Grant  
 One Bay Area Grants  
 Measure AA Program  
 Affordable Housing and Sustainable Communities Program  
 Storm Water Grant Program

### Pathway 3: Additional Funding Options

Pathway 3, Additional Funding Options, seeks to improve conditions for local agencies to fund Sustainable Streets projects with a range of funding options, including fees and loans, and the funding of pavement rehabilitation projects, through sources identified in Senate Bill 1 (SB 1), the Road Repair and Accountability Act of 2017, which was signed into law on April 28, 2017. SB 1 includes the continuous appropriation of \$1.5 billion annually for maintenance and rehabilitation of local streets and roads through various sources of revenue, such as increases in the State gasoline and diesel fuel taxes, and a new a transportation improvement fee to be collected with vehicle registration fees (League of California Cities 2017). The goal of Pathway 3 is to secure local funding mechanisms such as parcel taxes or fees for planning, implementation, and operations & maintenance of Sustainable Streets. It may be more cost-effective in the long run to fund ongoing costs through parcel taxes or fees than to expend staff time pursuing grants and loans to cover these costs. Although it is difficult to achieve the super-majority required by Proposition 218 to enact a stormwater fee, there are examples of successful ballot measures, including the 2017 approval of a fee in Palo Alto to fund routine water system maintenance and operation that provides for storm water system improvements (City of Palo Alto 2017), and the 2009 approval of a fee in Burlingame to fund a \$39 million Capital Improvement Program to improve the City's storm drain system (City of Burlingame 2015). Funds from parcel taxes or fees would help leverage grant opportunities as a reliable local match.

**Table 3**  
**Specific Actions for Additional Funding Options**

| Specific Action No.      | Entities Lead Support                    |        | Description of Action  |
|--------------------------|--|--------|--|
| <b>Immediate Actions</b> |  |        |  |
| 3-1                      | ACCWP,<br>CCCWP,<br>SMCWPPP,<br>SCVURPPP | BASMAA | <b>Provide Guidance on a Range of Funding Options</b> – Countywide stormwater programs will provide guidance for local agencies to evaluate a range of funding options for Sustainable Streets projects and other projects that incorporate green stormwater infrastructure. This is anticipated to include an evaluation of Business Improvement Districts, approaches to fund maintenance including fees, and working with BASMAA to explore potential opportunities to develop a regional alternative compliance program. |
| 3-2                      | SFEP                                     | BASMAA | <b>Improve the Existing Web Presence for the Roadmap.</b> Expand the existing Green Stormwater Infrastructure Resources of SFEP’s website to help publicize the Roadmap, or potentially develop a new website for the Roadmap. This will include the management of an online spreadsheet of Specific Actions to monitor progress of Roadmap implementation.  |
| 3-3                      | SFEP                                     | BASMAA | <b>Seek Funding for Roadmap Implementation.</b> Identify potential funding sources and submit applications for a grant to cover expenses for state legislative program development website development and maintenance, annual meetings of the Roadmap Committee, training on obtaining grants, development of guidance for obtaining multiple grants, and tracking implementation of Specific Actions.  |

**Table 3**  
**Specific Actions for Additional Funding Options**

| Specific Action No.       | Entities Lead Support         |   | Description of Action   |
|---------------------------|-------------------------------|---|---|
| 3-4                       | CASQA                         | BASMAA, Countywide stormwater programs, Local governments, SFEP, STB, TPL, SPUR | <b>Support SB 231 Implementation.</b> Participate in strategic efforts to use SB 231 (which clarified that the Prop 218 “sewer” exemption includes storm sewers) to raise local stormwater fees in ways that do not engender unwanted lawsuits while establishing that the full scope of the exemption includes planning, constructing, and maintaining sustainable streets the establishment of reliable revenue sources may allow local stormwater programs to seek loans under SWRCB’s State Revolving Fund.   |
| <b>Short-Term Actions</b> |                               |   |   |
| 3-5                       | SFEP                          | BASMAA  | <b>Convene the Roadmap Committee –</b> Monitor implementation of the Roadmap of Funding Solutions by convening the Roadmap Committee described in Section 3, Roles and Responsibilities. This will include at least two meetings per year. Potential agenda items include: <ul style="list-style-type: none"> <li>• Progress updates,</li> <li>• Reminders to partner agencies of action items,</li> <li>• Periodic reviews and adjustments of Specific Actions,</li> </ul> Updates regarding quantification of the need for GI, based on GI Plans prepared throughout the region.  |
| 3-6                       | MTC                           | BASMAA, SFEP, Countywide stormwater programs                                    | <b>Coordinate with Local Agency Staff to Share Information -</b> Facilitate discussions among staff from public works, stormwater, active transportation, and transit to develop integrated approaches to Sustainable Streets – at MTC’s working groups and/or a set of outreach/coordination meetings led by BASMAA and/or other partners. This dialogue is anticipated to improve communication between funding agencies and local agencies regarding the funding process. Topics for sharing and dialogue may include how local agencies can build capacity to address long-term maintenance needs for GI, the types of tools that can help local agencies communicate internally and work together across departments and identifying types of information sharing that can reduce effort for both funding agencies and local agencies. |
| 3-7                       | BASMAA                        | SFEP  | <b>Prepare and Distribute a Fact Sheet of the Roadmap -</b> The fact sheet would help agencies communicate internally regarding actions to fund Sustainable Streets, and could potentially be used for other outreach, in coordination with Specific Action 3-9, Develop and Conduct Outreach Strategy.   |
| 3-8                       | Funding agencies <sup>5</sup> | --  | <b>Incorporate Applicable Specific Actions in Agency Policies, Procedures, Strategic Plans and/or Other Documentation.</b> Funding agencies will each incorporate into its strategic plan the Specific Actions for which agency has been identified as Lead agency. Examples of policy documents include Green Building Policy, Sustainable Landscaping Guidelines, and BMPs.   |

<sup>5</sup> **Agencies implementing Action 3-8**  
ACTC, CCTA, SMCTA, VTA  
ACTC, C/CAG, CCTA, VTA  
BAAQMD  
Caltrans  
CNRA

**Applicable grant programs**  
Transportation half-cent sales tax measure programs  
Congestion Management Agency programs  
Transportation Fund for Clean Air  
Active Transportation Program, Cooperative Implementation Agreements  
Urban Greening grants

| Table 3<br>Specific Actions for Additional Funding Options |                       |   |  |
|--|-----------------------|---|--|
| Specific Action No.  | Entities Lead Support |   | Description of Action  |
| <b>Actions to Achieve Long-Term Solutions</b>              |                       |   |  |
| 3-9  | SFEP                  | BASMAA, BCDC, NRDC, Save the Bay, SPUR, TPL, Countywide stormwater programs | <b>Develop Outreach Strategy</b> - The strategy will identify the steps necessary to develop and implement an outreach program, seeking to build broader public engagement around Sustainable Streets. The strategy is anticipated to focus on the resiliency benefits of Sustainable and Streets and frame the issues as making streets better, laying the groundwork for a call to action around the Roadmap. The strategy will identify actions and assign roles for implementation. Depending on interests and capacities of support organizations, actions may encompass community outreach, elected official outreach, and business engagement. A Sustainable Streets fact sheet may be developed, focused on communicating to local elected officials the need for action to better fund Sustainable Streets. Part of the messaging is anticipated to present GI as an integral part of road projects. The Los Angeles River campaign is anticipated to serve as a model for the outreach strategy. |

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DWR, SCC  
FEMA  
MTC  
SFBRA, SCC  
SGC  
SWRCB

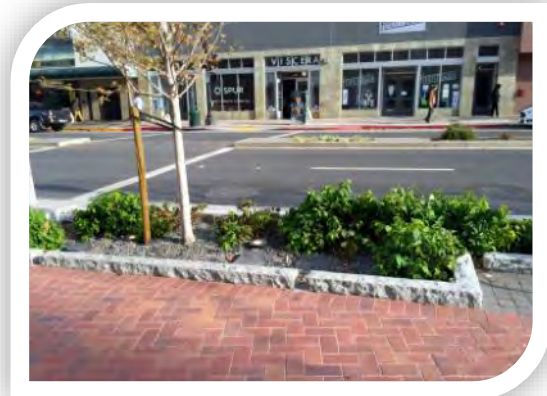
Proposition 1 grants  
Emergency Management Performance Grant  
One Bay Area Grants  
Measure AA Program  
Affordable Housing and Sustainable Communities Program  
Storm Water Grant Program

### 3. Roles and Responsibilities

The Roadmap will be implemented by Participating Agencies, Organizations, and Champions, with implementation monitored by a Roadmap Committee. These roles are described below, followed by a description of procedures to track and monitor implementation of the Roadmap.

#### Participating Agencies and Organizations

The Participating Agencies and Organizations are listed in Table 4, at the end of this section of the Roadmap. The agencies and organizations are categorized by type (federal agency, state agency, etc.) and listed alphabetically within these categories. Table 4 is cross-referenced to the lists of specific actions in Section 2, to identify the actions that each agency or organization is leading. Some actions are led by multiple parties, because individual agencies will conduct that action internally. For example, numerous funding agencies have committed to leading Action 1-4, Identify Opportunities to More Fully Fund Sustainable Streets, in which they will each review their own funding programs to identify opportunities to remove obstacles to the integrated funding of Sustainable Streets projects.



*This bioretention facility in Oakland receives stormwater runoff from both the roadway and an adjacent plaza (Source: Horizon)*

#### Champions

Champions are organizations that have the interest and capability to influence legislation and policy decisions, and generally advocate for the funding of Sustainable Streets. The current list of Champions is provided below.

- **Bay Area Stormwater Management Agencies Association (BASMAA)** – BASMAA is a consortium of nine San Francisco Bay Area municipal stormwater programs. BASMAA was started by local governments in response to municipal stormwater permits in an effort to promote regional consistency and facilitate efficient use of public resources. BASMAA is designed to encourage information sharing and cooperation, and to develop products and programs that are more cost-effective when done regionally than could be accomplished locally. In addition, BASMAA provides a forum for representing and advocating the common interests of member programs at the regional and state level.
- **San Francisco Bay Regional Water Quality Control Board (Regional Water Board)** – The Regional Water Board issued the current Municipal Regional Stormwater Permit on November 19, 2015, including in Provision C.3.j of the permit a requirement for the Permittees to prepare and implement Green Infrastructure Plans. Green Infrastructure Plans are required to include

targets for the amount of impervious surface to be retrofitted with green infrastructure by 2020, 2030, and 2040.

- **San Francisco Estuary Partnership (SFEP)** – SFEP is a collaboration of local, state, and federal agencies, NGOs, academia and business leaders working to protect and restore protect and restore the San Francisco Bay-Delta Estuary. SFEP builds partnerships and leverages federal funding with millions of dollars in state and local funds for regional-scale restoration, water quality improvement, and resilience-building projects (SFEP 2017).
- **Save The Bay** – Save The Bay is the largest regional organization working to protect, restore and celebrate San Francisco Bay since 1961. Save The Bay mobilizes thousands of Bay Area residents to protect and restore the Bay for future generations, both as advocates in their community and volunteers on the shoreline, working with scientists and policymakers to protect the Bay as the region's most important natural resource--essential to our environment, economy, and quality of life (Save The Bay 2017).

### Roadmap Committee

A Roadmap Committee will be formed to monitor and track progress of actions taken by agencies to make available funding for sustainable streets projects, to track the projects that succeed in obtaining funding, and periodically review and adjust Specific Actions as needed. This Committee may also identify needs for workgroups to implement various Specific Actions. The Roadmap Committee will consist of representatives of the Participating Agencies, potentially including local agency representatives, and is anticipated to elect officers for limited terms. The Committee is anticipated to meet at least twice a year, unless Committee members determine that more frequent meetings are needed. One annual meeting is anticipated to include progress reports and keynote speeches highlighting achievements by Participating Agencies and/or new advancements in Sustainable Streets.

### Tracking and Follow-up

The Roadmap Committee's primary tool for tracking and monitoring progress in implementing the actions listed in Section 2 is anticipated to be an online spreadsheet of specific actions, which would be editable by the representatives of Participating Agencies. Participating Agencies would periodically be reminded to populate the online spreadsheet with information on progress since the last update, which could be formatted as a progress report for annual meetings of the Roadmap Committee.

The Roadmap Committee will continue to follow up with partner agencies and organizations to identify additional Champions. For example, the Roadmap Committee is following up with the agencies listed below, as well as other agencies and organizations, regarding the potential to serve as Champions.

- **Department of Transportation (Caltrans)** – Through its Division of Local Assistance, Caltrans oversees more than one billion dollars annually available to over 600 cities, counties and regional agencies for the purpose of improving their transportation infrastructure or providing transportation services (Caltrans 2018). Some of the Division of Local Assistance grant programs, such as the Active Transportation Program, prioritize the funding of projects that include Sustainable Streets elements, such as bicycle and pedestrian improvements. Caltrans is subject to the California Department of Transportation Municipal Stormwater Permit, issued by the

State Water Board on September 19, 2012, as amended. As part of complying with this permit, the Caltrans Stormwater Program provides funding to local agencies for green infrastructure improvements through Cooperative Implementation Agreements.

- **Metropolitan Transportation Commission (MTC)** - MTC is the transportation planning, financing and coordinating agency for the nine-county San Francisco Bay Area. Congress distributes federal transportation dollars to MTC (and other metropolitan planning organizations) to invest in regional priority transportation projects and programs. MTC also helps local agencies in the Bay Area obtain state funding for transportation projects. In 2012, MTC established the One Bay Area Grant (OBAG) program, which taps federal funds to maintain MTC's commitments to regional transportation priorities while also advancing the Bay Area's land-use and housing goals. OBAG includes both a regional program administered by MTC and a county program that allows counties to use OBAG funds to invest in a range of street and road project types, including elements of Sustainable Streets projects.
- **State Water Resources Control Board (State Water Board)** – Through its Division of Financial Assistance, the State Water Board implements financial assistance programs, including the Storm Water Grant Program, loan and grant funding for construction of municipal sewage and water recycling facilities, remediation for underground storage tank releases, watershed protection projects, and nonpoint source pollution control projects (SWRCB 2018) . The State Water Board has experience collaborating with other funding agencies, including the Department of Water Resources.

### Sustainable Streets and Collaborative Action

This Roadmap sets forth a vision of collaborative action to implement specific actions to realize multi-benefit projects. This may challenge some existing organizational structures that were developed to support single-benefit projects. Agencies are making this commitment in order to realize a vision of multi-benefit projects that help make communities healthier and more vibrant than single-benefit projects of the past.



*Meeting of the Regional Roundtable on Sustainable Streets, March 2017*



| Table 4<br>Agency or Organization Assignments |   |   |  |
|---|---|---|--|
| Categories of Participants                    | Participating Agencies and Organizations  | Specific Actions  |  |
|   |   | Led by Agency or Organization   | Supported by Agency or Organization  |
| Federal Agencies                              | <ul style="list-style-type: none"> <li>Federal Emergency Management Agency</li> </ul>   | 1-4, Identify Opportunities to More Fully Fund Sustainable Streets<br>2-2, Inform Other Agencies of Solicitations<br>2-7, Consider Linkages to Other Programs<br>3-8, Incorporate Applicable Specific Actions in Agency Policies, Procedures, Strategic Plans, and/or Other Documentation | 2-3, Offer Training on Obtaining Grants<br>2-4, Prepare Guidance for Packaging Projects<br>2-6, Identify Opportunities to Coordinate Reporting   |
|   | <ul style="list-style-type: none"> <li>Federal Highway Administration</li> <li>Federal Transit Administration</li> </ul>  | --  | 1-1, Clarify GSI Eligibility in Federal Transportation Grants  |
| State Agencies                                | <ul style="list-style-type: none"> <li>Caltrans Division of Local Assistance</li> </ul>   | 1-1, Clarify GSI Eligibility in Federal Transportation Grants   | 1-2, Update OBAG Guidance<br>1-3, Clarify GSI Eligibility in the Local Streets and Roads Program   |
|   | <ul style="list-style-type: none"> <li>Caltrans Stormwater Program</li> </ul>   | 1-4, Identify Opportunities to More Fully Fund Sustainable Streets<br>1-8, Address Caltrans Stormwater Treatment Credit<br>2-2, Inform Other Agencies of Solicitations<br>2-7, Consider Linkages to Other Programs  | 2-1, Coordinate to Publicize Solicitations<br>2-3, Offer Training on Obtaining Grants<br>2-4, Prepare Guidance for Packaging Projects<br>2-6, Identify Opportunities to Coordinate Reporting |
|   | <ul style="list-style-type: none"> <li>Caltrans Active Transportation Program</li> <li>California Natural Resources Agency</li> <li>Department of Water Resources</li> <li>State Coastal Conservancy</li> <li>Strategic Growth Council</li> </ul> | 1-4, Identify Opportunities to More Fully Fund Sustainable Streets<br>2-2, Inform Other Agencies of Solicitations<br>2-7, Consider Linkages to Other Programs<br>3-8, Incorporate Applicable Specific Actions in Agency Policies, Procedures, Strategic Plans, and/or Other Documentation | 2-1, Coordinate to Publicize Solicitations<br>2-3, Offer Training on Obtaining Grants<br>2-4, Prepare Guidance for Packaging Projects<br>2-6, Identify Opportunities to Coordinate Reporting |
|   | <ul style="list-style-type: none"> <li>State Water Resources Control Board</li> </ul>   | 2-1, Coordinate to Publicize Solicitations<br>2-2, Inform Other Agencies of Solicitations<br>2-7, Consider Linkages to Other Programs<br>3-8, Incorporate Applicable Specific Actions in Agency Policies, Procedures, Strategic Plans, and/or Other Documentation                         | 1-7, Develop State Legislative Program<br>1-8, Address Caltrans Stormwater Treatment Credit<br>2-3, Offer Training on Obtaining Grants<br>2-4, Prepare Guidance for Packaging Projects       |



| Table 4<br>Agency or Organization Assignments |   |  |  |
|---|---|--|--|
| Categories of Participants                    | Participating Agencies and Organizations  | Specific Actions   |  |
|   |   | Led by Agency or Organization  | Supported by Agency or Organization  |
| State Agencies (cont.)                        |   |  | 2-6, Identify Opportunities to Coordinate Reporting  |
| Regional Agencies                             | <ul style="list-style-type: none"> <li>Bay Area Air Quality Management District</li> <li>San Francisco Bay Restoration Authority</li> </ul> | 1-4, Identify Opportunities to More Fully Fund Sustainable Streets<br>2-2, Inform Other Agencies of Solicitations<br>2-7, Consider linkages to other programs<br>3-8, Incorporate Applicable Specific Actions in Agency Policies, Procedures, Strategic Plans, and/or Other Documentation                        | 2-1, Coordinate to Publicize Solicitations<br>2-3, Offer Training on Obtaining Grants<br>2-4, Prepare Guidance for Packaging Projects<br>2-6, Identify Opportunities to Coordinate Reporting   |
|   | <ul style="list-style-type: none"> <li>Bay Conservation and Development Commission</li> </ul>   | --   | 3-9, Develop Outreach Strategy   |
|   | <ul style="list-style-type: none"> <li>Metropolitan Transportation Commission</li> </ul>  | 1-2, Update OBAG Guidance<br>2-2, Inform Other Agencies of Solicitations<br>2-7, Consider Linkages to Other Programs<br>3-6, Coordinate with Local Agency Staff to Share Information<br>3-8, Incorporate Applicable Specific Actions in Agency Policies, Procedures, Strategic Plans, and/or Other Documentation | 1-1, Clarify GSI Eligibility in Federal Transportation Grants<br>1-3, Clarify GSI Eligibility in the Local Streets and Roads Program<br>2-1, Coordinate to Publicize Solicitations<br>2-3, Offer Training on Obtaining Grants<br>2-4, Prepare Guidance for Packaging Projects<br>2-6, Identify Opportunities to Coordinate Reporting |
|   | <ul style="list-style-type: none"> <li>San Francisco Bay Regional Water Quality Control Board</li> </ul>                                    | 1-5, Regional Water Board Staff to Review the Completed Checklists Prepared in Specific Action 1-4   | 1-6, Identify Opportunities to Influence Federal Policy<br>1-7, Develop State Legislative Program<br>1-8, Address Caltrans Stormwater Treatment Credit<br>2-3, Offer Training on Obtaining Grants  |
|   | <ul style="list-style-type: none"> <li>San Francisco Estuary Partnership</li> </ul>   | 1-7, Develop State Legislative Program<br>2-5, Track Upcoming Solicitations<br>2-6, Identify Opportunities to Coordinate Reporting<br>3-2, Improve the Existing Web Presence for the Roadmap   | 1-6, Identify Opportunities to Influence Federal Policy<br>3-4, Support SB 231 Implementation<br>3-6, Coordinate with Local Agency Staff to Share Information  |

| Table 4<br>Agency or Organization Assignments |   |   |  |
|---|---|---|--|
| Categories of Participants                    | Participating Agencies and Organizations  | Specific Actions  |  |
|   |   | Led by Agency or Organization   | Supported by Agency or Organization  |
| Regional Agencies (cont.)                     |   | 3-3, Seek Funding for Roadmap Implementation<br>3-5, Convene the Roadmap Committee<br>3-7, Prepare and Distribute a Fact Sheet of the Roadmap<br>3-9, Develop Outreach Strategy   |  |
| County Transportation Agencies                | <ul style="list-style-type: none"> <li>Alameda County Transportation Commission</li> <li>Contra Costa Transportation Authority</li> <li>San Mateo County/City Association of Governments</li> <li>San Mateo County Transportation Authority</li> <li>Santa Clara Valley Transportation Authority</li> </ul> | 1-4, Identify Opportunities to More Fully Fund Sustainable Streets<br>2-2, Inform Other Agencies of Solicitations<br>2-7, Consider Linkages to Other Programs<br>3-8, Incorporate Applicable Specific Actions in Agency Policies, Procedures, Strategic Plans, and/or Other Documentation | 2-3, Offer Training on Obtaining Grants<br>2-4, Prepare Guidance for Packaging Projects<br>2-6, Identify Opportunities to Coordinate Reporting   |
|   | <ul style="list-style-type: none"> <li>Napa County Transportation and Planning Agency</li> <li>San Francisco County Transportation Authority</li> <li>Solano Transportation Authority</li> <li>Sonoma County Transportation Authority</li> <li>Transportation Authority of Marin</li> </ul>                 | --  | 2-3, Offer Training on Obtaining Grants<br>2-4, Prepare Guidance for Packaging Projects<br>2-6, Identify Opportunities to Coordinate Reporting   |
| Local Storm-water Programs                    | <ul style="list-style-type: none"> <li>Alameda Countywide Clean Water Program</li> <li>Contra Costa Clean Water Program</li> <li>San Mateo Countywide Water Pollution Prevention Program</li> <li>Santa Clara Valley Urban Runoff Pollution Prevention Program</li> </ul>                                   | 3-1, Provide Guidance on a Range of Funding Options   | 3-4, Support SB 231 Implementation<br>3-6, Coordinate with Local Agency Staff to Share Information<br>3-9, Develop and Conduct Outreach Strategy |

| Table 4<br>Agency or Organization Assignments |  |   |   |
|---|--|---|---|
| Categories of Participants                    | Participating Agencies and Organizations   | Specific Actions  |   |
|   |  | Led by Agency or Organization   | Supported by Agency or Organization   |
| Local Storm-water Programs (cont.)            | <ul style="list-style-type: none"> <li>• Cities of American Canyon, Benicia, Calistoga, Napa, Petaluma, Sonoma, St. Helena, Yountville</li> <li>• Counties of Napa, Solano, Sonoma, and Vallejo</li> <li>• Fairfield-Suisun Urban Runoff Management Program</li> <li>• Marin County Stormwater Pollution Prevention Program</li> <li>• San Francisco Public Utilities Commission</li> <li>• Sonoma County Water Agency</li> <li>• Town of Ross</li> <li>• Vallejo Sanitation and Flood Control District</li> </ul> | --  | 3-6, Coordinate with local Agency Staff to Share Information<br>3-4, Support SB 231 Implementation  |
| Non-Governmental Organizations                | <ul style="list-style-type: none"> <li>• Bay Area Stormwater Management Agencies Association</li> </ul>  | 1-4, Identify Opportunities to More Fully Fund Sustainable Streets<br>2-3, Offer Training on Obtaining Grants<br>2-4, Prepare Guidance for Packaging Projects<br>3-9, Develop Outreach Strategy | 1-7, Develop State Legislative Program<br>2-5, Track Upcoming Solicitations<br>2-6, Identify Opportunities to Coordinate Reporting<br>3-2, Improve the Existing Web Presence for the Roadmap<br>3-3, Seek Funding for Roadmap Implementation<br>3-4, Support SB 231 Implementation<br>3-5, Convene the Roadmap Committee<br>3-6, Coordinate with Local Agency Staff to share Information<br>3-7, Prepare and Distribute a Fact Sheet of the Roadmap<br>3-9, Develop Outreach Strategy |
|   | <ul style="list-style-type: none"> <li>• Save The Bay</li> <li>• Trust for Public Land</li> </ul>  | --  | 1-6, Identify Opportunities to Influence Federal Policy<br>1-7, Develop State Legislative Program   |

| Table 4<br>Agency or Organization Assignments |   |                                    |  |
|---|---|------------------------------------|--|
| Categories of Participants                    | Participating Agencies and Organizations    | Specific Actions                   |  |
|   |   | Led by Agency or Organization      | Supported by Agency or Organization                                  |
| Non-Governmental Organizations (cont.)        |   |                                    | 3-4, Support SB 231 Implementation<br>3-9, Develop Outreach Strategy |
|   | • California Stormwater Quality Association | 3-4, Support SB 231 Implementation | 2-4, Prepare Guidance for Packaging Strategy                         |
|   | • NRDC                                      | --                                 | 3-9, Develop Outreach Strategy                                       |
|   | • SPUR                                      | --                                 | 3-4, Support SB 231 Implementation<br>3-9, Develop Outreach Strategy |



# Appendix A

## Acronyms and Definitions

This appendix provides a list of acronyms and glossary of technical terms used in the Roadmap.

### List of Acronyms

|          |  |
|----------|--|
| ACCWP    | Alameda Countywide Clean Water Program                       |
| ACTC     | Alameda County Transportation Commission                     |
| BAAQMD   | Bay Area Air Quality Management District                     |
| BASMAA   | Bay Area Stormwater Management Agencies Association          |
| Caltrans | California Department of Transportation                      |
| CASQA    | California Stormwater Quality Association                    |
| C/CAG    | San Mateo County/City Association of Governments             |
| CCCWP    | Contra Costa Clean Water Program                             |
| CCTA     | Contra Costa Transportation Authority                        |
| CMA      | Congestion Management Agency                                 |
| CNRA     | California Natural Resources Agency                          |
| DWR      | Department of Water Resources                                |
| FEMA     | Federal Emergency Management Agency                          |
| GI       | Green infrastructure   |
| GSI      | Green stormwater infrastructure                              |
| MRP      | Municipal Regional Stormwater Permit                         |
| MTC      | Metropolitan Transportation Commission                       |
| OBAG     | One Bay Area Grant Program                                   |
| RWQCB    | Regional Water Quality Control Board                         |
| SCC      | State Coastal Conservancy                                    |
| SCVURPPP | Santa Clara Valley Urban Runoff Pollution Prevention Program |
| SFBRA    | San Francisco Bay Restoration Authority                      |
| SFEP     | San Francisco Estuary Partnership                            |
| SGC      | Strategic Growth Council                                     |
| SMCTA    | San Mateo County Transportation Authority                    |
| SMCWPPP  | San Mateo Countywide Water Pollution Prevention Program      |
| STB      | Save the Bay   |
| VTA      | Santa Clara Valley Transportation Authority                  |
| TMDL     | Total Maximum Daily Load                                     |
| TPL      | Trust for Public Land  |
| USEPA    | United States Environmental Protection Agency                |



## Glossary of Terms

**Active Transportation:** Any self-propelled, human-powered mode of transportation, such as walking or bicycling (CDC 2011).

**Carbon sequestration:** Terrestrial, or biologic, carbon sequestration is the process by which trees and plants absorb carbon dioxide, release the oxygen, and store the carbon. Geologic sequestration is one step in the process of carbon capture and sequestration, and involves injecting carbon dioxide deep underground where it stays permanently (USEPA 2016).

**Complete Street:** A transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit vehicles, truckers, and motorists, appropriate to the function and context of the facility (Caltrans 2017a).

**Congestion Management Agency:** A congestion management agencies (CMA) is a countywide body funded by the state gas tax that works to keep traffic levels manageable. CMAs help coordinate land use, air quality and transportation planning among the local jurisdictions; prepare a congestion management program to spend gas tax funds; monitor levels of congestion on major roads; and analyze the impacts that a proposed development will have on future traffic congestion (Institute for Local Government 2015).

**Green infrastructure:** Green infrastructure is an approach to water management that protects, restores, or mimics the natural water cycle, providing habitat, flood protection, cleaner air, and cleaner water (American Rivers 2017).

**Green stormwater infrastructure:** Green stormwater infrastructure is type of green infrastructure that specifically addresses stormwater management. It includes a range of soil-water-plant systems that intercept stormwater, infiltrate a portion of it into the ground, evaporate a portion of it into the air, and in some cases release a portion of it slowly back into the storm drain system (Philadelphia Water Department 2017)

**Stormwater treatment system:** Any engineered system designed to remove pollutants from stormwater runoff by settling, filtration, biological degradation, plant uptake, media absorption/adsorption or other physical, biological, or chemical process (San Francisco Bay Regional Water Quality Control Board 2015)

**Sustainable Street:** Roadway segment that includes both complete streets features and green stormwater infrastructure, and that is maintained in a state of good or fair condition.

**Total Maximum Daily Load:** After the identification of a water quality-limited waterbody is completed, a Total Maximum Daily Load is established at a level necessary to achieve the applicable state water quality standards (USEPA 2017c). A TMDL establishes the maximum amount of a pollutant allowed in a waterbody and serves as the starting point or planning tool for restoring water quality (USEPA 2017d).

**Urban greening:** An integrated, citywide approach to the planting, care and management of all vegetation in a city to secure multiple environmental and social benefits for urban dwellers; projects may involve planting of trees, shrubs, grass, or agricultural plots (Sorensen et al. 1997).



## Appendix B

### Potential Sources of Funding for Sustainable Streets

This appendix provides two tables that, taken together, identify a range of funding sources that may potentially be used to fund Sustainable Streets projects. Table B-1 includes transportation funding sources and presents available information regarding the eligibility of green stormwater infrastructure. Table B-2 includes resource-related funding sources and presents available information regarding the eligibility of transportation features.

| Table B-1<br>Transportation Funding Sources that May Potentially Fund Sustainable Streets |  |   |  |   |   |
|---|--|---|--|---|---|
| Row No.   | Name of Funding Source                 | Administering Agency  | Funded by  | Conditions under which Green Stormwater Infrastructure is Eligible  | Link to information   |
| 1   | One Bay Area Grant Program             | Metropolitan Transportation Commission (MTC)  | <ul style="list-style-type: none"> <li>Surface Transportation Block Grant Program (STP – federal funding)</li> <li>Congestion Mitigation and Air Quality Improvement (CMAQ – federal funding)</li> <li>(Source: MTC 2017)</li> </ul> | <ul style="list-style-type: none"> <li>Permeable pavement is eligible.</li> <li>Landscaping as part of streetscape improvement or safety improvement is eligible.</li> <li>GSI is eligible if required for mitigation.</li> <li>Dependent on various goals and guidelines of OBAG sub-programs</li> <li>Must comply with all Federal &amp; State &amp; Regional &amp; County level (for county programs) regulations.</li> <li>Follows Caltrans Federal Aid Delivery process.</li> <li>(Sources: MTC 2015a, Atkinson 2017)</li> </ul> | <a href="http://mtc.ca.gov/our-work/invest-protect/focused-growth/one-bay-area-grants">http://mtc.ca.gov/our-work/invest-protect/focused-growth/one-bay-area-grants</a><br>(Source: MTC 2017a)  |
| 2   | Active Transportation Program          | California Transportation Commission (CTC)  | Myriad of fund sources that will have to be obtained from CTC  | <ul style="list-style-type: none"> <li>Scoring criteria is a balance dictated by the various fund sources.</li> <li>Landscaping as part of the ATP project that meets the program goals are eligible expenses.</li> <li>Projects must comply with all Federal and State regulations and must follow the Caltrans Federal Aid and CTC delivery process.</li> </ul>   | <a href="http://www.dot.ca.gov/hq/LocalPrograms/atp/">www.dot.ca.gov/hq/LocalPrograms/atp/</a><br>(Source: Caltrans 2017b)  |
| 3   | TDA Article 3                          | MTC establishes guidelines; counties administer funding per MTC guidelines<br>(Source: MTC 2017b)                           | State funded through Transportation Development Act (TDA), Public Utilities Code (PUC) Section 99200   | <ul style="list-style-type: none"> <li>Intersection safety improvements including bulbouts/curb extensions (Source: MTC 2016).</li> <li>Curb and gutter improvements were not specifically mentioned in the guidelines, but would be integral to curb extension construction.</li> </ul>  | <a href="http://mtc.ca.gov/our-work/fund-invest/investment-strategies-commitments/transit-21st-century/funding-sales-tax-and-0">http://mtc.ca.gov/our-work/fund-invest/investment-strategies-commitments/transit-21st-century/funding-sales-tax-and-0</a><br>(Source: MTC 2017b)  |
| 4   | Transportation for Livable Communities | Counties administer Transportation for Livable Communities funding<br>(Sources: ACTC 2012, CCTA 2017, C/CAG 2016, VTA 2017) | Funding sources may vary by county.<br>(Sources: ACTC 2012, CCTA 2017, C/CAG 2016, VTA 2017)   | <ul style="list-style-type: none"> <li>Eligibility may vary by county.</li> </ul>   | Alameda: <a href="http://www.alamedactc.org/app_pages/view/8057">www.alamedactc.org/app_pages/view/8057</a> (ACTC 2012a)<br>Contra Costa: <a href="http://www.ccta.net/resources/detail/18/1">www.ccta.net/resources/detail/18/1</a> (CCTA 2017a)<br>San Mateo: <a href="http://ccag.ca.gov/wp-content/uploads/2016/06/OBAG-TLC-Scoring-Criteria.pdf">http://ccag.ca.gov/wp-content/uploads/2016/06/OBAG-TLC-Scoring-Criteria.pdf</a> (C/CAG 2016)<br>Santa Clara: <a href="http://www.vta.org/projects-and-programs/call-for-projects">www.vta.org/projects-and-programs/call-for-projects</a> (VTA 2017a) |
| 5   | Safe Routes to School                  | MTC establishes guidelines; counties administer funding per MTC guidelines.   | CMAQ funding (Source: MTC 2015b)   | <ul style="list-style-type: none"> <li>MTC guidelines identify new curbs and gutters as eligible improvements for pedestrian improvement projects (Source: MTC 2012).</li> </ul>  | <a href="http://mtc.ca.gov/tags-public/safe-routes-school">http://mtc.ca.gov/tags-public/safe-routes-school</a> (MTC 2017c)   |
| 6   | TIGER grants                           | FHWA  | FHWA   | <ul style="list-style-type: none"> <li>National competition aimed at highway/ Bridge bike/ped/passenger and freight rail/port / intermodal projects.</li> <li>Very intensive benefit-cost analysis required.</li> <li>Infrastructure as required mitigation is probably eligible.</li> </ul>  | <a href="https://www.transportation.gov/tiger">https://www.transportation.gov/tiger</a> (USDOT 2017)  |

| Table B-1<br>Transportation Funding Sources that May Potentially Fund Sustainable Streets |   |   |                             |  |  |
|---|---|---|-----------------------------|--|--|
| Row No.   | Name of Funding Source  | Administering Agency  | Funded by                   | Conditions under which Green Stormwater Infrastructure is Eligible   | Link to information  |
| 7   | Transportation Fund for Clean Air   | BAAQMD  | State Funding               | <ul style="list-style-type: none"> <li>The Application Guidance for the Bicycle Facilities Grant Program does not specifically mention storm drainage, landscaping, or other project activities directly related to green stormwater infrastructure (BAAQMD 2017b); however, an informational interview with BAAQMD staff (BASMAA 2016) indicated that green stormwater infrastructure improvements, or other landscaping improvements, may be eligible due to carbon sequestration benefits.</li> </ul>   | <a href="http://www.baaqmd.gov/grant-funding/public-agencies">http://www.baaqmd.gov/grant-funding/public-agencies</a> (BAAQMD 2017a)   |
| 8   | Affordable Housing and Sustainable Communities                                  | Strategic Growth Council guidelines.  | State Cap and Trade Funding | <ul style="list-style-type: none"> <li>Urban greening costs are eligible, and projects must include at least one urban greening element. The definition of urban greening includes natural infrastructure and stormwater features. Natural infrastructure is defined as the preservation and/or restoration of ecological systems, or utilization of engineered systems that use ecological processes, to increase resiliency to climate change and/or manage other environmental problems.</li> <li>Projects may receive up to 3 points for incorporating natural infrastructure, if the surrounding community is experiencing any specific climate vulnerabilities and the project aims to address specific concerns.<br/>(Source SGC 2017)</li> </ul> | <a href="http://www.sgc.ca.gov/Grant-Programs/AHSC-Program.html">http://www.sgc.ca.gov/Grant-Programs/AHSC-Program.html</a> (SGC 2015)   |
| 9   | Half-cent sales tax measure funding (different measures for different counties) | ACTC – Alameda County<br>CCTA – Contra Costa County<br>VTA – Santa Clara County<br>SMCTA – San Mateo County | Countywide sales taxes      | Eligibility policies vary by county.   | <p>Alameda County:<br/>Measure B: <a href="http://www.alamedactc.org/app_pages/view/4617">www.alamedactc.org/app_pages/view/4617</a> (ACTC 2012b)<br/>Measure BB: <a href="http://www.alamedactc.org/news_items/view/14837">www.alamedactc.org/news_items/view/14837</a> (ACTC 2015)</p> <p>Contra Costa County Measure J: <a href="http://www.ccta.net/sources/detail/2/1">www.ccta.net/sources/detail/2/1</a> (CCTA 2017b)</p> <p>San Mateo County Measure A: <a href="http://www.smcta.com/about/About_Measure_A.html">www.smcta.com/about/About_Measure_A.html</a> (SMCTA 2012)</p> <p>Santa Clara County:<br/>Measure A Transit Improvements: <a href="http://www.vta.org/projects-and-programs/programs/2000-measure-a-transit-improvement-program">www.vta.org/projects-and-programs/programs/2000-measure-a-transit-improvement-program</a> (VTA 2015)<br/>Measure B: <a href="http://www.vta.org/measure-b-2016">www.vta.org/measure-b-2016</a> (VTA 2017b)</p> |

| Table B-2<br>Resource-Based Grant and Loan Programs that May Potentially Fund Sustainable Streets |  |   |  |  |   |
|---|--|---|--|--|---|
| Row No.   | Name of Funding Source                             | Administering Agency                    | Funded by  | Conditions under which Transportation is Eligible  | Link to information   |
| 1   | Prop 1 Stormwater Grant Program                    | State Water Resources Control Board     | State Proposition 1  | <ul style="list-style-type: none"> <li>Costs for permeable pavement are eligible</li> <li>Costs for bike lanes/pedestrian pathways/alternate transit lane could be eligible if GHG reduction is shown as a quantifiable benefit (Source: BASMAA 2017b)</li> </ul>  | <a href="http://www.waterboards.ca.gov/water_issues/programs/grants_loans/swgp/prop1/">www.waterboards.ca.gov/water_issues/programs/grants_loans/swgp/prop1/</a> (Source: SWRCB 2017) |
| 2   | Prop 1 Integrated Regional Water Management Grants | Department of Water Resources           | State Proposition 1  | <ul style="list-style-type: none"> <li>The guidelines for the 2016 round of funding do not specifically address the eligibility of the transportation features of Sustainable Streets projects; however, projects receive points for demonstrating a reduction of GHG (DWR 2016)</li> </ul>  | <a href="http://www.water.ca.gov/irwm/grants/prop1index.cfm">http://www.water.ca.gov/irwm/grants/prop1index.cfm</a> (DWR 2017)  |
| 3   | State Coastal Conservancy                          | Prop 1 Grants                           | State Proposition 1  | <ul style="list-style-type: none"> <li>The program funds multi-benefit projects in four focus areas: Fisheries, Wetlands restoration, Agricultural water use/ ecosystem, and Urban Greening. Urban greening looks as multi-benefits, including public access to ecological resources, carbon sequestration, enhancement of urban park, with a focus on ecological function (BASMAA 2017a).</li> <li>The grant guidelines do not specifically address the eligibility of the transportation features of Sustainable Streets projects; however, one of the project selection criteria is for project design and construction methods to include measures to avoid or minimize GHG emissions to the extent feasible and consistent with the project objectives (SCC 2016).</li> </ul> | <a href="http://scc.ca.gov/grants/proposition-1-grants/">http://scc.ca.gov/grants/proposition-1-grants/</a> (SCC 2017)  |
| 4   | Measure AA   | San Francisco Bay Restoration Authority | Regional Measure AA  | <ul style="list-style-type: none"> <li>The program generally looks at larger scale GSI, but could fund water quality treatment systems along urbanized shorelines of the Bay. Projects in association with restoration and/or along shore or Bay edge may be eligible (BASMAA 2017a).</li> <li>The Measure AA grant guidelines do not mention roads or streets. Eligible project types include trails and levees (SFBRA 2017b).</li> </ul>   | <a href="http://sfbayrestore.org/sf-bay-restoration-authority-grants.php">http://sfbayrestore.org/sf-bay-restoration-authority-grants.php</a> (SFBRA 2017a)                           |
| 5   | Urban Greening Grants                              | California Natural Resources Agency     | State Cap and Trade funding  | <ul style="list-style-type: none"> <li>Eligible activities include green street and alleyway projects that integrate green stormwater infrastructure elements into the street or alley design, including permeable surfaces, bioswales, and trees (CNRA 2017b).</li> </ul>   | <a href="http://resources.ca.gov/grants/urban-greening/">http://resources.ca.gov/grants/urban-greening/</a> (CNRA 2017a)  |
| 6   | Emergency Management Performance Grant             | Federal Emergency Management Agency     | Appropriation Authority for Program: Department of Homeland Security Appropriations Act, 2017 (Pub. L. No. 115-31) | <ul style="list-style-type: none"> <li>This is a planning grant that provides Federal funds to states to assist state, local, territorial, and tribal governments in preparing for all</li> </ul>  | <a href="https://www.fema.gov/preparedness-non-disaster-grants">https://www.fema.gov/preparedness-non-disaster-grants</a> (FEMA 2017)   |



| Table B-2<br>Resource-Based Grant and Loan Programs that May Potentially Fund Sustainable Streets |  |                             |  |   |   |
|---|--|-----------------------------|--|---|---|
| Row No.   | Name of Funding Source   | Administering Agency        | Funded by  | Conditions under which Transportation is Eligible   | Link to information   |
|   |  |                             |  | hazards. Examples of funded activities include conducting risk assessments and updating emergency plans (USDHS and FEMA 2017).  |   |
| 7   | Cooperative Implementation Agreements for Total Maximum Daily Load (TMDL) Compliance | Caltrans Stormwater Program | Caltrans Stormwater Program funding  | <ul style="list-style-type: none"> <li>As of March 2018, the program had funded three local agency projects through cooperative implementation agreements in the San Francisco Bay Area; none were Sustainable Street projects. Sustainable Streets projects in the SF Bay Area could potentially be eligible; however, this program can only fund water quality improvements. Key criteria include: the number of TMDL pollutants that will be addressed (including trash) and the amount of Caltrans right of way that is treated. Projects that infiltrate or capture and use stormwater are preferred.</li> </ul> | For information, contact Tom Rutsch, <a href="mailto:tom.rutsch@dot.ca.gov">tom.rutsch@dot.ca.gov</a>   |
| 8   | San Francisco Bay Water Quality Improvement Grants                                   | USEPA                       | The funds for the awards under the 2017 RFP were appropriated to USEPA under the "Further Continuing and Security Assistance Appropriations Act, 2017" (Public Law 114-254) and will be issued under Section 320 of the Clean Water Act (National Estuary Program), 33 U.S.C. §1330 (USEPA 2017b). | <ul style="list-style-type: none"> <li>Eligible projects include projects that manage stormwater with low impact development and green stormwater infrastructure; projects should be based on a restoration plan, TMDL, stormwater/green stormwater infrastructure plan, or watershed plan (USEPA 2017b).</li> </ul>  | <a href="http://www.epa.gov/sfbay-delta/sf-bay-water-quality-improvement-fund">www.epa.gov/sfbay-delta/sf-bay-water-quality-improvement-fund</a> (USEPA 2017) |
| 9   | Clean Water State Revolving Fund (CWSRF)   | SWCRB                       | The CWSRF provides below-market rate financing, funded by the California Infrastructure and Economic Development Bank State Revolving Funds revenue bonds (Fitch Ratings 2014).  | <ul style="list-style-type: none"> <li>Eligible projects include planning, design, and/or construction of publicly-owned storm water treatment and control facilities.</li> </ul>   | <a href="http://www.waterboards.ca.gov/water_issues/programs/grants_loans/">www.waterboards.ca.gov/water_issues/programs/grants_loans/</a> (SWCRB 2018)       |

# Appendix C

## Solutions Considered and Withdrawn

A number of potential solutions were developed as part of the Regional Roundtable of Funding Solutions for Sustainable Streets but were withdrawn from further consideration based on input provided by agencies participating in the roundtable process. These potential solutions are listed in Table C-1, together with an explanation of the basis for withdrawing the solutions from further consideration.

| Table C-1<br>Potential Solutions Considered and Withdrawn from Further Consideration   |   |
|--|---|
| Potential Solution   | Basis for Withdrawing the Potential Solution  |
| <p><b>Single Distribution</b> – Create a single distribution of funding for projects that include both green stormwater infrastructure and transportation improvements that reduce greenhouse gases.</p>   | <p>This potential solution would have introduced difficulties inherent in mixing funds from different sources, since each funding source has been developed to address layers of objectives, as well as the agency mission and the funding source needs. Funding agencies participating in the Regional Roundtable for Funding Sustainable Streets did not support this potential solution.</p> |
| <p><b>Coordinate the Timing of Funding Cycles</b> – Coordinate the timing of funding cycles among agencies, in order to publish solicitations for different grants that fund Sustainable Streets within a given timeframe. This would make it more possible for one project to receive funding from multiple grants.</p> | <p>The timing of the funding cycle for each funding source is subject to many diverse factors, such as funding appropriations, which are unlikely to be changed in order to accommodate a subset of eligible types of projects.</p>   |



## Appendix D

### Checklist for Identifying Opportunities to Improve Funding of Sustainable Streets

This checklist is provided for use by individual funding agencies to review policy documents regarding their programs. For questions that receive a “YES” answer, enter in the “Potential Revisions for Consideration” columns potential changes to policies and procedures that would improve the funding of Sustainable Street projects. Potential revisions that could be done the program level go in the “Program Revisions” column, and potential revisions that require legislation go in the “Legislative Revisions” column. If you cannot currently determine whether legislation would be required, please indicate in the “Legislative Revisions” column that legislation may be required, pending more information.

| YES   | NO                       | N/A                      | Question   | Potential Revisions for Consideration |                       |
|---|--------------------------|--------------------------|--|---------------------------------------|-----------------------|
|   |                          |                          |  | Program Revisions                     | Legislative Revisions |
| <b>Questions Regarding Pathway 1: Prioritize Sustainable Streets in Funding Sources</b> |                          |                          |  |                                       |                       |
| <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | 1. If the funding source is a transportation grant, does it restrict the use of funds for green stormwater infrastructure? If yes, please describe the restrictions in the “Items to Consider Revising” columns. If applicable, include a discussion of how Transportation Asset Management (TAM) is used at the funding program level, and how TAM addresses or does not address green stormwater infrastructure. |                                       |                       |
| <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | 2. If the funding source is a resource grant, does it restrict the use of funds for transportation improvements that reduce greenhouse gases? If yes, please describe the restrictions in the “Items to Consider Revising” columns.  |                                       |                       |
| <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | 3. Is the maximum grant amount too low to fully fund the construction of both the transportation and green stormwater infrastructure features of a Sustainable Streets project? If yes, please indicate in the “Items to Consider Revising” columns whether an increase in the maximum grant amount could be considered.   |                                       |                       |
| <b>Questions Regarding Pathway 2: Improve Conditions for Using Multiple Grants</b>      |                          |                          |  |                                       |                       |
| <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | 4. To simplify the application process for projects that must obtain multiple grants,  |                                       |                       |

| YES                      | NO                       | N/A                      | Question   | Potential Revisions for Consideration |                       |
|--------------------------|--------------------------|--------------------------|--|---------------------------------------|-----------------------|
|                          |                          |                          |  | Program Revisions                     | Legislative Revisions |
|                          |                          |                          | would the agency consider coordinating with other funding agencies to develop a basic application form, which each agency could modify as needed for each funding program?   |                                       |                       |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 5. Would the agency consider incorporating into the guidelines for its funding program(s) statewide guidance on how to “package” Sustainable Streets projects for specific grants?   |                                       |                       |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 6. Would the agency consider jointly establishing a match with other agencies – for example, would resource agencies consider establishing a standard local match similar to transportation grants?  |                                       |                       |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 7. If grant recipients may combine this grant with other grants, is your agency willing to coordinate with the other funding agencies to allow joint reporting?  |                                       |                       |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 8. If the funding source does not fund all aspects of Sustainable Streets, does the scoring system put projects at a disadvantage if they include ineligible costs?  |                                       |                       |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 9. If grant recipients may combine this grant with other grants, is your agency willing to coordinate among agencies to time solicitations?  |                                       |                       |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 10. If your agency does not currently include in solicitations the extensions that may be available, would you be willing to include this information in order to assist applicants in evaluating the potential alignment of grant periods of different grants that may be combined for a project? |                                       |                       |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 11. Are any of the following activities ineligible under the grant program: planning, design, construction, and/or short-term maintenance, and monitoring?   |                                       |                       |

| YES                      | NO                       | N/A                      | Question  | Potential Revisions for Consideration |                       |
|--------------------------|--------------------------|--------------------------|---|---------------------------------------|-----------------------|
|                          |                          |                          |   | Program Revisions                     | Legislative Revisions |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 12. How does the funding program ensure that the various regions of the state get their fair share of funding?  |                                       |                       |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 13. How does the funding program address the need for green stormwater infrastructure to be provided in old industrial areas, which will help meet load reduction targets for PCBs? Please describe any ways in which locating Sustainable Streets in the old industrial areas are encouraged or discouraged. |                                       |                       |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 14. For urban greening grant programs, would the agency be willing to coordinate with other urban greening programs in order to standardize urban greening solicitations to the extent possible?  |                                       |                       |





# Appendix E

## Case Studies

Two case studies were conducted to identify opportunities to improve funding of Sustainable Streets. The case studies are intended to serve as examples for how funding agencies may use the checklist provided in Appendix D to review their funding programs and develop specific actions to improve funding of Sustainable Streets projects. The two case studies focused, respectively on the One Bay Area Grant (OBAG) county program managed by the Metropolitan Transportation Commission (MTC) and the Storm Water Grant Program (SWGP) managed by the State Water Resources Control Board (SWRCB). The results of each case study is presented in the format of the checklist provided in Appendix D, followed by an explanation of how specific actions were identified based on the results.

### One Bay Area Grant (OBAG) Case Study

The following checklist presents the results of a review of MTC Resolution 4202, Adoption of the project selection policies and project programming for the second round of the One Bay Area Grant program (OBAG 2), using the checklist in Appendix D. This review focused on the OBAG County Program, which provides funding for grants administered by the nine Bay Area counties. Resolution 4202 establishes regional policies that must be followed by each county’s OBAG program. Following the checklist is a discussion of how the results were used to develop specific actions included in the Roadmap.

| <b>OBAG County Program Case Study</b>   |                          |                          |   |  |  |  |
|---|--------------------------|--------------------------|---|--|--|--|
| <b>Identifying Opportunities to Improve Funding of Sustainable Streets</b>              |                          |                          |   |  |  |  |
|   |                          |                          | <b>Potential Revisions for Consideration</b>  |  |  |  |
| YES   | NO                       | N/A                      | Question  | Program Revisions  | Legislative Revisions  |  |
| <b>Questions Regarding Pathway 1: Prioritize Sustainable Streets in Funding Sources</b> |                          |                          |   |  |  |  |
| <input checked="" type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | 1. If the funding source is a transportation grant, does it restrict the use of funds for green stormwater infrastructure? If yes, please describe the restrictions in the “Potential Revisions for Consideration” columns. | <ul style="list-style-type: none"> <li>Eligibility is governed by federal law. Some GSI components of Sustainable Streets projects, such as pervious paving, are clearly eligible. It would be helpful to have guidance to assist grant applicants in demonstrating the benefits of GSI in transportation projects.</li> </ul> | <ul style="list-style-type: none"> <li>The Water Environment Foundation has been involved in the public review of federal surface transportation legislation and may seek to influence eligibility of GSI in future federal surface transportation acts. If other regional partners seek to influence GSI eligibility in federal legislation,</li> </ul> |  |

| OBAG County Program Case Study  |                                     |                                     |   |  |   |
|---|-------------------------------------|-------------------------------------|---|--|---|
| Identifying Opportunities to Improve Funding of Sustainable Streets         |                                     |                                     |   |  |   |
| YES   | NO                                  | N/A                                 | Question  | Potential Revisions for Consideration  |   |
|   |                                     |                                     |   | Program Revisions  | Legislative Revisions   |
|   |                                     |                                     |   | <ul style="list-style-type: none"> <li>Coordination with Caltrans is recommended to clarify eligibility of GSI components in federally funded transportation projects.</li> </ul>  | they should inform MTC. MTC conducts legislative advocacy on the federal level. |
| <input type="checkbox"/>  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 2. If the funding source is a resource grant, does it restrict the use of funds for transportation improvements that reduce greenhouse gases? If yes, please describe the restrictions in the “Potential Revisions for Consideration” columns.  | <ul style="list-style-type: none"> <li>The funding source is not a resource grant.</li> </ul>  |   |
| <input type="checkbox"/>  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 3. Is the maximum grant amount too low to fully fund the construction of both the transportation and green stormwater infrastructure features of a Sustainable Streets project? If yes, please indicate in the “Potential Revisions for Consideration” columns whether an increase in the maximum grant amount could be considered. | <ul style="list-style-type: none"> <li>MTC does not specify a maximum amount for OBAG County Program grants.</li> </ul>  |   |
| Questions Regarding Pathway 2: Improve Conditions for Using Multiple Grants |                                     |                                     |   |  |   |
| <input type="checkbox"/>  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 4. To simplify the application process for projects that must obtain multiple grants, would the agency consider coordinating with other funding agencies to develop a basic application form, which each agency could modify as needed for each funding program?  | <ul style="list-style-type: none"> <li>OBAG2, proposition, and other funding program requirements are too unique to fit into a “single application” solution. However, MTC is looking at ways to coordinate regional programs to develop an MTC application that may be used for multiple programs.</li> </ul> | N/A   |

| OBAG County Program Case Study                                      |                                     |                                     |  |   |   |
|---|-------------------------------------|-------------------------------------|--|---|---|
| Identifying Opportunities to Improve Funding of Sustainable Streets |                                     |                                     |  |   |   |
| YES   | NO                                  | N/A                                 | Question   | Potential Revisions for Consideration   |   |
|   |                                     |                                     |  | Program Revisions   | Legislative Revisions   |
| <input checked="" type="checkbox"/>                                 | <input type="checkbox"/>            | <input type="checkbox"/>            | 5. Would the agency consider incorporating into the guidelines for its funding program(s) statewide guidance on how to “package” Sustainable Streets projects for specific grants?   | <ul style="list-style-type: none"> <li>This type of guidance could be helpful for grant applicants to demonstrate multiple benefits of GSI in transportation projects.</li> </ul>   | N/A   |
| <input type="checkbox"/>  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 6. Would the agency consider jointly establishing a match with other agencies – for example, would resource agencies consider establishing a standard local match similar to transportation grants?  | <ul style="list-style-type: none"> <li>The OBAG match requirement is determined by federal law.</li> </ul>  | <ul style="list-style-type: none"> <li>No changes to the federally-legislated 11.47% non-federal local match requirement are anticipated.</li> </ul>                          |
| <input type="checkbox"/>  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 7. If grant recipients may combine this grant with other grants, is your agency willing to coordinate with the other funding agencies to allow joint reporting?  | <ul style="list-style-type: none"> <li>MTC does not have reporting requirements for OBAG.</li> </ul>  |   |
| <input type="checkbox"/>  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 8. If the funding source does not fund all aspects of Sustainable Streets, does the scoring system put projects at a disadvantage if they include ineligible costs?  | <ul style="list-style-type: none"> <li>The OBAG program already includes an emphasis on multi-modal, multi-benefit projects. Additionally, OBAG criteria do not include a requirement to look at cost/benefit.</li> </ul> |   |
| <input type="checkbox"/>  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 9. If grant recipients may combine this grant with other grants, is your agency willing to coordinate among agencies to time solicitations?  | <ul style="list-style-type: none"> <li>MTC is looking at ways to coordinate regional programs, and could inform other funding agencies of its RFPs.</li> </ul>  | <ul style="list-style-type: none"> <li>Federal legislation dictates when funds are spent; there are no opportunities to time the requirements with other programs.</li> </ul> |
| <input type="checkbox"/>  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 10. If your agency does not currently include in solicitations the extensions that may be available, would you be willing to include this information in order to assist applicants in evaluating the potential alignment of grant periods of different grants that may be combined for a project? | <ul style="list-style-type: none"> <li>The obligation and delivery deadlines are already described in the OBAG policy resolution; extensions are not available.</li> </ul>  |   |

| OBAG County Program Case Study                                      |                          |                                     |  |   |
|---|--------------------------|-------------------------------------|--|---|
| Identifying Opportunities to Improve Funding of Sustainable Streets |                          |                                     |  |   |
|   |                          |                                     | Potential Revisions for Consideration  |   |
| YES   | NO                       | N/A                                 | Question   | Program Revisions<br>Legislative Revisions  |
| <input type="checkbox"/>  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 11. Are any of the following activities ineligible under the grant program: planning, design, construction, and/or short-term maintenance, and monitoring?                                       | <ul style="list-style-type: none"> <li>OBAG grants can be used for planning, design, construction, and short-term establishment. Eligibility for maintenance is determined by federal law.</li> </ul> |
| <input type="checkbox"/>  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 12. For urban greening grant programs, would the agency be willing to coordinate with other urban greening programs in order to standardize urban greening solicitations to the extent possible? | <ul style="list-style-type: none"> <li>The funding source is not an urban greening grant program.</li> </ul>  |

As a result of completing the above checklist for the OBAG program, four Specific Actions were identified. The relationship between these specific actions and the information in the checklist is shown in Table E-1.

| Table E-1<br>Relationship between Specific Actions and the OBAG Program Review   |                                 |   |  |
|--|---------------------------------|---|--|
| Specific Action  | Agencies/Organizations          |   | Applicable Items from the OBAG Review Checklist  |
|  | Lead                            | Support                                   |  |
| <b>1-1, Clarify GSI Eligibility in Federal Transportation Grants</b> - Provide clarification of the eligibility of GSI elements in federally-funded transportation projects  | Caltrans                        | FHWA, MTC                                 | The clarification of eligibility proposed in Specific Action 1-1 would address issues discussed in the following checklist item: <ul style="list-style-type: none"> <li>Item 1 (Eligibility of GSI components of Sustainable Streets)</li> </ul>                   |
| <b>1-2, Update OBAG Guidance</b> - Develop guidance clarifying eligibility of GSI elements in federally funded (One Bay Area Grant - OBAG) transportation projects, for inclusion in guidance materials that MTC will provide to counties for OBAG's third round of funding (OBAG 3) | MTC                             | Caltrans                                  | Guidance proposed in Specific Action 1-2 would address issues discussed in the following checklist item: <ul style="list-style-type: none"> <li>Item 1 (Eligibility of GSI components of Sustainable Streets)</li> </ul>   |
| <b>1-6, Identify Opportunities to Influence Federal Policy</b> - Identify opportunities to support efforts by Champions to influence eligibility of GSI in federal surface transportation programs, maintaining communication with MTC on legislative engagement and/or advocacy     | BASMAA                          | SFEP, Trust for Public Land, Save the Bay | The federal legislative engagement and/or advocacy proposed in Specific Action 1-6 would address issues discussed in the following checklist item: <ul style="list-style-type: none"> <li>Item 1 (Eligibility of GSI components of Sustainable Streets)</li> </ul> |
| <b>2-2, Inform other agencies of solicitations</b> - Identify and add staff from applicable agencies to the list of parties to notify regarding schedules of future solicitations for applicable grant programs  | Funding agencies, including MTC | None                                      | The coordination proposed in Specific Action 2-2 would address issues discussed in the following checklist item: <ul style="list-style-type: none"> <li>Item 9 (Coordinate timing of solicitations)</li> </ul>   |



## Storm Water Grant Program (SWGP) Case Study

The following checklist presents the results of a review of the State Water Resources Control Board’s (SWRCB) Proposition 1 Storm Water Grant Program Guidelines (SWRCB 2015), which was conducted using the checklist in Appendix D. Following the checklist is a discussion of how the results were used to develop specific actions included in the Roadmap.

| SWGP Case Study   |                                     |                                     |   |   |  |
|---|-------------------------------------|-------------------------------------|---|---|--|
| Identifying Opportunities to Improve Funding of Sustainable Streets                     |                                     |                                     |   |   |  |
| YES   | NO                                  | N/A                                 | Question  | Potential Revisions for Consideration   |  |
|   |                                     |                                     |   | Program Revisions   | Legislative Revisions  |
| <b>Questions Regarding Pathway 1: Prioritize Sustainable Streets in Funding Sources</b> |                                     |                                     |   |   |  |
| <input type="checkbox"/>  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 1. If the funding source is a transportation grant, does it restrict the use of funds for green stormwater infrastructure? If yes, please describe the restrictions in the “Potential Revisions for Consideration” columns.   | <ul style="list-style-type: none"> <li>The funding source is not a transportation grant.</li> </ul>   |  |
| <input checked="" type="checkbox"/>   | <input type="checkbox"/>            | <input type="checkbox"/>            | 2. If the funding source is a resource grant, does it restrict the use of funds for transportation improvements that reduce greenhouse gases? If yes, please describe the restrictions in the “Potential Revisions for Consideration” columns.  | <ul style="list-style-type: none"> <li>Costs for impervious surfaces are generally ineligible; however, costs for bike lanes, pedestrian pathways, and/or alternate transit lanes could be eligible if greenhouse gas (GHG) reduction is shown as a quantifiable benefit. Guidance may be provided to assist applicants in documenting multiple benefits of GSI.</li> </ul> | <ul style="list-style-type: none"> <li>Fure grant programs could consider how the program may support the funding of Sustainable Streets as eligibility criteria are developed.</li> </ul> |
| <input type="checkbox"/>  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 3. Is the maximum grant amount too low to fully fund the construction of both the transportation and green stormwater infrastructure features of a Sustainable Streets project? If yes, please indicate in the “Potential Revisions for Consideration” columns whether an increase in the maximum grant amount could be considered. | <ul style="list-style-type: none"> <li>Although the maximum implementation grant amount is \$10 million, projects that seek funding under the Storm Water Grant Program often combine funding from multiple sources.</li> </ul>   | N/A  |

| SWGP Case Study<br>Identifying Opportunities to Improve Funding of Sustainable Streets |                          |                                     |  |   |
|--|--------------------------|-------------------------------------|--|---|
| YES  | NO                       | N/A                                 | Question   | Potential Revisions for Consideration<br>Program Revisions      Legislative Revisions   |
| <b>Questions Regarding Pathway 2: Improve Conditions for Using Multiple Grants</b>     |                          |                                     |  |   |
| <input type="checkbox"/>   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 4. To simplify the application process for projects that must obtain multiple grants, would the agency consider coordinating with other funding agencies to develop a basic application form, which each agency could modify as needed for each funding program? | <ul style="list-style-type: none"> <li>The SWGP and other funding program requirements are too unique to fit into a “single application” solution.</li> <li>It may be possible to influence the development of future propositions/enacting legislation to coordinate some elements of application requirements with other grant programs that fund Sustainable Streets</li> </ul>  |
| <input checked="" type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>            | 5. Would the agency consider incorporating into the guidelines for its funding program(s) statewide guidance on how to “package” Sustainable Streets projects for specific grants?   | <ul style="list-style-type: none"> <li>This type of guidance could be helpful for grant applicants to demonstrate multiple benefits of Sustainable Streets projects, including GHG reduction.</li> <li>N/A</li> </ul>   |
| <input type="checkbox"/>   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 6. Would the agency consider jointly establishing a match with other agencies – for example, would resource agencies consider establishing a standard local match similar to transportation grants?  | <ul style="list-style-type: none"> <li>The SWGP match requirement was dictated by the chapter of State law into which the program was incorporated.</li> <li>Guidance could be developed to help applicants demonstrate the eligibility of transportation elements, such as the use of permeable paving, so that funding of those elements could be</li> <li>As future funding programs based on future propositions are developed, there may be opportunities to influence related legislation and the incorporation into a chapter of state law.</li> </ul> |

| SWGP Case Study   |                          |                                     |   |  |                       |
|---|--------------------------|-------------------------------------|---|--|-----------------------|
| Identifying Opportunities to Improve Funding of Sustainable Streets |                          |                                     |   |  |                       |
| YES   | NO                       | N/A                                 | Question  | Potential Revisions for Consideration  |                       |
|   |                          |                                     |   | Program Revisions  | Legislative Revisions |
|   |                          |                                     |   | identified as matching funds.  |                       |
| <input type="checkbox"/>  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 7. If grant recipients may combine this grant with other grants, is your agency willing to coordinate with the other funding agencies to allow joint reporting?     | <ul style="list-style-type: none"> <li>SWRCB currently allows grant recipients to establish some milestone dates. If reporting requirements of applicable funding programs are compared, there may be opportunities to coordinate the reporting schedule, format, etc.</li> </ul>  | N/A                   |
| <input type="checkbox"/>  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 8. If the funding source does not fund all aspects of Sustainable Streets, does the scoring system put projects at a disadvantage if they include ineligible costs? | <ul style="list-style-type: none"> <li>The SWGP's scoring criteria do not penalize projects that include ineligible costs.</li> </ul>  |                       |
| <input type="checkbox"/>  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 9. If grant recipients may combine this grant with other grants, is your agency willing to coordinate among agencies to time solicitations?                         | <ul style="list-style-type: none"> <li>Timing of solicitations is subject to state budget allocation. Bond law dictates when funds must be spent.</li> <li>While the SWGP has no flexibility in the timing of solicitations, there are opportunities to coordinate information. SWRCB participates in funding fairs and the California Financing Coordinating Committee website. A database of grants/upcoming solicitations could be</li> </ul> | N/A                   |

| SWGP Case Study<br>Identifying Opportunities to Improve Funding of Sustainable Streets |                          |                                     |  |   |
|--|--------------------------|-------------------------------------|--|---|
| YES  | NO                       | N/A                                 | Question   | Potential Revisions for Consideration<br>Program Revisions      Legislative Revisions   |
|  |                          |                                     |  | developed. Funding agencies could inform one another on RFP timing.   |
| <input type="checkbox"/>   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 10. If your agency does not currently include in solicitations the extensions that may be available, would you be willing to include this information in order to assist applicants in evaluating the potential alignment of grant periods of different grants that may be combined for a project? | <ul style="list-style-type: none"> <li>Time extension requests are never guaranteed and may be denied by the Governor.</li> </ul> |
| <input type="checkbox"/>   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 11. Are any of the following activities ineligible under the grant program: planning, design, construction, and/or short-term maintenance, and monitoring?   | <ul style="list-style-type: none"> <li>Grants can only cover costs incurred within the grant period.</li> </ul>                   |
| <input type="checkbox"/>   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 12. For urban greening grant programs, would the agency be willing to coordinate with other urban greening programs in order to standardize urban greening solicitations to the extent possible?   | <ul style="list-style-type: none"> <li>The funding source is not an urban greening grant program.</li> </ul>                      |

As a result of completing the above checklist for the SWGP, four Specific Actions were identified. The relationship between these specific actions and the information in the checklist is explained in Table E-2.

| Table E-2<br>Relationship between Specific Actions and the SWGP Review   |                                   |                                 |  |
|--|-----------------------------------|---------------------------------|--|
| Specific Action  | Agencies/Organizations            |                                 | Applicable Items from the SWGP Review Checklist  |
|  | Lead                              | Support                         |  |
| <b>1-7, Develop State Legislative Program</b> - Develop and implement an initiative to influence future state propositions, related legislation, and incorporation into a chapter of state law – to provide a clear path for full eligibility of Sustainable Streets, and coordinate application requirements among grant programs that fund Sustainable Streets | SFEP                              | SWRCB, RWQCB, BASMAA, Champions | The State Legislative Program proposed in Specific Action 1-7 would address issues discussed in the following checklist items: <ul style="list-style-type: none"> <li>• Item 2 (Eligibility of transportation components of Sustainable Streets)</li> <li>• Item 4 (Potential coordination of some application requirements with other grant programs)</li> <li>• Item 6 (Match requirements)</li> </ul> |
| <b>2-1, Coordinate to publicize solicitations</b> - Coordinate with other agencies to join SWRCB in participating in funding fairs and the California Financing Coordinating Committee website   | SWRCB                             | Other funding agencies          | The coordination proposed in Specific Action 2-1 would address issues discussed in the following checklist item: <ul style="list-style-type: none"> <li>• Item 9 (Coordinate timing of solicitations)</li> </ul>   |
| <b>2-2, Inform other agencies of solicitations</b> - Identify and add staff from applicable agencies to the list of parties to notify regarding schedules of future solicitations for applicable grant programs  | Funding agencies, including SWRCB | None                            | The coordination proposed in Specific Action 2-2 would address issues discussed in the following checklist item: <ul style="list-style-type: none"> <li>• Item 9 (Coordinate timing of solicitations)</li> </ul>   |
| <b>2-7, Consider linkages to other programs</b> - Funding agencies will consider aspects of other related grant programs (timing, criteria, etc.) in the development of future grant programs, and will coordinate with other grant programs where feasible  | Funding agencies, including SWRCB | None                            | The considerations proposed in Specific Action 2-7 would address issues discussed in the following checklist item: <ul style="list-style-type: none"> <li>• Item 4 (Potential coordination of some application requirements with other grant programs)</li> </ul>  |

# Appendix F

## References

- Alameda County Transportation Commission (ACTC). 2012a. Funding, [http://www.alamedactc.org/app\\_pages/view/8057](http://www.alamedactc.org/app_pages/view/8057). Accessed July 17, 2017.
- \_\_\_\_\_. 2012b. Measure B, [http://www.alamedactc.org/app\\_pages/view/4617](http://www.alamedactc.org/app_pages/view/4617). Accessed July 17, 2017.
- \_\_\_\_\_. 2015. Measure BB, [http://www.alamedactc.org/news\\_items/view/14837](http://www.alamedactc.org/news_items/view/14837). Accessed July 17, 2017.
- American Rivers. 2017. What Is Green Infrastructure?, <https://www.americanrivers.org/threats-solutions/clean-water/green-infrastructure/what-is-green-infrastructure/>. Accessed July 17, 2017.
- Atkinson, Mallory, MTC staff. 2017. Telephone communication, May 5.
- Bay Area Air Quality Management District (BAAQMD). 2017a. Grant Funding, Public Agencies, <http://www.baaqmd.gov/grant-funding/public-agencies>. Accessed July 17, 2017.
- Bay Area Air Quality Management District (BAAQMD). 2017b. Application Guidance for Bicycle Facilities Grant Program, <http://www.baaqmd.gov/~media/files/strategic-incentives/bikeways/2017-bicycle-facilities-grant-program-guidance-pdf.pdf?la=en>. Accessed July 17, 2017.
- Bay Area Stormwater Management Agencies Association (BASMAA). 2016. Summary of Informational Interviews Conducted for the Regional Resilient Infrastructure Roundtable.
- \_\_\_\_\_. 2017a. Regional Roundtable: Sustainable Streets, Meeting Summary, Initial Roundtable Meeting, March 29.
- \_\_\_\_\_. 2017b. Case Study of the Proposition 1 Stormwater Grant Program – Potential Solutions for Sustainable Streets, Presentation at Roundtable Focus Meeting 1, May 23.
- California Coastal Conservancy. 2016. California State Coastal Conservancy Proposition 1 Grant Program Guidelines. [http://scc.ca.gov/webmaster/ftp/pdf/sccbb/2016/1609/20160929Board04B\\_Rev\\_SCC\\_Prop\\_1\\_Grant\\_Guidelines\\_Ex1.pdf](http://scc.ca.gov/webmaster/ftp/pdf/sccbb/2016/1609/20160929Board04B_Rev_SCC_Prop_1_Grant_Guidelines_Ex1.pdf). Accessed July 17, 2017.



\_\_\_\_\_. 2017. Proposition 1 Grants, <http://scc.ca.gov/grants/proposition-1-grants/>. Accessed July 17, 2017.

California Department of Transportation (Caltrans). 2016. A Single Plan,” in *Mile Marker*, Quarter 4, <http://www.dot.ca.gov/milemarker/docs/articles/2016/Q4/MM-2016-Q4-Project-Delivery-SHSMP.pdf>.

\_\_\_\_\_. 2017a. Complete Streets Program, <http://www.dot.ca.gov/transplanning/ocp/complete-streets.html>. Accessed July 14, 2017.

\_\_\_\_\_. 2018. Division of Local Assistance, <http://www.dot.ca.gov/localassistance/>. Accessed April 2, 2018.

California Department of Water (DWR). 2016. Integrated Regional Water Management Grant Program Guidelines, [www.water.ca.gov/irwm/grants/docs/p1Guidelines/2016Prop1IRWMGuidelines\\_FINAL\\_07192016.pdf](http://www.water.ca.gov/irwm/grants/docs/p1Guidelines/2016Prop1IRWMGuidelines_FINAL_07192016.pdf). Accessed July 14, 2017.

\_\_\_\_\_. 2017. Proposition 1 IRWM, <http://www.water.ca.gov/irwm/grants/prop1index.cfm>. Accessed July 14, 2017.

\_\_\_\_\_. 2017b. Active Transportation Program, <http://www.dot.ca.gov/hq/LocalPrograms/atp/>. Accessed July 14, 2017.

California Natural Resources Agency (CNRA). 2017a. Urban Greening Grant Program, <http://resources.ca.gov/grants/urban-greening/>. Accessed July 14, 2017.

\_\_\_\_\_. 2017b. Urban Greening Grant Program Final Guidelines, <http://resources.ca.gov/grants/urban-greening/>. Accessed July 14, 2017.

C/CAG – See San Mateo County/City Association of Governments.

Centers for Disease Control (CDC). 2011. Transportation Health Impact Assessment Toolkit, [https://www.cdc.gov/healthyplaces/transportation/promote\\_strategy.htm](https://www.cdc.gov/healthyplaces/transportation/promote_strategy.htm). Accessed July 14, 2017.

City of Burlingame, California. 2015. Storm Drain Capital Improvement Program. <https://www.burlingame.org/Index.aspx?page=1598>. Accessed August 6, 2017.

Coleman, Michael. 2017. The California Local Government Finance Almanac, <http://www.californiacityfinance.com/LSR1704.pdf>. Accessed August 31, 2017.

- City of Palo Alto, California. 2017. Storm Water Management Fee.  
<https://www.burlingame.org/Index.aspx?page=1598>. Accessed August 6, 2017.
- Contra Costa Transportation Authority. 2017a. Coordinated Call for Projects,  
<http://www.ccta.net/resources/detail/18/1>. Accessed July 17, 2017.
- \_\_\_\_\_. 2017b. Measure J, <http://www.ccta.net/sources/detail/2/1>. Accessed July 17, 2017.
- DWR – See California Department of Water.
- Farfaring, Ken and Richard Watson. 2014. Stormwater Funding Options,  
[http://www.scag.ca.gov/committees/CommitteeDocLibrary/eec060514\\_StormWaterReport.pdf](http://www.scag.ca.gov/committees/CommitteeDocLibrary/eec060514_StormWaterReport.pdf)  
. Accessed July 14, 2017.
- Federal Emergency Management Agency (FEMA). 2017. Preparedness (Non-Disaster) Grants,  
<https://www.fema.gov/preparedness-non-disaster-grants>. Accessed July 14, 2017.
- Fitch Ratings. 2014. Fitch Affirms California Infra and Econ Devel Bank’s \$56MM SRF Rev Bonds at ‘AAA’;  
Outlook Stable,  
[https://www.waterboards.ca.gov/water\\_issues/programs/grants\\_loans/srf/docs/cwsrf/cwsrf\\_fitch\\_aaa\\_report.pdf](https://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/docs/cwsrf/cwsrf_fitch_aaa_report.pdf). Accessed February 23, 2018.
- Institute for Local Government. 2015. Regional Agencies and Special Districts, <http://www.ca-ilg.org/srts-toolkit/regional-agencies-and-special-districts>. Accessed July 17, 2017.
- Metropolitan Transportation Commission (MTC). 2012. MTC Regional Safe Routes to School Program  
Guidelines for Cycle 2017, [http://mtc.ca.gov/sites/default/files/RSR2S\\_Guidelines.pdf](http://mtc.ca.gov/sites/default/files/RSR2S_Guidelines.pdf). Accessed  
July 14, 2017.
- \_\_\_\_\_. 2015a. Resolution 4202. [http://mtc.ca.gov/sites/default/files/RES-4202\\_approved.pdf](http://mtc.ca.gov/sites/default/files/RES-4202_approved.pdf).  
Accessed July 14, 2017.
- \_\_\_\_\_. 2015b. MTC’s Climate Initiatives Program Evaluation:  
Regional Safe Routes to School Program,  
[http://mtc.ca.gov/sites/default/files/MTC\\_Regional\\_SRTS\\_Evaluation\\_Report\\_Final.pdf](http://mtc.ca.gov/sites/default/files/MTC_Regional_SRTS_Evaluation_Report_Final.pdf).  
Accessed July 14, 2017.
- \_\_\_\_\_. 2016. Resolution No. 4108, Revised February 24, 2016.  
<http://mtc.ca.gov/sites/default/files/RES-4108.pdf>. Accessed July 14, 2017.
- \_\_\_\_\_. 2017a. One Bay Area Grants, <http://mtc.ca.gov/our-work/invest-protect/focused-growth/one-bay-area-grants>. Accessed July 14, 2017.

\_\_\_\_\_. 2017b. Transportation Development Act Article 3, <http://mtc.ca.gov/our-work/fund-invest/investment-strategies-commitments/transit-21st-century/funding-sales-tax-and-0>. Accessed July 17, 2017.

\_\_\_\_\_. 2017c. Safe Routes to School, <http://mtc.ca.gov/tags-public/safe-routes-school>. Accessed July 17, 2017.

\_\_\_\_\_. 2017d. Draft Plan Bay Area 2040, [www.planbayarea.org](http://www.planbayarea.org). Accessed August 6, 2017.

Philadelphia Water Department. 2017. Green Stormwater Infrastructure, [http://www.phillywatersheds.org/what\\_were\\_doing/green\\_infrastructure](http://www.phillywatersheds.org/what_were_doing/green_infrastructure). Accessed August 8, 2017.

Ruark, Thomas, City Engineer, City of Union City. 2017. Personal Communication, March 21.

San Francisco Bay Regional Water Quality Control Board. 2015. Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit, Order No. R2-2015-0049, NPDES Permit No. CAS612008; [www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/stormwater/Municipal/R2-2015-0049.pdf](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/Municipal/R2-2015-0049.pdf). Accessed July 17, 2017.

San Francisco Bay Restoration Authority. 2017a. Restoration Authority Grants, <http://sfbayrestore.org/sf-bay-restoration-authority-grants.php>. Accessed July 17, 2017.

\_\_\_\_\_. 2017b. Draft Measure AA 2017b. Proposal Solicitation, [http://sfbayrestore.org/packets/2017-06-09/Item%2010B\\_Att%201%20Draft%20Request%20for%20Proposals.pdf](http://sfbayrestore.org/packets/2017-06-09/Item%2010B_Att%201%20Draft%20Request%20for%20Proposals.pdf). Accessed July 17, 2017.

San Francisco Estuary Partnership (SFEP). 2017. About Us, <http://www.sfestuary.org/about-us/>. Accessed July 14, 2017.

San Francisco Public Utilities Commission (SFPUC). 2017. Urban Watershed Planning, <http://sfwater.org/index.aspx?page=615>. Accessed August 27, 2017.

San Mateo County/City Association of Governments (C/CAG). 2016. C/CAG One Bay Area Grant (OBAG) Scoring Criteria Fiscal Years 2017/2018 – 2021/2022, Transportation For Livable Communities (TLC) Program; <http://ccag.ca.gov/wp-content/uploads/2016/06/OBAG-TLC-Scoring-Criteria.pdf>. Accessed July 17, 2017.

San Mateo County Transportation Authority (SMCTA) 2012. About Measure A, [http://www.smcta.com/about/About\\_Measure\\_A.html](http://www.smcta.com/about/About_Measure_A.html). Accessed July 14, 2017.

- Santa Clara Valley Transportation Authority (VTA). 2012. Measure A Transit Improvements, <http://www.vta.org/projects-and-programs/programs/2000-measure-a-transit-improvement-program>. Accessed July 17, 2017.
- \_\_\_\_\_. 2017a. Call for Projects, <http://www.vta.org/projects-and-programs/call-for-projects>. Accessed July 17, 2017.
- \_\_\_\_\_. 2017b. Measure B, <http://www.vta.org/measure-b-2016>. Accessed July 17, 2017.
- \_\_\_\_\_. 2018. Financial Assistance Funding - Grants and Loans, [https://www.waterboards.ca.gov/water\\_issues/programs/grants\\_loans/](https://www.waterboards.ca.gov/water_issues/programs/grants_loans/). Accessed April 2, 2018.
- Save the Bay. 2017. Welcome to Save The Bay, <https://www.savesfbay.org/about>. Accessed July 14, 2017.
- SCC – See California Coastal Conservancy.
- Sorensen, Mark, Jac Smit, Valerie Barzetti and John Williams, “Good Practices for Urban Greening,” Inter-American Development Bank, 1997, <http://www.iadb.org/sds/doc/ENV109KKeipiE.pdf>. Accessed July 17, 2017.
- State Water Resources Control Board (SWRCB). 2015. Proposition 1 Stormwater Grant Program Guidelines, [www.waterboards.ca.gov/water\\_issues/programs/grants\\_loans/swgp/docs/prop1/prop1\\_swgp\\_guidelines\\_final\\_dec2015.pdf](http://www.waterboards.ca.gov/water_issues/programs/grants_loans/swgp/docs/prop1/prop1_swgp_guidelines_final_dec2015.pdf). Accessed August 27, 2017.
- \_\_\_\_\_. 2017. Storm Water Grant Program (SWGP) – Prop 1, [http://www.waterboards.ca.gov/water\\_issues/programs/grants\\_loans/swgp/prop1/](http://www.waterboards.ca.gov/water_issues/programs/grants_loans/swgp/prop1/). Accessed July 14, 2017.
- \_\_\_\_\_. 2018. Below-Market Financing for Wastewater and Water Quality, [https://www.waterboards.ca.gov/water\\_issues/programs/grants\\_loans/srf/docs/pubs/cwsrf\\_small\\_brochure.pdf](https://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/docs/pubs/cwsrf_small_brochure.pdf). Accessed February 23, 2018.
- Strategic Growth Council (SGC). 2015. AHSC Program Guidelines, <http://www.sgc.ca.gov/Grant-Programs/AHSC-Guidelines.html>. Accessed July 14, 2017.
- \_\_\_\_\_. 2017. Affordable Housing and Sustainable Communities Program, FY 2016-2017 Final Draft Program Guidelines (June 5), <http://www.sgc.ca.gov/Grant-Programs/AHSCResources/AHSC1617Guidelines-060517.pdf>. Accessed July 14, 2017.

Trust for Public Land. 2016. About Us,

<https://www.tpl.org/about#sm.0001c3dp33b7wf9lwxu2ceiub90uy>. Accessed July 14, 2017.

U.S. Department of Homeland Security (USDHS) and FEMA. 2017. The U.S. Department of Homeland Security Notice of Funding Opportunity, Fiscal Year (FY) 2017 Emergency Management Performance Grant (EMPG); [https://www.fema.gov/media-library-data/1496322792825-14e183f5162625ef399f7b09aa0630ff/FY\\_2017\\_EMPG\\_NOFO\\_Final508.pdf](https://www.fema.gov/media-library-data/1496322792825-14e183f5162625ef399f7b09aa0630ff/FY_2017_EMPG_NOFO_Final508.pdf). Accessed July 14, 2017.

U.S. Department of Transportation (USDOT). 2017. TIGER Discretionary Grants,

<https://www.transportation.gov/tiger>. Accessed July 17, 2017.

U.S. Environmental Protection Agency. 2016. Glossary of Climate Change Terms,

<https://www3.epa.gov/climatechange/glossary.html>. Accessed July 17, 2017.

\_\_\_\_\_. 2017a. San Francisco Bay Water Quality Improvement Fund, <https://www.epa.gov/sfbay-delta/sf-bay-water-quality-improvement-fund>. Accessed July 14, 2017.

\_\_\_\_\_. 2017b. San Francisco Bay Water Quality Improvement Fund Request for Proposals, <https://www.epa.gov/sfbay-delta/water-quality-improvement-fund-fy-2017-request-proposals>. Accessed July 14, 2017.

\_\_\_\_\_. 2017c. Developing Total Maximum Daily Loads (TMDL), <https://www.epa.gov/tmdl/developing-total-maximum-daily-loads-tmdl>. Accessed July 17, 2017.

\_\_\_\_\_. 2017d. Clean Water Act Section 303(d): Impaired Waters and Total Maximum Daily Loads (TMDLs), <https://www.epa.gov/tmdl>. Accessed July 17, 2017.

VTA – See Santa Clara Valley Transportation Authority.

# Appendix G

## List of Participating Agencies and Organizations

Participating agencies and organizations are listed below, and includes the names of the representatives that attended Regional Roundtable meetings. Attendees<sup>6</sup> of this meeting provided comments on the Draft Roadmap that have been incorporated in the Final Roadmap.

| Table G-1<br>Participating Agencies and Organizations |                                 |
|---|---------------------------------|
| Agency/Organization                                   | Roundtable Attendance 9/19/2017 |
| Alameda Countywide Clean Water Program                | Jim Scanlin                     |
| BAAQMD  | --                              |
| BASMAA  | Geoff Brosseau                  |
|   | Matt Fabry                      |
| Bay Area Metro   ABAG and MTC                         | Anne Richman                    |
|   | Matt Maloney                    |
|   | Mallory Atkinson                |
|   | Christy Leffal                  |
| Bay Area Regional Collaborative                       | --                              |
| Bay Conservation and Development Commission           | Miriam Torres                   |
| California Natural Resources Agency                   | --                              |
| California Transportation Commission                  | Garth Hopkins                   |
| Caltrans  | Jagjiwan Grewal                 |
|   | Ephrem Meharena                 |
|   | Tom Rutsch                      |
| California Stormwater Quality Association             | Geoff Brosseau                  |
| City of Campbell                                      | Fred Ho                         |
| City of Oakland                                       | Ryan Russo                      |
|   | Alison Schwartz                 |

<sup>6</sup> Curt Kruger, of Contech, and Eric Zickler, of Lotus Water, also attended the September 19, 2017, Regional Roundtable meeting and commented on the Draft Roadmap.

| Table G-1<br>Participating Agencies and Organizations           |                                 |
|---|---------------------------------|
| Agency/Organization   | Roundtable Attendance 9/19/2017 |
|   | Terri Fashing                   |
|   | Bruce Wells                     |
| City of San Jose  | --                              |
| City of San Pablo   | Amanda Booth                    |
| City of Union City  | Thomas Ruark                    |
| Contra Costa Clean Water Program                                | Rachel Kraai                    |
| Contra Costa County   | Mary Halle                      |
| Contra Costa Transportation Authority                           | --                              |
| Department of Water Resources                                   | Paul Wells                      |
| Federal Emergency Management Agency                             | --                              |
| Federal Highway Administration                                  | --                              |
| Natural Resources Defense Council                               | Alisa Valderrama                |
| Regional Water Quality Control Board                            | Thomas Mumley                   |
|   | Keith Lichten                   |
| San Francisco Estuary Partnership                               | Josh Bradt                      |
| San Mateo City/County Association of Governments                | Jean Higaki                     |
| San Mateo Countywide Water Pollution Prevention Program         | Matt Fabry                      |
| San Mateo Transportation Authority                              | --                              |
| Santa Clara Urban Runoff Pollution Prevention Program           | Jill Bicknell                   |
| Santa Clara Valley Transportation Authority                     | Eugene Maeda                    |
| Save the Bay  | Allison Chan                    |
| SPUR  | Laura Tam                       |
| State Coastal Conservancy/ San Francisco Bay Restoration Agency | Sam Schuchat                    |
|   | Matt Gerhart                    |
| State Water Resources Control Board                             | Jeffrey Albrecht                |
|   | Meghan Tosney                   |
| Strategic Growth Council  | --                              |



| <b>Table G-1<br/>Participating Agencies and Organizations</b> |  |
|---|--|
| <b>Agency/Organization</b>                                    | <b>Roundtable Attendance 9/19/2017</b> |
| Trust for Public Land   | Katherine Jones                        |
| U.S. Environmental Protection Agency                          | David Smith                            |
|   | Luisa Valiela                          |
|   | Erica Yelensky                         |

**APPENDIX D**

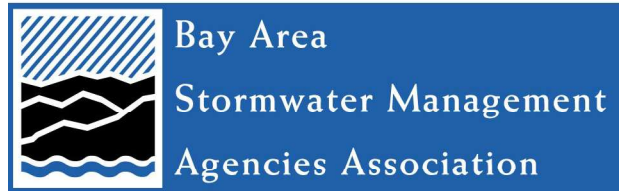
**GUIDANCE FOR SIZING GREEN INFRASTRUCTURE  
FACILITIES IN STREET PROJECTS**

***Guidance for Sizing Green Infrastructure  
Facilities in Street Projects***

with companion analysis:

***Green Infrastructure Facility Sizing for  
Non-Regulated Street Projects***

B A S M A A



Prepared by  
Dan Cloak Environmental Consulting  
EOA, Inc.

June 2019

## Introduction and Regulatory Background

Provision C.3.j. in the reissued Municipal Regional Stormwater Permit<sup>1</sup> (MRP) requires each Permittee to “complete and implement a Green Infrastructure (GI) Plan for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other storm drain infrastructure elements.”

Provision C.3.j.i.(g) further mandates that these plans include:

*Requirements that projects be designed to meet the treatment and hydromodification sizing requirements in Provisions C.3.c. and C.3.d. For street projects not subject to Provision C.3.b.ii. (i.e., non-Regulated Projects) Permittees may collectively propose a single approach with their Green Infrastructure Plans for how to proceed should project constraints preclude fully meeting the C.3.d. sizing requirements. The single approach can include different options to address specific issues or scenarios. That is, the approach shall identify the specific constraints that would preclude meeting the sizing requirements and the design approach(es) to take in that situation. The approach should also consider whether a broad effort to incorporate hydromodification controls into green infrastructure, even where not otherwise required, could significantly improve creek health and whether such implementation may be appropriate, plus all other information as appropriate (e.g., how to account for load reduction for the PCBs or mercury TMDLs).*

This document represents the “single approach” collectively proposed by the Permittees for how to proceed when constraints on GI projects affect facility sizing in street projects. For other types of projects, information on hydraulic sizing is provided in the technical guidance manuals for Provision C.3 developed by each countywide stormwater program.

## Hydraulic Sizing Requirements

MRP Provision C.3.d contains criteria for sizing stormwater treatment facilities. Facilities may be sized on the basis of flow, volume, or a combination of flow and volume. With adoption of the 2009 MRP, a third option for sizing stormwater treatment facilities was added to Provision C.3.d. This option states that “treatment systems that use a combination of flow and volume capacity shall be sized to treat at least 80 percent of the total runoff over the life of the project, using local rainfall data.”

This option can also be used to develop sizing factors for facilities with a standard cross-section (i.e., where the volume available to detain runoff is proportional to facility surface area). To calculate sizing factors, inflows, storage, infiltration to groundwater, underdrain discharge, and overflows are tracked for each time-step during a long-term simulation. The continuous simulation is repeated, with variations in the treatment surface area, to determine the minimum area required for the facility to capture and treat 80% of the inflow during the simulation.

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<sup>1</sup> Order R2-2015-0049

Such an analysis was conducted for BASMAA by Dubin Environmental Consulting and is described in the attached Technical Report. The analysis shows that bioretention facilities with the current-standard cross-section can capture and treat the Provision C.3.d amount of runoff when sized to 1.5% - 3% of tributary equivalent impervious area, depending on location.

### **Hydromodification Management**

A principal objective of LID is to mimic natural hydrology in the post-development condition. This is accomplished by retaining and infiltrating runoff flows during small to medium events. Flows from larger events are detained and slowed.

MRP Provision C.3.g. includes requirements and criteria for implementing hydromodification management (HM). These HM requirements apply to Regulated Projects that create or replace an acre or more of impervious area, increase the amount of impervious area over the pre-project condition, and flow to creeks that are at risk of erosion. As such, the HM requirements do not apply to street projects that retrofit drainage systems that receive runoff from existing roofs and paving.

However, Provision C.3.j.i.(g) states that the Permittees' approach to sizing GI facilities "...should also consider whether a broad effort to incorporate hydromodification controls into green infrastructure, even where not otherwise required, could significantly improve creek health and whether such implementation may be appropriate..."

Various criteria for HM design have been used in California and throughout the U.S. These criteria have been based on one or more of the following principles:

- Maintaining watershed processes
- Maintaining a site-specific water balance
- Maintaining the value of the curve number used in the NRCS method of computing peak runoff
- Controlling increases in peak flows from a specified storm size
- Controlling increases in the duration of flows at each intensity within a specified range (flow duration control)
- Controlling the likelihood of downstream erosion in streams (erosion potential, or Ep)

Generally, for any HM criterion used, facilities with more storage and a larger infiltrative area will be more effective in meeting the criterion than facilities with less storage and a smaller infiltrative area.

In the statewide municipal stormwater NPDES permit for small MS4s, Provision E.12.f. includes the following HM standard applicable to Bay Area small MS4s: "Post-project runoff shall not exceed estimated pre-project flow rate for the 2-year, 24-hour storm..."

Dubin (2014) conducted modeling to evaluate whether this standard would be met in the San Francisco Phase II counties (Marin, Sonoma, Napa, and Solano) by a bioretention facility meeting the minimum requirements in that permit's Provision

E.12.f. Dubin's analysis found that a facility sized to 4% of tributary equivalent impervious area, and having a 6-inch deep reservoir with 2 inches of freeboard, 18 inches of treatment soil, and a 12-inch-deep "dead storage" gravel layer below the underdrain, would meet this standard, even in the wettest portions of the Bay Area.

### **Additional Considerations for Bioretention Sizing**

In summary, bioretention facilities for street projects sized to 1.5% - 3% of tributary equivalent impervious area (depending on their location in the Bay Area) can meet the criteria in Provision C.3.d., according to the modeling study documented in the attached Technical Memo.

There are many reasons to design and build facilities larger than the Provision C.3.d. minimum. Building larger facilities helps ensure the facilities perform to the minimum hydraulic capacity intended, despite minor flaws in design, construction, and maintenance, providing an engineering safety factor for the project. Further, larger-sized facilities may more effectively address objectives to maximize the removal of pollutants (particularly pollutants in dissolved form), to operate as full trash capture devices, and to manage hydromodification effects.

However, municipalities often face considerable challenges in retrofitting existing streetscapes with GI facilities. Constraints and design challenges typically encountered in the public right-of-way include:

- The presence of existing underground utilities (known and unknown during the design phase);
- The presence of existing above-ground fixtures such as street lights, fire hydrants, utility boxes, etc.;
- The presence of existing mature trees and root systems;
- The elevation of or lack of existing storm drains in the area to which to connect underdrains or overflow structures;
- Challenges of defining and controlling any catchment areas on adjacent private parcels that drain to the roadway surface;
- Low soil permeability and strength, and the need to protect the adjacent roadway structure;
- Competition with other assets & uses for limited right-of-way area; and
- Presence of archeologic/cultural deposits.

Use of the sizing factors in the attached Technical Memo will provide municipalities flexibility in design of bioretention facilities for street projects where constraints are present.

### **Recommendations for Sizing Approaches for Green Infrastructure Retrofit Facilities in Street Projects**

1. Bioretention facilities in street projects should be sized as large as feasible and meet the C.3.d criteria where possible. Constraints in the public right-of-way may affect the size of these facilities and warrant the use of smaller sizing factors.

Bioretention facilities in street projects may use the sizing curves in the attached memorandum to meet the C.3.d criteria. Local municipal staff involved with other assets in the public right of way should be consulted to provide further guidance to design teams as early in the process as possible.

2. Bioretention facilities in street projects smaller than what would be required to meet the Provision C.3.d criteria may be appropriate in some circumstances. As an example, it might be appropriate to construct a bioretention facility where a small proportion of runoff is diverted from a larger runoff stream. Where feasible, such facilities can be designed as “off-line” facilities, where the bypassed runoff is not treated or is treated in a different facility further downstream. In these cases, the proportion of total runoff captured and treated should be estimated using the results of the attached memorandum. In cases where “in-line” bioretention systems cannot meet the C.3.d criteria, the facilities should incorporate erosion control as needed to protect the facility from high flows. See Figures 1 and 2 below for illustration of the in-line and off-line concepts.
3. Pollutant reduction achieved by GI facilities in street projects will be estimated in accordance with the Interim Accounting Methodology<sup>i</sup> or the applicable Reasonable Assurance Analysis<sup>ii</sup>.





Figure 1: Off-line system in El Cerrito where low flow is diverted to the sidewalk planter and high flows continue down the gutter.



Figure 2: In-line system in Berkeley/Albany where low and high flows enter the system and overflows exit through a drain within the system.

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<sup>i</sup> The Interim Accounting Methodology for TMDL Loads Reduced Report (BASMAA 2017) describes the methodology that is being used to demonstrate progress towards achieving the PCB and mercury load reductions required during the term of MRP 2.0. The methodology is based on the conversion of land use from a higher to a lower PCB or mercury loading rate during the redevelopment of a parcel. See:

[www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/stormwater/Municipal/POC/Final%20Interim%20Accounting%20Methodology%20Report%20v.1.1%20\(Revised%20March%202017\).pdf](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/Municipal/POC/Final%20Interim%20Accounting%20Methodology%20Report%20v.1.1%20(Revised%20March%202017).pdf)

<sup>ii</sup> A Reasonable Assurance Analysis (RAA) is a methodology used to demonstrate that implementation of pollutant control measures (such as GI facilities) over a specified time period will meet required pollutant load reductions associated with a TMDL. The Bay Area Reasonable Assurance Analysis Guidance Document (BASMAA 2017) establishes a regional framework and provides guidance for conducting PCBs and mercury RAAs in the San Francisco Bay Area. See: <http://basmaa.org/Announcements/bay-area-reasonable-assurance-analysis-guidance-document>

**BAY AREA  
STORMWATER MANAGEMENT AGENCIES  
ASSOCIATION**

**GREEN INFRASTRUCTURE  
FACILITY SIZING FOR NON-REGULATED STREET  
PROJECTS**

**Prepared by:  
Dubin Environmental  
December 13, 2017**

## 1. Introduction

The San Francisco Bay Regional Water Quality Control Board's reissued Phase I Municipal Regional Stormwater Permit (Order No. R2-2015-0049, issued 11/19/2015 and referred to as "MRP 2.0") includes a requirement that Permittees complete and implement green infrastructure plans to promote the increased use of green infrastructure in urban areas. These plans will guide the integration of green stormwater facilities into streets, parking lots, parks, building rooftops and similar places where there is an opportunity to retrofit traditional gray infrastructure systems and increase the removal of pollutants and improve water quality.

Provision C.3.j states:

*Over the long term, the (Green Infrastructure) Plan is intended to describe how the Permittees will shift their impervious surfaces and storm drain infrastructure from gray, or traditional storm drain infrastructure where runoff flows directly into the storm drain and then the receiving water, to green—that is, to a more-resilient, sustainable system that slows runoff by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and evapotranspiration, and uses bioretention and other green infrastructure practices to clean stormwater runoff.*

Provision C.3.j.i.(2)(g) requires that projects be designed to meet the treatment and hydromodification sizing requirements in Provisions C.3.c. and C.3.d. However, the provision further states that for street projects that are not Regulated Projects:

*...Permittees may collectively propose a single approach with their Green Infrastructure Plans for how to proceed should project constraints preclude fully meeting the C.3.d sizing requirements. The single approach can include different options to address specific issues or scenarios. That is, the approach shall identify the specific constraints that would preclude meeting the sizing requirements and the design approach(es) to take in that situation.*

To address this provision and further define the C.3.d sizing requirements for green infrastructure projects, the Bay Area Stormwater Management Agencies Association (BASMAA) contracted with Dubin Environmental to conduct continuous simulation hydrologic modeling to evaluate relationships of facility size (e.g., area, depth, flow rate) to facility performance. The BASMAA Development Committee, and BASMAA member agencies, intend to use these relationships to develop and justify an approach, to be created by the Development Committee, for implementing green street projects when there are constraints on facility size.

This report describes the modeling analysis that was performed to better understand the relationship between bioretention configuration and annual runoff treatment across the different BASMAA stormwater agencies and their climate zones. Long-term continuous modeling was used to compute stormwater runoff, simulate bioretention hydraulics, and estimate the annual percentage of stormwater that is treated. The analysis was performed for 10 different rain gauges that together represent the full range of climate conditions across the BASMAA member agency area. The analysis also considered different bioretention configurations and treatment goals. BASMAA member agencies can use these results to help establish policies and design guidelines to include in their green infrastructure plans.

## 2. Project Approach

The performance of bioretention facilities was modeled using HSPF (Hydrologic Simulation Program Fortran), which is a physically based, hydrologic model that is maintained and distributed by the US EPA.

HSPF has been used since the 1970s to conduct hydrologic analyses and size stormwater and flood control facilities. For this project, an HSPF model was developed to simulate runoff from a fully paved, 1-acre reference site and route this flow through a bioretention facility. This section describes the rain gauge selection and the HSPF modeling approach. Section 3 describes the modeling results.

## 2.1 Rainfall and Evapotranspiration Data

There are more than two dozen rain gauges with long-term, hourly data located within the BASMAA area. A list of candidate gauges was prepared from the National Center for Environmental Information (NCEI; formerly the National Climate Data Center or NCDC) network and then evaluated for inclusion. The evaluation focused on gauge data that could be downloaded directly from EPA’s National Stormwater Calculator, because these datasets have been reviewed and missing records filled with data from available nearby stations (similar to the data included with the EPA BASINS software). The list of candidate gauges was narrowed to 19 locations with 35+ years of data that are geographically distributed through the BASMAA area. The rain gauges were organized into tables that show a) mean annual precipitation (MAP) and b) 6-month, 1-year, and 2-year accumulations for 1-year and 24-hour durations. The different storm depth statistics were used to identify any outliers among the rain gauge data that could indicate problems that would hinder the effort to create regressions among the model results. The rain gauge locations were also plotted in ArcGIS.

The recommended sites were presented to the BASMAA project work group who provided helpful input about their preferences and experiences with different rain gauges. Based on this input, six stations were selected for inclusion in the modeling analysis. After developing the HSPF input and output routines, the number of gauges was increased to 10 by including higher rainfall locations to allow development of regression relationships that span the rainfall characteristics at any likely project location. Table 1 lists the candidate rain gauges included in the modeling analysis. For all gauges, a common 37 year period was used to eliminate the influence of drought and wet periods that occurred when some gauges were operational but not others. Figure 1 shows the mean annual rainfall and Figure 2 shows their locations. The 1-year and 24-hour storm durations are included in Appendix A.

TABLE 1. SELECTED RAIN GAUGES FOR GREEN INFRASTRUCTURE MODELING

| <b>2</b> | <b>Name</b>          | <b>County/Agency</b> | <b>Years of Record</b> | <b>Mean Annual Rain (in)</b> |
|----------|----------------------|----------------------|------------------------|------------------------------|
| 049001   | Tracy Pumping Plant  | Contra Costa         | 37                     | 12.7                         |
| 047821   | San Jose             | Santa Clara          | 37                     | 15.2                         |
| 045378   | Martinez Water Plant | Contra Costa         | 37                     | 19.6                         |
| 047769   | SF Airport           | San Francisco        | 37                     | 20.4                         |
| 047772   | SF Downtown          | San Francisco        | 37                     | 21.9                         |
| 046336   | Oakland Museum       | Alameda              | 37                     | 22.8                         |
| 042934   | Fairfield            | Fairfield-Suisun     | 37                     | 24.1                         |
| 043714   | Half Moon Bay        | San Mateo            | 37                     | 28.6                         |
| 047807   | San Gregorio         | San Mateo            | 37                     | 30.0                         |
| 044500   | Kentfield            | Marin                | 37                     | 48.1                         |

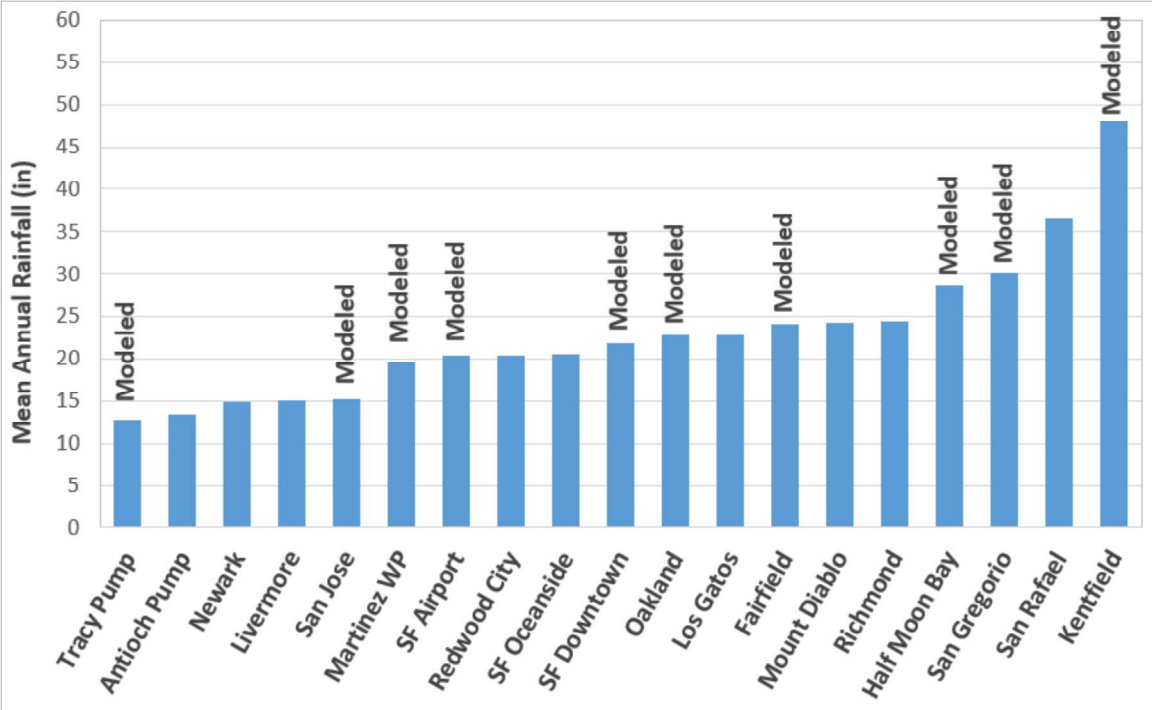


Figure 1. Candidate and selected rainfall sites with mean annual rainfall



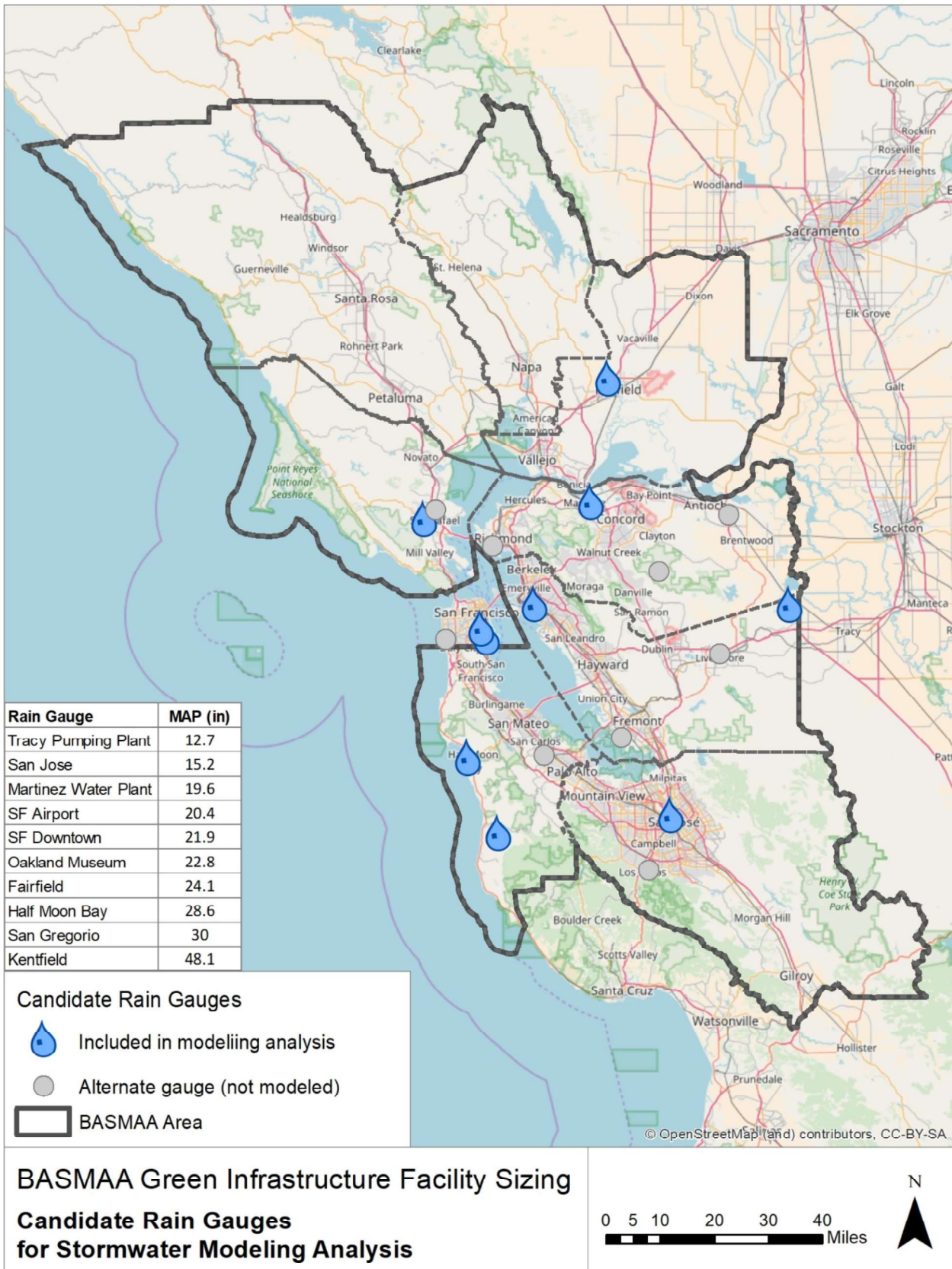


Figure 2. Location of rain gauges used in the modeling analysis



## 2.2 HSPF Model Setup

An HSPF model was developed to simulate runoff from a fully paved, 1-acre reference area and route this flow through a bioretention facility. The model outputs were then evaluated to determine the fraction of incoming stormwater receiving water quality treatment (defined as the fraction filtered through the bioretention media, evaporated or transpired). The HSPF model was developed with Excel/VBA-based code that enabled us to easily modify the rain gauge, bioretention area, and surface reservoir depth to determine how these watershed and configuration parameters affect the fraction of stormwater being treated.

The model parameters and approach to simulating bioretention hydraulics are discussed in detail below:

- Stormwater runoff flows across the reference 1-acre paved area and enters the bioretention facility. This water is initially detained in a shallow surface reservoir and then infiltrates to the bioretention media.
- Stormwater infiltrates through the bioretention media into an underlying gravel layer. The saturated soil permeability was set to 5 inches per hour (based on the media specification). For unsaturated soils, the relationship between soil moisture and permeability was based on monitoring data collected at three installations in Pittsburg (Contra Costa, 2013). The data showed very little infiltration occurs until the soil reaches about two-thirds saturation, and then infiltration increases roughly linearly until reaching 5 inches per hour at 90 percent saturation. Evapotranspiration also occurs in this layer.
- Stormwater within the gravel layer can move freely and infiltrate to surrounding soils, based on their capacity. If runoff enters the gravel layer more rapidly than it infiltrates, the saturation level in the gravel layer will rise until it reaches the elevation of a perforated pipe underdrain. When this occurs, water will flow through the underdrain to a downstream discharge point (typically the municipal storm drainage system).
- The surface reservoir is also equipped with an overflow structure that will become active if runoff enters the surface reservoir more rapidly than it infiltrates through the bioretention media and the surface reservoir fills to its maximum depth. Water discharged via the overflow relief structure does not receive treatment.

The bioretention configuration was based on the water quality treatment design criteria listed in the MRP 2.0 and accepted design practice in the Bay Area. Table 2 lists the dimensions of the bioretention layers as modeled in HPSF.

TABLE 2. BIORETENTION CHARACTERISTICS IN HSPF MODEL

| Component               | Characteristics  |
|-------------------------|--|
| Surface reservoir       | <ul style="list-style-type: none"> <li>• Area = bioretention area (varies from 0.5% to 5% of upstream impervious area)</li> <li>• Depth = 6 or 12 inches with overflow relief set 2 inches from top of reservoir</li> </ul>                                  |
| Bioretention soil media | <ul style="list-style-type: none"> <li>• Area = bioretention area</li> <li>• Depth = 18 inches</li> <li>• Saturated permeability = 5 inches per hour</li> <li>• Unsaturated permeability = variable, based on Contra Costa’s 2013 monitoring data</li> </ul> |
| Storage (gravel) layer  | <ul style="list-style-type: none"> <li>• Area = bioretention area</li> <li>• Depth = 12 inches</li> <li>• Permeability of surrounding soils = 0.024 inches per hour</li> </ul>   |
| Underdrain              | <ul style="list-style-type: none"> <li>• Located at top of gravel layer</li> <li>• Assumed 4-in diameter pipe</li> </ul>   |

## 2.3 Model QA/QC Process

The HSPF input files and initial model results were carefully examined during the QA/QC process. Model errors and warnings were systematically eliminated and then the results were compared with the results generated from three independent calculation methods:

1. An Excel-based bioretention hydraulics calculator
2. A Matlab-based bioretention algorithm that was used for bioretention modeling in the Central Coast region
3. An EPA SWMM model using the LID module to represent bioretention hydraulics

The comparison was performed for the San Jose and Fairfield gauges with a bioretention sizing factor of 0.02 (i.e., bioretention surface area equal to 2 percent of the upstream impervious area). The estimated annual runoff treatment percentages agreed to within 3 percent, which confirmed the HSPF model was performing as intended.

## 3. Modeling Scenarios and Results

The HSPF modeling analysis was used to develop bioretention sizing criteria and support policy decisions. Working collaboratively with the BASMAA Development Committee, the modeling analysis addressed the following issues, which are presented in this section:

1. Bioretention area necessary to treat 80 percent of annual stormwater runoff
2. Relationships for estimating annual stormwater treatment percentage across a range of bioretention sizes and mean annual precipitation depths
3. Relationships for estimating annual stormwater treatment percentage for bioretention facilities without an underdrain
4. Bioretention treatment percentage for facilities with no infiltration to surrounding soils
5. Bioretention treatment percentage for facilities with lower bioretention media permeability

The results are summarized graphically here. The full set of results and underlying data were provided separately to the BASMAA Development Committee on 7/28/2017 and are available from BASMAA upon request.

### 3.1 Bioretention Sizing for Treatment of 80 Percent of Annual Runoff

The performance of bioretention facilities was modeled for 10 different rain gauges and bioretention footprint areas, ranging from 0.5 to 5.0 percent of the upstream tributary area, using the approach described in Section 2. Bioretention configurations with 6-inch and 12-inch deep surface reservoirs were modeled. For each of the model runs, the runoff treatment percentage was computed, and the results were plotted. Figure 3 shows an example for the San Jose gauge. Appendix B shows results for the other rain gauges.

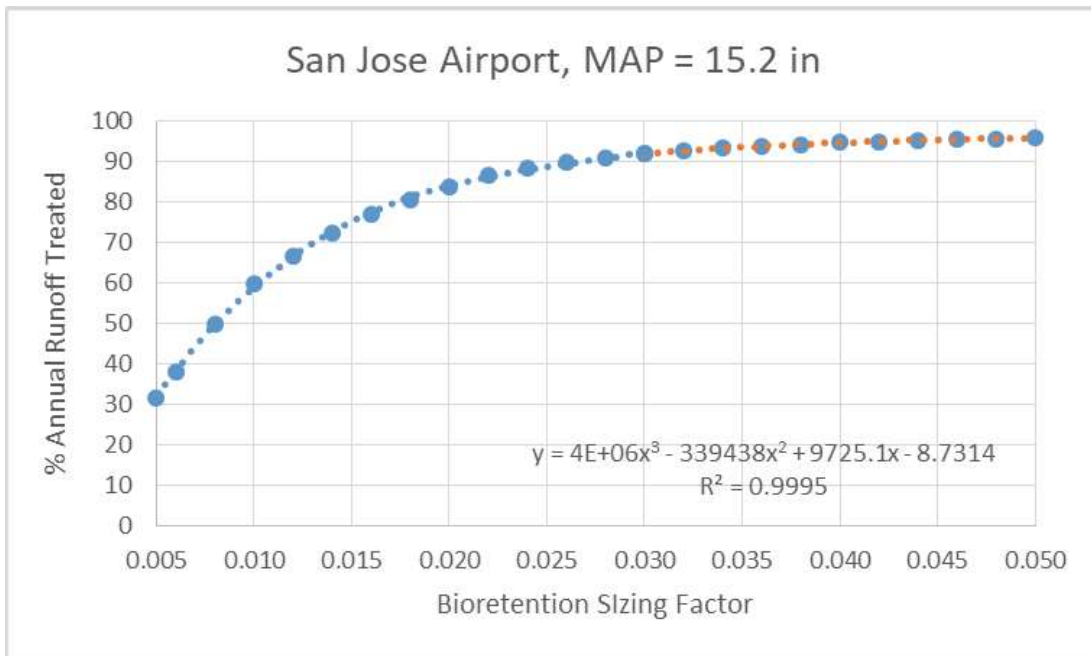


Figure 3. Percent of annual runoff treated for range of bioretention facility sizes using San Jose rain gauge

Using a polynomial regression equation, the model results for each rain gauge/surface reservoir depth scenario were interpolated to estimate the bioretention sizing factor needed to provide 80 percent annual runoff treatment, which is the treatment criterion for regulated water quality projects in the MRP 2.0. The results across the 10 rain gauges showed a clear linear relationship between mean annual rainfall and the bioretention footprint needed for 80 percent annual runoff treatment. Figure 4 and Figure 5 show the results for the 6-inch and 12-inch surface reservoir configurations, respectively.

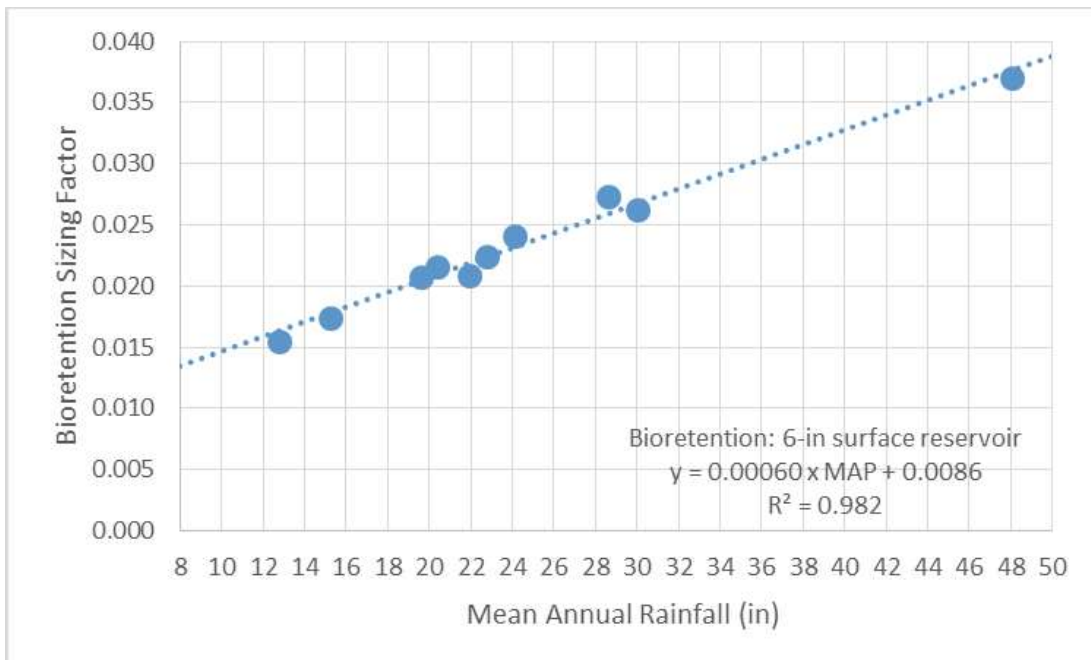


Figure 4. Bioretention size needed to provide treatment of 80 percent of annual runoff; 6-in surface reservoir

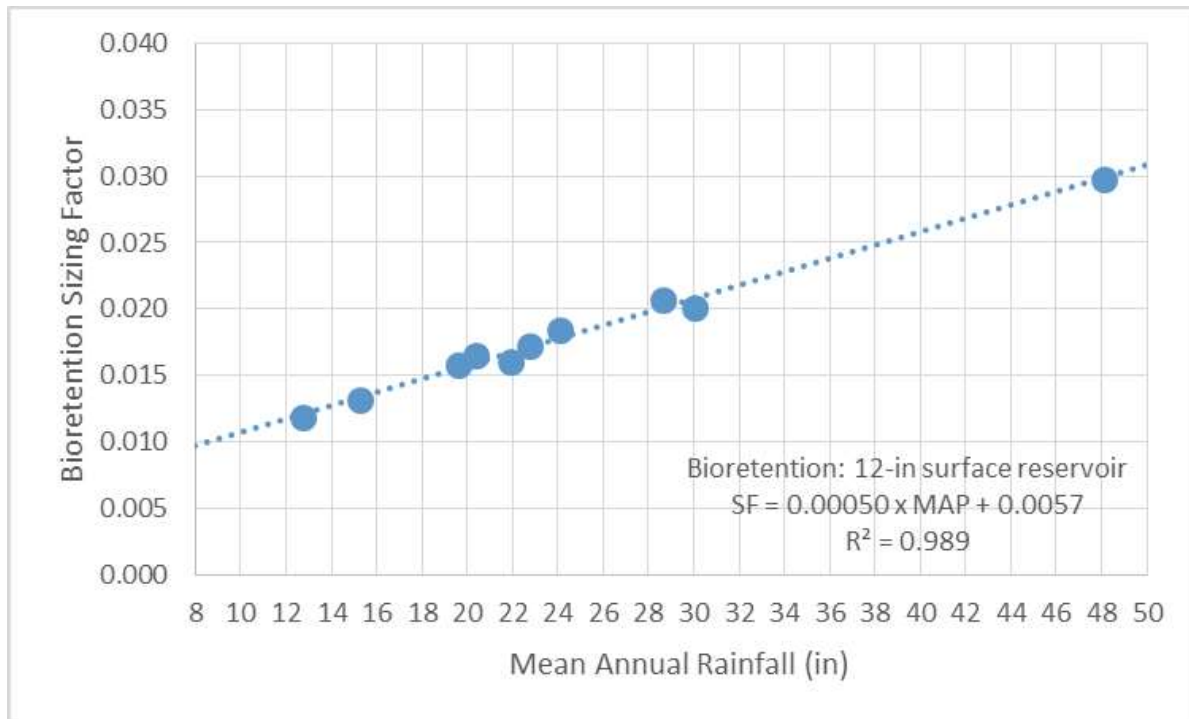


Figure 5. Bioretention size needed to provide treatment of 80 percent of annual runoff; 12-in surface reservoir

The results shown above could be used by BASMAA agencies to set minimum bioretention sizing criteria for projects that must provide treatment of 80 percent of annual runoff. The following equations could be included in BASMAA guidance for green infrastructure manuals.

For bioretention with 6-in surface reservoir configuration:

$$SizingFactor = 0.00060 \times MAP(in) + 0.0086$$

For bioretention with 12-in surface reservoir configuration:

$$SizingFactor = 0.00050 \times MAP(in) + 0.0057$$

### 3.2 Relationship Among Bioretention Sizing, Annual Precipitation, and Percent of Annual Runoff Treated

The modeling results generated in the previous section were then further evaluated to develop more general relationships among a) bioretention sizing factor, b) mean annual rainfall, and c) annual runoff treatment percentages. The following steps were used for the 6-inch and 12-inch reservoir depth configurations:

1. A polynomial regression was fit to the annual runoff treatment results for each of the 10 rain gauges (see example in Figure 3 above) and surface reservoir depths of 6 and 12 inches.
2. For each rain gauge/surface reservoir depth combination, the regression equation was used to estimate the sizing factors needed to provide 50, 60, 70, 80, 90, and 95 percent annual runoff treatment. This step generated 10 pairs of mean annual rainfall/bioretention sizing factor data for each rain gauge/surface reservoir depth combination (120 pairs in total). Excel’s solver function was used for these calculations.

3. For each runoff treatment percentage level (50 percent, 60 percent, etc.), the mean annual rainfall (x-axis) and computed sizing factor (y-axis) were plotted and a linear regression was fit to the data in a manner similar to Figure 4 and Figure 5 above.
4. The linear regressions created for each runoff treatment level (50 percent, 60 percent, etc.) and surface reservoir depth were then plotted together to create a nomograph. Figure 6 and Figure 7 show nomographs for the 6-inch and 12-inch reservoir depths, respectively.

These nomographs are simple but powerful tools that municipal planners can use to estimate the annual treatment percentage for any bioretention facility within the BASMAA member agency area that uses the standard bioretention configuration (i.e., 6-in or 12-in reservoir, 18-in soil media, 12-in gravel layer, underdrain at top of gravel layer). The nomographs should be read as follows:

Step 1: Find the mean annual rainfall for the project location along the horizontal axis

Step 2: Move vertically up the chart to the bioretention sizing factor for the project/installation (note: this step assumes the tributary impervious area and bioretention area have already been planned)

Step 3: Visually interpolate between the closest two “treatment lines” to estimate the percent of annual runoff treated for this location/project.

These nomographs and instructions could be included in BASMAA guidance for green infrastructure manuals and used to a) evaluate the water quality benefits of proposed projects or b) evaluate the treatment provided by existing facilities with the layer depths described above.

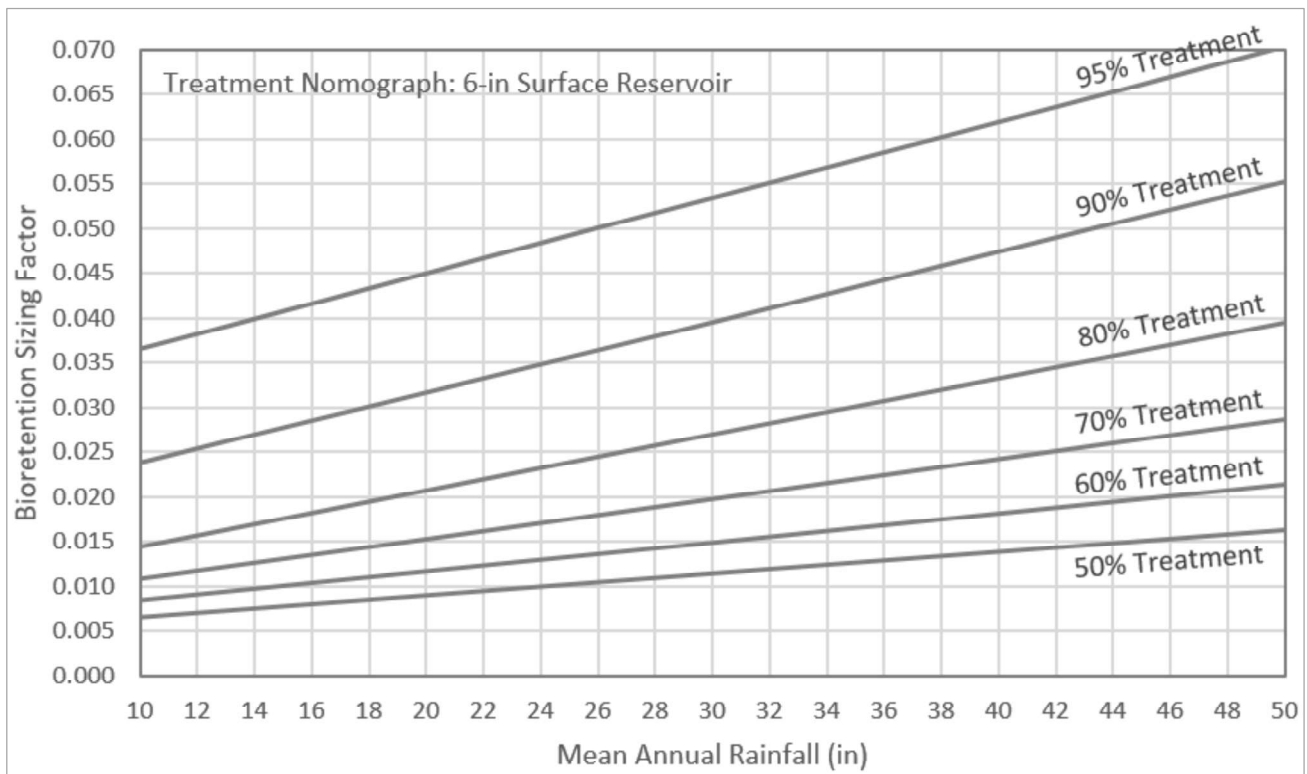


Figure 6. Percent of annual runoff treatment nomograph for bioretention facility with 6-in surface reservoir

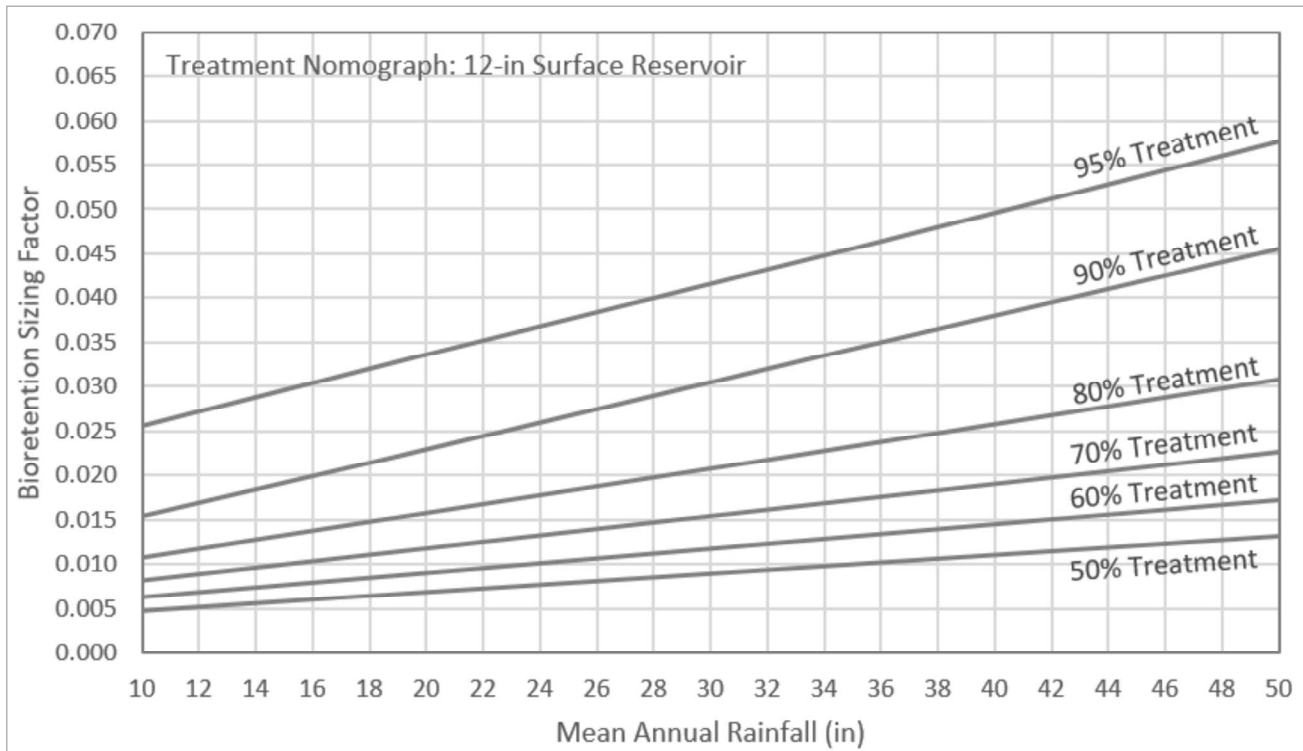


Figure 7. Percent of annual runoff treatment nomograph for bioretention facility with 12-in surface reservoir

### 3.3 Percent of Annual Runoff Treated by Bioretention Facilities with No Underdrain

Bioretention facilities are occasionally designed with no underdrain, including bioretention facilities in the following conditions:

- High permeability of surrounding (native) soils
- Isolated projects with no downstream drainage system for the underdrain connection
- Small projects that would not justify the additional design and construction costs associated with underdrains and cleanouts
- Projects that were designed and built prior to the development of the current standards

The HSPF model setup was modified to eliminate the underdrain outflows and allow the permeability of the surrounding soils to vary. The annual runoff treatment percentage was computed for a) three rain gauges representing drier, average and wetter than average conditions, b) six rates of permeability of surrounding soils, and c) two bioretention surface reservoir depths (Table 3).

TABLE 3. BIORETENTION WITH NO UNDERDRAIN SCENARIOS

| Component                                  | Characteristics  |
|--|--|
| Rain gauges                                | <ul style="list-style-type: none"> <li>• San Jose (MAP = 15.2 in)</li> <li>• San Francisco Airport (MAP = 20.4 in)</li> <li>• Fairfield (MAP = 24.1 in)</li> </ul> |
| Permeability of surrounding (native) soils | <ul style="list-style-type: none"> <li>• 0.2, 0.5, 1.0, 2.0, 3.0, 4.0 inches per hour</li> <li>• Underdrain results also plotted</li> </ul>                        |

TABLE 3. BIORETENTION WITH NO UNDERDRAIN SCENARIOS

| Component                   | Characteristics   |
|-----------------------------|---|
| Surface reservoir depths    | <ul style="list-style-type: none"> <li>Depth = 6 inches</li> <li>Depth = 12 inches</li> </ul>     |
| Bioretention sizing factors | <ul style="list-style-type: none"> <li>Area = 0.5% to 5.0% of upstream impervious acre</li> </ul> |

Figure 8, Figure 9 and Figure 10 show the modeled annual runoff treatment results for the three rain gauges and a surface reservoir depth of 6 inches. Results for the 12-inch surface reservoir are shown in Appendix C. For rates of permeability of 4 inches per hour, there is little drop off in performance. The annual runoff treatment percentage declines gradually between rates of permeability of 2 to 4 inches per hour and then declines more rapidly for rates of permeability of 1 inch per hour or less. The reduction in performance is more pronounced in wetter areas (as seen in the Fairfield results). These results could be incorporated into the BASMAA guidance for green infrastructure manuals to assess the general performance of existing facilities that were installed with no underdrain.

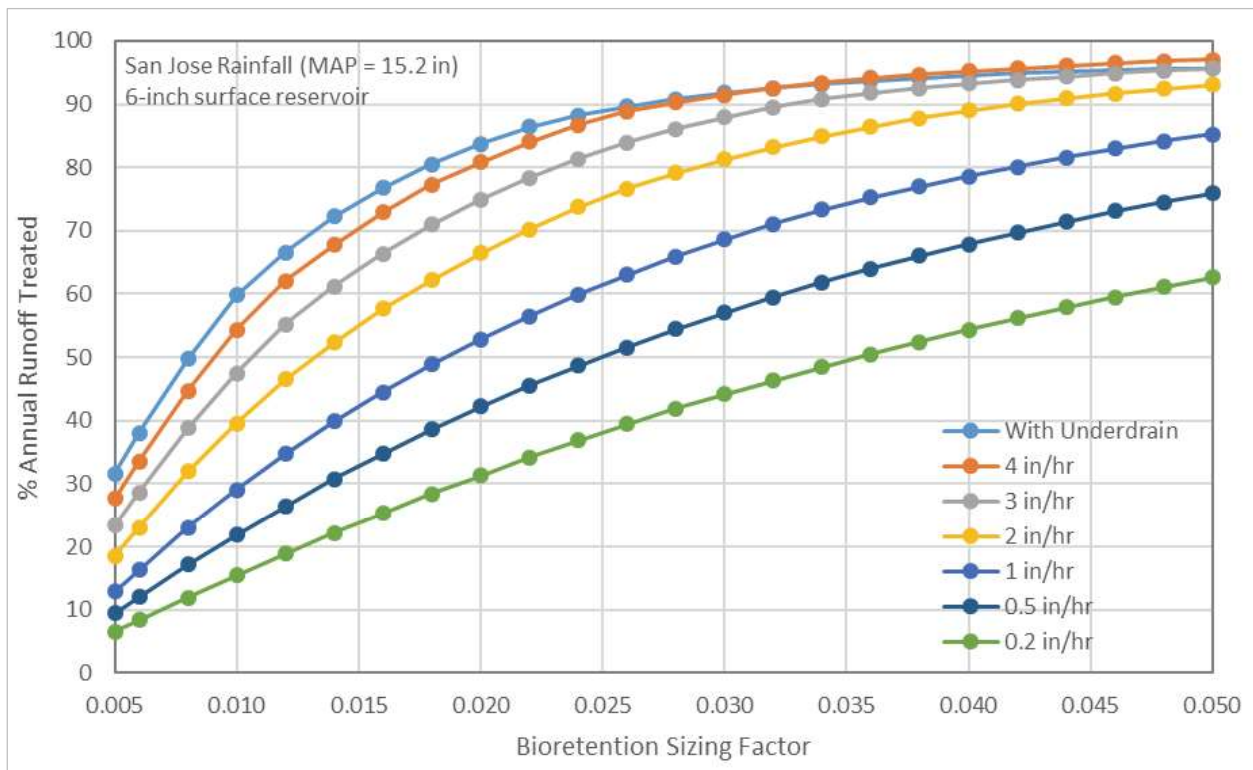


Figure 8. Treatment results for bioretention with no underdrain, San Jose gauge (MAP = 15.2 in), for varying rates of permeability of surrounding soils



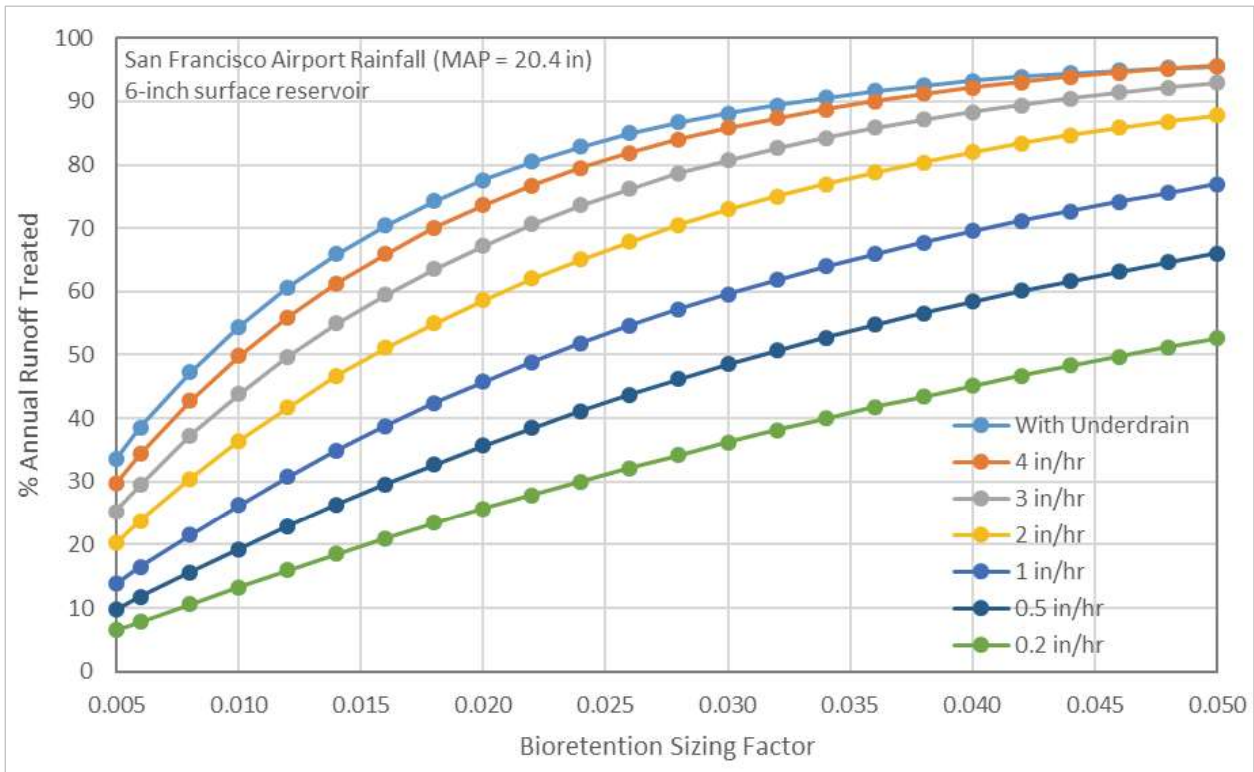


Figure 9. Treatment results for bioretention with no underdrain, San Francisco Airport gauge (MAP = 20.4 in), for varying rates of permeability of surrounding soils

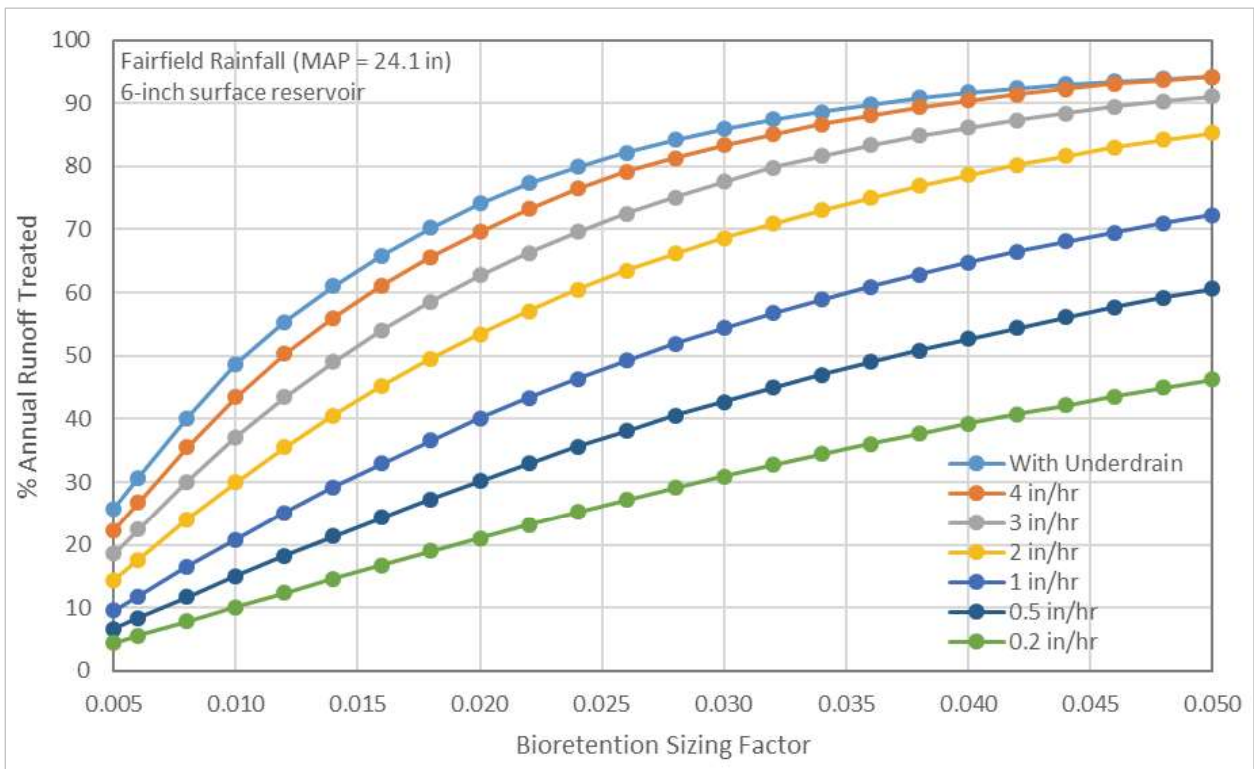


Figure 10. Treatment results for bioretention with no underdrain, Fairfield gauge (MAP = 24.1 in), for varying rates of permeability of surrounding soils

### 3.4 Percent of Annual Runoff Treated for Bioretention Facilities with No Infiltration to Surrounding Soils

The previous simulations described in Sections 3.1 and 3.2 were conducted for bioretention facilities located in NRCS hydrologic soil group D soils, which are low permeability soils, such as clays. These model simulations used a conservative permeability of 0.024 inches per hour from the bioretention gravel layer to surrounding soils. It was assumed the permeability of surrounding soils would have a negligible effect on the results because the hydraulic capacity of the underdrain is much higher than the permeability of D soils and that when the bioretention media becomes saturated, stormwater would exit mostly via the underdrain. If this assumption is correct, a lined bioretention facility or flow-through planter with no infiltration into surrounding soils should have similar performance.

This assumption was tested directly by running a limited number of simulations with the permeability of the surrounding soils set to a value of zero (i.e., an impervious layer directly below the bioretention facility). The annual treatment percentages were then compared to the previous modeling results (with D soil permeability set to 0.024 inches per hour). These simulations were performed for the Fairfield rain gauge and a bioretention facility with a 6-inch surface reservoir for sizing factors ranging from 0.005 to 0.050.

Figure 11 shows the two sets of model results. For the impermeable bottom scenario, the annual treatment percentage was on average 0.8 percent less the scenarios with a D soil permeability of 0.024 inches per hour (minimum difference = 0.4 percent; maximum difference = 1.5 percent). Therefore, the sizing curves and nomographs in Figure 4 through Figure 7 can be used for lined facilities with no infiltration.

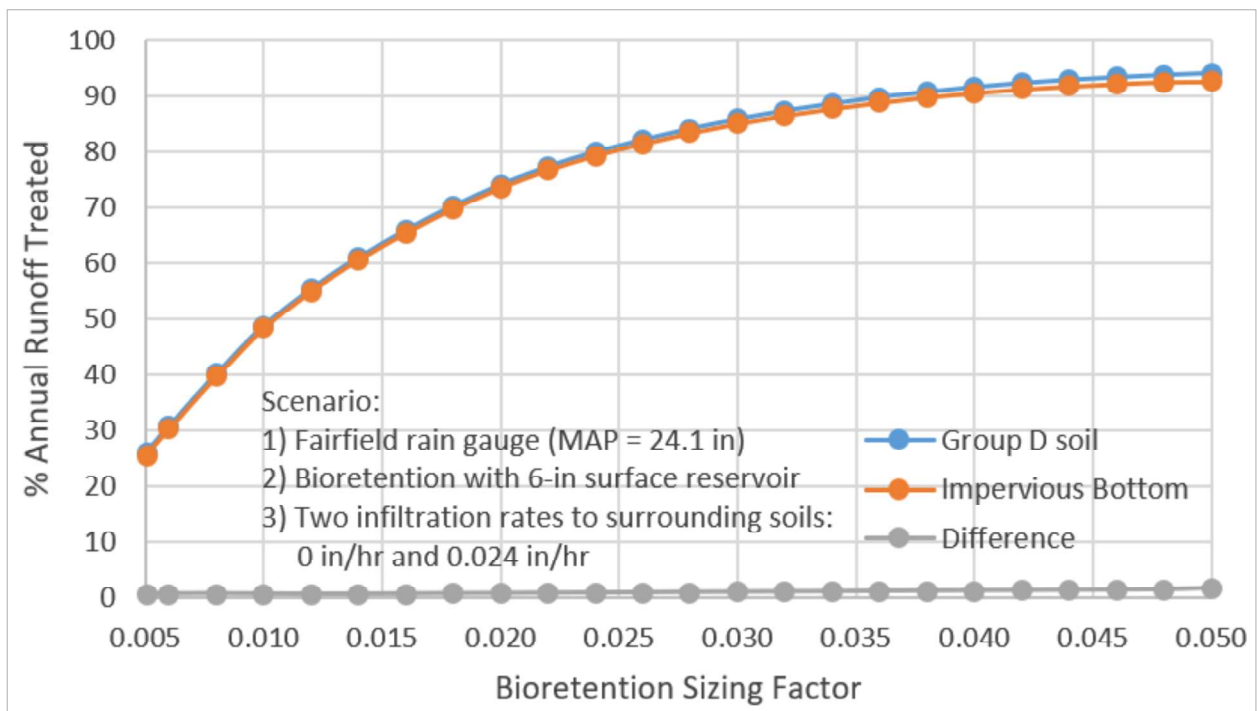


Figure 11. Comparison of model results for Group D soils and impermeable bottom scenarios

### 3.5 Percent of Annual Runoff Treated for Bioretention Facilities with Lower Media Permeability

The final modeling analysis examined the effect of modifying the bioretention media properties to reduce its saturated permeability from 5 inches per hour to 2 or 3 inches per hour. A lower permeability media would expand the list of available plantings and provide additional flexibility for landscape designers. However, the lower permeability would also reduce the bioretention’s capacity for treating runoff during intense storms.

Due to budgetary constraints, this modeling analysis was limited to two scenarios: San Jose rain gauge, 6-inch surface reservoir depth, sizing factors ranging from 0.005 to 0.05, and saturated bioretention media permeability of 2 and 3 inches per hour. Figure 12 shows the percentage of annual runoff treated across the range of bioretention sizing factors and permeability rates. All of the scenarios include an underdrain, so the media permeability is the facility characteristic that controls the treatment percentage (i.e., the rate limiting step). The reduction in treatment percentage could be significant, particularly for smaller facilities. For example, the percent of annual runoff treated for a bioretention facility with a sizing factor of 0.02 would be reduced from 84 percent to 74 or 65 percent (for media permeability rates of 3 and 2 inches per hour, respectively).

Another way to consider the effect of lower media permeability is to estimate *how much larger a facility would need to be* to treat 80 percent of annual runoff. For the San Jose gauge, a sizing factor of 0.017 is needed with the standard bioretention media specification. If the media permeability were reduced to 3 or 2 inches per hour, the sizing factor needed to treat 80 percent of annual runoff would be 0.024 or 0.030, respectively, which represents a 37 to 75 percent increase in the facility footprint.

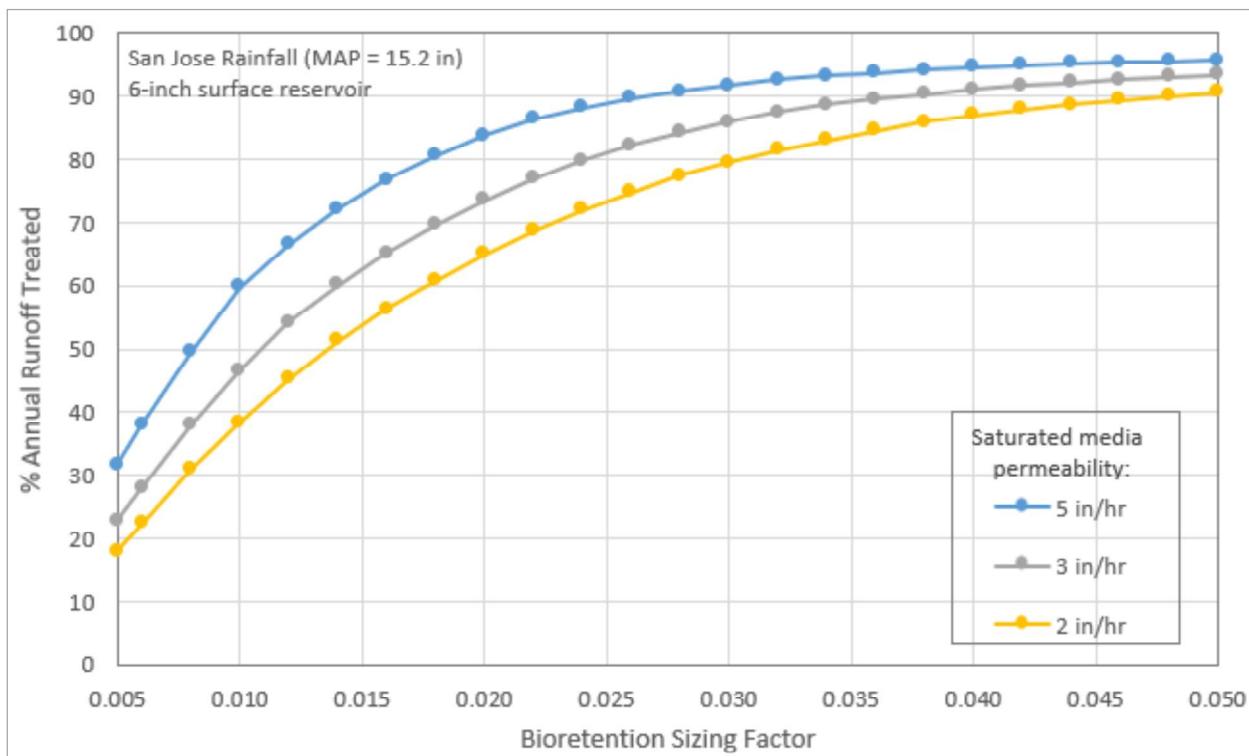


Figure 12. Treatment results for bioretention with variable media permeability, San Jose gauge (MAP = 15.2 in)

As a final note, the media permeability modeling was limited to two scenarios (one rain gauge, one facility configuration, two permeability rates). However, these results could be extended by noting that they are

generally similar to the “no underdrain” results shown in Section 3.3 (e.g., comparing the results for a media permeability of 2 inches per hour to a 2-inch per hour permeability of surrounding soil). When comparing the two sets of results, the percent of annual runoff treated for the lower media permeability is a little lower (0.5 to 2.5 percent) than the corresponding “no underdrain” scenario and the shape of the curve in Figure 12 is similar to the Figure 8 in Section 3.3.

## 4. Summary and Conclusions

Bioretention facilities are a useful and flexible approach for improving stormwater quality in urban areas. This project developed a set of useful tools that will help municipal staff plan green infrastructure projects in constrained public rights-of-way and assess the effectiveness of existing facilities.

### 1. Bioretention Sizing Criteria for 80 Percent Annual Runoff Treatment

The modeling analysis in Section 3.1 showed that bioretention facility performance is closely related to mean annual rainfall. For most locations, the bioretention area necessary to treat 80 percent of annual stormwater ranges from 1.5 to 2.5 percent of the connected upstream impervious area. The precise bioretention area necessary for any project within the BASMAA area (under the guidelines to be developed by BASMAA) can be calculated using the regression equations in Section 3.1.

### 2. General Sizing Relationships that Apply Throughout the BASMAA Area

The modeling analysis in Section 3.2 developed nomographs that estimate the annual stormwater treatment percentage across a range of bioretention facility sizes and mean annual rainfall depths. These nomographs can be used to estimate the annual treatment percentages for retrofit projects with space constraints and will enable municipal staff to compare bioretention with other treatment technologies. These nomographs can also be used to assess the effectiveness of existing facilities.

### 3. Performance of Bioretention Facilities with No Underdrain and Varying Rates of Permeability of Surrounding Soils

The modeling analysis in Section 3.3 demonstrated the relationship between stormwater treatment percentage and level of permeability of surrounding soils for bioretention facilities without an underdrain. Graphics were developed for rain gauges in wetter and drier areas. The results of this analysis can help assess existing installations and also inform designers about the benefits and tradeoffs of constructing bioretention with no underdrain.

### 4. Performance of Bioretention Facilities with No Infiltration

The modeling analysis in Sections 3.1 and 3.2 included the conservative assumption that bioretention facilities were installed in NRCS Group D soils with a very low permeability. The modeling analysis in Section 3.4 compared these results to bioretention facilities with no infiltration to surrounding soils (e.g., facilities with a liner or concrete bottom). The results were very similar, which confirms that the sizing guidance developed in Sections 3.1 and 3.2 can apply to flow-through planters or similar facilities that do not infiltrate to surrounding soils.

#### 5. Sizing Criteria for Facilities with Lower Permeability Soil Media

The modeling analysis in Section 3.5 demonstrated the relationship between percent of annual runoff treated and bioretention soil media permeability. Reducing media permeability would allow for a wider range of bioretention plantings but would also result in a reduction in the percent of annual runoff treated for the same size drainage area. The reduction would be particularly notable for bioretention facilities with smaller sizing factors. The results of the bioretention media permeability analysis were similar to the no underdrain scenarios in Section 3.3. The Section 3.3 results could be used to estimate how reducing media permeability would influence treatment percentages across a wider range of scenarios.

In general, the bioretention surface area sizing criteria for treating 80% of the annual runoff derived from the modeling analyses described herein are significantly lower than the sizing factors that municipalities in the Bay Area have been requiring regulated projects to meet for compliance with permit requirements for some time. As stated in the Introduction (Section 1), the BASMAA Development Committee and BASMAA member agencies intend to use these sizing relationships to develop and justify a “single approach” for implementing non-regulated green street projects when there are constraints on facility size. A work group of the Development Committee was formed to develop policies and guidelines for implementing the new sizing criteria and addressing other related issues. These include defining the conditions, constraints, and types of projects for which the reduced sizing factors can be used; the method for applying the sizing factors; guidelines for when dimensions of other components such as media depths can be adjusted; how the design of other types of green infrastructure measures may be modified; the effectiveness of smaller or modified green infrastructure facilities in terms of pollutant load reduction; and other considerations.

## 5. References

- Contra Costa Clean Water Program (CCCWP). 2006. Hydrograph Modification Management Plan. April 16, 2006.
- Contra Costa Clean Water Program (CCCWP). 2013. IMP Monitoring Report, IMP Model Calibration and Validation Report. September 20, 2013.

## Appendix A: Storm Depths for 1-Hour and 24-Hour Durations

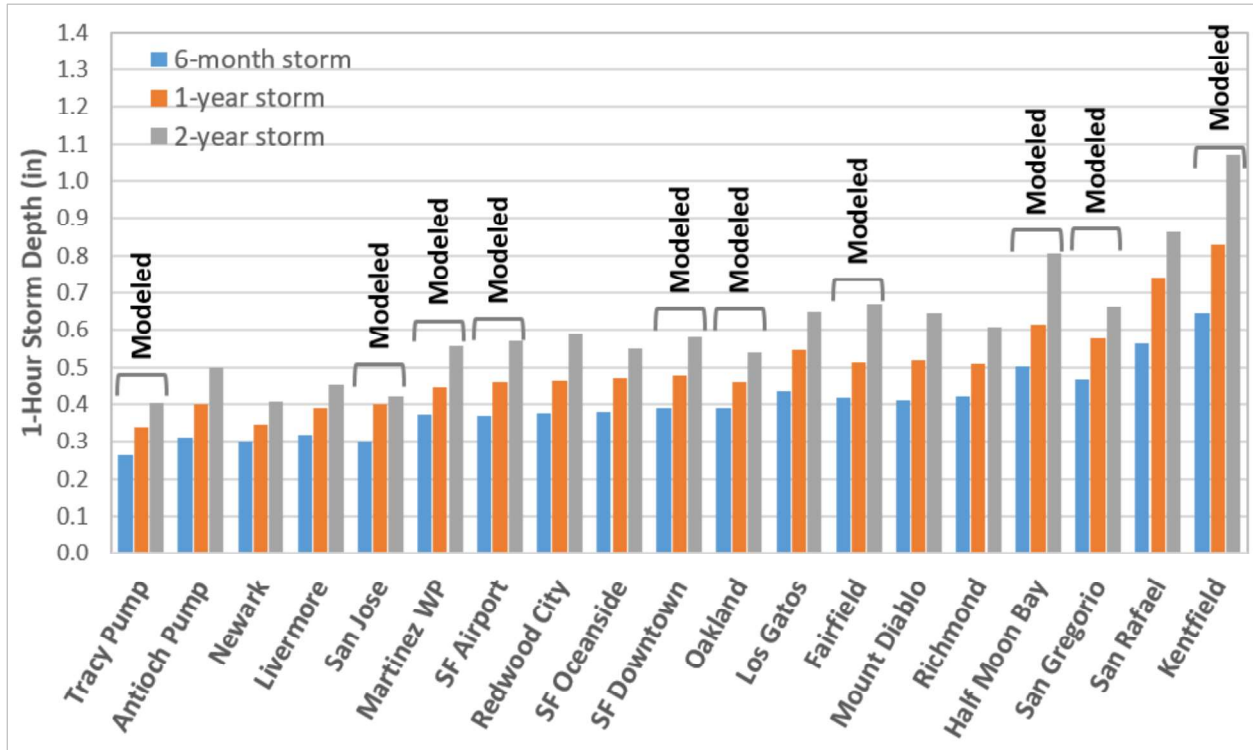


Figure 13. Storm depths for 1-hour duration

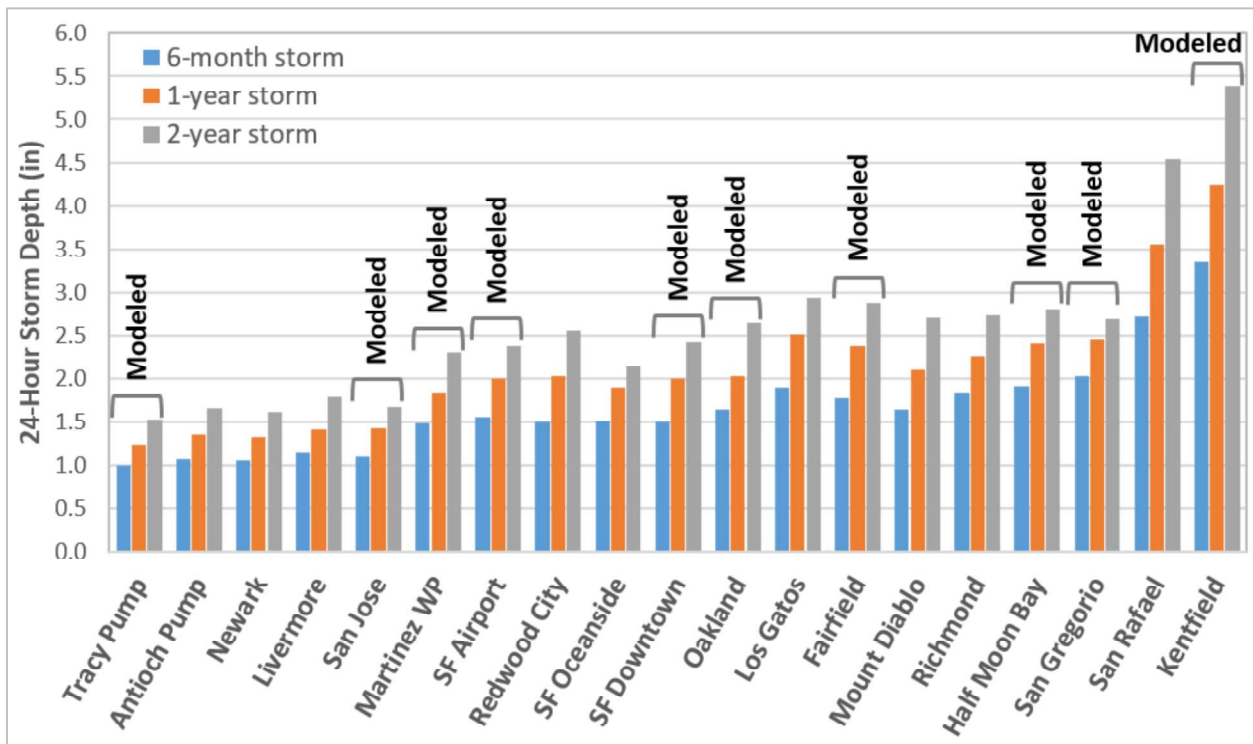


Figure 14. Storm depths for 24-hour duration



## Appendix B: Treatment Percentage Results Graphics for All Rain Gauges

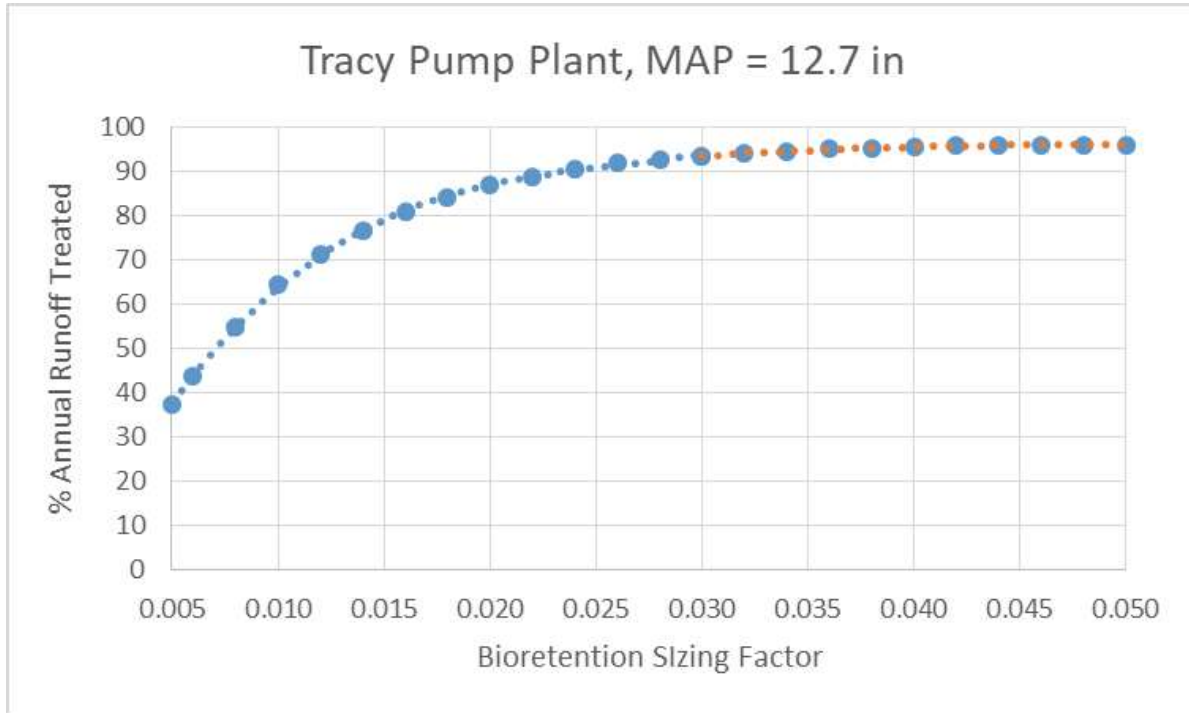


Figure 15. Annual treatment percentage for the Tracy Pump Plant rain gauge

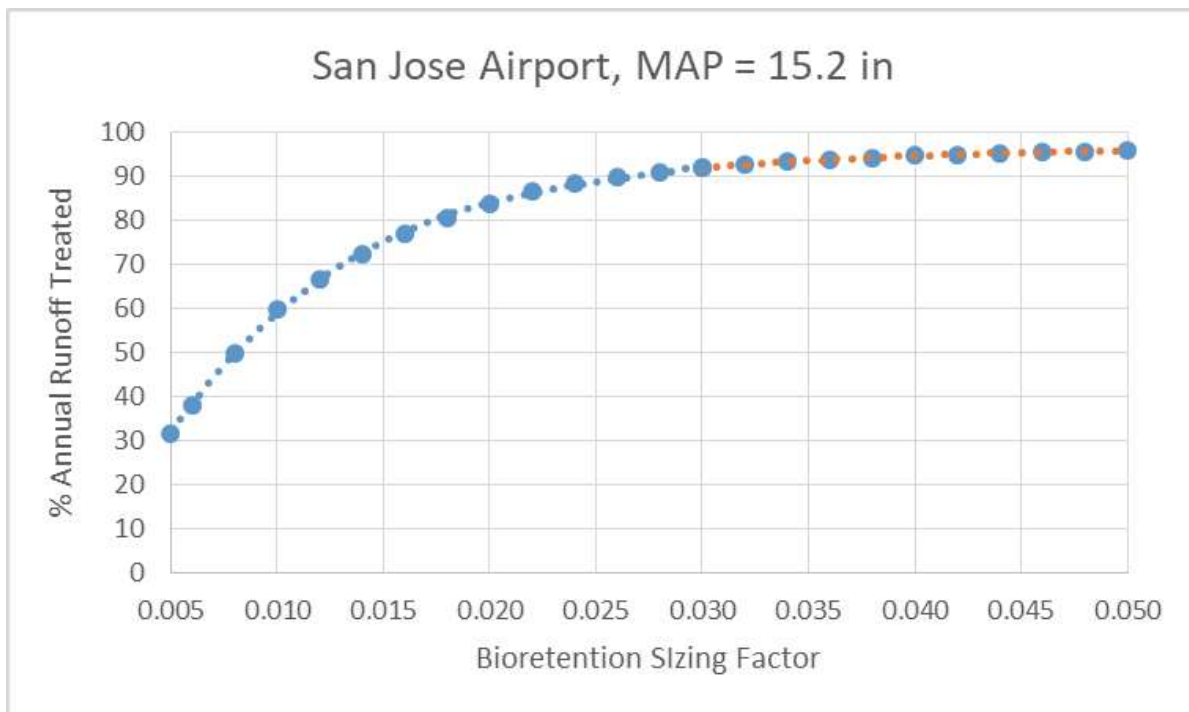


Figure 16. Annual treatment percentage for the San Jose rain gauge



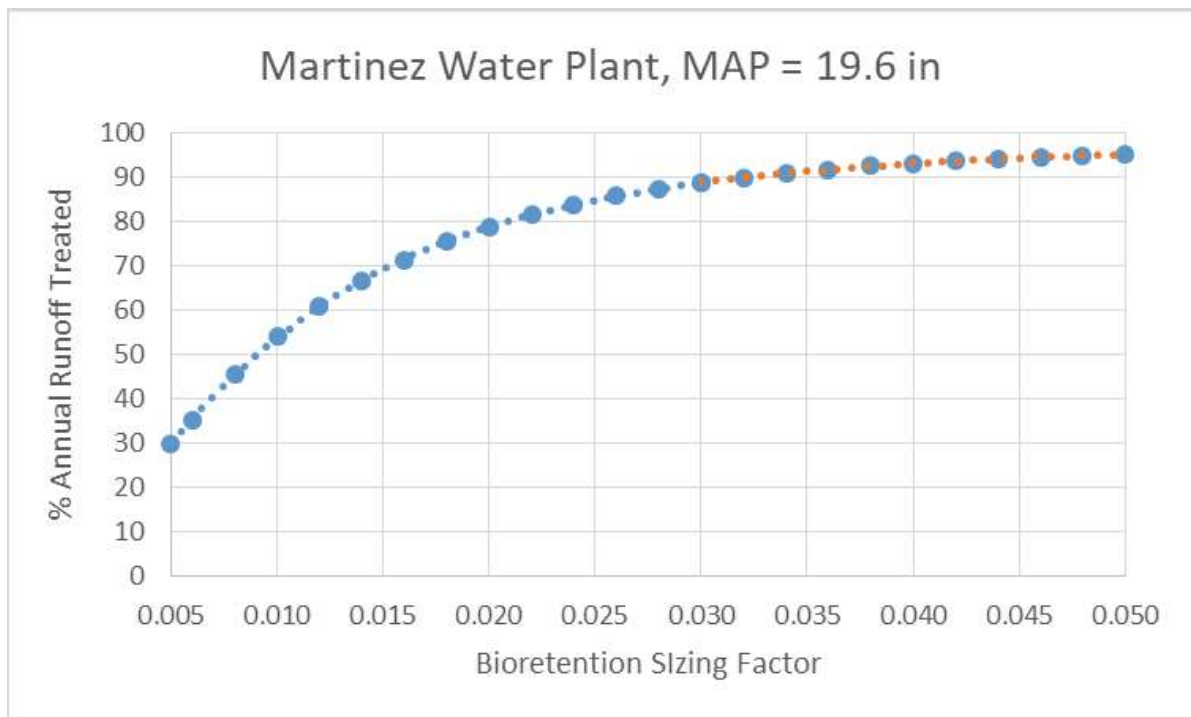


Figure 17. Annual treatment percentage for the Martinez Water Plant rain gauge

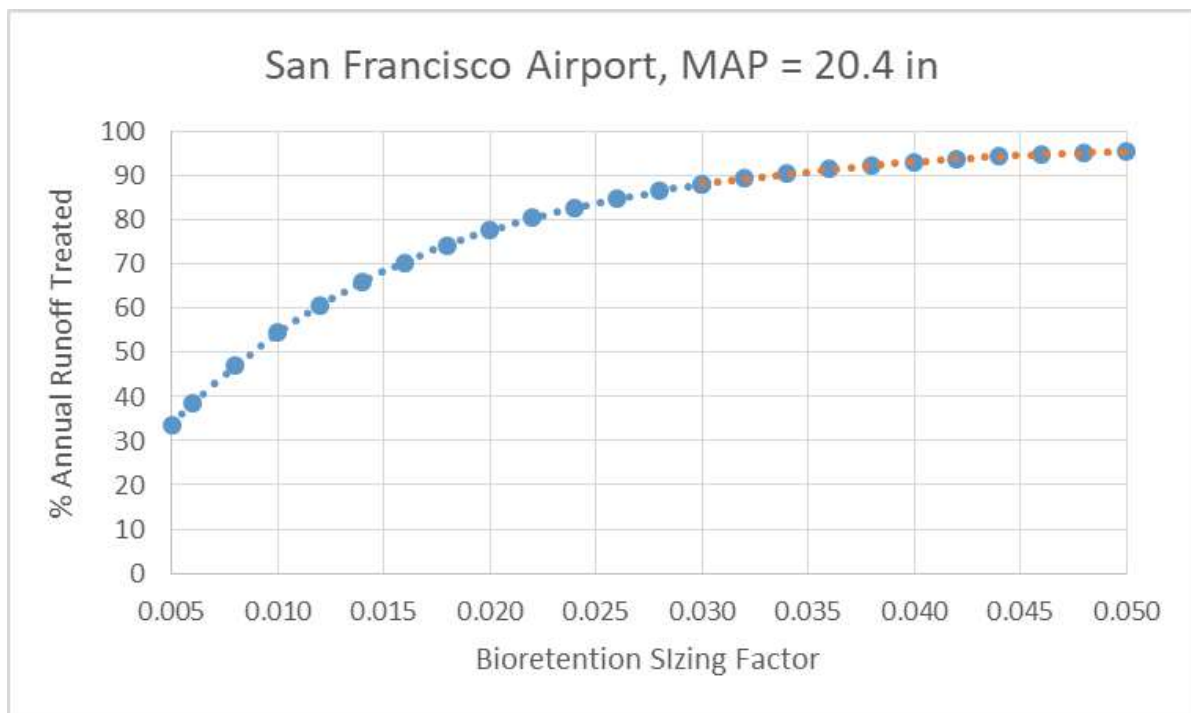


Figure 18. Annual treatment percentage for the San Francisco Airport rain gauge

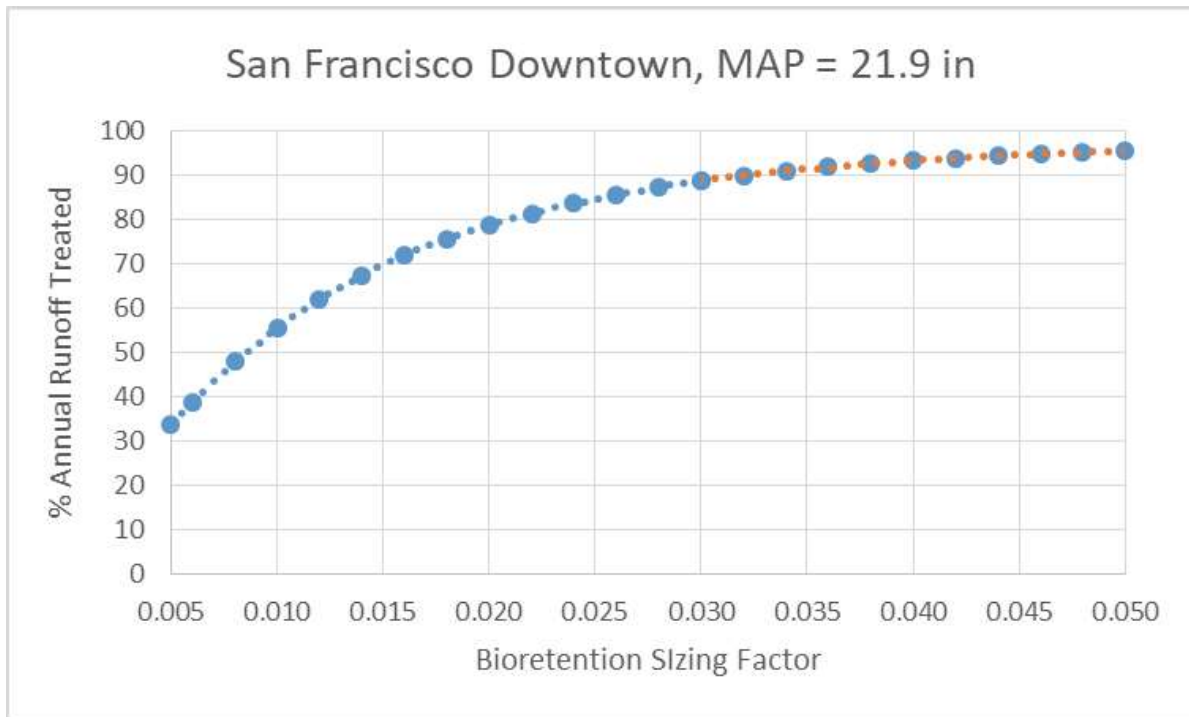


Figure 19. Annual treatment percentage for the San Francisco Downtown rain gauge

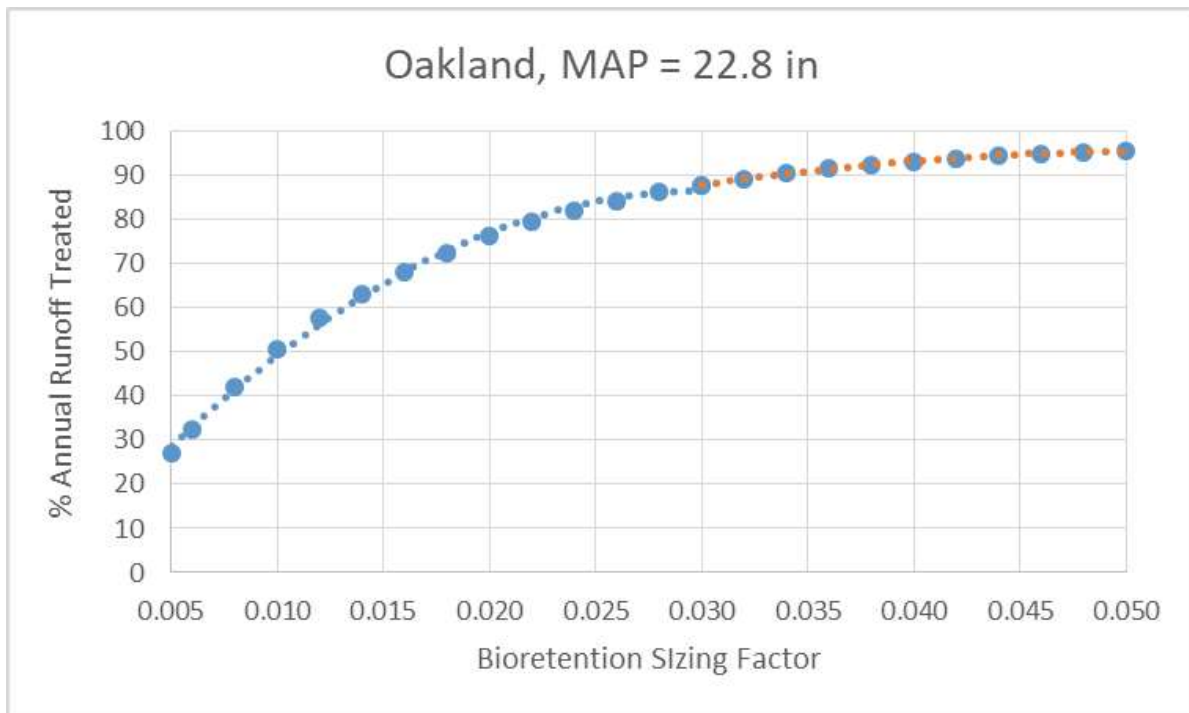


Figure 20. Annual treatment percentage for the Oakland rain gauge

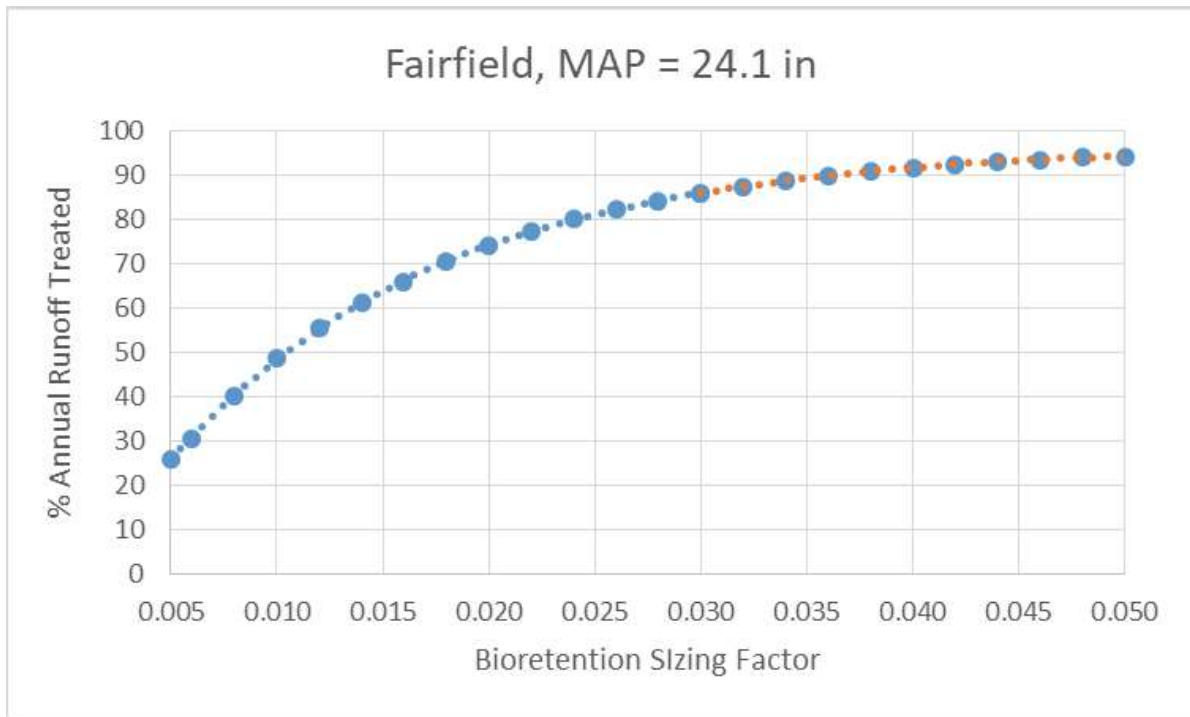


Figure 21. Annual treatment percentage for the Fairfield rain gauge

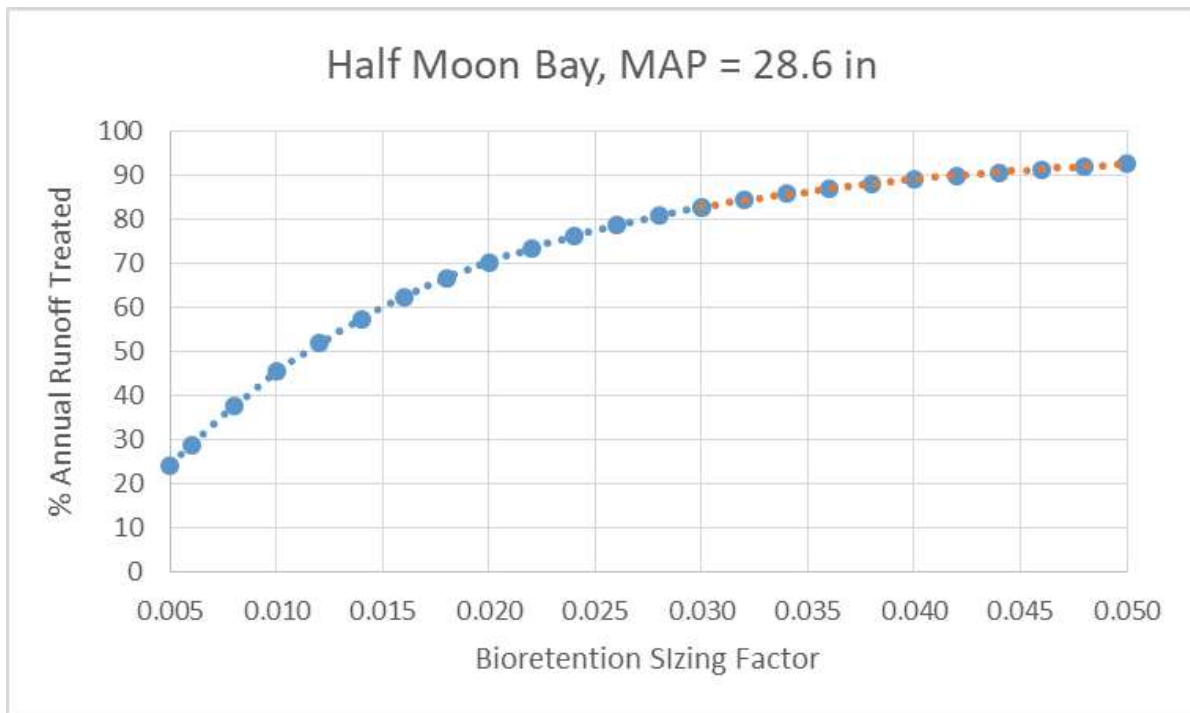


Figure 22. Annual treatment percentage for the Half Moon Bay rain gauge

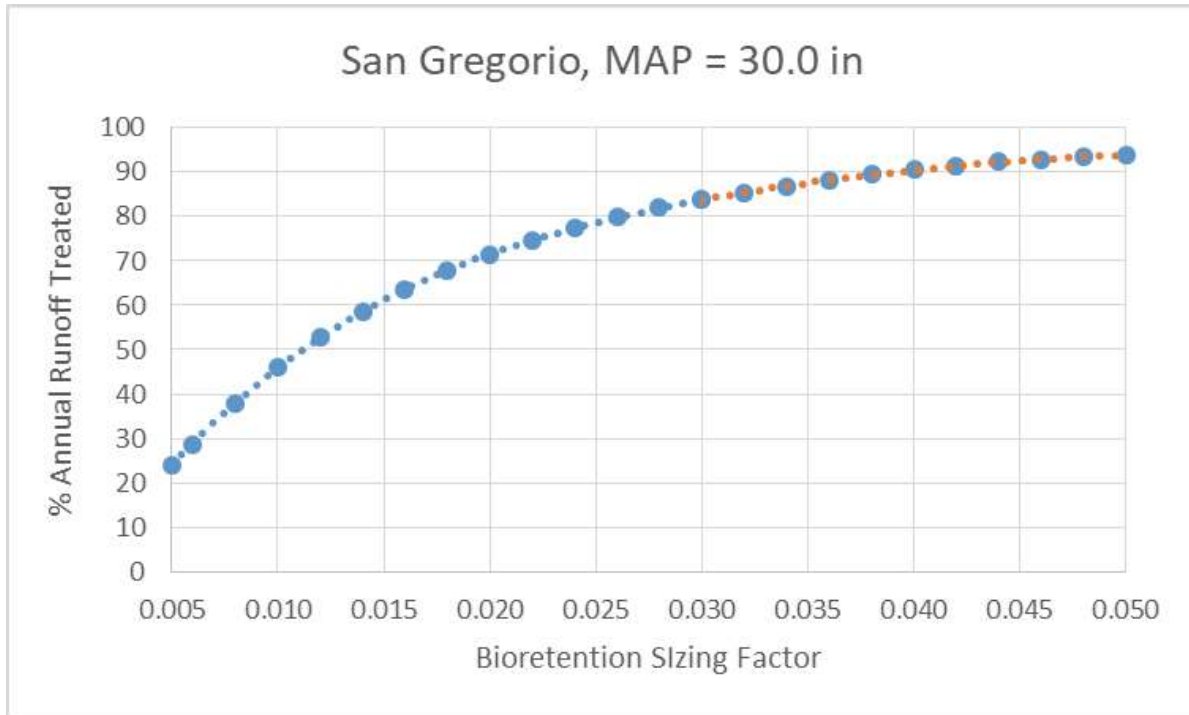


Figure 23. Annual treatment percentage for the San Gregorio rain gauge

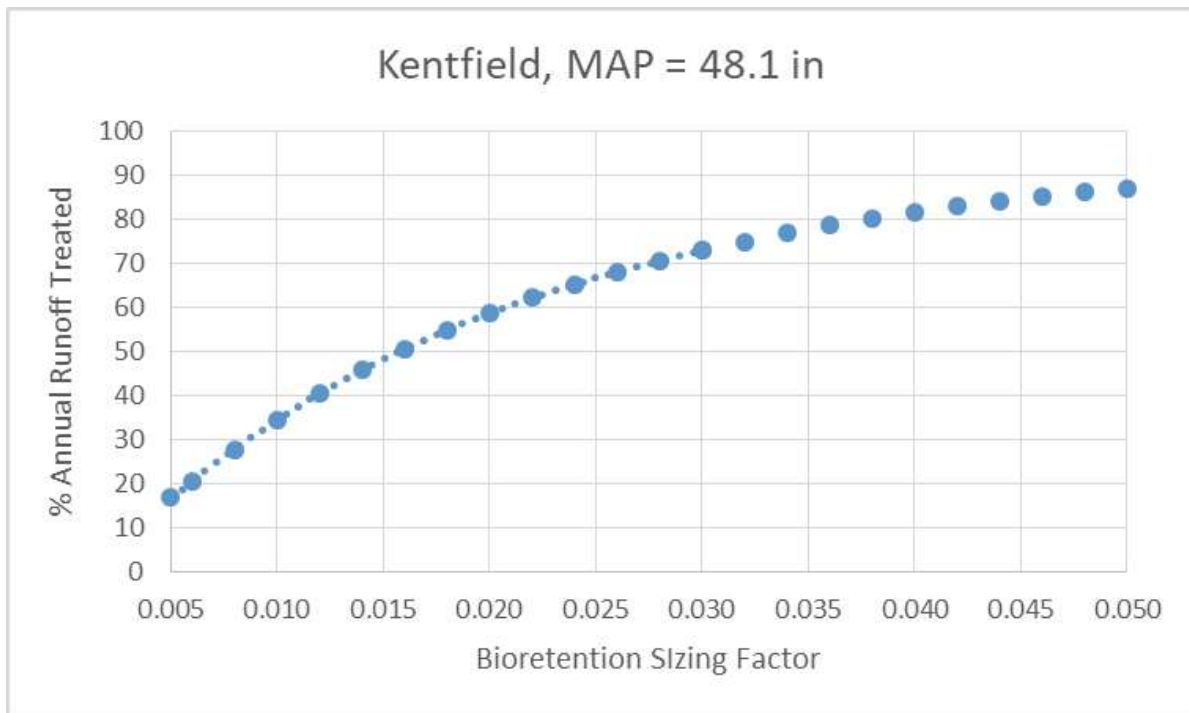


Figure 24. Annual treatment percentage for the Kentfield rain gauge

### Appendix C: Bioretention with No Underdrain, 12-inch Surface Reservoir Results

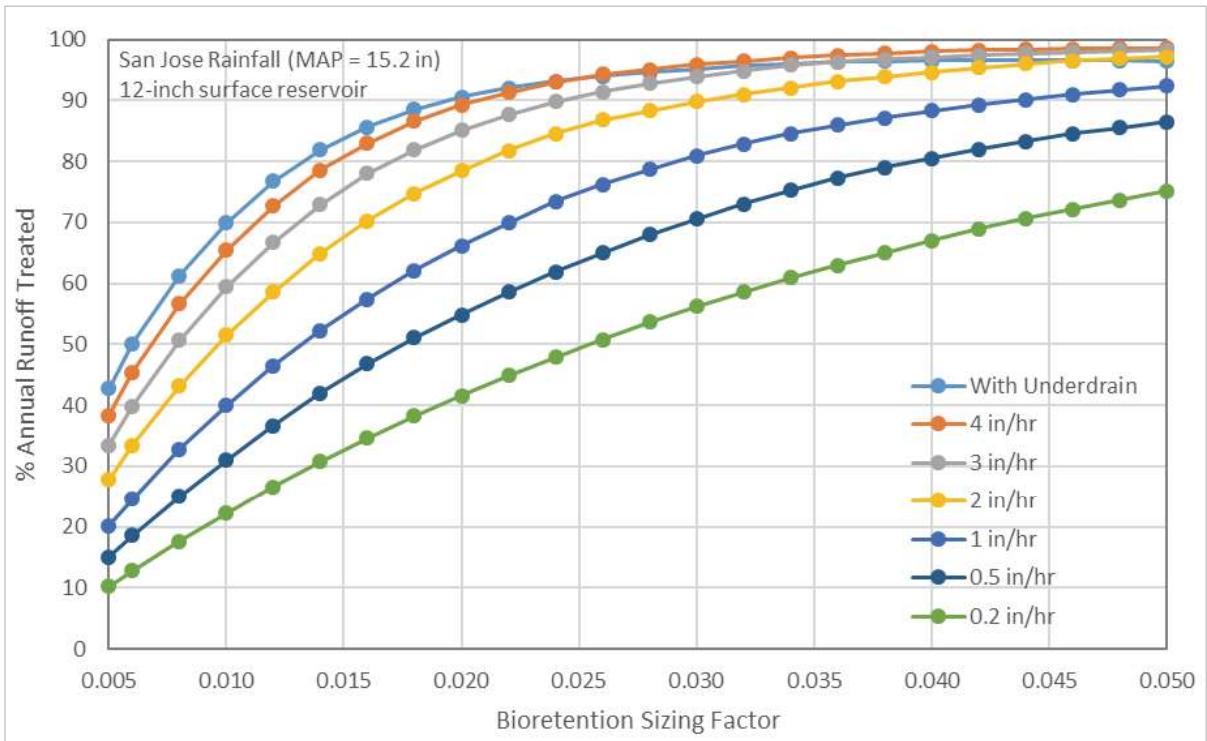


Figure 25. Treatment results for bioretention with no underdrain, San Jose gauge (MAP = 15.2 in)

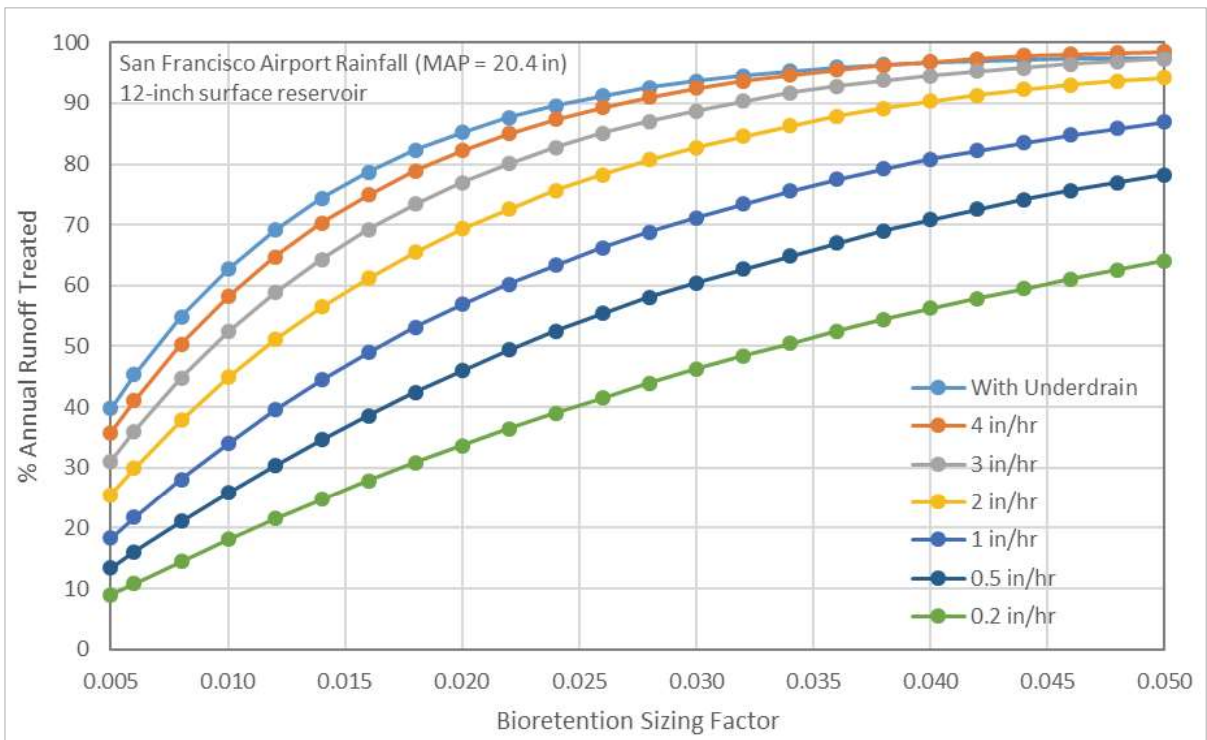


Figure 26. Treatment results for bioretention with no underdrain, San Jose gauge (MAP = 15.2 in)

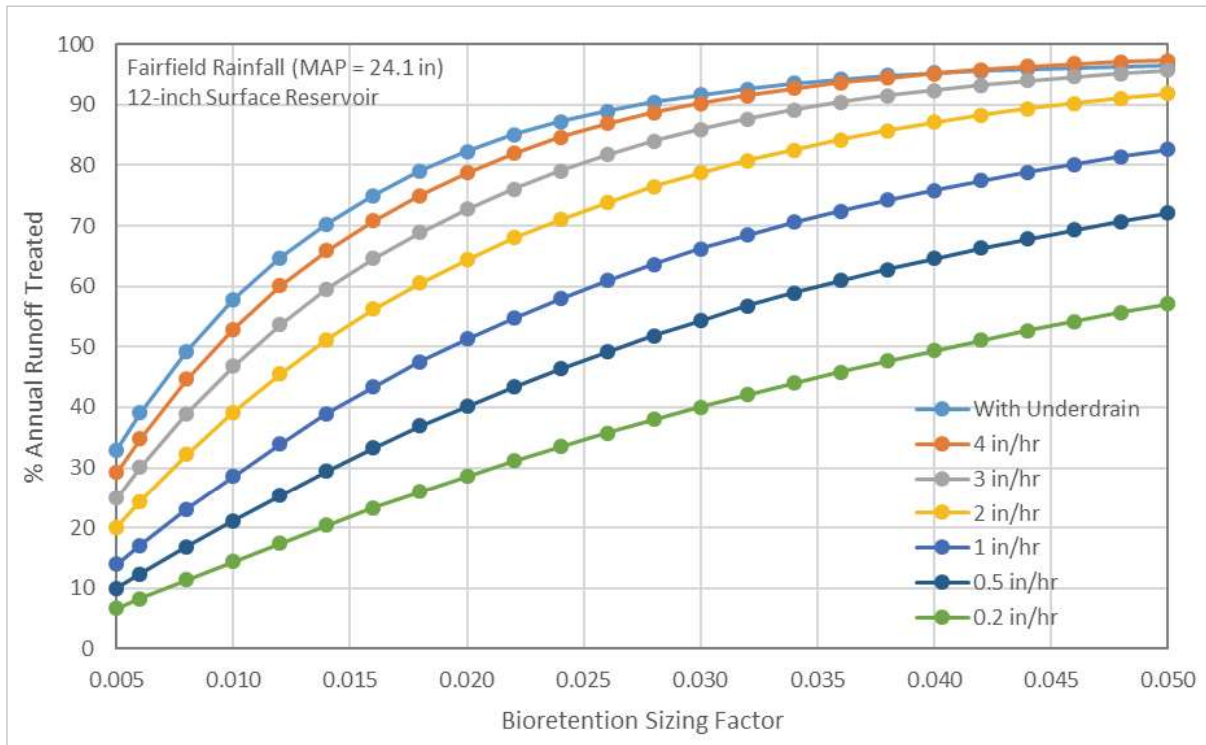


Figure 27. Treatment results for bioretention with no underdrain, San Jose gauge (MAP = 15.2 in)

**APPENDIX E**

**CONDITIONAL ACCEPTANCE OF GUIDANCE FOR  
SIZING GREEN INFRASTRUCTURE FACILITIES IN  
STREET PROJECTS**





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## San Francisco Bay Regional Water Quality Control Board

June 21, 2019  
CIWQS Place ID 756972

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**Subject: Conditional Acceptance of Guidance for Sizing Green Infrastructure Facilities in Street Projects**

Dear MRP Stormwater Program Managers:

This letter provides the Water Board's conditional acceptance of BASMAA's "Guidance for Sizing Green Infrastructure Facilities in Street Projects" (Guidance) and the "Green Infrastructure Facility Sizing for Non-Regulated Street Projects Technical Report" (Report). The Water Board supports Permittee efforts to retrofit existing streets with low impact development/green stormwater infrastructure (LID) bioretention treatment controls and recognizes both the challenges inherent in retrofitting existing urban infrastructure and the substantial water quality and related benefits that can result from successful retrofits.

Municipal Regional Stormwater NPDES Permit (MRP) Permittee studies, including stormwater resource plans and work on reasonable assurance analyses for pollutants of concern, have identified the public right-of-way, and particularly streets, as a key location for retrofits to control urban runoff pollution from the Bay Area's already-built urban environment. The Water Board recognizes the importance of green street retrofits and supports Permittee efforts to implement them. At the same time, there is a potentially significant trade-off between reduced treatment control sizing relative to the tributary area and the likelihood a control will function effectively over its life. All else

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DR. TERRY F. YOUNG, CHAIR | MICHAEL MONTGOMERY, EXECUTIVE OFFICER

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being equal, controls that are relatively larger are more likely to provide water quality and related co-benefits with less attention over time.

MRP Provision C.3.j.i.(g) allows the Permittees to propose an approach for alternate sizing of LID treatment controls to achieve treatment control and hydromodification requirements in certain green streets projects where conventional design storm hydraulic sizing may be difficult:

For street projects not subject to Provision C.3.b.ii (i.e., non-Regulated Projects), Permittees may collectively propose a single approach with their Green Infrastructure Plans for how to proceed should project constraints preclude fully meeting the C.3.d sizing requirements.

The Report, in support of the Guidance, sets forth a sizing approach for bioretention controls for treatment using the combined flow and volume modelling approach. The Report notes, appropriately, that Permittees will design treatment controls to be “as large as feasible.” Where larger sizing is impracticable, this approach enables bioretention controls to be as small a percentage of the tributary area as possible, and as little as 1.5 – 3 percent, while treating at least 80 percent of the average annual runoff based on local precipitation gauge records. This conditional acceptance provides direction on how Permittees should design controls to be as large as practicable, within existing MRP requirements.

The Guidance includes general suggestions regarding an approach for treating less than 80 percent of the total runoff, which may be appropriate for voluntary green street retrofit projects, and could be considered for green infrastructure plan street retrofit projects, in combination with Permittee reasonable assurance analyses and a future, more-detailed proposal of how to implement such reduced sizing. We look forward to working with the Permittees on that.

One aspect of the approach is that it has minimized safety factors, which, as noted in the Guidance, is likely to result in the construction of controls that have a greater need for operation and maintenance work over their lifetime, a higher rate of failure, and may be more likely to have reduced effectiveness and a reduced effective life in the absence of that attention. This calls into question whether the approach meets the C.3.d sizing requirements for Regulated Projects, and whether it should be applied beyond non-Regulated Green Streets retrofit projects. In the absence of additional evaluation of this issue, the reduced sizing approach should not be applied to Regulated Projects.

In addition, BASMAA considered developing, but did not include in this effort, specific guidance regarding how Permittees could determine practicability for using the reduced sizing approach, and regional guidance for green street best management practice installation, such as recommended locations and designs based on typical tributary areas. Such work could be a useful future project. The Guidance does include examples of constraints that could lead to reduced sizing.

The Report and Guidance do not propose an alternative sizing approach for hydromodification. While noting the MRP's triggers for hydromodification controls, the Guidance states categorically that hydromodification controls "...do not apply to street projects that retrofit drainage systems that receive runoff from existing roofs and paving." It is likely that many projects would not trigger the MRP's hydromodification control requirements. However, where the retrofits are part of a project that meets or exceeds the triggers for the MRP's hydromodification requirements, then the requirements would apply. Permittees should continue to review that as part of project implementation.

To better address the question of practicability and to help develop information that can contribute to future guidance regarding green street retrofits, this conditional acceptance directs Permittees to use existing MRP Provision C.3.d regulated project sizing for green street bioretention treatment control initial sizing. The design approaches for that sizing are set forth in the Permittees' existing technical guidance documents. With cause (e.g., significantly constrained area for a BMP, substantially increased costs for that sizing relative to the C.3.j.i.(g) approach, significant amounts of run-on from adjacent areas, or other substantial constraints identified by Permittees), and with reporting in their Annual Reports, Permittees may use the proposed C.3.j.i.(g) sizing for "non-Regulated Project" green streets projects, including non-Regulated Project green streets projects in Permittees' Green Infrastructure Plans and purely voluntary green streets projects.

The intent of the reporting is for the Permittees and the Water Board to, over time, identify more categorically green street retrofit approaches and needs, allowing Permittees to more-easily implement an effective and robust green street retrofit program. We look forward to working with the Permittees to identify appropriate and useful sizing analysis practicability information that can be developed, reported, and/or retained by the Permittees, as appropriate.

This conditional approval categorizes green streets projects into three categories. Regulated Projects under MRP Provision C.3.b, including green street retrofit projects funded all or in part from alternate compliance; green street retrofit projects that are not otherwise Regulated Projects under C.3.b, which may include green street retrofit projects in Green Infrastructure Plans; and purely voluntary green street retrofit projects.

- **Regulated projects:** Should be designed to the sizing standard in C.3.d, using the approaches set forth in existing Permittee technical guidance manuals.<sup>1</sup>
- **Green street retrofit projects in Permittee green infrastructure plans, which are not Regulated Projects under C.3.b:** Should be designed to the sizing standard in C.3.d, using the approaches set forth in existing Permittee technical guidance manuals. If Permittee analysis determines there is substantial cause to

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<sup>1</sup> The Water Board may consider changes to this approach for Regulated Projects in a future MRP reissuance, following additional discussion regarding safety factors, control performance, and more-specific guidance regarding implementation.

reduce the sizing to the proposed C.3.j.i.(g) approach, then reduce the sizing, with reporting in the Permittee's annual report as to why larger sizing was impracticable.

- **Voluntary green street retrofit projects outside of green infrastructure plans:** Permittees should determine whether controls can be designed to the C.3.d sizing standard, using the approaches set forth in existing Permittee technical guidance manuals. To the extent that is not possible, they should use the C.3.j.i.(g) approach.

The Guidance notes that even with site-specific constraints, it may still be desirable to design bioretention treatment controls to treat amounts of runoff below the 80 percent of average annual runoff standard. We agree. It notes, further, that “[p]ollutant reduction achieved by GI facilities in street projects will be estimated in accordance with the Interim accounting Methodology or the applicable Reasonable Assurance Analysis.” We look forward to working with the Permittees to establish an agreed-upon approach for estimating pollutant load reductions associated with smaller-sized facilities. In addition, we are interested to work with the Permittees regarding guidance on bounds for control sizing, such as particular control designs to use or bounds below which the operation and maintenance burden may be unreasonably high relative to the benefits achieved.

We look forward to working with you to identify appropriate reporting regarding use of the Guidance and Report that can be completed prior to the MRP's reissuance, and which could inform the reissuance. Reporting is likely to include a narrative discussion of how Permittees implemented the alternative design guidance for projects using it, and consideration of how to track partial treatment with respect to crediting for Provisions C.11 and C.12.

If you have any questions or would like to discuss this matter further, please contact Dale Bowyer at (510) 622-2323 or [dale.bowyer@waterboards.ca.gov](mailto:dale.bowyer@waterboards.ca.gov).

Sincerely,

Keith H. Lichten, Chief  
Watershed Management Division

## **APPENDIX F**

# **GUIDANCE FOR IDENTIFYING GREEN INFRASTRUCTURE POTENTIAL IN MUNICIPAL CAPITAL IMPROVEMENT PROGRAM PROJECTS**

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<sup>1</sup>. 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

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<sup>1</sup> 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  $\geq 0.5$  for dispersal to landscape or pervious pavement<sup>2</sup> (i.e., a maximum 2:1 ratio of impervious area to pervious area)
- Sizing factor  $\geq 0.04$  for bioretention
- Sizing factor  $\geq 0.004$  (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).

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<sup>2</sup> 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**

Permittee Name: \_\_\_\_\_

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

| Project Name<br>Project No.   | Project Location <sup>9</sup> ,<br>Street Address | Name of Developer | Project Phase No. <sup>10</sup> | Project Type & Description <sup>11</sup> | Project Watershed <sup>12</sup> | Total Site Area (Acres) | Total Area of Land Disturbed (Acres) | Total New Impervious Surface Area (ft <sup>2</sup> ) <sup>13</sup> | Total Replaced Impervious Surface Area (ft <sup>2</sup> ) <sup>14</sup> | Total Pre-Project Impervious Surface Area <sup>15</sup> (ft <sup>2</sup> ) | Total Post-Project Impervious Surface Area <sup>16</sup> (ft <sup>2</sup> ) |
|---|---|-------------------|---------------------------------|--|---------------------------------|-------------------------|--------------------------------------|--|---|--|---|
| <b>Private Projects</b>   |   |                   |                                 |  |                                 |                         |                                      |  |   |  |   |
|   |   |                   |                                 |  |                                 |                         |                                      |  |   |  |   |
|   |   |                   |                                 |  |                                 |                         |                                      |  |   |  |   |
|   |   |                   |                                 |  |                                 |                         |                                      |  |   |  |   |
|   |   |                   |                                 |  |                                 |                         |                                      |  |   |  |   |
|   |   |                   |                                 |  |                                 |                         |                                      |  |   |  |   |
| <b>Public Projects</b>  |   |                   |                                 |  |                                 |                         |                                      |  |   |  |   |
|   |   |                   |                                 |  |                                 |                         |                                      |  |   |  |   |
|   |   |                   |                                 |  |                                 |                         |                                      |  |   |  |   |
|   |   |                   |                                 |  |                                 |                         |                                      |  |   |  |   |
|   |   |                   |                                 |  |                                 |                         |                                      |  |   |  |   |
|   |   |                   |                                 |  |                                 |                         |                                      |  |   |  |   |
| Comments:   |   |                   |                                 |  |                                 |                         |                                      |  |   |  |   |
| <b>Guidance: If necessary, provide any additional details or clarifications needed about listed projects in this box. Do not leave any cells blank.</b> |   |                   |                                 |  |                                 |                         |                                      |  |   |  |   |

<sup>9</sup>Include cross streets

<sup>10</sup>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".

<sup>11</sup>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.

<sup>12</sup>State the watershed(s) in which the Regulated Project is located. Downstream watershed(s) may be included, but this is optional.

<sup>13</sup>All impervious surfaces added to any area of the site that was previously existing pervious surface.

<sup>14</sup>All impervious surfaces added to any area of the site that was previously existing impervious surface.

<sup>15</sup>For redevelopment projects, state the pre-project impervious surface area.

<sup>16</sup>For redevelopment projects, state the post-project impervious surface area.

Permittee Name: \_\_\_\_\_

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

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

<sup>29</sup>For public projects, enter the plans and specifications approval date.

<sup>30</sup>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.

<sup>31</sup>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.

<sup>32</sup>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.).

<sup>33</sup>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.

<sup>34</sup>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).

<sup>35</sup>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.

<sup>36</sup>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.

<sup>37</sup>Note whether a third party was used to certify the project design complies with Provision C.3.d.

<sup>38</sup>If HM control is not required, state why not.

<sup>39</sup>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), bioretention 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 <sup>43</sup>            | Project Description  | Status <sup>44</sup>                | GI Included? <sup>45</sup> | Description of GI Measures Considered and/or Proposed or Why GI is Impracticable to Implement <sup>46</sup>      |
|--|--|-------------------------------------|----------------------------|--|
| 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 <sup>47</sup>      | 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. |
|  |  |   |   |
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|  |  |   |   |

<sup>43</sup> List each public project that is going through your agency’s process for identifying projects with green infrastructure potential.

<sup>44</sup> Indicate status of project, such as: beginning design, under design (or X% design), projected completion date, completed final design date, etc.

<sup>45</sup> 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.

<sup>46</sup> 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.

<sup>47</sup> 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.