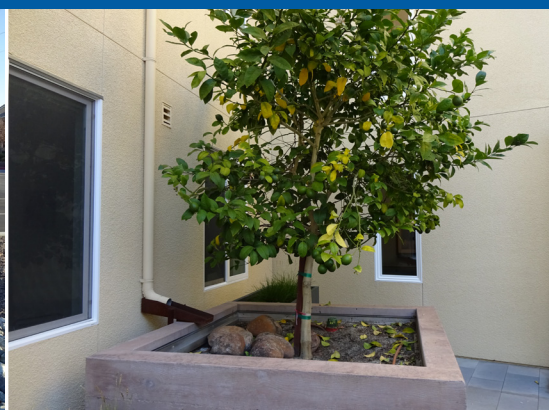
GREEN INFRASTRUCTURE PLAN

CITY OF FOSTER CITY 610 Foster City Blvd., Foster City, CA 94404 • 650.286.3200

AUGUST 2019



ACKNOWLEDGEMENTS

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PREFACE

Green Infrastructure (GI) is a cost-effective, resilient approach to managing water quality. GI encompasses many different types of stormwater measures that mimic natural hydrologic processes, including filtration, infiltration, detention, and evapotranspiration. It uses plants, soils, and other elements to mimic the natural water cycle and capture rainwater, and, in built form, includes facilities such as bioretention areas, permeable pavements, stormwater trees, and green roofs. GI provides multiple community benefits such as improving water quality before discharging it to the bay or ocean by removing pollutants like sediment and trash from stormwater, reducing the effect of urbanization on local creeks and waterways, mitigating the heat island-effect, providing climate change resilience, reducing localized flooding, promoting natural ground infiltration and groundwater recharge, increasing biodiversity and habitat for native plants and animals, and enhancing property and neighborhood economic vitality and aesthetics.

The San Francisco Bay Regional Water Quality Control Board (SFRWQCB)'s Municipal Regional Stormwater NPDES Permit (MRP), Order No. R2-2015-0049, regulates pollutants in stormwater runoff from municipal storm drain systems throughout San Mateo, Santa Clara, Alameda, and Contra Costa Counties, as well as in the Cities of Fairfield, Suisun, and Vallejo, and the Vallejo Sanitation and Flood Control District. The City of Foster City is obligated to follow the mandates of the MRP to control stormwater discharge within City limits. The City of Foster City, as one of the 76 municipalities that are Permittees of the MRP, has developed this document, the Green Infrastructure Plan (GI Plan), in order to comply with the MRP's Green Infrastructure Planning and Implementation requirements.

This GI Plan describes how the City will, over time, transition its existing "gray" (traditional) infrastructure to "green" infrastructure. This local planning document determines, defines, and supports local GI goals and policies. This document also provides guidance to meet stormwater pollutant load reduction goals and creates a process for prioritizing the integration of GI into capital improvement projects. This plan is intended to be a "living document" and may change and adjust over time as regulatory requirements change, new information is gathered and analyzed, and technologies advance.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) EXEMPTION

Development and approval of this Green Infrastructure (GI) Plan will likely result in the construction or installation of GI improvements such as landscaping, irrigation, bioswales, stormwater capture devices, pervious paving, and rain gardens, which will improve the quality of stormwater on existing private property and/or in City rights-of-way and facilities via operation, repair and maintenance, replacement or reconstruction, and/or new construction or conversion of small structures.

Preparation and implementation of this Green Infrastructure Plan qualifies as a California Environmental Quality Act (CEQA) Class 1 categorical exemption (CEQA Guidelines Section 15301) for minor alteration of existing public or private facilities and structures such as highways, streets, sidewalks, gutters, and bicycle and pedestrian trails through addition of Green Infrastructure improvements that would involve no or negligible expansion of existing use. The policies contained herein also qualify as a Class 2 categorical exemption (CEQA Guidelines Section 15302), as they would involve replacement of existing storm drainage facilities with GI improvements that would have substantially the same purpose and capacity as the structures replaced. The policies in this plan further qualify as a Class 3 categorical exemption (CEQA Guidelines Section 15303) to the extent that new Green Infrastructure will be incorporated into new construction or in the conversion of, and/or minor modifications to, existing small structures and facilities. Lastly, this GI Plan qualifies as a California Environmental Quality Act Class 8 categorical exemption (CEQA Guidelines Section 15308), as the plan promotes the construction or installation of GI which will "assure the maintenance, restoration, enhancement, or protection of the environment" through improvement to water quality, provision of flood protection, and enhancement of community aesthetics. The City Council will provide final approval for adoption of this Green Infrastructure Plan, and a Notice of Exemption will be filed.

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GREEN INFRASTRUCTURE PLAN APPENDICES

ABBREVIATIONS

BASMAA	Bay Area Stormwater Management Agencies Association
C/CAG	City/County Association of Governments
CEQA	California Environmental Quality Act
CIP	Capital Improvement Program
City	City of Foster City
CWA	Clean Water Act
FY	Fiscal Year
GI	Green Infrastructure
GI Plan	Green Infrastructure Plan
GI TAC	Green Infrastructure Technical Advisory Committee
GIS	Geographic Information System
LID	Low Impact Development
MRP	Municipal Regional Stormwater NPDES Permit
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
PCBs	Polychlorinated Biphenyls
RAA	Reasonable Assurance Analysis
SFRWQCB	San Francisco Bay Regional Water Quality Control Board
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SMCWPPP	San Mateo County Water Pollution Prevention Program
SRP	San Mateo County Stormwater Resource Plan
SWRCB	State Water Resource Control Board
TMDL	Total Maximum Daily Load
WDR	Waste Discharge Requirements
WLA	Waste Load Allocation

1.0 INTRODUCTION

1.1 What is Green Infrastructure?

1.1.1 Basics of Green Infrastructure

A traditional stormwater management approach collects excess rainwater ("runoff") and dry weather runoff (or "non-rainwater", which is the flow of water which occurs during a period without rainfall, such as in instances of over-irrigation) through a series of "gray" infrastructure, such as curbs, gutters, storm drain structures, and piping. In this "collect and convey" methodology, stormwater is treated as a waste rather than a resource and is directed to receiving waters as quickly as possible and without treatment. As land becomes more developed over time, natural landscapes are converted to impervious areas and soils are compacted, reducing the amount of water which infiltrates into the ground, increasing both the amount of runoff and the speed with which it reaches local creeks and other waterbodies.

As the runoff travels over impervious surfaces, it collects pollutants such as heavy metals, oils, grease, trash, sediment, bacteria, nutrients, pesticides, and toxic chemicals from vehicles, construction sites, animals, landscaping activities, and industrial or commercial businesses. Over time, this leads to the pollution of local waterbodies. In the case of the San Francisco Bay, the water quality has degraded to the point of being "impaired", meaning that it cannot meet at least one of its beneficial uses due to insufficient water quality.[1] Figures 1 and 2 represent the differences between the hydrologic cycle before and after development, while Figure 3 represents a balanced approach to stormwater management using Green Infrastructure (GI).

In contrast to traditional "gray" infrastructure, GI is a means of restoring water quality through implementing a range of natural and built approaches to stormwater management that mimic natural systems. GI can reduce the amount of runoff that enters the traditional piped stormwater system below ground, prevent overflows that pollute nearby water bodies, clean stormwater, and allow water to reabsorb back into the ground. GI uses vegetation, soils, filter media, and/or natural processes to create healthier urban environments. At the scale of a city or town, GI refers to the network of natural areas that provide habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or project site, GI refers to stormwater management systems and features that mimic nature by absorbing and storing stormwater as well as reducing pollutants through filtration, infiltration, detention, and evapotranspiration.

[1] The SWRCB has defined the beneficial uses of the San Francisco Bay to be as follows: industrial service supply, industrial process supply, commercial and sport fishing, shellfish harvesting, estuarine habitat, fish migration, preservation of rare and endangered species, fish spawning, wildlife habitat, water contact recreation, noncontact water recreation, and navigation.

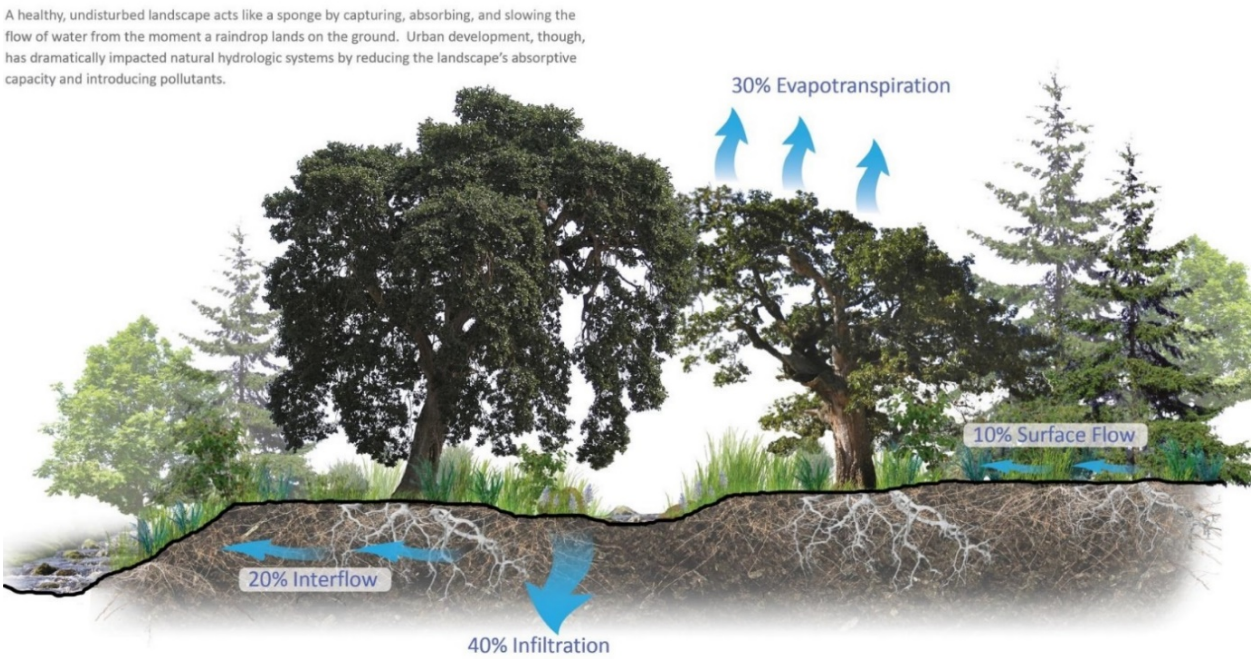


Figure 1. *Pre-Urban Development Water Cycle (SMCWPPP 2009).*

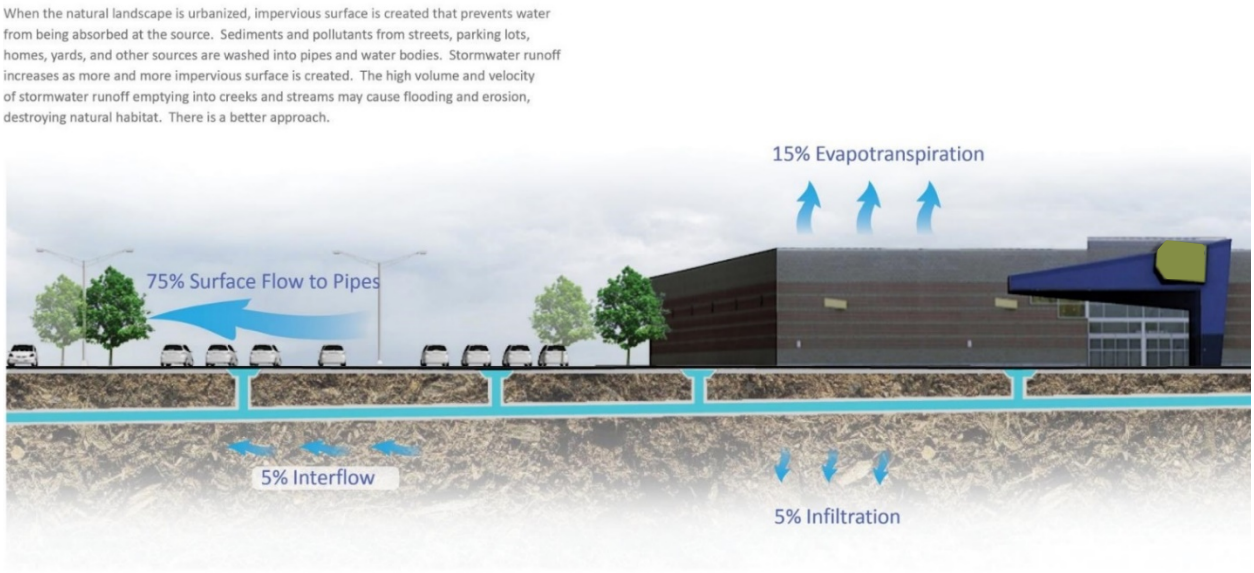


Figure 2. *Post-Urban Development Water Cycle (SMCWPPP 2009).*

GI measures are used on both public and private lands, such as roads and parking lots, and act as resilient, sustainable systems that retain, detain, filter, harvest, infiltrate, and/or evapotranspire runoff. Through such processes, GI limits the discharge of pollutants to the storm drain system and promotes the infiltration of stormwater into groundwater.

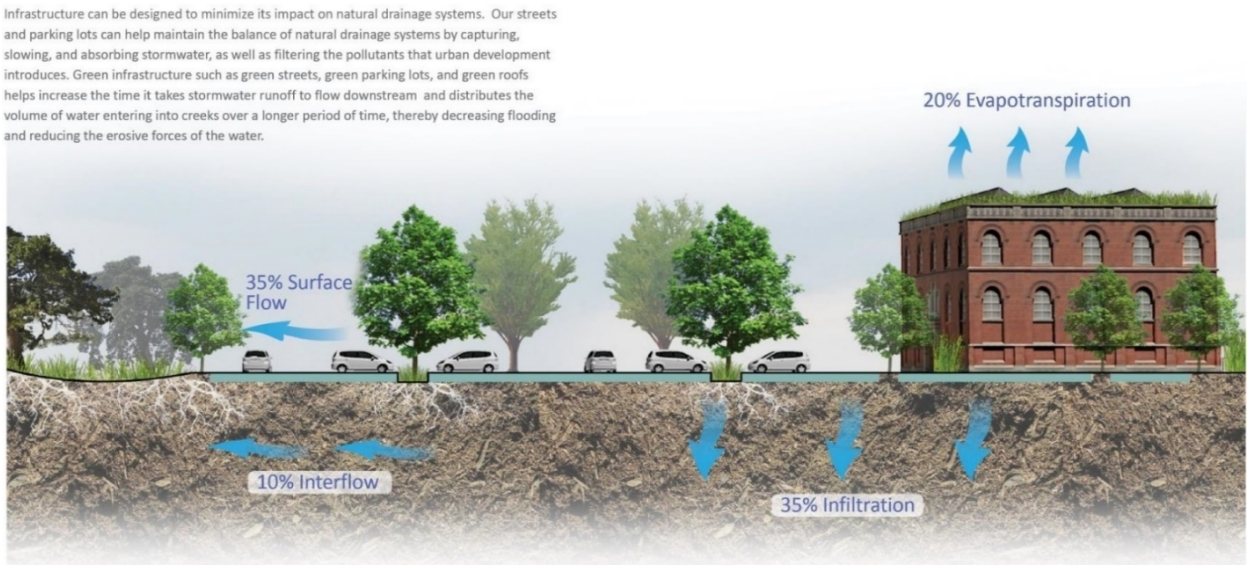


Figure 3. *Balanced Development Water Cycle (SMCWPPP 2009).*

GI provides amenities with many benefits beyond water quality improvement and groundwater replenishment, including reduction of flooding, creation of attractive streetscapes and habitats, and mitigation of the heat island effect.

Examples of GI include landscape-based stormwater "biotreatment" using soil and plants ranging from grasses to trees, pervious paving systems (e.g., interlocking concrete pavers, porous asphalt, and pervious concrete), rainwater harvesting systems (e.g., cisterns and rain barrels), and other methods to capture and treat stormwater. These practices are also known as Low Impact Development (LID) site design and treatment measures.

GI also includes best management practices (BMP) such as directing runoff from impervious areas to landscaping and minimizing impervious surfaces in new development, which act to remove pollutants and protect natural systems.

In addition to LID and BMP, GI includes facilities such as green walls and mechanical treatment (e.g., media filters or high flow-rate tree well filters), which can be used in areas where landscape-based approaches are not feasible. Some mechanical devices, such as hydrodynamic separators, offer pollutant removal capability and may offer partial treatment of the stormwater system. These can be used in isolation or can provide additional pollutant removal capability when installed in a "treatment train" with landscape-based systems. Table 1 features the various terminology used to describe water quality improvement measures, ranging from engineered GI facilities such as bioretention areas, to watershed-based practices which reduce pollutants to receiving waters, such as preservation of open space.

Table 1. *Water Quality Improvement Measures.*

Green Infrastructure Measures *These measures provide treatment of stormwater or intercept stormwater before it can collect pollutants.*		**Mechanical Treatment Measures** *These measures can improve water quality through the mechanical removal of pollutants.*
GI Planters Stormwater Planter (also known as a Bioretention or Biofiltration Area) Rain Garden Stormwater Curb Extension **GI Trees** Tree Well Stormwater Tree Interceptor Tree **GI Pavements** Pervious Pavement Pervious Pavers Porous Asphalt Porous Concrete	**Underground GI Systems** Infiltration System **GI for Buildings** Rainwater Harvesting Green Roof Green Wall **Other GI Vegetative Systems** Green Gutter Vegetated Swale (also known as a Bioswale) Self-Treating Areas Self-Retaining Areas	Media Filter *(Non-LID)* High-Flow Rate Tree Well Filter *(Non-LID)* Hydrodynamic Separator (Partial Treatment Credit) **Natural Systems** *Preservation of natural systems can help to support anti-degradation policies on a watershed-based scale.* Open Space Areas Landscaping **Other Best Management Practices** *These practices do not provide stormwater treatment, but they can help to improve water quality.* Street sweeping Water conservation Draining impervious surfaces to landscaping Detention systems

Information about various types of GI measures is provided in the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) *Green Infrastructure Design Guide (Design Guide)*[2] and *C.3 Regulated Projects Guide.*[3]

The *Design Guide* provides photos and renderings of example GI projects as well as detailed descriptions of various types of stormwater treatment measures. Figure 4 shows the key stormwater treatment measures featured in the *Design Guide*.

[2] The *Design Guide* can be found at SMCWPPP's website at https://www.flowstobay.org/gidesignguide.

[3] *C.3 Regulated Projects Guide* (formerly known as the *C.3 Technical Guidance)* can be found on the SMCWPPP "Flows to Bay" website at https://www.flowstobay.org/newdevelopment.

CHAPTER 2

2.0 Green Infrastructure Measures and Opportunities
Introduction

A Visual Guide of Green Infrastructure Measures

Stormwater Planters

Stormwater Curb Extensions

Rain Gardens

Tree Wells

Infiltration Systems

Pervious Pavement

Green Roofs

Rainwater Harvesting

Vegetated Swales

Green Gutters

Stormwater Trees

Interceptor Trees

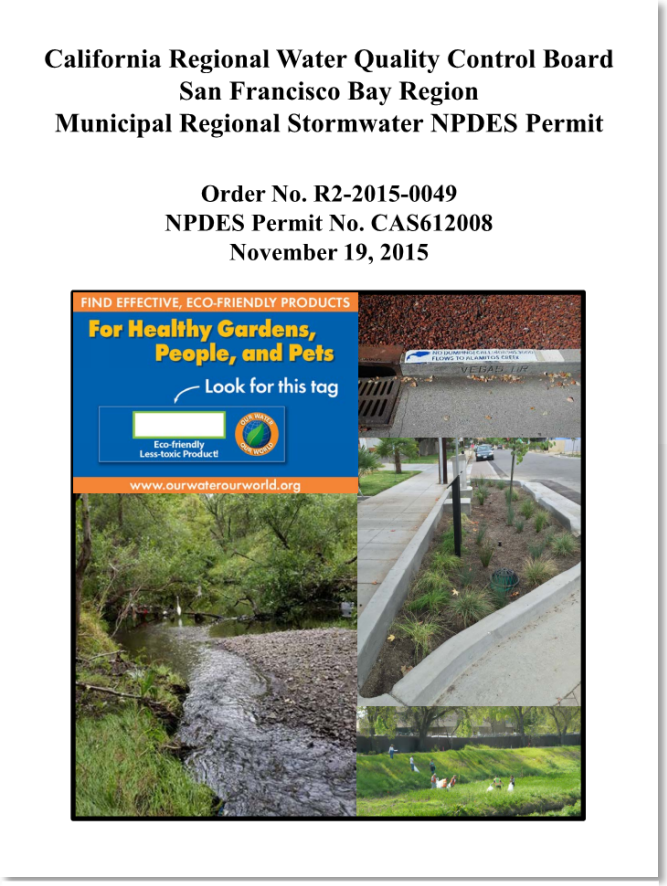
Green Walls

Figure 4. *Visual Guide of Green Infrastructure Measures (SMCWPPP 2019b).*

"Green Streets" are roadway projects which incorporate GI strategies to manage runoff. "Complete Streets" are streets designed with equal consideration to all modes of travel for enhancement of safety and access for cyclists and pedestrians. When combined, Complete Streets and Green Streets are referred to as "Living Streets," "Better Streets," and "Sustainable Streets." This "Living Streets" movement recognizes that environmentally- and holistically-designed streets achieve many benefits, including increased multi-modal travel and safety, cleaner water and air, improved flood and climate change resilience and mitigation, enhanced "sense of place," greater energy savings and habitat retention, in addition to higher property values.

1.1.2 Regulatory Water Quality Requirements

Section 402(p) of the federal Clean Water Act (CWA) requires National Pollutant Discharge Elimination System (NPDES) permits for stormwater discharges from Municipal Separate Storm Sewer Systems (MS4s), which are considered a significant contributor of pollutants to waters of the United States. The US Environmental Protection Agency (USEPA) delegates its authority to regulate MS4s to the State Water Resources Control Board, which, in turn, assigns many regulatory tasks to the Regional Water Quality Control Boards. The San Francisco Bay Regional Water Quality Control Board (SFRWQCB) oversees protection of water quality in the San Francisco Bay Area. In accordance with CWA Section 303(d), the SFRWQCB is required to establish Total Maximum Daily Loads (TMDLs) for certain pollutants that may be causing or threatening to cause or contribute to water quality impairment in the waters of the region. These pollutants include mercury, polychlorinated biphenyls (PCBs), pesticides, and sediment. There is not yet a TMDL for trash; however, trash is still considered a pollutant.



California Regional Water Quality Control Board San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (MRP).

NPDES Permittees, including the City of Foster City, are subject to the requirements of the recently reissued Municipal Regional Stormwater NPDES Permit for Phase I municipalities and agencies in the San Francisco Bay Area (Order R2-2015-0049), also known as the Municipal Regional Permit (MRP), which

became effective on January 1, 2016. The MRP applies to 76 large, medium, and small municipalities (cities, towns, and counties) and flood control agencies (collectively referred to as Permittees) that discharge stormwater to the San Francisco Bay.

Over the last thirteen (13) years, under successive NPDES stormwater permits, new and redevelopment projects on private and public property which result in the creation or modification of impervious area exceeding specified size thresholds (referred to as "Regulated Projects") have been required to mitigate impacts on water quality by incorporating site design, pollutant source control, stormwater treatment, and flow control measures as appropriate. LID treatment measures, such as rainwater harvesting and use, infiltration, and biotreatment, have been required on most Regulated Projects since December 2011. Construction of new roads is covered by these requirements, but projects related to existing roads and adjoining sidewalks and bike lanes are not Regulated Projects unless one or more travel lanes is added.

As of 2015, a new section of the MRP (Provision C.3.j) requires Permittees to develop and implement long-term GI Plans to address pollutants in stormwater discharges to meet Waste Load Allocation (WLA) and TMDL requirements. LID measures incorporated into GI design and retrofit projects can help remove regulated pollutants from stormwater runoff. For this reason, the MRP establishes a new linkage between GI and required reductions in discharges of polychlorinated biphenyls (PCBs) and mercury. The GI Plan is intended to serve as an implementation guide and reporting tool to provide reasonable assurance that urban runoff Total Maximum Daily Load (TMDL) wasteload allocations are met; the GI Plan also sets goals for reducing, over the long term, adverse water-quality impacts of urbanization and urban runoff to receiving waters. Over the next few decades, Permittees must reduce the loads of PCBs and mercury in stormwater discharges through various means, with a portion of these load reductions achieved through sediment reduction via the installation of GI systems.

Other pollutants, including trash and pesticides, should also be coordinated with the GI program since, when properly designed, constructed and maintained, biotreatment systems may also be credited toward trash and pesticide reduction goals.

Bioretention area located at City Hall.

1.1.3 Contributors to Pollution

Numerous human activities generate or otherwise contribute to pollution in stormwater and simultaneously impair the beneficial uses of receiving waterbodies. Types of stormwater-borne pollutants vary. The following pollutants of concern have resulted in impairments of waters from San Mateo County watersheds[4] and are regulated under the MRP:

- **PCBs.** Sources of PCBs are transformers or capacitors with leaking hydraulic fluids, lubricants, some plasticizers, building materials, and pesticide extenders. PCBs are released to the environment through spills, leaks, and improper disposal and storage. PCBs have not been produced since 1977, but they can be transported long distances and bind strongly to sediment and therefore persistent in the environment. In addition to treatment by GI, PCBs are managed through the City's PCB Demolition Program through control of waste resulting from building

[4] *Stormwater Resource Plan for San Mateo County.* (2017, February). San Mateo Countywide Water Pollution Prevention Program. City/County Association of Governments of San Mateo County. Prepared by Paradigm Environmental and Larry Walker Associates, Inc.

demolition and referral of source properties to the SFRWQCB. Property owners are required to address any PCB-related impacts.

- **Diazinon and Other Pesticides.** Pesticides have been used throughout the San Francisco Bay Area to manage pests, and are released into the environment during manufacture, formulation, distribution and retail, landscape maintenance, and through agricultural usage (SFRWQCB 2016). Urban runoff transports these pesticides to local water bodies. In addition to treatment by GI, pesticides are reduced through implementation of a Pesticides Toxicity Control Program, which includes an Integrated Pest Management program aimed at reducing the use of pesticides.
- **Mercury.** Mercury sources include historic mines, urban runoff, wastewater discharges, resuspension of mercury-laden sediment in the Bay, and atmospheric deposition (SFRWQCB 2016). In addition to treatment by GI, levels of mercury are reduced through implementation of a Mercury Control Program, which includes referral of source properties to the SFRWQCB.
- **Trash.** Trash accumulates in waterbodies due to littering and dumping of debris which is then transported to water through wind and urban runoff. Plastic represented 60% of the trash accumulated from a 2007 study of six (6) watersheds in the County (SMCWPPP 2007). In addition to treatment by GI, levels of trash are reduced by various trash prevention and control actions, such as installation and operation of trash capture devices, street sweeping, storm drain inlet cleaning, and hot spot cleanups.
- **Sediment.** Sources of sediment include erosion of creek banks and incision of creek streambeds (often caused by increased stormwater flows resulting from development) as well as excavation and deposition of sediment (through construction, historic logging, agriculture, and similar activities). Sediment is controlled via GI and mechanical treatment devices, such as hydrodynamic separators.
- **Indicator Bacteria.** Sources of indicator bacteria along the shoreline of San Francisco Bay, beaches of the Pacific Ocean, and waterbodies of San Mateo County such as the Marina Lagoon, stem from urbanization as well as natural background sources. Urban stormwater runoff carries pet waste and litter which contributes to coliform bacteria. Additional sources include sanitary sewer leaks and overflows, boat waste, litter from recreation, and direct deposit by animals such as waterfowl (SFRWQCB 2013).

1.1.4 Benefits of Green Infrastructure

GI is a long-term solution to reduce the amount of water pollution entering nearby creeks, rivers, and the ocean by utilizing natural systems, such as water retention and the absorption capabilities of vegetation and soil, to treat urban runoff. Increased implementation of GI will ultimately lead to improved quality of urban water discharge.

GI is associated with a range of benefits to environmental and human health, especially in urban and suburban areas. For example, a stormwater curb extension in a commercial area provides both improved water quality and traffic calming. The City will prioritize the types and locations of GI which furnish multiple benefits. Table 2 lists the key benefits of GI.

Table 2. *Green Infrastructure Benefits.*

1.2 Purpose, Goals, and Benefits of the Green Infrastructure Plan

1.2.1 Statement of Purpose and GI Plan Goals

This GI Plan describes how the City will shift its impervious surfaces and storm drain infrastructure from "gray" (traditional) to "green." In other words, the plan describes how the City will change processes and practices over time to replace infrastructure which directs runoff directly into storm drains and receiving waters with Green Infrastructure, which slows overland flow by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and evapotranspiration, and utilizes bioretention and other similar methods to treat stormwater runoff.

The GI Plan also demonstrates the City's long-term commitment to the implementation of GI to help reduce loads of pollutants conveyed in stormwater and discharged into local waterways. The GI Plan establishes milestones for areas of impervious surface to be retrofitted with GI and serves as an implementation guide and reporting tool to provide reasonable assurance that urban runoff TMDL wasteload allocations will be met. It sets goals for reducing the adverse water quality impacts of urbanization and urban runoff on receiving waters over the long term.

Bioretention area located at Lincoln Centre.

The GI Plan identifies means and methods to prioritize particular areas and projects within the City's jurisdiction, at appropriate geographic and time scales, for the implementation of GI projects. It will also include an approach for tracking sites within the City's jurisdiction which are treated by GI controls, as well as areas of directly connected impervious surface (i.e., impervious surface which drains directly to the storm drain system without first flowing across permeable land area).

The City will act to meet the milestones established in the GI Plan by incorporating GI, where feasible, into the Capital Improvement Program (CIP). In addition, the City will strive to collaborate in regional efforts to improve water quality through multi-jurisdictional projects. To overcome the City's many constraints that prohibit the use of several traditional methods of GI, the City will explore alternatives, such as the use of source control measures. The GI Plan goals and objectives are summarized in Table 3.

Table 3. *Green Infrastructure Plan Goals and Objectives.*

GI Plan Goals	Objectives
Protect the Environment	• Improve water quality by using GI to treat stormwater runoff • Protect local creeks and waterways through reduction of sediment and peak runoff • Raise public awareness about pollution prevention
Reduce Urban Flooding	• Reduce peak runoff volumes and velocities using GI
Use Rainwater as a Resource	• Harvest and use runoff for non-potable purposes • Promote neighborhood greening and create habitat using landscape-based GI measures
"No Missed Opportunities"	• Establish procedures and practices to require and implement GI practices in public and private projects as part of the City's regular course of business • Set milestones and goals for water quality improvement • Identify and prioritize areas and projects within the City's jurisdiction for the implementation of GI projects • Incorporate GI where feasible in the CIP • Coordinate the GI Plan with other local planning documents and promote the multiple benefits of GI • Establish a means of tracking potential and completed GI projects

The GI Plan aligns to existing City documents such as the Local Hazard Mitigation Plan (LHMP) and Climate Action Plan (CAP) and will be coordinated with other documents such as the General Plan to achieve multiple potential benefits to the community. These benefits include water and air quality improvements, reduced flooding, increased water supply, traffic calming, safer pedestrian and bicycle facilities, climate resiliency, improved wildlife habitat, and a more pleasant urban environment. Refer to Chapter 7,

"Integration with Other Planning Documents," for more information about how the GI Plan coordinates with various other planning documents.

1.2.2 Integration of GI Plan with Provision C.3

The MRP requires Permittees to use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in new and redevelopment projects, with the aim of addressing stormwater runoff pollutant discharges and preventing increases in runoff flows from new and redevelopment projects. Projects which meet the MRP-established thresholds must include stormwater treatment systems and are called "Regulated Projects".

In the MRP, the SFRWQCB states that the GI Plan's implementation is required, in part, as an alternative to expanding the definition and lowering the threshold of Regulated Projects prescribed in Provision C.3.b.[5] Regulated Projects are required to treat their site stormwater with LID site design and treatment control measures, thus contributing to the City's overall GI and sustainability goals. Lower thresholds for Regulated Projects would result in more projects being required to incorporate GI as a condition of new or redevelopment. The SFRWQCB may opt to lower this threshold in a future permit, however, if progress towards GI milestones is deemed insufficient.

The City is committed to protection of its natural resources, and to that effect will continue to provide oversight of implementation of LID on private projects in accordance with Provision C.3 requirements. The City will also aim to incorporate LID and GI into CIP projects.

The City will plan, analyze, implement, and credit GI systems for pollutant load reductions on a watershed scale. One focus of the GI Plan is the integration of GI systems into Non-Regulated public rights-of-way projects. Another objective of the GI Plan is to provide incentives or opportunities for private property owners to add or contribute GI elements to Non-Regulated projects. However, the GI Plan is not intended to impose retrofit requirements on private property outside the standard development application review process for projects already Regulated by the MRP. Additionally, the GI Plan provides a mechanism to establish and implement alternative or in-lieu compliance options for Regulated Projects as well as to account for and justify Special Projects in accordance with Provision C.3.e.[6]

[5] Since 2006, private or public projects that create or replace 10,000 square feet or more of impervious surface have been deemed Regulated Projects under Provision C.3 of the MRP. Effective December 1, 2011, the threshold was reduced from 10,000 to 5,000 square feet for uncovered parking areas, restaurants, auto service facilities, and retail gasoline outlets. Effective 1/1/16, Under MRP 2.0, all projects including single-family dwellings with ≥2,500ft^2 and <10,000ft^2 of impervious surface must install one or more of six (6) specified LID site design measures.

[6] On November 28, 2011, the SFRWQCB amended the MRP to allow LID treatment reduction credits for smart growth, high density, and transit-oriented development projects which meet certain requirements. "Special Projects" can use non-LID treatment, such as high flow-rate media filters and high flow-rate tree well filters.

1.2.3 Benefits of Developing a GI Plan

Currently, most of the infrastructure that has been constructed within the City is classified as "gray" infrastructure. The City is working toward fostering a more sustainable urban community by incorporating GI components in Capital Improvement Projects. This GI Plan can be used to educate City staff, developers, and the general community on both the nature of GI as well as the environmental, economic, and human health benefits of cultivating a climate in which opportunities for incorporation of GI are identified and pursued. Additionally, the GI plan provides guidelines for implementation of GI in future developments. Benefits of this GI Plan include the following:

- Aids the City's and County's mission to create sustainable communities
- Facilitates systematic integration of GI into existing practices
- Identifies priority implementation locations
- Supports the City in meeting current and future permit requirements
- Assists in understanding of compliance costs as well as planning and budgeting for future implementation

Bioretention Area at North Peninsula Jewish Campus.

1.3 Overview of Green Infrastructure Plan Development Process

1.3.1 Regional and SMCWPPP Guidance and Inter-Agency Collaboration

Since the issuance of MRP 2.0, the City of Foster City has undertaken a substantial effort to develop the GI Plan. In collaboration with the SMCWPPP Green Infrastructure Technical Advisory Committee (GI TAC), which was formed in April 2016 to address the new permit requirements, the City has worked diligently to develop the elements of the GI Plan. Through SMCWPPP, the City has participated in and supported regional (BASMAA) efforts, including the preparation of technical projects, memos, and reports. **Refer to Appendix F for more information about the key GI TAC deliverables.**

1.3.2 Workplan Development and Adoption

The MRP requires all Permittees to adopt a GI Workplan consisting of a framework for completing the GI Plan and including a statement of purpose, tasks, and timeframes to complete the required elements of the GI Plan. The City of Foster City adopted a GI Workplan on June 5, 2017 through City Council Resolution 2017-37.

1.3.3 Alignment with City Plans, Policies, and Programs

GI implementation aligns with existing City plans, policies, and programs, such as the General Plan and Climate Action Plan, because it can help to provide multiple benefits to the community, as listed in Section 1.1.4.

Chapter 7, "Integration with Other Planning Documents", describes how existing planning documents coordinate with the GI Plan, and which planning documents will be updated to further support implementation of GI.

Chapter 10, "Implementation Approach", describes how the City's standard operating procedures, Municipal Code, maintenance program, and internal policies help to support implementation of GI.

1.3.4 Outreach and Education

Chapter 9, "Outreach and Education", describes which outreach and education efforts were conducted at a City- or Countywide level throughout the GI Plan development process. Chapter 9 also describes the education and outreach strategy to be implemented to raise awareness about water quality and pollution as well as to help promote the implementation of GI.

1.3.5 Project Oversight

An interdepartmental task force headed by the Public Works Department and consisting of representatives of various other departments was formed. At various stages in the planning process, Public Works coordinated with the City Council, Community Development Department, City Manager's

Office, Parks and Recreation Department, Building Maintenance Department, and the City Attorney to discuss the planning, requirements, and anticipated work products.

Additional oversight was provided by the GI TAC, which provided City staff with information and feedback about various GI Plan elements. In order to develop a GI Plan which is consistent with others being developed in San Mateo and Santa Clara counties, this GI Plan was developed using a combination of a GI Plan template provided by SCVURPPP and the model table of contents provided by SMCWPPP.

2.0 CITY DESCRIPTION AND BACKGROUND

2.1 Background and Land Use

Incorporated in 1971, the City of Foster City is located halfway between San Francisco and San Jose on the western shoreline of the San Francisco Bay, east of US-101 on an engineered landfill in the marshes of San Francisco Bay (see Figure 5). Foster City encompasses 12,345 acres, of which 9,726 acres are part of San Francisco Bay and Belmont Slough, and 2,619 acres are land area[7] (2,448 acres are jurisdictional area). This equates to approximately four (4) square miles of land area. The City is bisected by State Route 92 (the J. Arthur Younger Freeway), which runs between Half Moon Bay to the west and Hayward and Highway 880 to the east via the San Mateo-Hayward Bridge.

Figure 5. *Foster City Regional Location.*[7]

The City of Foster City was developed under a master plan and represents the first successful planned community in California. Since the inception of the master plan, the City has designated areas to residential, commercial, and light industrial development. Since its construction, Foster City has remained primarily residential. Over the years, the City has actively pursued commercial and light industrial development. These developments are mostly located along the San Mateo Bridge (Highway 92), which runs through the northern third of the City.

Businesses are attracted to Foster City due to its proximity to major transportation centers in the Bay Area, such as the San Mateo Bridge, State Route 92, US-101, and the San Francisco Airport. Businesses are further attracted to the City due to its amenities, strong economy, and skilled labor force. Several major corporations are located within Foster City, including Gilead Sciences, Applied Biosystems (a subsidiary of Thermo Fisher Scientific), VISA International, Innovant, Zoox, and QuinStreet.

Land uses within Foster City are summarized in Table 4 and Figures 6 and 7. Foster City is comprised of seven (7) land uses, including Residential, Commercial and Services, Open Space, Parks, Industrial,

[7] Metropolitan Planning Group and City of Foster City Department of Community Development. *Community Profile.* Regional Location Map, page 2. https://www.fostercity.org/commdev/page/foster-city-community-profile. Accessed 2019.

Public/Semi-Public, and Elementary Schools. Figure 7 shows the City land uses by geographic location from the General Plan.

Table 4. *Percentage of Foster City's area within land use classes identified by ABAG (2006).*

Land Use Category	Area (Acres)	Percent of Area
Residential*	1565.5	63.6%
Commercial and Services	466.6	19.0%
Open Space	164.1	6.7%
Parks	121.5	4.9%
Industrial	54.8	2.2%
Public/Semi-Public	51.4	2.1%
Elementary Schools	36.2	1.5%
TOTAL	**2460.1**	**100%**

*Includes approximately 83.2 acres of California Department of Transportation (Caltrans) right-of-way.

Table 4 and Figure 6 include areas that would be considered non-jurisdictional, such as school district properties and California State Route 92.[8] California State Route 92 on this exhibit represents approximately 83.2 acres.

A Permittee's jurisdictional area is defined as the urban land area within a Permittee's boundary that is not subject to stormwater NPDES Permit requirements for traditional or non-traditional small MS4s (i.e., Phase II MS4s), including school districts, the California Department of Transportation, and areas owned and maintained by the State of California, the U.S. federal government, or any other municipal agency or special district, such as the San Mateo County Flood Control District.

[8] In Figure 6, Highway 92 is erroneously grouped with a larger residential area due to there being no ABAG land use category for Caltrans right-of-way.

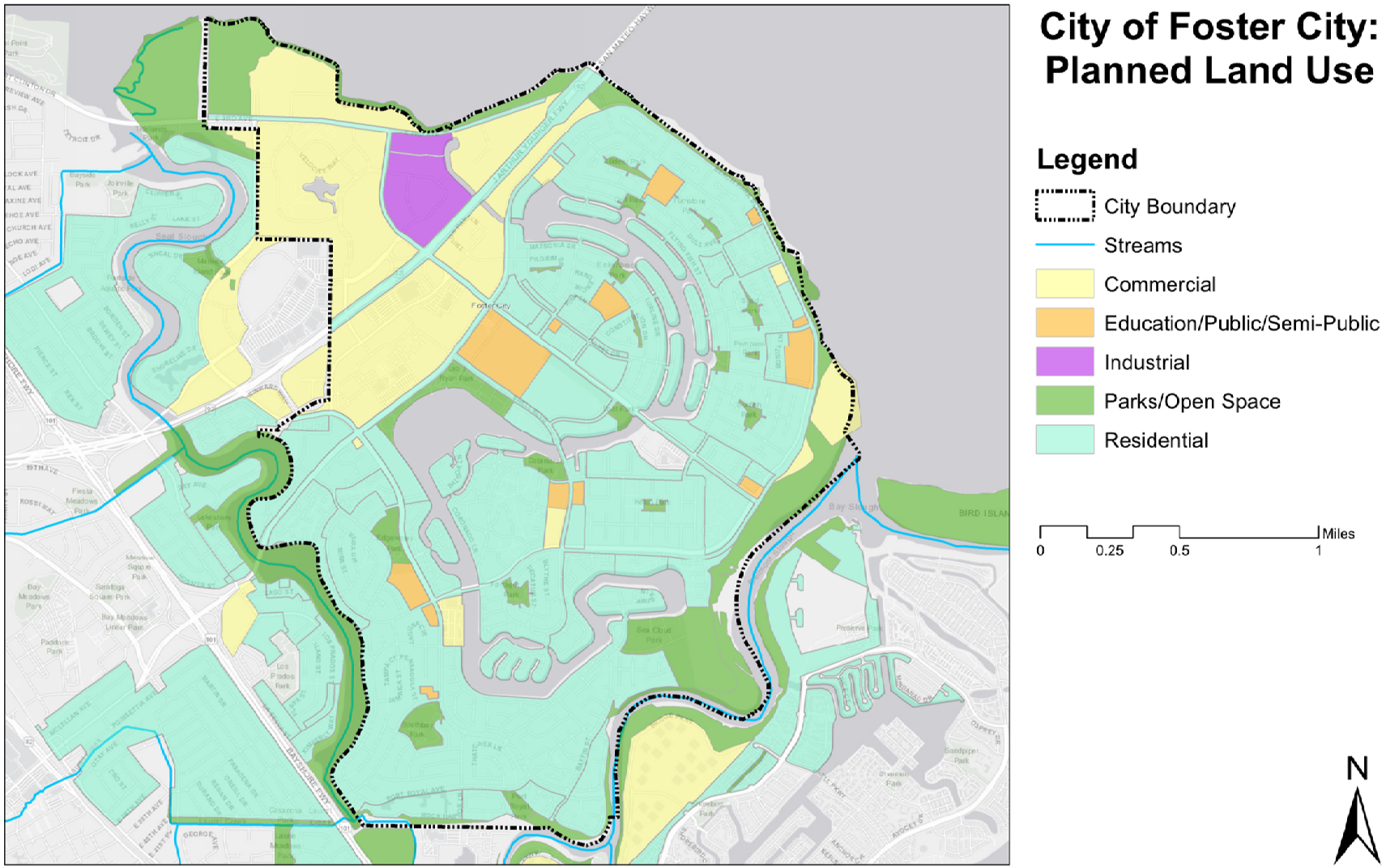


Figure 6. *Map of Foster City land use classes identified by ABAG (2006).*

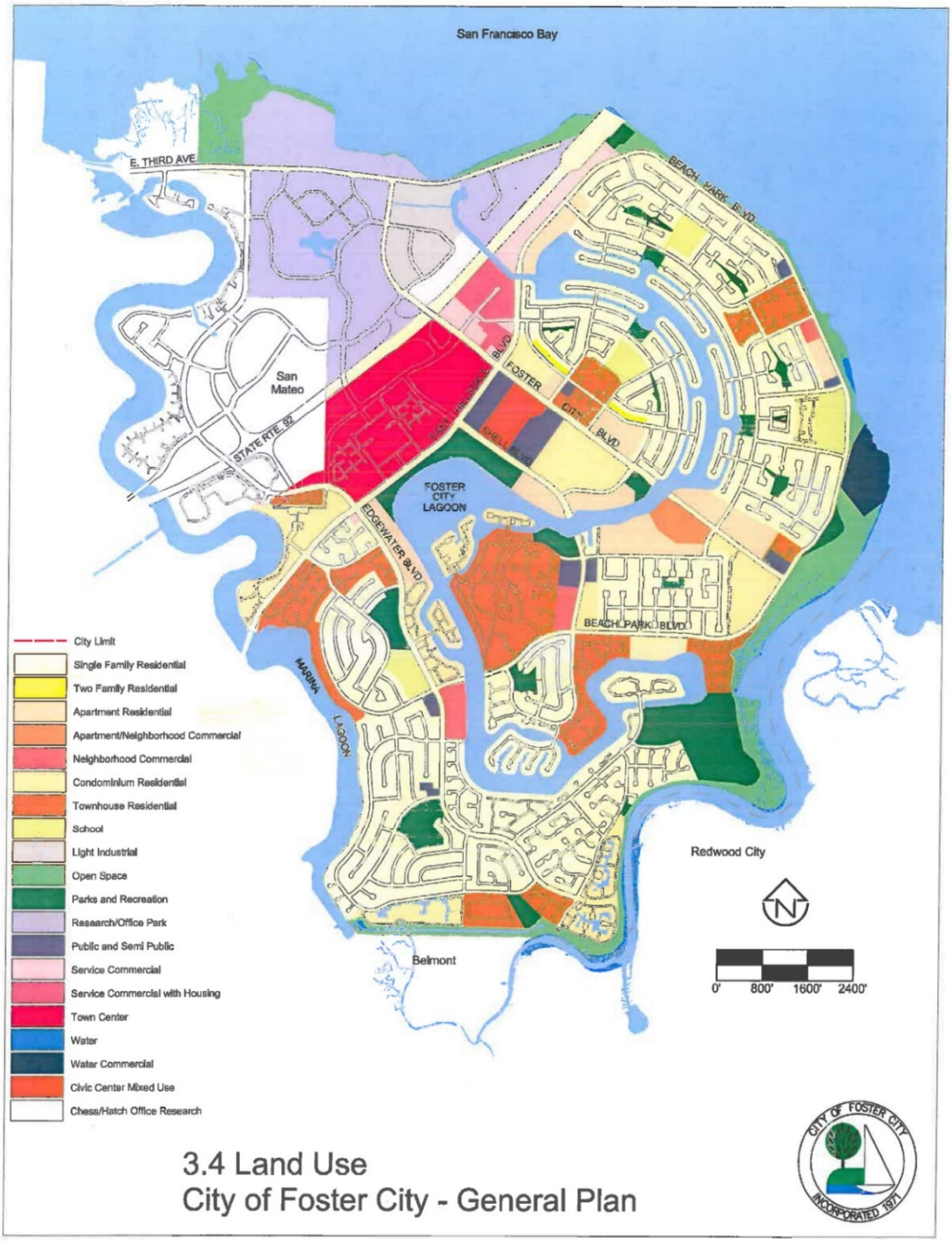


Figure 7. *City of Foster City Land Use.*[9]

[9] *Foster City 2030 General Plan.* (2016) City of Foster City. Department of Economic and Community Development. Planning Division.

2.2 Water Resources

The Foster City Lagoon, as a drainage detention basin, is designed for a 100-year storm, or a storm of such severity that it is likely to occur only once each century. The lagoon therefore provides maximum drainage security for Foster City. Stormwater collected throughout the City flows to the Foster City Lagoon. All stormwater enters the storm drain system through curb inlets and catch basins and then drains into the lagoon, from which it is subsequently pumped into the Bay. It is unlawful to dispose of any substances that may contaminate the lagoon and stormwater system or cause blockages of the storm drainage system.

Foster City's levee system is primary designed for flood protection. Aside from flood protection, the levee system also provides recreational uses for the community. Serving as a main link to the Bay Trail, residents can enjoy walking, running, bicycling, and skating on the levee pathway.

Foster City is not within any natural watershed; however, it does border two (2) watersheds: Seal Slough and Belmont Slough.

2.3 Transportation

Regional vehicular access to the City is provided by State Route 92, which passes through the northern third of the City. Access is also provided by US-101 via Hilldale Boulevard, which is used primarily by Foster City residents and employees. Other transportation options include SamTrans (San Mateo County Transit District), Caltrain, AC Transit (Alameda-Contra Costa Transit District), and BART (Bay Area Rapid Transit).

City shuttles provide transportation throughout Foster City and connect to major transportation hubs in the Bay Area. The City, working with the Peninsula Traffic Congestion Relief Alliance, provides shuttle service to Foster City residents and employees in Foster City to the Hillsdale Shopping Center and the Bridgepointe Shopping Center, both located in San Mateo. The Peninsula Traffic Congestion Relief Alliance, in conjunction with several employers, provides shuttle service to the Millbrae lntermodal (BART and Caltrain) Station Monday through Friday during commute hours.

SamTrans operates a bus service throughout Foster City and the San Francisco Peninsula, interconnecting with virtually all other public transit agencies in the Bay Area. SamTrans runs four (4) routes in Foster City: Route 54, Route 57, Route 251, and Route 256. Caltrain provides commuter rail service between San Francisco and Gilroy along the San Francisco Peninsula. The closest Caltrain stations are located on Hillsdale Boulevard and El Camino Real in San Mateo, and at 995 El Camino Real in Belmont. Foster City residents and employees can connect to the Caltrain station by car, SamTrans Route 251, employer shuttles, the Foster City Connections Shuttle, or the Senior Express Shuttle. AC Transit Line M links the transit center at the Hayward BART Station with the Hillsdale Caltrain Station in San Mateo and Redwood Shores. Line M operates via Highway 92 (the San Mateo-Hayward Bridge) to serve commercial and business centers at Bridgepointe and Metro Center, the Foster City Library and City Hall, and, via East Hillsdale Boulevard, the Hillsdale Caltrain Station and Hillsdale Mall. The nearest BART station is the

Millbrae Station, which also provides a connection to Caltrain. Access to the Millbrae Station is provided by the North Foster City Shuttle or by transferring from Caltrain. BART provides access to San Francisco Airport, Downtown San Francisco, and the East Bay.

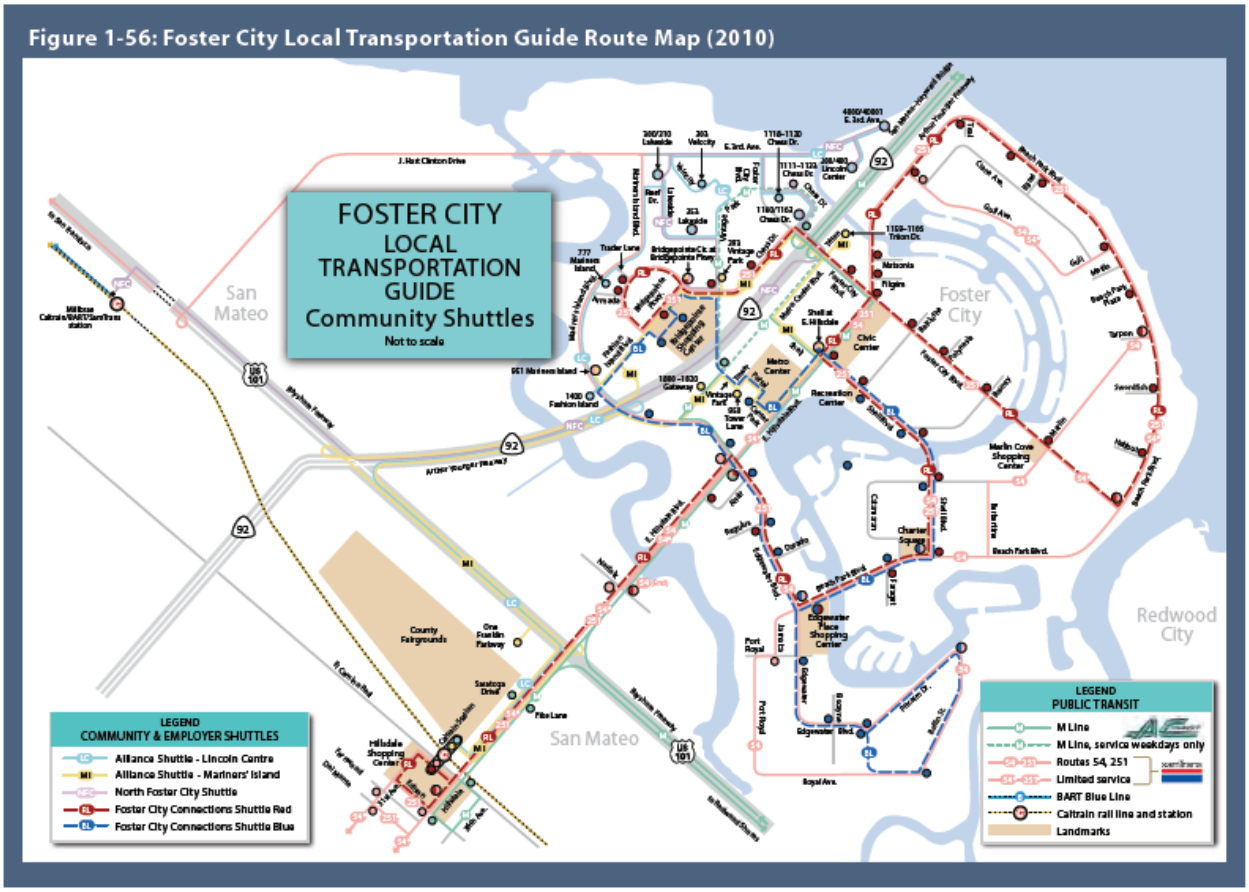


Figure 8. *Foster City Local Transportation Guide Route Map.*[10]

2.4 Population and Growth Forecasts

According to the U.S. Census Bureau 2011-2015 American Community Survey 5-Year Estimates[11], Foster City has a population of 32,377 with an average household size of 2.62. Of the 32,377 residents who call Foster City home, 21.5% are under the age of 18, 5.2% are between 18 and 24, 30.6% are between 25 and 44, 26.8% are between 45 and 64, and 15.9% are 65 or older (see Figure 9 on the next page). The median household income was $123,039 in 2015.

[10] Metropolitan Planning Group and City of Foster City Department of Community Development. Community Profile. Regional Location Map, page 2. https://www.fostercity.org/commdev/page/foster-city-community-profile. Accessed 2019.

[11] American FactFinder. United States. Census Bureau. Accessed 2019. https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml.

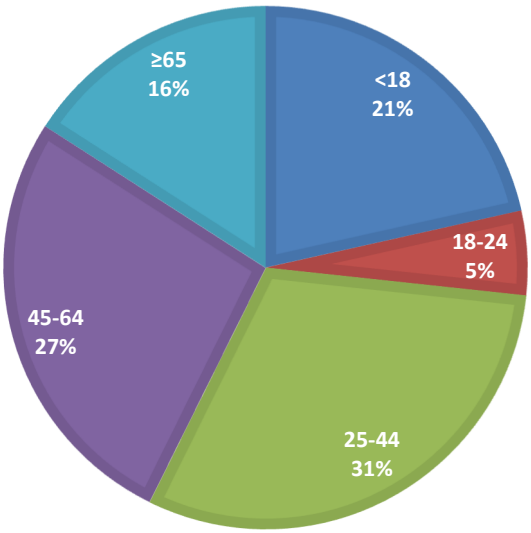


Figure 9. *Foster City Age Distribution (2011-2015 American Community Survey).*

2.5 Characteristics that Impact Green Infrastructure Implementation

Specific City characteristics that may hamper implementation of Green Infrastructure (GI) include the following:

- **Limited underground space.** The majority of the City is built-out with very little vacant land available, which limits the space available for GI.
- **High groundwater and low infiltration potential.** The seasonal groundwater level in Foster City is high due to the City's elevation and proximity to the San Francisco Bay. In addition, the soil types in the City have low permeability rates. Therefore, use of infiltration measures is typically not feasible.
- **Limited opportunities in CIP.** The projects listed in the City's upcoming Capital Improvement Program (CIP) projects have little or no GI potential, were in advanced stages of development and therefore could not be feasibly modified to incorporate GI, or were classified as maintenance projects. Therefore, the City cannot practicably incorporate GI into the current CIP.
- **Tidal flooding.** The City has a high potential for flooding due to the combined impacts of high tides, heavy storm flows, and projected sea level rise. The City's levees protect the Bay from tidal flooding and require significant maintenance and improvement. In June 2018, Foster City voters passed Measure P for the issuance of General Obligation bonds for the City's Levee Protection Planning and Improvements Project. The opportunity for incorporation of GI in the levee improvement project has been reviewed and determined to not be feasible.
- **Limited ability to discharge treated runoff.** The City's storm drain system operates under a "wet" condition, in that the storm drain pipes are constantly full of water due to tidal action from the

San Francisco Bay. In addition, the storm drains are very shallow. Together, these constraints make it difficult to incorporate some types of stormwater treatment measures, such as underground detention or deep stormwater planters, and restrict use of large trash capture devices or pre-treatment devices, such as hydrodynamic separators.

- **Too low-density for large-scale rainwater harvesting.** Rainwater harvesting in Foster City is typically not implemented because it is not possible to harvest, store, and use enough runoff to provide treatment for an entire site. Rainwater harvesting could be used for partial treatment of many sites.

Specific City opportunities that may positively affect GI implementation include the following:

- **Private redevelopment.** The City has a fair amount of commercial or light industrial land that is underutilized and being redeveloped. The City anticipates significant future redevelopment between now and 2040. Provision C.3 Regulated projects will help to add GI within the City limits which can help the City meet its 2020, 2030, and 2040 GI milestones. Recent and upcoming redevelopment projects include GI as part of compliance with Provision C.3 of the MRP. For example, the Gilead campus is currently in the midst of a long-term redevelopment process, and the Lincoln Biomedical Research facility Phase 1 project was recently redeveloped.
- **Continued CIP screening.** The City will continue to screen its Capital Improvement Program (CIP) for projects that may have GI potential.
- **Climate resiliency synchronicity.** The City published a Climate Action Plan in 2015. It may be possible to coordinate resiliency upgrades for climate change readiness with GI.
- **Bike and pedestrian improvements synchronicity.** The City performed an early assessment of GI opportunities that can be effectively combined with Safe Routes to School improvements as part of a Bicycle, Pedestrian, and Intersection Evaluation Study.

3.0 GREEN INFRASTRUCTURE MILESTONES

3.1 Regulatory Background

Provision C.3.j of the MRP specifies that the GI Plan should include the following:

> *"Targets for the amount of impervious surface, from public and private projects, within the Permittee's jurisdiction to be retrofitted over the following time schedules, which are consistent with the timeframes for assessing load reductions specified in Provisions C.11 and C.12: (i) By 2020; (ii) By 2030; and (iii) By 2040."*

This chapter discusses the required load reductions to be achieved via Green Infrastructure (GI) at the Countywide level and includes various approaches that can be taken at the City and/or County level to achieve load reductions within specified compliance periods. The load reduction performance criteria are established through Provision C.11.c (for mercury) and Provision C.12.c (for PCBs).

Flow-through planter at Triton Pointe.

3.2 Determining Load Reduction Milestones

3.2.1 Reasonable Assurance Analysis (RAA) Background

Collectively, San Mateo County Permittees (including the City of Foster City) prepared a Reasonable Assurance Analysis (RAA) to demonstrate quantitatively that the proposed control measures will result in sufficient load reductions to meet Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) and to set goals for the amount of GI needed to meet the portion of PCB and mercury load reduction the MRP assigns to GI (SFBRWQCB 2015). The RAA allows the City to engage in a cooperative effort with other San Mateo County municipalities while also operating under City-specific stormwater quality goals and the City's unique implementation strategies, tools, and processes set forth in this GI Plan.

The RAA is a tool for San Mateo County Permittees to achieve the following:

1. Determine a quantitative 2040 load reduction goal for each municipality. If each municipality meets this goal, then San Mateo County will collectively have met the performance criteria of the MRP.
2. Establish sample "recipes" for achieving load reduction through a combination of existing projects, future new and redevelopment, regional projects, and construction of new streets (or retrofit of existing streets) as green streets.
3. Evaluate the financial resources needed to meet the 2040 goal and determine the feasibility of meeting this goal based on City context, knowledge, and opportunities.
4. Serve as a discussion tool to facilitate conversations about countywide collaboration, such as the pooling of funds to construct regional projects or the use of a credit trading program.
5. Project the amount of GI to be constructed via future new and redevelopment.
6. Assist the City in forecasting the relative ease or difficulty of green street implementation, based on a prioritization of green street opportunities.
7. Facilitate the creation of a tracking tool for GI implementation by establishing goals that are easily tracked and measured.

The EPA RAA Guide provides an example of three (3) differing perspectives for defining reasonable assurance (USEPA 2017):

- **Regulator Perspective.** Reasonable assurance is a demonstration that the implementation of a GI Plan will result in sufficient pollutant reductions over time to address TMDL WLAs or other targets specified in the MRP.
- **Stakeholder Perspective.** Reasonable assurance is a demonstration that specific management practices are identified with sufficient detail and implemented on a schedule to ensure that necessary improvements in water quality will occur.

- **Permittee Perspective.** Reasonable assurance is based on a detailed analysis of the TMDL WLAs and associated MRP targets themselves, and a determination of the feasibility of those requirements. The RAA may also assist in evaluating the financial resources needed to meet pollutant reductions based on schedules identified in the MRP.

The SMCWPPP RAA was developed by Paradigm Environmental, and consists of two (2) reports:

- **Phase I Baseline Modeling Report.** Provides documentation of the development, calibration, and validation of the baseline hydrology and water quality model, and the determination of PCB and mercury load reductions to be addressed through GI implementation (SMCWPPP 2018b).
- **Phase II Green Infrastructure Modeling Report.** Provides documentation of the application of models to determine the most cost-effective GI implementation on a municipality-specific basis, setting stormwater improvement goals for the GI Plan (SMCWPPP 2019c).

Per the EPA "Developing Reasonable Assurance" guide, stormwater NPDES programs are shifting from ensuring compliance through a standard analytical- and modeling-based approach to a focus on the specific stormwater management strategies and processes that will be necessary over the long term to achieve water quality goals. The RAA acts as a benchmarking strategy and process for assessment of the City's progress in implementing GI. The planning process inputs and outputs of a reasonable assurance analysis are summarized in Figure 10.

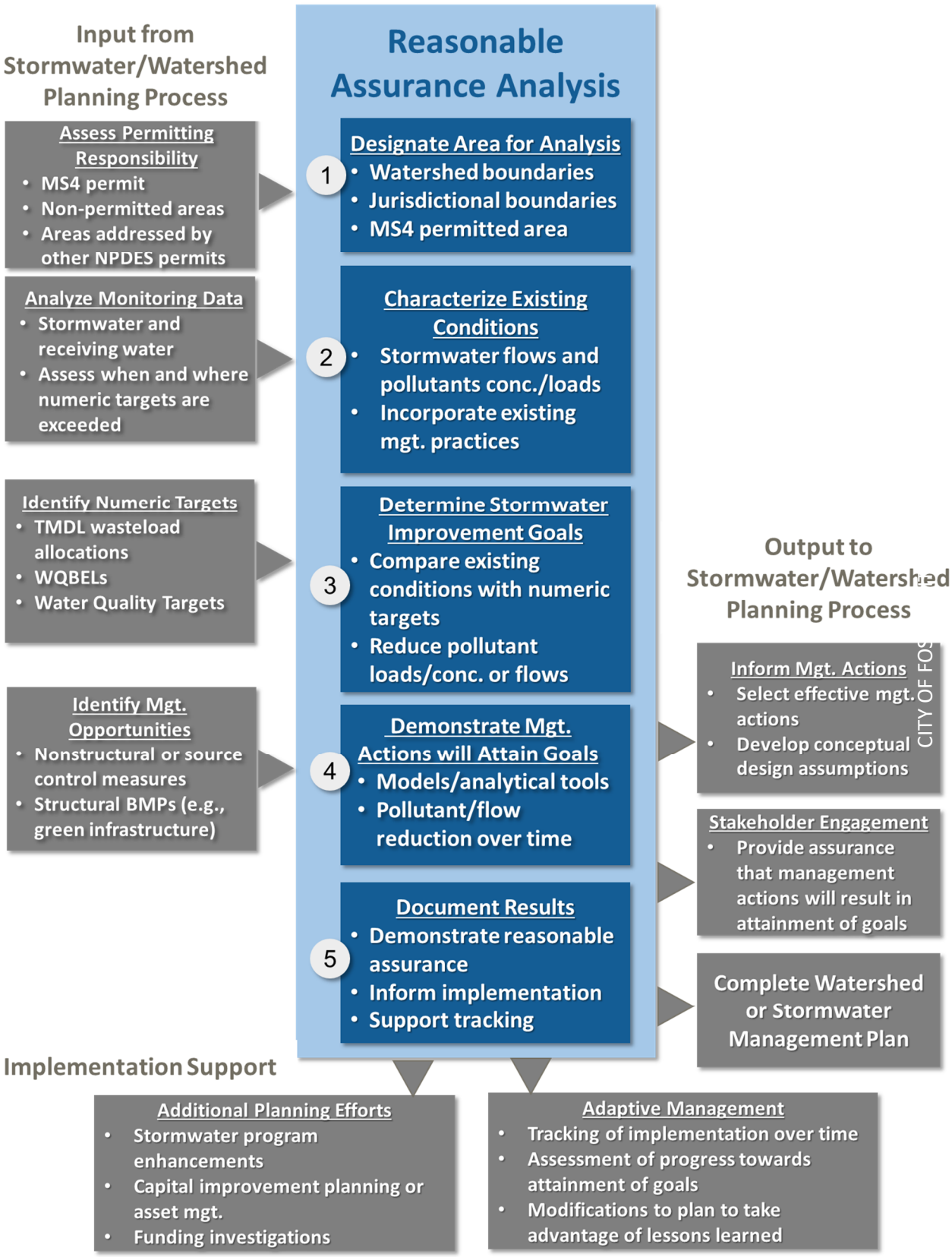


Figure 10. *Reasonable Assurance Analysis Process (USEPA 2017).*

3.2.2 RAA Modeling Process

Pollutants, like PCBs and mercury, attach to cohesive sediments, like silts and clays, and do not settle out before discharging to the Bay. Using data such as rainfall levels, land use composition, impervious surface area, elevation, slopes, evaporation and infiltration, San Mateo County subwatersheds were modeled by Paradigm Environmental to establish stormwater runoff and total sediment loads. By reducing the amount of cohesive sediment with GI projects, the pollutants are also reduced.

Using the runoff and sediment load as input, the watersheds were modeled using the System of Urban Stormwater Treatment & Analysis (SUSTAIN), which was developed by the EPA's Office of Research and Development. This software is a cost-benefit optimization model that runs iteratively to evaluate various GI opportunities.

The basic modeling system of the RAA is further described in Figure 11.

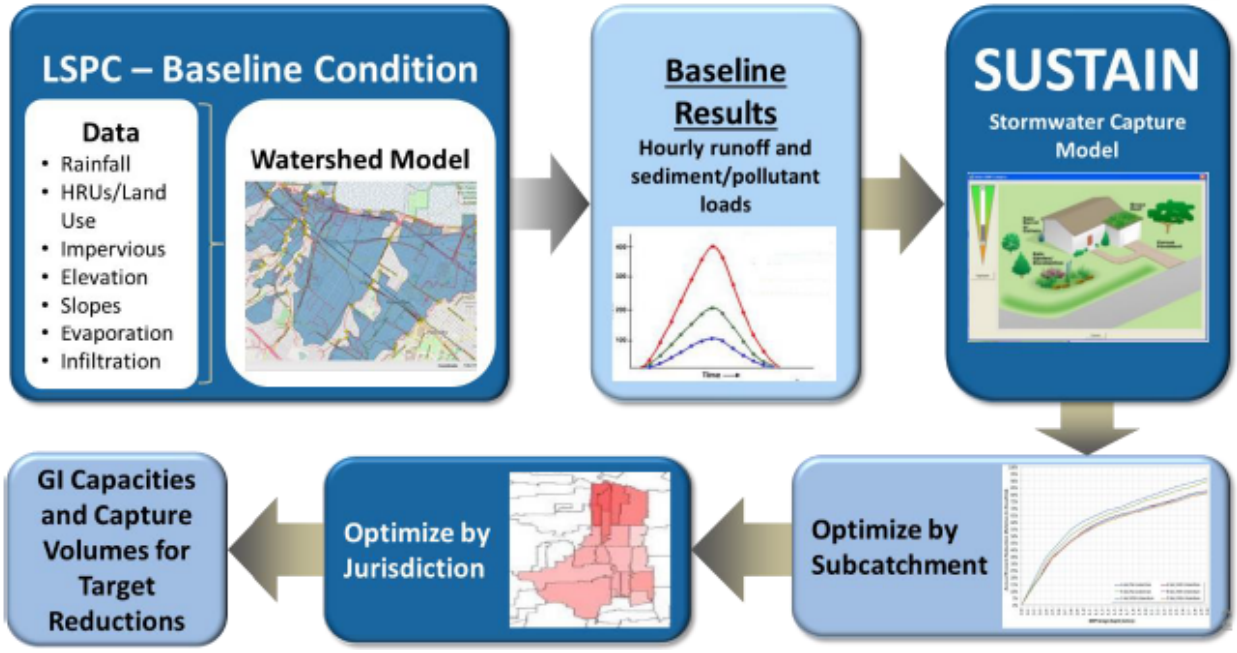


Figure 11. *Reasonable Assurance Analysis Modeling (SMCWPPP 2018a).*

3.2.3 Determination of Water Quality Goals

The following are key considerations for the RAA output:

- **Demonstrate PCBs and Mercury Load Reductions.** The primary goal of the RAA is to quantitatively demonstrate that GI Plans and Control Measure Implementation Plans will result in load reductions of PCBs and mercury sufficient to attain their respective TMDL WLAs and the component stormwater improvement goals to be achieved with GI. **Development of these milestones is further described in Section 3.2.4.**

- **Develop Metrics to Support Implementation Tracking.** The MRP (Provision C.3.j) also requires tracking methods to provide reasonable assurance that TMDL WLAs are being met. Through C/CAG's current effort in preparing a Sustainable Streets Master Plan (SSMP) for San Mateo County, a tracking tool will be developed that will enable calculation of metrics consistent with the results of the RAA and additional metrics relevant to sustainable street implementation. **The tracking tool is further described in Section 5.5.**
- **Support Adaptive Management.** Numerous individual GI projects will be needed to address pollutant reduction goals. All projects which include GI will require site investigations to assess feasibility and costs. The RAA provides a preliminary investigation of the amount of GI needed spatially (e.g., by subwatershed and municipal jurisdiction) to achieve the countywide pollutant load reduction goal. As GI Plans are implemented and more comprehensive municipal engineering analyses are performed (such as detailed, site-specific assessments of GI feasibility), the adaptive management process will be vital to ensuring that goals are met. The RAA informs GI implementation goals, but the pathway to meeting those goals is subject to adaptive management. **Adaptive management is further discussed in Section 5.6.**

The RAA considered multiple alternative scenarios that can inform implementation of GI and direct the adaptive management process. These scenarios demonstrate multiple needs, such as completion of further research, collaboration among multiple Permittees, and incorporation of lessons learned in order to gain efficiencies and maximize the cost-effectiveness of GI to reduce pollutant loads over time.

3.2.4 PCBs and Mercury Load Reduction Milestones

The MRP specifies a PCB and mercury wasteload allocation which is assigned to San Mateo County based on population. Foster City's wasteload allocation of PCBs and mercury was derived on a population-share basis through the RAA. From this baseline load, the contribution of PCBs and mercury from open space areas, sites covered under other discharge permits (such as schools and other Phase II permittees, and sites covered under an industrial discharge permit), Caltrans rights-of-way, as well as areas that drain to the Ocean were removed. The remaining amount of wasteload allocation is what is controlled by the MRP in urban areas.

Based on the baseline hydrology and water quality model, the RAA determined that a 17.6% reduction in PCB loads is needed to meet the GI implementation goals established by the MRP. Zero reduction in mercury loads was determined to be needed from MRP areas because baseline loads were predicted to be below the TMDL WLA for San Mateo County. As a result, a 17.6% reduction in PCB loads compared to existing conditions is established as the primary pollutant reduction goal for the GI Plan.

Figure 12 represents various model scenarios that were considered during the RAA development. Scenarios 1 and 2 are explored further in this chapter. Scenarios 3 and 4 are not recommended due to the uncertainties involved in terms of how PCB source areas are represented in the model, which would require more monitoring and analysis in the future to gain an improved understanding of PCB source areas

and the ability to target these areas with GI. PCBs are difficult to model, track, and sample compared to cohesive sediment.

Load Reduction Objective	Percent of Total GI Cost to Achieve Reduction Objective		
	Jurisdictional	Countywide	*Total Savings (Jurisdictional vs. Countywide)*
Cohesive Sediment 17.6% Reduction	**Scenario 1**	**Scenario 2**	→ *Savings*
Total PCBs 17.6% Reduction	**Scenario 3**	**Scenario 4**	→ *Savings*
Total Savings (Sediment vs. PCBs)	↓ *Savings*	↓ *Savings*	↘ *Overall Savings*

Figure 12. *Model scenarios objectives and cost-benefit evaluation (SMCWPPP 2018a).*

- **Scenarios 1 and 2.** With a cohesive sediment load reduction objective, Scenarios 1 and 2 represent the most conservative approaches. Those scenarios assume that given the uncertainties about PCB source areas, targeting an overall 17.6% load reduction of cohesive sediment in general (silts and clays) achieves the PCB load reduction objective for GI.

  Since PCBs are generally understood to be transported with cohesive sediment (e.g., silt and clay), cohesive sediment load can serve as a surrogate on which to base a load reduction target. The RAA considers a 17.6% reduction of cohesive sediment load as a more conservative surrogate until a better understanding is reached in terms of specific PCB source areas within the County. PCB source areas could be targeted for additional GI implementation, likely resulting in greater effectiveness for GI to reduce PCB loads in those areas, and thus reducing the overall amount of GI needed.

- **Scenarios 3 and 4.** These scenarios assume that PCB sources are spatially distributed based on analysis of land use types. The cost-benefit optimization process targets those areas as having the highest likelihood of PCB sources. Scenarios 3 and 4 would have a potential cost savings (relative to Scenarios 1 and 2) which could be realized if PCB sources are identified and targeted for GI implementation.

3.3 Approach to Load Reduction Milestones

3.3.1 Jurisdictional vs. Countywide Approach

There are two (2) potential approaches the various municipalities within San Mateo County may consider:

- **Jurisdictional Approach.** Each municipality would be individually responsible for a 17.6% sediment load reduction that is proportional based on population.
- **Countywide Approach.** The County adopts a holistic approach and each municipality agrees to reduce overall PCBs within the County by focusing on municipalities with the potential to implement more efficient and numerous GI opportunities.

The Countywide approach is projected to result in a significant cost reduction to each municipality and considers implementation of GI throughout San Mateo County. Some agencies will have more capacity to implement GI, while others will have less. A countywide approach is not only more cost-effective, but also provides a vehicle for collecting funding for regional project opportunities, the costs of which can be shared by multiple jurisdictions. It also provides a vehicle for credit trading between agencies. See "Green Infrastructure Funding Nexus Evaluation" (SCI Consulting Group and Larry Walker Associates, January 2019) for more information about credit trading.

The RAA allows for the possibility of credit trading by providing multiple management metrics for GI, such as impervious area to be treated in acreage, and GI capacity in acre-feet. **Refer to Section 3.4.3 for more information about the RAA's management metrics.**

3.3.2 Modeled Green Infrastructure Opportunities

For the purposes of the RAA, GI represents a group of structural control measures that provide similar processes for the capture, infiltration, and/or treatment of urban runoff prior to its discharge to receiving waters. In this context, the use of GI includes measures such as bioretention areas and permeable pavers. **For more information about the methods used to identify and screen potential projects, refer to Chapter 4, "Project Identification and Prioritization".** GI opportunities incorporated into the model include the following:

1. **Existing Projects.** Stormwater treatment measures and GI projects that have been implemented since FY -2004/05. This is primarily all the Regulated Projects that were mandated to treat runoff via Provision C.3 of the MRP, but also includes any public green street or other demonstration projects that were not subject to Provision C.3 requirements. For Regulated Projects in the early years of C.3 implementation, stormwater treatment may have been achieved through non-GI means, such as underground vault systems or media filters.
2. **Future New and Redevelopment (Low Impact Development).** LID projects are located on discrete parcels and sites, and do not include green streets (see below for further information). Examples include green roofs, bioswales, bioretention areas, permeable pavement, and infiltration trenches. These are Regulated projects that will be subject to Provision C.3 requirements to treat runoff via GI per the MRP. The RAA modeled these projects based on spatial projections of future new and redevelopment tied to regional models for population and employment growth. **For a map of prioritized LID projects, refer to Appendix C.**

3. **Regional Projects.** Regional stormwater capture projects consist of facilities that capture and treat stormwater from offsite. The primary objective of regional projects is often flood attenuation, but many also contain a water quality treatment or infiltration component. Common examples include detention basins, retention basins, and subsurface infiltration systems. Ideal locations are large public spaces, such as public parks, sports fields, parking lots, and school grounds (SMCWPPP 2017). The San Mateo County Stormwater Resource Plan (SRP) identifies projects which provide regional capture and infiltration/treatment of stormwater and includes conceptual design to support further planning and designs. This list of region-wide projects has been further refined since the SRP was developed to update the RAA.

4. **Green Streets.** Green streets consist of stormwater capture infrastructure that is implemented in public rights-of-way. Green streets projects include installation of permeable pavement, bioretention areas, and stormwater curb extensions. The SRP identifies and prioritizes opportunities throughout San Mateo County for retrofitting existing streets with GI in public rights-of-way. This prioritization was refined with the RAA, using feedback from the GI TAC. The green streets were further broken up into high-, medium-, and low-priority categories to represent the projects which have the greatest (high priority) or least (low priority) potential for cost-effective installation of a GI measure. **For a map of prioritized Green Streets projects, refer to Appendix C.**

5. **Other GI Projects (to be determined).** Other types of GI projects on publicly owned sites represent a combination of either additional parcel-based GI or other Regional Projects. The SRP screens and prioritizes public parcels for opportunities for onsite LID and Regional Projects. These opportunities need further investigation to determine those with greatest potential.

Together, modeled GI opportunities listed above present the “recipe” for attaining the water quality milestones. The contribution from each project category is simulated in the RAA, but the actual contribution will depend upon the opportunities which arise through development, through CIP projects, and through regional collaboration between now and 2040. Figure 13 represents how the GI opportunities will be sequenced to first take advantage of the projects with the lowest implementation cost before incorporating the use of more costly GI opportunities.

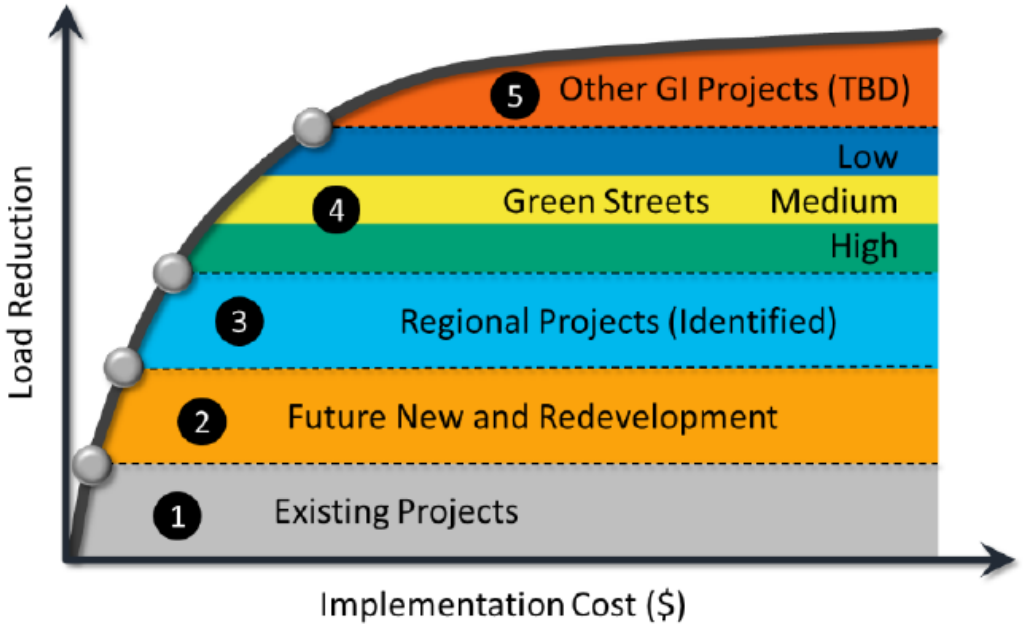


Figure 13. *Example implementation recipe showing general sequencing of GI projects (SMCWPPP 2018a).*

3.4 City-Specific Water Quality Milestones

As a result of the RAA, each municipality is provided a range of options to achieve a 17.6% reduction in sediment. The parameters provided include the (1) volume of annual runoff to be managed, (2) area of impervious surface to be managed, and (3) GI capacity of GI measures to be constructed. The RAA presents a "recipe" for how much GI might be constructed in each area of the City, but the actual implementation of GI will be dependent upon opportunities and funding.

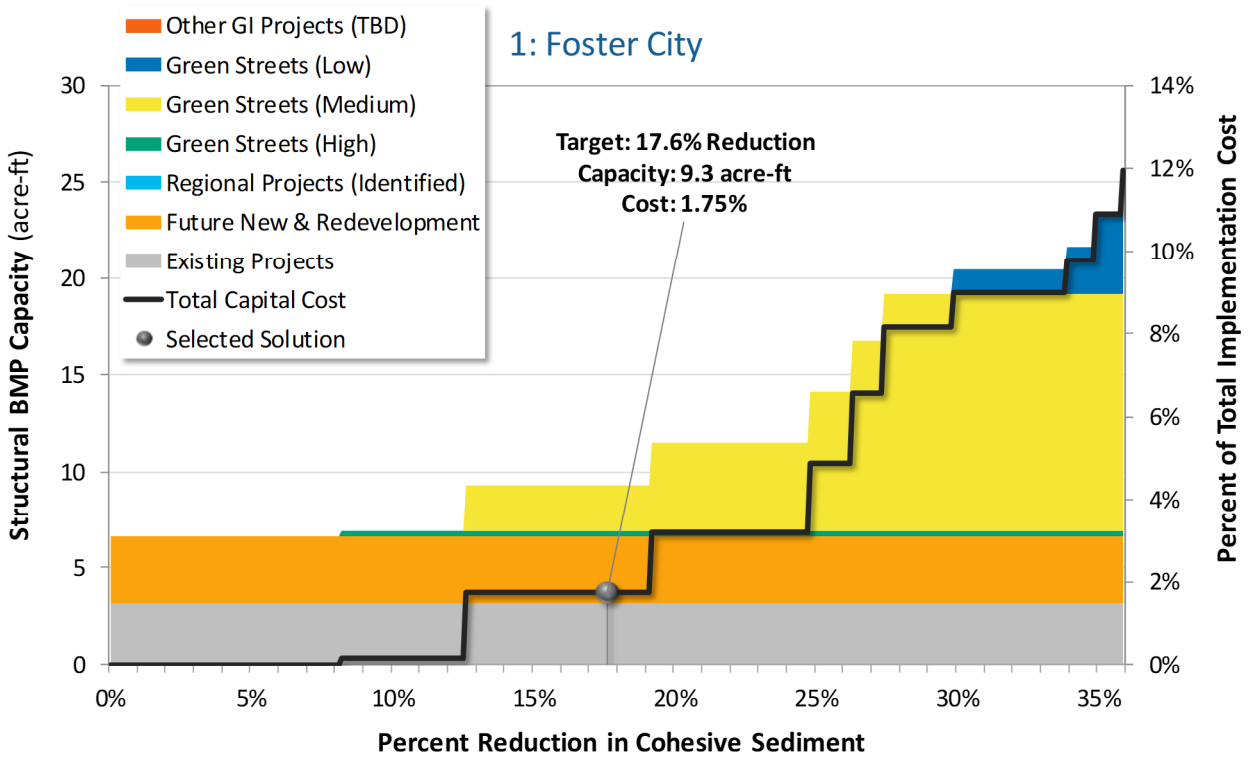


Figure 14. *Optimization summary for Foster City, sediment goal (by jurisdiction).*

3.4.1 Jurisdictional Approach

Figure 14 displays the most cost-effective path for the City to reach the 17.6% sediment reduction goal. The left Y-axis is paired with the colored bars and displays the structural Best Management Practices (BMP) capacity in acre-feet. Structural BMP capacity is defined as the volume of the theoretical Green Infrastructure measure(s) necessary to achieve a target load reduction. The X-axis displays the percent reduction in cohesive sediment. The right Y-axis is paired with the black line and displays the percent of the total countywide implementation cost that would be paid by the City.

To read the graph, follow the black line until you reach the desired point along the X-axis (in the above graph, this is 17.6% sediment reduction). Imagine a vertical line slicing through the entire graph at this point. The highest point of this line touching a colored bar represents the structural BMP capacity required to reach the sediment reduction goal (in the above graph, this is 9.3 acre-feet). These 9.3 acre-feet will be achieved via existing projects (about 3.0 acre-feet), future new developments and redevelopments (about 3.0 acre-feet), high-priority green streets (about 0.1 acre-feet), and medium-priority green streets (about 3.2 acre-feet). Now return to the selected point along the black line and imagine a horizontal line slicing through the entire graph at this point. Follow this line to the right Y-axis to find the percent of the total countywide cost that would be paid by the City under the proposed plan (in the above graph, this would be 1.75%).

As the percent reduction in sediment increases, the amount (acre-feet) of structural BMP capacity as well as the percent of total implementation cost also increase to achieve the desired level of sediment

reduction. The most efficient methods are first used to their capacity, and then less efficient methods follow. For example, as illustrated in the graph above, high priority green street projects have reached maximum capacity before any medium-priority green street projects are introduced, and these, in turn, are at maximum capacity before any low-priority green street projects are introduced.

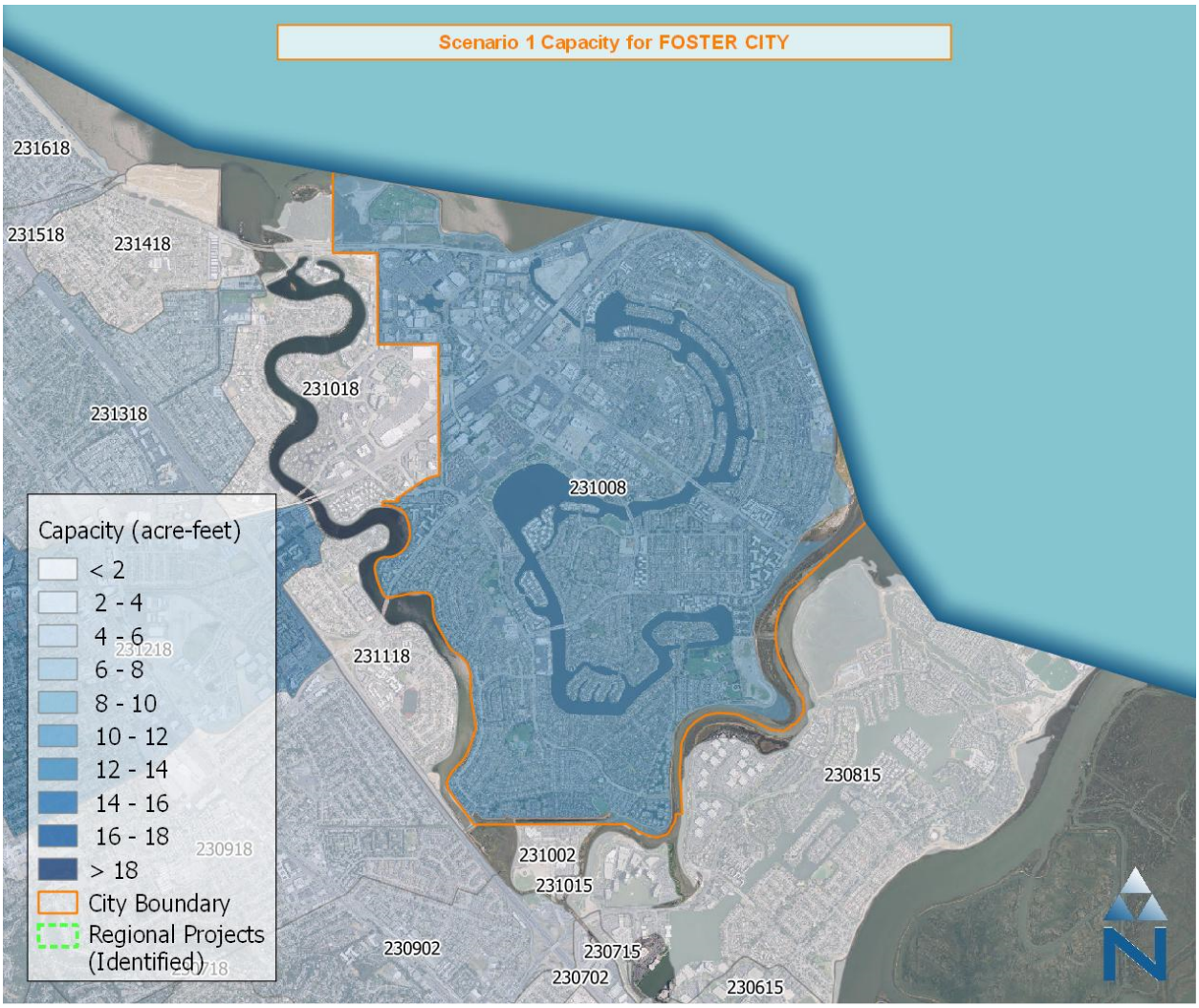


Figure 15. *Scenario 1: Foster City, sediment goal (by jurisdiction).*

Figure 15 shows the subwatershed (231008, devised for the purpose of conducting the RAA analysis; Foster City does not contain any subwatersheds) located within the City, along with the planned structural BMP capacity of each area to be utilized within the City under the jurisdictional approach, in which the City manages stormwater reduction goals by itself (not as part of a Countywide effort).

Table 5. *Scenario 1, Foster City: Sediment Goal (By Jurisdiction, With Regional Projects).*

Subwatershed ID	Management Metrics for GI			Green Infrastructure Capacity to Achieve 17.6% Reduction Goal (Capacity expressed in units of acre-feet)							
				Existing/Planned			Green Streets				
	% Load Reduction PCBs (Annual)	Annual Volume Managed (acre-ft)	Impervious Area Treated (acres)	Existing Projects	Future New & Redevelopment	Regional Projects (Identified)	High	Medium	Low	Other GI Projects (TBD)	Total BMP Capacity (acre-ft)
231008	19%	173.71	134.79	3.16	3.49	--	0.27	4.61	--	--	**11.5**
Total	**19.1%**	**173.7**	**134.8**	**3.2**	**3.5**	**--**	**0.3**	**4.6**	**--**	**--**	**11.5**

Table 5 shows several points of data for the City's devised subwatershed. Using this table, one can determine how many acre feet of volume must be managed via GI, along with many other parameters. The tabular data were calculated assuming the City will pursue the jurisdictional approach.

3.4.2 Countywide Approach

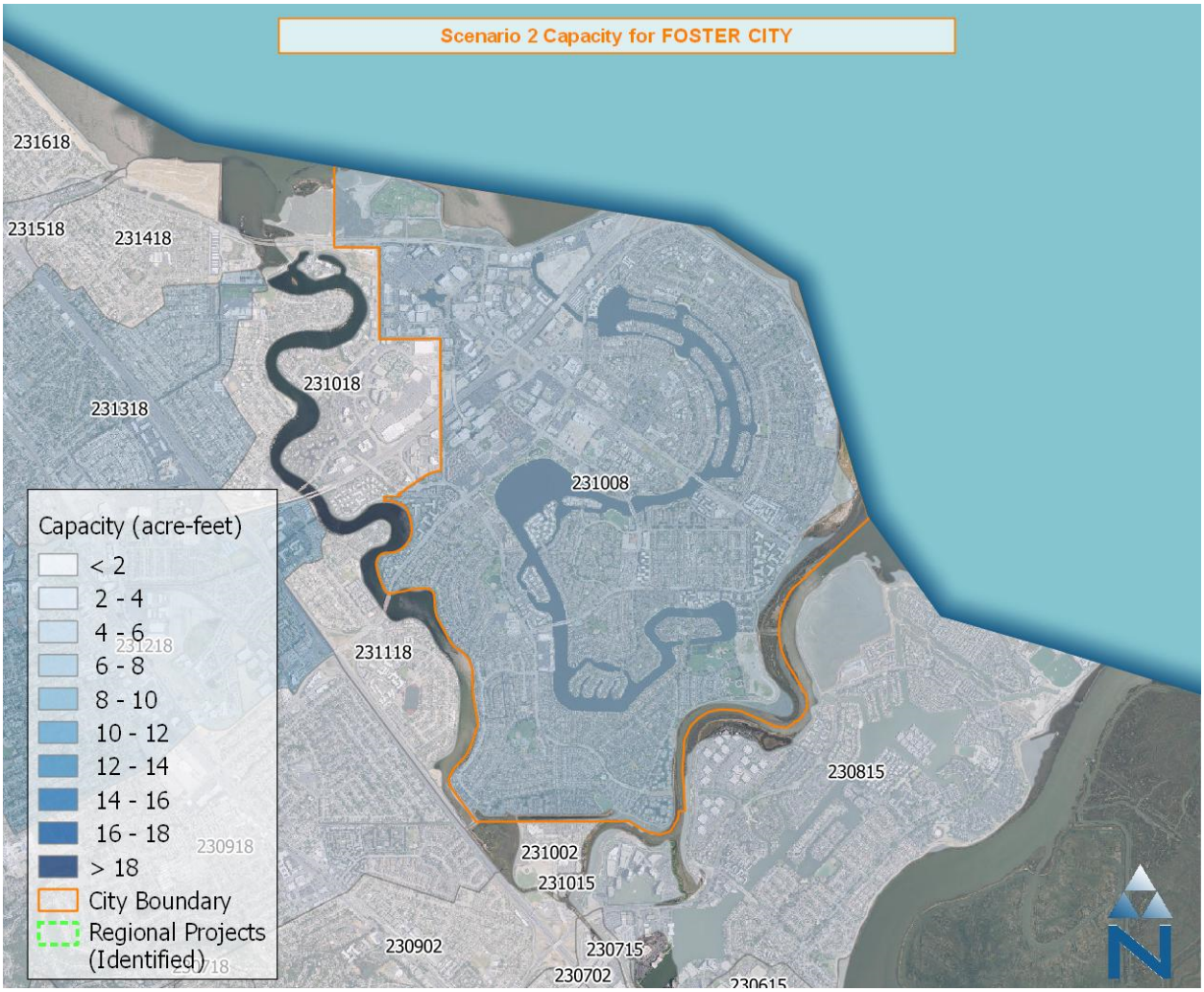


Figure 16. *Scenario 2: Foster City, sediment goal (countywide).*

The above map shows the devised subwatershed located within the City, along with the planned structural BMP capacity of each area to be utilized within the City under the countywide approach.

Table 6. *Scenario 2, Foster City: Sediment Goal (Countywide, With Regional Projects).*

Subwatershed ID	Management Metrics for GI			Green Infrastructure Capacity to Achieve 17.6% Reduction Goal (Capacity expressed in units of acre-feet)							
				Existing/Planned			Green Streets				
	% Load Reduction PCBs (Annual)	Annual Volume Managed (acre-ft)	Impervious Area Treated (acres)	Existing Projects	Future New & Redevelopment	Regional Projects (Identified)	High	Medium	Low	Other GI Projects (TBD)	Total BMP Capacity (acre-ft)
231008	8%	72.84	82.72	3.16	3.49	--	--	--	--	--	**6.7**
Total	**8.1%**	**72.8**	**82.7**	**3.2**	**3.5**	**--**	**--**	**--**	**--**	**--**	**6.7**

Table 6 is the same as Table 5, except these data were calculated assuming the City will pursue the countywide approach.

3.4.3 Management Metrics

The RAA presents a "recipe" for GI implementation using various management metrics. Progress towards GI milestones will be tracked using one or more of these management metrics.

- **% Load Reduction PCBs (Annual).** This is the load reduction necessary in each subwatershed to achieve the overall targeted load reduction.
- **Annual Volume Managed (acre-ft).** This is the volume of water that is captured, infiltrated, and/or treated within each subwatershed in order to achieve the overall targeted load reduction, given the theoretical combination of projects modeled by the RAA.
- **Impervious Area Treated (acres).** This is the impervious area that needs to be treated in order to achieve the overall targeted load reduction, given the theoretical combination of projects modeled by the RAA.
- **Total Best Management Practices (BMP) Capacity (acre-ft).** Also known as Total Green Infrastructure Capacity, this represents the theoretical capacity of GI projects modeled. Use of this metric as a focus for stormwater improvement goals for the GI Plan is not recommended, due to its sensitivity to the dimensions, locations, and upstream drainage area of the combination of GI projects that are installed.

Use of management metrics allows the City to alter its "recipe" for GI implementation without needing to re-run the RAA model. This enables the City to adapt to the changing needs and opportunities in its community. **For more information about the City's adaptive management approach to GI implementation, refer to Section 5.6.**

3.4.4 Green Infrastructure Interim Milestones

The MRP requires the reporting of goals for the implementation of GI for interim milestones in 2020 and 2030, in addition to the final goal in 2040. Interim milestones for 2020 and 2030 aimed at reaching the 2040 goal were selected in order to assist municipalities with maintaining a sufficient pace throughout the twenty (20)-plus-year period. In order to estimate the amount of GI to be implemented by these milestones, various assumptions were made in terms of the pace of implementation for various GI project types.

- **Interim Milestone Assumption for Future New & Redevelopment.** An analysis[12] separate from the RAA determined the projected amount of LID associated with new and redevelopment by 2020, 2030, and 2040. That analysis was completed by Community Design + Architecture, using a C/CAG and MTC demographic dataset. It was found that growth varied significantly between communities and land use types. The data were validated by City staff.
- **Interim Milestone Assumption for Regional Projects.** No regional projects were identified in Foster City, but for regional projects located throughout the County, assumptions were made regarding timing of construction and completion of such regional projects which were included in the model. Generally, regional projects were assumed to be complete by 2030. Regional projects help to reduce the amount of GI of various types, including green streets, which needs to be installed within City boundaries.
- **Interim Milestone Assumption for Green Streets.** Thirty-three (33) percent of green streets required by 2040 are assumed to be implemented by 2030.

The schedule resulting from the milestones presented above appears in Figure 17. The schedule includes anticipated interim and final milestones for GI implementation in terms of structural capacity. These interim and final GI capacities are subject to adaptive management; however, the 2040 Management Metrics for GI (left side of Table 5, as discussed in **Section 3.4.1**) set the ultimate goal for GI planning efforts and tracking.

In the Countywide scenario, use of the model has determined that the installation of green streets in Foster City was not as cost-effective as in other areas in the County, such that in a Countywide approach, Foster City would only need to implement the GI that is anticipated from the combination of existing projects and future new and redevelopment, with no contribution from green streets.

[12] Community Design + Architecture (2019).

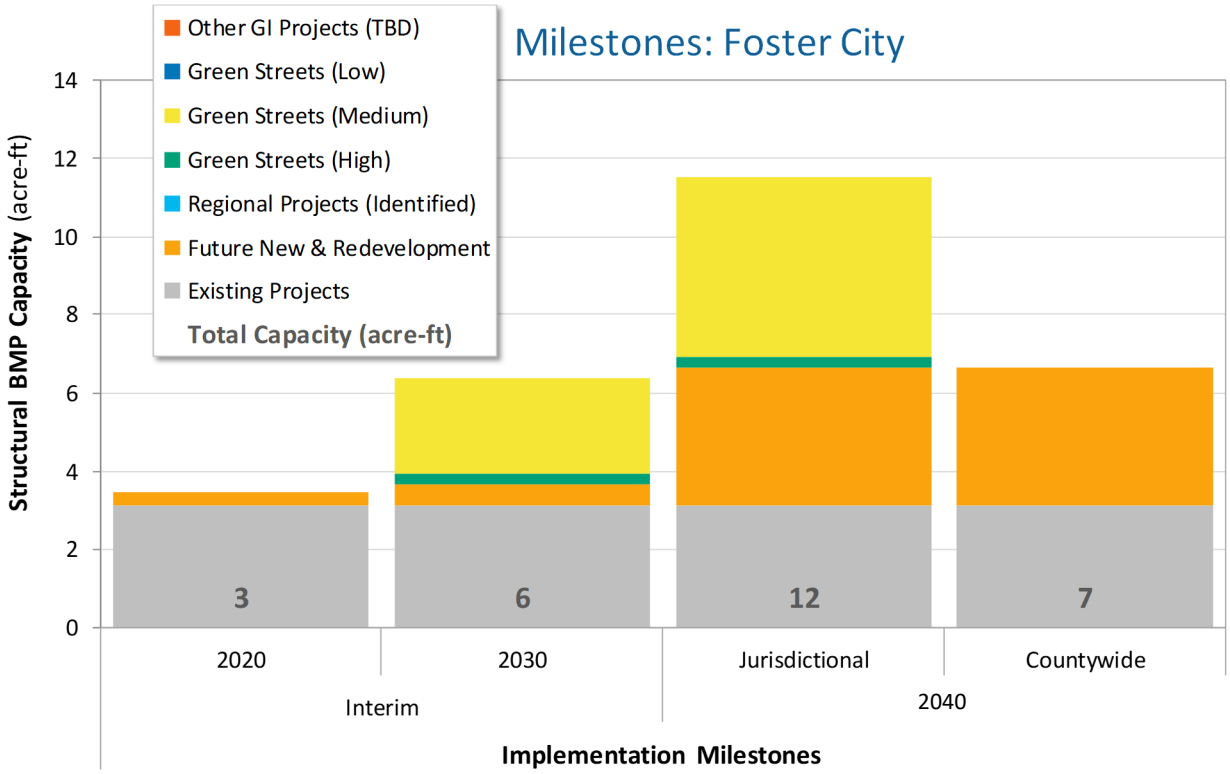


Figure 17. *Summary GI capacity for interim and final implementation milestones.*

The City's goal under a jurisdictional approach would be a 19.1% reduction in PCBs; under a countywide approach, the City's goal would be an 8.1% reduction. The reason the RAA model calls for a 19.1% reduction, rather than the 17.6% reduction as required under the jurisdictional approach, is that the model applies potential GI projects in order of efficiency from greatest to least, slowly building the sediment reduction until a particular project causes the sediment reduction to exceed the 17.6% threshold. The City is free to utilize adaptive management strategies **(discussed in Section 5.6)** to, for example, construct less efficient but smaller projects to achieve a reduction closer to the 17.6% minimum.

Table 7. *Implementation Milestones: Foster City.*

Implementation Metrics		Implementation Milestones: Foster City					
		Incremental		Cumulative		Final 2040	
		2020-2030	2030-2040	2020	2030	Jurisdictional	Countywide
Index	% Load Reduction	4.0%	11.8%	3.3%	7.4%	19.1%	8.1%
	Volume Managed (acre-ft/yr)	35.8	104.8	33.1	68.9	173.7	72.8
	Treated Impervious (acres)	3.3	100.5	31.0	34.3	134.8	82.7
Capacities (acre-ft)	Existing Projects	0.0	0.0	3.2	3.2	3.2	3.2
	Future New Development & Redevelopment	0.2	3.0	0.3	0.5	3.5	3.5
	Regional Projects (Identified)	--	--	--	--	--	--
	Green Streets (High)	--	0.0	--	0.3	0.3	--
	Green Streets (Medium)	--	2.2	--	2.4	4.6	--
	Green Streets (Low)	--	--	--	--	--	--
	Other GI Projects (TBD)	--	--	--	--	--	--
	Total	**0.2**	**5.1**	**3.5**	**6.4**	**11.5**	**6.7**

Table 7 displays both the incremental and cumulative growth recommended from 2020 through 2040 to reach the 2040 goals for the jurisdictional approach. The totals required for the countywide approach are also provided.

For a visual depiction of the City's existing GI projects and future GI opportunities, please see the map in Appendix C.

4.0 PROJECT IDENTIFICATION AND PRIORITIZATION

4.1 Introduction

MRP Provision C.3.j states that each Permittee shall develop the following:

> *"A mechanism…to prioritize and map areas for potential and planned projects, both public and private, on a drainage-area-specific basis, for implementation over the following time schedules, which are consistent with the timeframes for assessing load reductions specified in Provisions C.11. and C.12 (i) By 2020; (ii) By 2030; and (iii) By 2040.*
>
> *The mechanism shall include criteria for prioritization…and outputs (e.g., maps, project lists) that can be incorporated into the Permittee's long-term planning and capital improvement processes."*

This chapter summarizes the City's project identification and prioritization process, which consists of the following elements:

1. **Identification and Prioritization of Project Opportunities through the San Mateo County Stormwater Resources Plan (SRP).** In addition to identification of projects in the Capital Improvement Program, the City has integrated the prioritization results of the San Mateo County Stormwater Resource Plan (SRP), which was developed by SMCWPPP with participation from the GI TAC and member agencies. The SRP establishes a region-level, watershed-based planning and implementation guide for stormwater and dry weather runoff capture and reuse projects on public land and rights-of-way. The SRP produced a list of prioritized project locations eligible for future State implementation grant funds.
2. **Identification and Prioritization of Project Opportunities through the Capital Improvement Program (CIP).** Starting in 2016 with the adoption of the new MRP, the City prepared a list of projects that have the potential to incorporate Green Infrastructure (GI). This list is updated each year to reflect the project status, additional findings, and new additions to the CIP. The focus of this list is on public projects listed in the CIP rather than private projects, because private projects are typically tracked separately as Regulated project opportunities. This chapter formalizes the process developed to promote early implementation of GI projects for the identification and prioritization of project opportunities.
3. **Identification and Prioritization of Project Opportunities on Private Property.** Identification and prioritization of opportunities on private property is not the focus of this chapter, but the City does intend to collaborate where possible with other agencies and private landowners. At the end of this chapter, the City has identified possible partners with whom the City can collaborate to achieve the water quality goals outside the City rights-of-way.

4. **Future Identification and Prioritization of Project Opportunities through the San Mateo County Sustainable Streets Master Plan.** Further prioritization of the City's streets, sidewalks, City-owned properties, and other land resources will be conducted in the future through the San Mateo County Sustainable Streets Master Plan in 2021.

The City is intentionally spring-boarding from existing processes in order to (1) maintain consistency with the SRP and BASMAA GI screening process, (2) take advantage of training conducted to familiarize staff with the SRP and screening process, and (3) make the identification and prioritization process simple, to allow for more time in focusing on the implementation of GI in projects that have GI potential.

Bioretention area located at TownePlace Suites, 1299 Chess Drive.

4.2 Identifying Existing Projects and Future Opportunities

4.2.1 Participation in Developing San Mateo Countywide Stormwater Resource Plan

SMCWPPP developed an SRP, which, in addition to characterizing San Mateo County water resources, established both a quantitative prioritization protocol for GI opportunities and an initial list of prioritized local and regional GI projects. It also served the purpose of providing municipalities with access to funding

for stormwater and dry weather runoff capture projects. Senate Bill 985, which went into effect on January 1, 2015 requires a municipality, county, or special district to develop an SRP as a condition of receiving voter-approved bond funds for stormwater and dry weather runoff capture projects. The final draft of the San Mateo County SRP was approved under Resolution 17-04 by the C/CAG Board of Directors on February 9, 2017.

The SRP is intended to be a living document and will be periodically revised—once every five (5) years—to update the project implementation plan and reflect lessons learned through wide-scale integration of LID, green streets, and regional stormwater capture projects.

The City contributed proposed projects to the SRP during the development of the SRP and may consider opportunities to pursue grant funding for those projects identified as part of the GI Plan Implementation Process.

4.2.2 Identification and Screening of Project Opportunities through the Capital Improvement Program

The City's primary means of identifying and screening project opportunities is the Capital Improvement Program (CIP). Projects that are listed in the CIP are likely to be constructed and operated, as they address specific City needs and provide benefits consistent with City goals, policies, and priorities. Projects are typically added to the CIP based, in part, on needs assessments performed in association with the development of master plans. With the development of this GI Plan, the City is both formalizing and documenting its procedure for screening CIP projects for GI potential as well as reinforcing the link between GI and the City's various local planning documents and master plans.

As required by the MRP, the City will continue to prepare and maintain a list of public and private projects with potential for inclusion of GI measures that are planned to commence during the permit term. The list will be used to provide potential projects for inclusion in the SRP development and incorporation into the GI Plan. The City also plans to annually update the map of the City's existing and potential GI projects included in Appendix C to reflect current progress towards the GI plan implementation as well as future project opportunities.

Figure 18 summarizes the key factors that will be taken into consideration when integrating GI into the CIP.

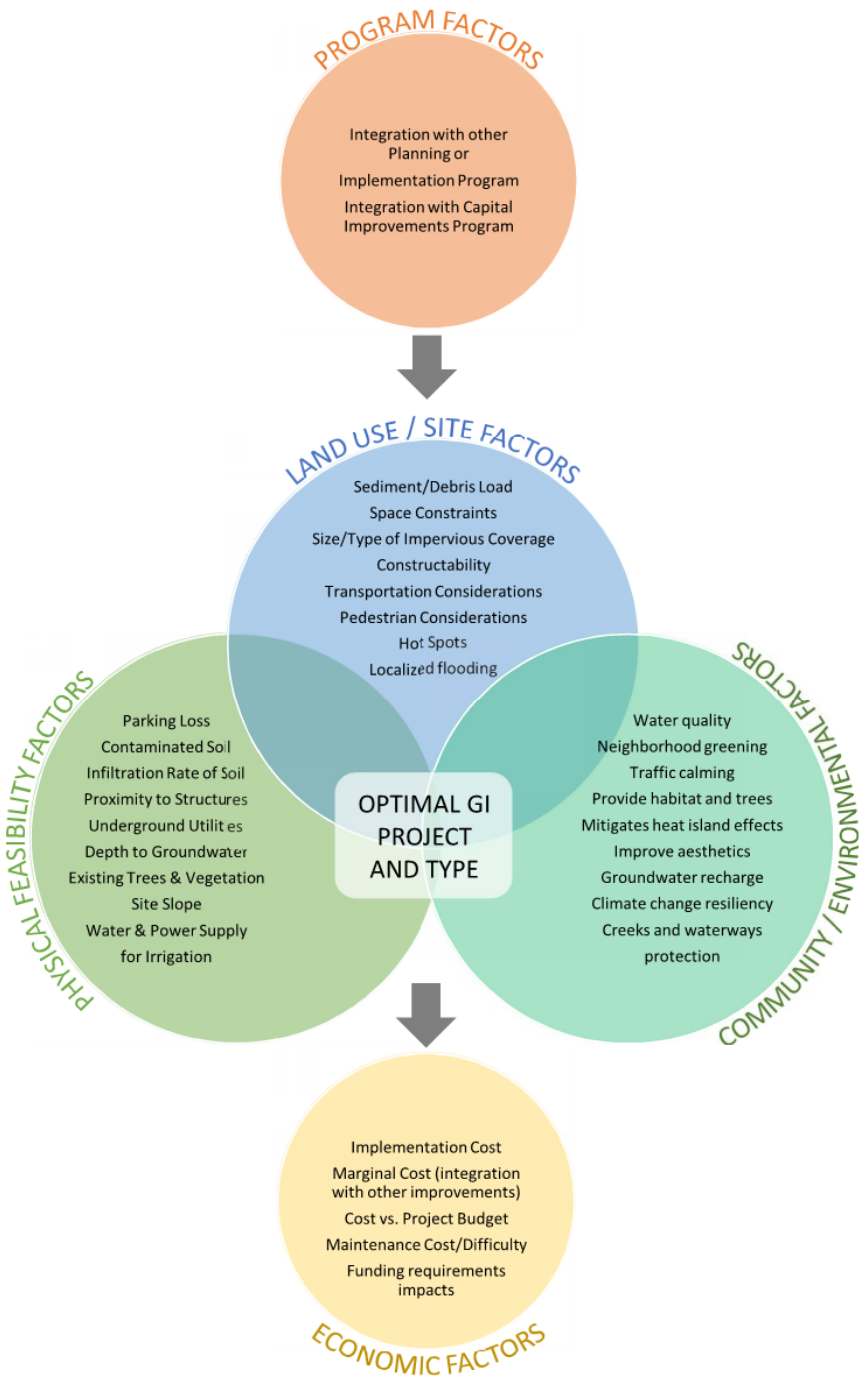


Figure 18. *Factors Impacting Selection of Optimal GI Projects.*[13]

[13] Adapted from Figure 10.1, Decision process for selection of GI Types. (2014). Water Environment Federation.

The City currently screens its CIP using an adjusted version of the BASMAA Screening Process (BASMAA 2016). This process consists of three (3) parts:

- **Part 1 – Initial Screening.** Projects move on to the Part 2 Screening process unless they are one of the following categories: No Potential, Too Late to Change, Too Early to Assess, or Maintenance / Minor Construction. Projects without GI potential are removed from the City's tracking list.
- **Part 2 – Assessment of GI Potential.** Projects are assessed for their ease of integration of GI according to project types. C.3-Regulated project status is assessed. Projects without GI potential are removed from the City's tracking list, and the reasons for infeasibility of incorporating GI are documented.
- **Part 3 – Preliminary Design.** Information is collected, preliminary GI sizing takes place, barriers and conflicts are assessed, budget and schedule considerations are noted, and the results of the GI assessment are documented. Projects without GI potential are removed from the City's tracking list, and the reasons for infeasibility of incorporating GI are documented.

This screening process is provided in Appendix B.

4.2.3 Identification of Opportunities on Private Property

The GI Plan focuses on public rights-of-way as well as identification and screening of projects that are within the jurisdiction and control of the City. However, GI can be implemented on private property which is under development through the project entitlement process. **For more detail about how the City enforces GI on private property, refer to Section 10.2, "Private Development Program and Policies".**

4.3 Determining GI Priorities

4.3.1 Countywide GI Project Screening

The SRP includes an evaluation of project benefits addressing several key metrics: Water Quality, Water Supply, Flood Management, Environmental, and Community Benefits. Based on these metrics, watershed characteristics, and processes (including land use, impervious cover, hydrologic soil group, percent slope, rainfall, and pollutant wasteload), the SRP identifies and prioritizes projects to address water quality impairment, reduce flooding, and provide more natural groundwater recharge.[14]

Three (3) basic categories of project opportunities have been screened **(for more information about these project opportunities, refer to Section 3.3.2, Modeled GI Opportunities)**:

[14] *Stormwater Resource Plan for San Mateo County.* (2017, February). San Mateo Countywide Water Pollution Prevention Program, a program of the City/County Association of Governments of San Mateo County. Prepared by Paradigm Environmental and Larry Walker Associates, Inc.

- **Future New and Redevelopment (which may include Low Impact Development)**
- **Regional Projects**
- **Green Streets**

Note that Existing Projects are not included in the above list because they have already been constructed, therefore it is not necessary to screen and prioritize these sites.

Table 8 summarizes the screening methodology for parcels and rights-of-way.

Table 8. *SRP Parcel and Right-of-Way Project Screening Methodology.*

Screening Factor	Characteristic	Criteria	Reason
PARCEL			
Public Parcels	Ownership	City, County, or Town	Identify all public parcels for regional storm and dry weather runoff capture projects or onsite LID retrofits
	Land Use	Park, School, Other (e.g., Golf Course)	
Suitability	Parcel Size	>0.25 acres	Adequate space for regional stormwater and dry weather runoff capture project
		<0.25 acres	Opportunity for onsite Green Infrastructure retrofit
	Average Parcel Slope	<10%	Steeper grades present additional design challenges
RIGHT-OF-WAY			
Selection	Functional Class	S1200 S1400 S1730 S1780	City street, arterial Local neighborhood road, rural road Alley Parking lot roads
Suitability	Ownership	Public	Potential projects are focused on public and right-of-way opportunities
	Road Slope	<5%	Steep grades present additional design challenges; reduce capture opportunity due to increased runoff velocity

4.3.2 Countywide GI Project Prioritization

After the identification of feasible project locations, screened parcels and rights-of-way were prioritized to aid in the selection of potential project locations that would be most effective and provide the greatest number of benefits.

This was a two-step ranking process:

1. First, all potential project locations were ranked on the basis of which sites offer the greatest opportunity for stormwater capture and other multiple benefits. Opportunities to combine stormwater capture projects with the CIP can be considered now and in the future.
2. The highest-ranked opportunities were further analyzed to provide a detailed quantification of project benefits and to develop preliminary conceptual designs and project costs. Though this analysis was focused on a select number of opportunities, the concepts developed can be used on a wide variety of similar projects.

Specifically, projects were prioritized using the following categories, through a quantitative scoring system:

- **Physical Characteristics.** For parcels, physical conditions include land use or, for green streets, street type. Physical characteristics also include impervious area, parcel size, hydrologic soil group, and/or slope. Prioritization based on these factors varies slightly depending on whether the project was a regional project, green street, or LID retrofit. In general, the highest prioritization is given to sites that consisted of high imperviousness, have the potential to infiltrate, and have mild slopes.
- **Flood-Prone Streams.** Projects placed within the subwatersheds of flood-prone streams and areas subject to flooding can help to mitigate flood risks and reduce flood and hydromodification impacts by limiting the volume of runoff that reaches the impacted streams. Therefore, high priority was given to sites closest to the flood-prone streams.
- **PCB Interest Areas.** PCBs are one of the primary pollutants of concern within the Bay Area; therefore, siting stormwater capture projects in PCB interest areas can potentially address water quality issues.
- **Co-Located Planned Projects.** Consideration of other potential or planned City projects presents opportunities for cost-sharing and maximizes multiple benefits achieved by a single project. Higher priority scores were given to projects that may be implemented in parallel with new and redevelopment projects or other municipal CIP projects.
- **Drains to TMDL Waters.** Projects that are located in watersheds that drain to Bay TMDL waters were given higher scores. Stormwater capture in these areas will aid in the removal of pollutants from runoff downstream.
- **Multiple Benefits.** While the reduction of pollutant loads is one of the primary objectives of GI, several other benefits can be achieved to improve cost effectiveness and increase buy-in. **Potential benefits of GI are listed in Section 1.1.4.**

Through the City's input and through input from other SMCWPPP member agencies, prioritization criteria were weighed in development of the final project prioritization methodology. The process of development of a prioritization methodology resulted in assigned prioritization scores for each identified GI opportunity within each of the three (3) project categories (green streets, LID retrofits, and regional projects). These scores could then be further filtered or sorted to support ongoing prioritization of projects within the City of Foster City. The criteria and weighting are summarized for each project type in Table 9.

Table 9. *SRP Parcel and Right-of-Way Project Prioritization Methodology.*

Metric	Points						Weight Factor
	0	1	2	3	4	5	
REGIONAL PROJECTS							
Parcel Land Use			Schools/Golf Courses	Public Buildings	Parking Lot	Park / Open Space	
Parcel Size (acres)	0.25 ≤ X < 0.5	0.5 ≤ X < 1	1 ≤ X < 2	2 ≤ X < 3	3 ≤ X < 4	4 ≤ X	
Slope (%)	5 < X ≤ 10	4 < X ≤ 5	3 < X ≤ 4	2 < X ≤ 3	1 < X ≤ 2	0 < X ≤ 1	
LID RETROFIT PROJECTS							
Parcel Land Use			Schools/Golf Courses	Park / Open Space	Parking Lot	Public Buildings	
Slope (%)	5 < X ≤ 10	4 < X ≤ 5	3 < X ≤ 4	2 < X ≤ 3	1 < X ≤ 2	0 < X ≤ 1	
GREEN STREET PROJECTS							
Parcel Land Use	Highway		Arterial	Collector	Alley	Local	
"Safe Routes to School" program	No					Yes	2
Slope (%)		4 < X ≤ 5	3 < X ≤ 4	2 < X ≤ 3	1 < X ≤ 2	0 < X ≤ 1	
ALL PROJECTS							
Impervious Area (%)	X < 40	40 ≤ X < 50	50 ≤ X < 60	60 ≤ X < 70	70 ≤ X < 80	80 ≤ X < 100	
Hydrologic Soil Group		D	Unknown	C	B	A	
Proximity to Flood-prone Channels (miles)	Not in sub-basin	3 < X		1 < X ≤ 3		X ≤ 1	2
Contains PCB Risk Areas	None			Moderate		High	2
Currently planned by City or co-located with other City project	No					Yes	2
Drains to TMDL water	No					Yes	
Above groundwater basin	No		Yes				
Augments Water Supply	No	Yes					
Water Quality Source Control	No	Yes					
Reestablishes Natural Hydrology	No	Yes					
Creates or Enhances Habitat	No	Yes					
Community Enhancement	No	Yes					

The results of the SRP project prioritization are provided in a web-viewer created by C/CAG: http://54.183.214.51/maps/SMC_project_prioritization. **Prioritization maps for the City of Foster City are provided in Appendix C.**

5.0 PROJECT TRACKING

5.1 Introduction

Provision C.3.j of the MRP states that each Permittee shall develop the following:

> *"A process for tracking and mapping completed projects, public and private, and making the information publicly available."*

Tracking and mapping both existing and potential Green Infrastructure (GI) projects facilitates the implementation of a GI program in several ways:

1. Keeps the community engaged by providing an ongoing list of existing and potential GI projects.
2. Facilitates management of and associated inspections for a GI Operations and Maintenance Program.
3. Keeps the focus on potential GI projects in the City to encourage a continued effort to transition the City from "gray" to "green" and ensure these projects continue to make progress.
4. Allows the City to ascertain the treatment area for potential GI projects and continue to refine this area as projects develop.
5. Enables tracking of projects in different areas of the City which may have different land uses and priorities.
6. Helps measures progress towards water quality objectives.

5.2 City Internal Project Tracking System

As part of the development of the GI Plan, the City has mapped all existing and potential areas treated by GI in a Geographic Information System (GIS), which is a graphical framework for gathering, analyzing, managing, and representing data. In addition, specific projects are tracked on an internal Excel spreadsheet, which includes additional data, such as the type of treatment measures installed. The Excel spreadsheet is updated continuously and is used to manage the City's GI Operations and Maintenance program.

The City will aim to update the GIS exhibit which maps existing and potential areas treated by GI **(refer to the last exhibit of Appendix C)** on an annual basis and prior to preparation of the Annual Report to reflect the following:

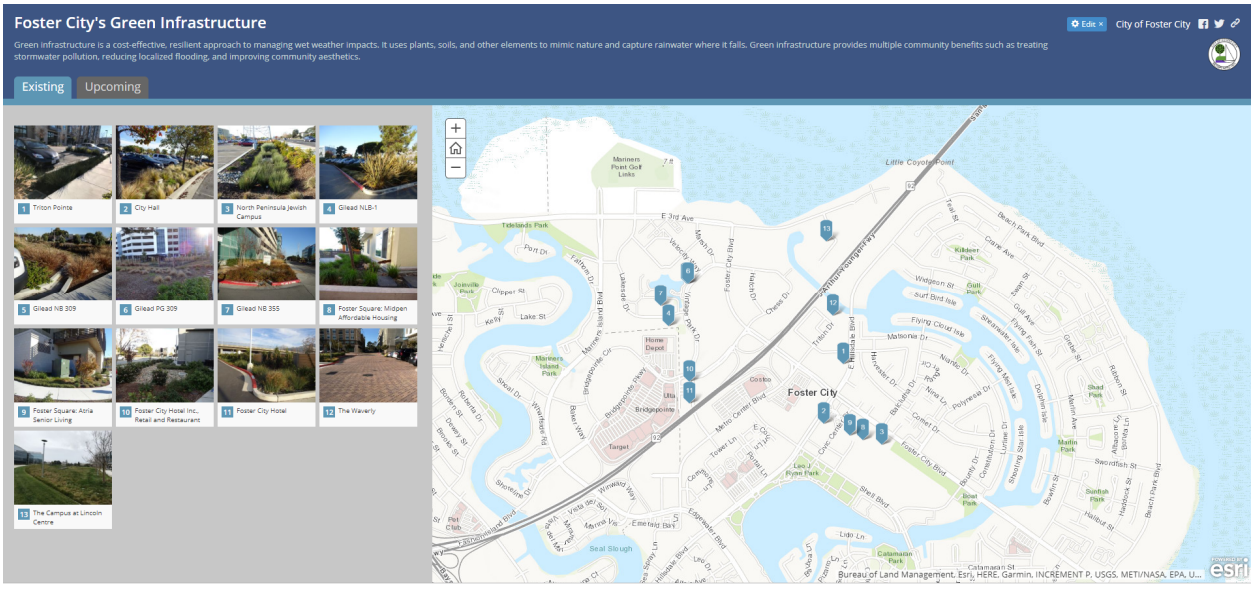
1. Projects which moved from "potential" to "existing" (i.e., were constructed).
2. Development projects that come in for planning review (either entitled, or in pre-application status if the project is likely to be submitted as a formal application).
3. CIP projects which are newly-identified as having GI potential.

The City's internal project tracking system is intended to be used until the Countywide Project Tracking System becomes available. At that time (estimated 2021), the City may consider reassessing the need for an additional internal project tracking tool. So as not to duplicate efforts, the City may consider the following options:

- Retire the internal project tracking system and use the Countywide tool instead. This will save on upfront costs and could even save on future costs if the City has a small number of GI projects.
- Should the City determine that, in addition to the Countywide tool, a more robust internal tracking tool with greater functionality is needed, the City may transition the Excel spreadsheet and GIS layer into a stormwater compliance database, which would require significant upfront expense but could reduce future costs if the City has enough existing GI projects. This would allow City staff to complete the following:
    - Complete inspection reports electronically.
    - Match the inspection data more quickly to the project list.
    - Facilitate the exporting of data.

5.3 City Public-Facing Project Tracking System

As part of the development of the GI Plan, the City created a GI Map using the ArcGIS Online story map tool (see Figure 19). This map features all existing and potential GI projects within the City. This story map is an interactive publicly-accessible web map that can be accessed at https://arcg.is/1r4TSn, or on the City website at https://fostercity.maps.arcgis.com/apps/Shortlist/index.html?appid=3ac35949ae2d472b9df7e1cdeb950fae. This allows the public to see locations, descriptions, and photos of GI throughout the City.



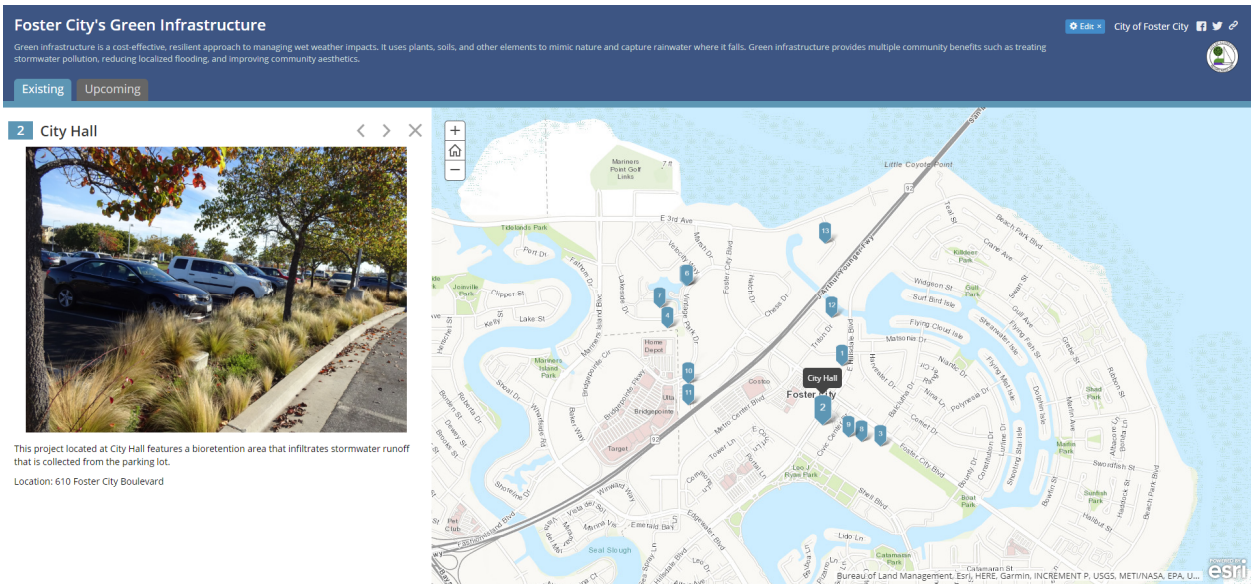


Figure 19. *Screenshots of the City's Green Infrastructure Map (2019).*

5.4 O&M Tracking Systems and Procedures

Proper maintenance is essential to maximizing the environmental, social, and economic benefits of GI, as well as ensuring that projects perform as expected. Written plans and procedures ensure proper long-term maintenance and are critical components to the success of any GI measure.

The City's goal is to ensure that public, private, Regulated, and Non-Regulated GI measures are maintained sufficiently to perform as designed by implementing the City's Enforcement Response Plan (ERP) and Standard Operating Procedures (SOPs), and by drawing from SMCWPPP resources, such as Chapter 6, Guidelines and Specifications.

5.4.1 O&M Tracking of Provision C.3.h. ("Regulated") Sites

The MRP requires, under Provision C.3.h, that GI installed as part of Regulated projects as well as permeable pavement installations in excess of 3,000 square feet be inspected upon project completion and at least once every five (5) years. Inspection and enforcement procedures are described in the City's Stormwater NPDES Enforcement Response Plan (ERP).

The City maintains an electronic database of sites as required by Provision C.3.h, which includes project data, the contact information of the site representative, the site Operations and Maintenance (O&M) Agreement and O&M Plan, past inspection records, and records of any enforcement actions.

5.4.2 O&M Tracking of Non-Regulated Sites

The City aims to design, construct, and maintain GI on public properties and rights-of-way. Voluntary, or Non-Regulated, installations of GI will be tracked as feasible in the same manner as Regulated projects, except that small measures, such as those installed on single-family homes, will not necessarily be tracked

for the purposes of the GI milestones **(see Chapter 3, "Green Infrastructure Milestones")**. The City may later opt to track these small projects.

Bioretention area located along Foster City Boulevard.

5.5 Countywide Project Tracking Tool

The City/County Association of Governments of San Mateo County (C/CAG) received a Caltrans Adaptation Planning Grant, which is being used to partially fund the San Mateo Countywide Sustainable Streets Master Plan (SSMP). The SSMP and associated deliverables will support C/CAG's member agencies in advancing sustainable stormwater management and creating more resilient transportation networks in San Mateo County in the face of a changing climate.[15]

[15] Request for Proposals for Technical Support to the City/County Association of Governments of San Mateo County to Develop the *San Mateo Countywide Sustainable Streets Master Plan.* (2018, August 30).

The SSMP will include the following elements:

- **Community Engagement.** Input will be solicited from local agency staff, community stakeholders, and the public to provide a participatory forum for sharing progress and soliciting input on the Master Plan.
- **Climate Adaptation Risk Analysis on Local Transportation Network.** Climate change-related precipitation impacts and stormwater capture benefits will be quantified.
- **High Resolution Data Analysis and Fine-Scale Drainage Delineation.** Data will be collected from member agencies, and then a high-resolution drainage system delineation will be prepared. Sustainable streets opportunities within the public right-of-way will be identified at a street-level scale.
- **Prioritization of Sustainable Streets Opportunities.** The SSMP will build on the existing green street prioritization system that C/CAG developed as part of the SRP by integrating priorities associated with protecting the multi-modal transportation network, pavement maintenance, and bicycle/pedestrian planning. The prioritization will also be subject to a rigorous stakeholder involvement process.
- **Project Concepts.** Up to ten (10) priority pilot projects will be identified and detailed which demonstrate the integration of bicycle and pedestrian improvements with sustainable streets practices.
- **Web-based Sustainable Streets Project Implementation Mapping and Tracking Tool.** An online tracking tool will be developed which can be used by member agencies to track GI implementation. It will include dashboards to show the public and interested stakeholders progress toward building adaptation to precipitation-based climate change impacts as well as water quality improvement. This tool will be publicly available and will allow users to see locations of implemented projects, project benefits, and progress toward long-term goals. The tracking tool is planned for completion in 2020.

5.6 Adaptive Management

This GI Plan is intended to act as a "living" document, allowing it to shift and adapt to the changing needs of the City. Using an adaptive management process **(as discussed in Section 3.2.3)**, the City will continue to verify feasible opportunities for GI projects to meet the final load reduction goals for 2040. The process will include the tracking of management metrics as discussed in Chapter 3, and continued re-evaluation of GI project opportunities.

Some aspects of the GI program will be outside of the City's control, including the uncertainty of the development climate and the actual construction of anticipated new and redevelopment projects. Forecasts for development may be higher or lower than what is achieved by the 2040 milestone. If less development occurs over time, more green streets or regional projects on public land may be needed to

provide equivalent volume management. Similarly, there are uncertainties in the implementation of public GI projects, as opportunities and funding for GI are likely to change between now and 2040.

The possibility exists that the screening and prioritization procedure used to develop the SRP is not as restrictive as it needs to be, meaning that there may be many streets identified as having GI potential where incorporation of GI is not actually feasible. Under such a scenario, more GI may be required to be installed in fewer areas. Alternatively, there may be opportunities not identified through the SRP, but through the CIP, which could result in GI implementation.

By taking an adaptive management approach to GI, the City can establish a process that is driven by the goals set forth in the RAA, which is flexible and iterative, and which allows for continuous improvement over time. GI is goal-driven, and its effectiveness will be measured at a watershed scale. See Figure 20 below for the adaptive management process.

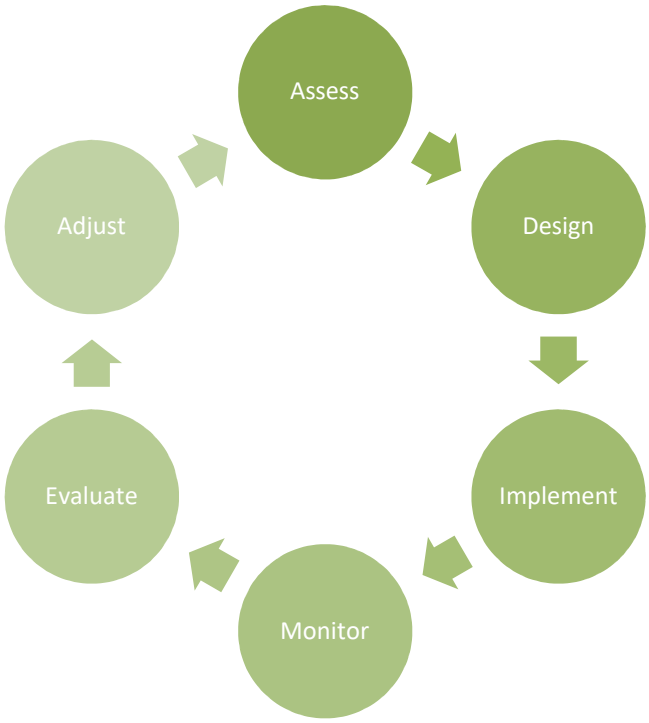


Figure 20. *Adaptive Management Process.*[16]

[16] *Green Infrastructure Implementation.* (2014). Water Environment Federation. Page 220.

6.0 GUIDELINES AND SPECIFICATIONS

6.1 Introduction

The MRP states that the adopted Green Infrastructure (GI) Plan shall contain the following elements:

> *Provision C.3.j.i.(2)(e): "General guidelines for overall streetscape, and project design and construction so that projects have a unified, complete design that implements the range of functions associated with the projects…. The guidelines should call for the Permittee to coordinate, for example, street improvement projects so that related improvements are constructed simultaneously to minimize conflicts that may impact green infrastructure."*
>
> *Provision C.3.j.i.(2)(f): "Standard specifications and, as appropriate, typical design details and related information necessary for the Permittee to incorporate green infrastructure into projects in its jurisdiction."*
>
> *Provision C.3.j.i.(2)(g): "Requirement(s) that the projects be designed to meet the treatment and hydromodification management 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 different 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)."*

The City has met these requirements through (1) development through the GI TAC and adoption of Countywide GI Guidelines and Standards, which include typical design details and sample specifications; (2) clarification of sizing of Non-Regulated GI projects; and (3) development through the GI TAC and adoption of BASMAA alternative sizing criteria for Non-Regulated green street projects.

Flow-through planter located at Midpen Affordable Housing.

6.2 Countywide GI Guidelines and Standards

6.2.1 San Mateo County GreenSuite

The City participated in the GI Technical Advisory Committee (GI TAC)'s development of the "GreenSuite". The GreenSuite is a combination of an updated version of the SMCWPPP C.3 Stormwater Technical Guidance Manual *(C.3 Regulated Projects Guide)* and the newly-developed Green Infrastructure Design Guide *(Design Guide).* The key content and organization of these guides is summarized in Figure 21.

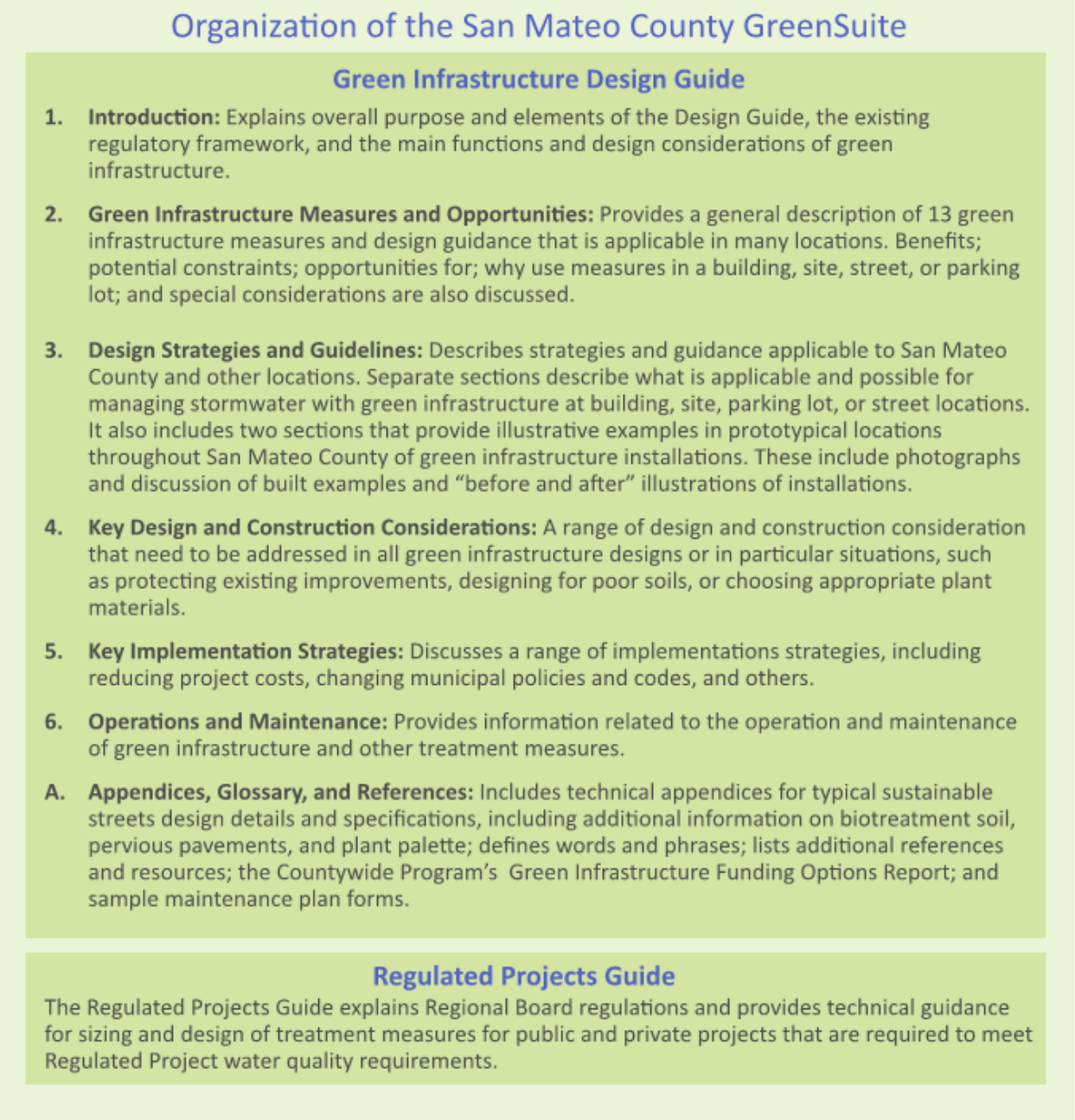


Figure 21. *Key Content and Organization of the San Mateo County GreenSuite.*[17]

Together, the documents referenced in Figure 21 allow designers, City staff, and developers to implement a range of GI measures and strategies. They also include model procedures for coordinated and consistent plan review of private projects, scoping and design for public projects, as well as recommendations for ongoing operations and maintenance.

[17] *San Mateo County Green Infrastructure Design Guide.* (2019).

In order to design GI facilities, designers would likely use a combination of both the *C.3 Regulated Projects Guide* and the *Design Guide.* Regulated projects must adhere to the specific requirements of the MRP, but Non-Regulated projects may also benefit from the sizing guidance provided in the *C.3 Regulated Projects Guide*. Designers will find more GI options in the *Design Guide* for Non-Regulated projects, because the *C.3 Regulated Projects Guide* does not address certain measures like green gutters, green walls, stormwater trees, and vegetated swales. For example, if a designer finds that landscape-based measures are not feasible on a project, he/she might consider mechanical treatment devices, such as media filters or high-flow rate tree wells, which are described in the *C.3 Regulated Projects Guide.* Utilizing both guides allows for flexibility in GI design and implementation on Non-Regulated projects without repeating information already provided for Regulated projects, while keeping the requirements for Regulated projects clear and separate.

6.2.2 Green Infrastructure Design Guide

SMCWPPP, with input and feedback from its member agencies, including the City of Foster City, developed the *Design Guide* to provide comprehensive guidance on the planning, design, construction, and operations and maintenance of GI for buildings, parking lots, sites, and streets. The *Design Guide* addresses the requirements of the MRP, fulfilling Provision C.3.j.i.(2)(e) requiring design and construction guidelines for streets and projects and C.3.j.i.(2)(f) for developing typical design details and specifications for different street and project types. The *Design Guide* also addresses the part of C.3.j.i.(2)(g) related to a regional approach for alternative hydraulic sizing for Non-Regulated constrained street projects.

The *Design Guide* includes a range of information related to GI, such as provision of policies and definitions; identification of different types of treatment and site design measures; summation of various benefits including a range of community benefits provided beyond stormwater management; presentation of "before" and "after" images showing the results of integration of GI into various projects; introduction of complete streets concepts and design; discussion of BASMAA's regional approach for alternative sizing of Non-Regulated green street projects involving spatial constraints; design and implementation considerations; operations and maintenance; and provision of typical construction details and specifications. The *Design Guide* explains how these concepts, considerations, and guidance can be used to effectively integrate GI in new and redevelopment projects, whether C.3 Regulated or not.

General guidelines for overall streetscape and project design, construction, and maintenance have been developed so that projects have unified, thoughtful designs and implement the full range of GI capabilities possible. The MRP emphasizes the need for guidance related to green streets functions, and the *Design Guide* includes implementation guidance specifically for stormwater management and treatment within streets. The *Design Guide* provides direction regarding retrofit of streets to: incorporate GI measures appropriate for a range of street and land use contexts and types; support safe and effective multimodal travel with a focus on the comfort of cyclists and pedestrians; offer shared use as attractive, functional public space; and achieve urban forestry goals and benefits. The *Design Guide* describes practices for incorporating GI following the principle of "no missed opportunities" as specified in the MRP, Provision

C.3.j, and for directing the efficient and effective coordination, review, and implementation of GI in public and private projects.

The Appendices of the *Design Guide* include typical design details and specifications for the design and construction of GI applicable to a variety of applications whether street or site-based projects. These details, as well as those provided in the *C.3 Regulated Projects Guide*, can be adapted for use on local GI projects.

6.2.3 Adoption of Countywide Green Infrastructure Guidelines

The City of Foster City will use the *Design Guide*, *C.3 Regulated Projects Guide,* and future amended versions to provide support and guidance in implementing GI within the City. As more projects include GI, portions of the *Design Guide* may be superseded by Foster City-specific updates or modifications based upon lessons learned and other factors as determined by the City.

The *Design Guide* can be found at SMCWPPP's website at https://www.flowstobay.org/gidesignguide.

C.3 Regulated Projects Guide (formerly known as the *C.3 Technical Guidance, Version 5.0 Handbook)* can be found on the SMCWPPP "Flows to Bay" website at https://www.flowstobay.org/newdevelopment.

For any project identified as having GI potential, a feasibility review will be undertaken to determine the GI options best suited to that project, given its goals, funding source, budget, and constraints. As any such project is developed through concept and plans – including improvement plans – the plans, specifications, details, and project constraints will be reviewed by City Public Works staff for compliance with both the Countywide GreenSuite and City standards. Inconsistencies, if they arise, will be resolved through development of site-specific specifications and details.

6.3 Local Green Infrastructure Guidelines in Foster City

In addition to the guidance available in the Countywide GreenSuite, the City of Foster City has provided additional local guidance to address local context and existing policies in this section. No changes are proposed to the Countywide GreenSuite; rather, this section is intended to be a local supplement to the Countywide GreenSuite. The City may make future updates or modifications to this section if necessary; if any local updates conflict with the Countywide GreenSuite, it will be stated in this section.

Not every GI measure in the GreenSuite will be applicable to the City of Foster City. Specific constraints within the City of Foster City include the following:

- **Limited infiltration potential.** Per the MRP glossary, surfaces are considered pervious if they are properly designed to "store and infiltrate runoff at a rate equal to the immediately surrounding unpaved, landscaped areas, or store and infiltrate the rainfall runoff volume described in C.3.d". The City is low in elevation and close in proximity to the San Francisco Bay, resulting in a high seasonal groundwater. In addition, the soil types in the City have low permeability rates. This restricts the use of infiltration-based measures, such as stormwater planters (unless they are lined

with a waterproof membrane). Permeable pavers also rely on the ability to infiltrate in order to be considered "pervious".

- **Limited ability to discharge treated runoff.** The City's storm drain system operates under a "wet" condition, in that the storm drain pipes are constantly full of water due to tidal action from the San Francisco Bay. In addition, City storm drains are very shallow. Together, these constraints make it difficult to incorporate various types of stormwater treatment measures, including underground detention, and restrict use of large mechanical treatment devices, such as hydrodynamic separators.
- **Limited feasibility of rainwater harvesting.** The use of rainwater harvesting in Foster City is typically infeasible because it is not possible to harvest, store, and use sufficient runoff to provide treatment for an entire site. Other, more space-effective treatment measures, like bioretention areas, are used on Regulated Projects subject to Provision C.3 requirements. On a smaller scale, rainwater harvesting may be more feasible to implement. For example, a rainwater cistern on a single-family home site that supplements the home's irrigation demand may be feasible to implement.

6.4 GI Measure Sizing Approaches

6.4.1 Standard "C.3.d" Sizing

Under the updated MRP, Provision C.3 Regulated Projects will continue to be subject to the treatment and hydromodification sizing requirements of Provision C.3.c and C.3.d currently in place. The definition of "Regulated" project and details of various treatment sizing options are described in the MRP and the SMCWPPP C.3 Stormwater Technical Guidance Manual.

The MRP requires that GI projects be "designed to meet the treatment and hydromodification sizing requirements in Provisions C.3.c. and C.3.d." (Provision C.3.j.i.(2)(g)). This means that, for most projects, there will be no difference in the sizing requirements between a Regulated and Non-Regulated Project. As a goal, the City will aim to meet the requirements of Provision C.3.d when sizing GI facilities. However, should site constraints preclude fully meeting these requirements, the City will construct a smaller facility **(for green streets projects, refer to Section 6.4.3, "Alternative Sizing Approach", which describes the BASMSAA Alternative Sizing Criteria)**. In designing Green Infrastructure facilities, the City will pursue a flexible, adaptive approach. In other words, even if a small facility is constructed with a proposed project, some treatment is better than no treatment, and future facilities can be constructed to provide stormwater treatment for areas not addressed by the initial installation. Where feasible, bioretention facilities can be designed as "off-line" facilities, meaning they would treat a fraction of runoff generated, preventing high-volume flows and/or bypassing some of the runoff to be treated downstream.

Non-Regulated GI projects may use the full range of stormwater treatment measures described in both the *C.3 Regulated Projects Guide* and *Design Guide*, including mechanical treatment measures such as tree

well filters and media filters, without the restrictions imposed on Regulated Projects. The *C.3 Regulated Projects Guide* summarizes the technical aspects of GI measures, including how they should be sized for treatment. The *Design Guide* introduces some GI measures which are not discussed in the *C.3 Regulated Projects Guide*. For these, it is not clear how to size the GI measures for treatment.

Measures which are not considered treatment for Regulated Projects (and therefore have no associated sizing criteria for Non-Regulated Projects) are as follows:

- Vegetated Swale
- Green Gutter
- Stormwater Tree
- Green Wall

Three (3) of these measures (vegetated swale, green gutter, and stormwater tree) can optionally be constructed with the same cross-section as a stormwater planter (18 inches of bioretention soil, and 12 inches of Class 2 Permeable Material). If these measures are built to the same standards as a stormwater planter under the GreenSuite, the same sizing factors as those that apply to stormwater planters would apply. Otherwise, a customized sizing approach would need to be proposed by the designer and verified by the City, with appropriate factors of safety applied.

For green walls, there is no like-measure with established sizing criteria. Therefore, when designing green walls, no minimum sizing criteria pertain, and such green walls can be constructed to fit the site-specific context and available wall space.

6.4.2 Defining Drainage Management Areas

Regulated projects must be sized to provide treatment for the effective impervious area which drains to them. For more information about defining catchment areas for projects, refer to the C.3 *Regulated Projects Guide* and Chapter 4 of the *Design Guide.*

Non-Regulated public street applications of GI measures must also be sized to provide treatment for the effective impervious which drains to them, with an exception: they need not be designed to treat contributing private areas, such that the drainage management area (also called “catchment area”) is delimited by the street right of way, or in some cases, the back of sidewalk. If the sidewalk drains to a planter strip, the drainage management area can be limited to the back of curb, since the sidewalk is “treated” by the landscaped planter strip. This approach was first established in the 2009 San Mateo County Sustainable Green Streets and Parking Lots Guidebook (refer to Chapter 5) and has been deemed acceptable for the purposes of sizing projects for the 2018 C/CAG Safe Routes to School (SRTS) and Green Streets Infrastructure Pilot Program. Sizing for public street applications is not discussed in the GreenSuite.

6.4.3 Alternative Sizing Approach

All Green Infrastructure projects should be designed to meet the treatment requirements of Provisions C.3.c and C.3.d of the MRP (and hydromodification requirements, where applicable). However, an

alternative regional sizing approach was developed for street projects where site constraints preclude fully meeting the sizing requirements of Provision C.3.d.

BASMAA was tasked with developing Alternative Sizing Criteria on a regional basis. Per the MRP, GI facilities must be sized using either a flow, volume, or combination flow and volume method, depending on the type of treatment measure used and based on the engineering judgment of the project designer. The least conservative method is the combination flow and volume method, which specifies that treatment facilities should be sized to treat at least 80 percent of the total runoff over the life of the project, using local rainfall data. Using the combination flow and volume method and a continuous simulation analysis, BASMAA's consultant (Dublin Environmental Consulting) assessed the sizing factors needed, assuming a standard bioretention area cross section, in order to achieve the MRP sizing requirements. It was determined that bioretention facilities with a standard cross section can both capture and treat the required amount of Provision C.3.d runoff when sized to 1.5% - 3% of the tributary equivalent impervious area, depending on the project location.

Bioretention area located at Atria Senior Living Center at Foster Square.

6.4.3.1 Conditions Under Which the Alternative Approach May Be Used

The BASMAA Alternative Sizing Criteria can be used when site constraints are present which preclude fully meeting the sizing criteria.

Where feasible, bioretention facilities on street projects should be sized as large as possible. There are several reasons to design and build facilities larger than the Provision C.3.d minimum:

- Promotes better performance
- Ensures compliance with Provision C.3.d despite minor flaws in design, construction, or maintenance
- Allows for an engineering safety factor
- Maximizes removal of pollutants
- Allows the facilities to operate as full trash capture devices
- Facilitates management of hydromodification effects, as relevant

However, existing streetscapes can be challenging to retrofit, making it difficult to build large GI facilities. These constraints include the following:

- Limited project funding.
- Larger facilities can result in more parking loss and more impacts to residential driveways.
- The presence of existing underground utilities can create restrictions in either the footprint or depth of a GI facility. Typically, clearances are required by the utility owner between the existing utility and the GI facility and any associated storm drain piping. In addition, having utilities in the GI facility can create issues in the future, as a utility owner must be careful not to damage or destroy the GI facility or impair its function when performing repairs on their utility lines. Utility crews are typically not familiar with the construction requirements or functionality of GI facilities.
- The presence of existing or proposed above-ground structures and fixtures such as street lights, fire hydrants, and utility boxes can reduce the amount of functional cross-sectional area of the GI facility.
- Larger bioretention facilities are likely to impact existing mature trees and root systems. It may be preferable for the municipality to reduce the treatment area in order to preserve a tree, especially given that mature trees offer many stormwater quality benefits.
- Sometimes, the elevations of or lack of nearby storm drain facilities put restrictions on either the depth or use of an underdrain facility or overflow structure.
- It is difficult to define and control catchment areas for street projects, because both public areas (streets, curbs, and sidewalks) and private areas (residential or commercial areas, some of which may be treated by onsite facilities) drain to the bioretention areas. Typically, it would make a project infeasible to aim to treat the entirety of public and private runoff.

- The in-situ soil permeability and strength are often low. Protection of the adjacent roadway structure (e.g., via deep retaining curbs) is often necessary to prevent compromising the roadway by oversaturation. This can increase project costs.
- In some cases, it may be preferable to limit the depth of the facility adjacent to the roadway or sidewalk, or to introduce 3:1 side slopes to promote safety. These modifications for safety can reduce the effective area of the treatment measure.
- Right-of-way area is limited, and the City must always consider the site context and various City objectives when designing a project. Truck turning radii, the presence of bike lanes and pedestrian walkways, parking loss, through-lane widths, and driveway impacts are all considerations when designing Green Infrastructure facilities on a public street.

7.0 INTEGRATION WITH OTHER PLANNING DOCUMENTS

7.1 Introduction

To ensure implementation of the GI Plan, the MRP states that the Green Infrastructure Plan shall contain the following:

> *C.3.j.i.(2)(h): "A summary of the planning documents the Permittee has updated or otherwise modified to appropriately incorporate Green Infrastructure requirements, such as: General Plans, Specific Plans, Complete Street Plans, Active Transportation Plans, Storm Drain Master Plans, Pavement Work Plans, Urban Forestry Plans, Flood Control or Flood Management Plans, and other plans that may affect the future alignment, configuration, or design of impervious surfaces within the Permittee's jurisdiction, including, but not limited to, streets, alleys, parking lots, sidewalks, plazas, roofs, and drainage infrastructure. Permittees are expected to complete these modifications as a part of completing the Green Infrastructure Plan, and by not later than the end of the permit term."*
>
> *C.3.j.i.(2)(h): "To the extent not addressed above, a work plan identifying how the Permittee will ensure that Green Infrastructure and low impact development measures are appropriately included in future plans (e.g., new or amended versions of the kinds of plans listed above)."*

7.2 Evaluation of Planning Documents

The City has undertaken a review of its existing planning documents to determine if the documents (1) contain opportunities for GI implementation, (2) have existing language and policies supporting GI implementation, and (3) hold potential for updates to implement GI. The planning documents were then organized into the following categories:

- Planning documents that do not require modification or are unrelated to GI;
- Existing planning documents which support GI implementation;
- Modifications made to existing planning documents; and
- Planning documents to be updated in the future.

Planning documents that are not related to GI are not included in the GI Plan.

The City determined that existing planning documents include language that support or relate to GI implementation as noted in Section 7.3. Planning documents to be updated in the future are listed in Section 7.6.

7.3 Existing Planning Documents Which Support GI Implementation

The implementation of Green Infrastructure is addressed in the City's Local Hazard Mitigation Plan/General Plan Safety Element as well as the Climate Action Plan. Such existing documents will likely not be updated in the near future. However, because of the multiple benefits that can be achieved through GI, the City can implement Green Infrastructure as a strategy for flood reduction, climate change adaptation, traffic calming, and other City goals. Table 10 summarizes the City's existing documents and method by which each document supports GI Implementation.

Table 10. *Existing planning documents which support GI implementation.*

Planning Document	Related Pages or Sections
Local Hazard Mitigation Plan / General Plan Safety Element November 2016	Flood Mitigation – Page: 31, 47, 67-74, 101, 109, 113, 114, and 133 Sea Level Rise – Page: 67-74 Storm Drain Improvements – Page: 35 Water Supply and Quality – Page: 105, 120
The City's 2016 Local Hazard Mitigation Plan / General Plan Safety Element addresses the protection of the community from risks associated with hazards such as storms, earthquakes, floods, fires, and hazardous materials. The installation of Green Infrastructure improvements can be used as a strategy to mitigate the impacts of storms and floods by reducing the area of impervious surfaces and creating additional storage capacity. Therefore, the implementation of GI can be used as a tool to meet the goals of the Local Hazard Mitigation Plan / General Plan Safety Element.	
Climate Action Plan September 2015	Complete Streets – Page: 4-4, 4-41, 5-5, B-8 Infrastructure – Page: 1-14, 4-46 Landscaping – Page: 4-71, 5-5 Sustainability – Page: 2, 4-79, B-14 Traffic Calming – Page: 4-42 Water Conservation – Page: 1-17, 4-15, 4-76
The City of Foster City developed a Climate Action Plan in 2015 to address climate change and reduce the greenhouse gas emissions in the City. The planning document addresses climate change with measures that affect land use, transportation, street design, landscaping, infrastructure, energy and water. These measures, while originally identified as methods to reduce greenhouse gas emissions, are also achieved by implementing Green Infrastructure. By converting old infrastructure to green streets, the City can develop complete streets that promote alternative forms of transportation while also creating landscaped spaces which absorb greenhouse gas emissions. By promoting awareness of sustainability through Green Infrastructure outreach, the City can also increase awareness about water conservation, sustainability, and climate change impacts. Many of the measures support in the plan support GI implementation in that they can be achieved with or in conjunction by incorporating Green Infrastructure.	

7.4 Maintenance and Engineering Standards

With the approval of this GI Plan, the City adopts the GreenSuite, which is the combination of the Green Infrastructure Design Guide and the Regulated Projects Guide, and any amendments thereof, as its Green Infrastructure guidelines. **Refer to Section 6.2.2, "Green Infrastructure Design Guide".**

7.5 Summary of Modifications to Existing Documents

7.5.1 Safe Routes to School Assessment (January 2018)

The City developed a Safe Routes to School Assessment which assesses safety concerns for bicyclists, pedestrians, and drop-off and pick up operations for students. It includes a comprehensive pedestrian, bicycle, vehicular, and intersection evaluation to determine the current traffic and transportation facilities and potential for improvements. Within this study, the City references the GI Workplan and notes that GI opportunities can be effectively combined with safe routes to school improvements. GI is a strategy that can meet the goals of the Safe Routes to School Assessment. When integrated in the design of pedestrian improvements, GI improves the pedestrian experience and creates a traffic calming effect. Further review of GI potential can be undertaken with the design of the safe routes to school projects.

7.6 Future Updates

In a review of existing Planning Documents, the City determined that the update of the General Plan would be necessary to support implementation of the GI Plan.

7.6.1 Foster City General Plan Land Use and Circulation Element (In Progress)

The Foster City General Plan Land Use Element was last updated in 2016. The City has reviewed and plans to update the document in 2019 to incorporate policies and language to support GI Implementation, namely the following policies:

- **LUC-D-4 Neighborhood Commercial Centers.**
- **LUC-D-8 Increases in Intensity of Uses in East Hillsdale Boulevard Corridor.**
- **LUC-E Provide for Diversified Circulation Needs.**
- **LUC-E-1 Improvements to Existing Streets.**
- **LUC-E-2 Complete Streets.**
- **LUC-E-2-a Plan Consultation and Consistency.**
- **LUC-E-2-b Street Network/Connectivity.**
- **LUE-E-2-d Evaluation.**
- **LUC-E-2-3 Leadership Approval for Exemptions.**
- **LUE-E-3 Streets in Residential Neighborhoods.**
- **LUC-E-4 Private Street and Public Loop or Cul-de-Sac Streets.**
- **LUC-E-7 Coordination with Transit Agencies that Serve San Mateo County.**

- **LUC-E-7-a Transit System Infrastructure.**
- **LUC-E-8-b Development Standards for Bicycles.**
- **LUC-F-1-d Traffic Calming.**
- **LUC-H Foster a More Sustainable Community.**
- **LUC-H-6 (new objective) Green Infrastructure Plan.**
- **LUC-H-6-a (new policy) Implementation of Green Infrastructure, Including Green Streets Measures.**
- **LUC-K-2 Consistency with City's Infrastructure.**
- **LUC-L-10 Adequacy of Public Infrastructure and Services.**

Permeable pavers located at The Triton Apartments.

7.6.2 Foster City General Plan Conservation Element (In Progress)

The Foster City General Plan Conservation Element was last updated in 2006. The Conservation Element addresses resource conservation and the preservation of natural resources and includes many policies that support the Stormwater Program and the implementation of Green Infrastructure. The City plans to expand on Green Infrastructure by modifying language as well as specific policies to create a more direct connection to Green Infrastructure. Those policies generally include stormwater management, water

quality improvement and managing discharge and can place an emphasis on implementing GI to meet its intent. The City plans to update the document in 2019 to strengthen the language in existing policies below:

- **C-2 Water Quality Monitoring.**
- **C-a Water Saving Landscaping and Irrigation.**
- **C-b Property Owner Water Saving Techniques.**
- **C-e Water Quality.**
- **C-f Lagoon Water Quality.**
- **C-i Water Quality Discharge.**
- **C-bb National Pollution Discharge Elimination System (NPDES) Stormwater Management Plan.**

7.6.3 Update Schedule

Generally, updates to existing planning documents requires public hearings and consideration from Planning Commission and City Council. The planning document updates are scheduled to go to the Planning Commission on 7/18/19; and the City Council on 8/19/19 for the first reading, and 9/3/19 for the second reading.

In future documents, Planning and Public Works staff will support the process in updating and developing Planning documents in order to ensure that the requirements and policies of the GI Plan are incorporated. Table 11 lists the anticipated date of completion of planning document updates.

Table 11. *Schedule for update of planning documents.*

Name of Plan to be Completed / Updated	Anticipated Date of Completion / Update
Foster City General Plan Land Use and Circulation Element	September 2019
Foster City General Plan Conservation Element	September 2019

8.0 FUNDING OPTIONS

8.1 Introduction

Provision C.3.j.i.(2)(k) of the MRP states that the Green Infrastructure (GI) Plan shall contain the following:

> *"An evaluation of prioritized project funding options, including, but not limited to: Alternative compliance funds; grant monies, including transportation project grants from federal, State, and local agencies; existing Permittee resources; new tax or other levies; and other sources of funds."*

To undertake an evaluation of potential funding options and sources, the City (1) reviewed the GI program elements and associated costs, (2) participated in the development of a Nexus Funding Evaluation, which identified and evaluated the feasibility of various funding strategies, through the GI TAC, (3) assessed the funding strategies of the Nexus Funding Evaluation for local applicability, (4) discussed opportunities for public and private cooperation, and (5) developed a process for funding GI through integration into the City's existing Capital Improvement Program.

A single source of revenue for GI is unlikely to cover all the various elements of a GI program. Instead, implementation of GI will require a range of funding sources. This chapter is a starting point to gauge funding needs and develop a suite of funding options for use with GI. As the program develops, the funding needs and opportunities may change. This chapter and the City's approach to funding may be revisited in the future as more information becomes available and more awareness is brought to the GI policies and requirements.

8.2 GI Program Elements and Funding Needs

8.2.1 Current Assessment of GI Costs

Implementation of GI measures is expensive. It is estimated that the cost to install the GI required to be in place by 2040 per the MRP will range in the tens of millions of dollars for the capital (construction) costs alone. Additional costs include management of the GI program, planning, design, tracking of completed projects, as well as operations and maintenance.

One of the difficulties of developing funding for GI is that few funding sources are available which can be used for all the elements of a GI program throughout its lifecycle. For example, grants can be used to fund design and construction costs, but not overall management of the GI program or operations and maintenance costs.

Bioretention area located at the TownePlace Suites, 1299 Chess Drive.

GI costs may include the following:

- **Program Management.** Though the City has managed MRP compliance for many years, GI implementation will take additional staff time beyond permit compliance activities which occurred prior to 2016. In addition to reviewing capital projects for GI potential, City staff will begin tracking both regulated as well as select Non-Regulated projects and monitoring progress toward achieving the milestones for GI implementation for 2030 and 2040. Participation in the SMCWPPP GI TAC will also likely continue to be necessary past the date when the GI Plan is submitted in September 2019 to assist in developing the Countywide Sustainable Streets Master Plan and to coordinate with other San Mateo County agencies on GI implementation and tracking efforts. Interdepartmental meetings among the Planning, Public Works, and Parks and Recreation Departments will also likely continue to be necessary to ensure that GI is implemented successfully on private and public projects.
- **Capital Costs.** GI capital costs depend on the measure(s) to be implemented, size of the facility, the ease with which such measure(s) can be incorporated on a project that includes other

elements, and the local context (such as the ease of connecting to existing drainage systems, ground slope, space limitations, and nearby existing utilities).

Because of the limited construction cost data available for public infrastructure projects located in San Mateo County which incorporate GI, it is difficult to estimate their cost. Private projects have been constructed in San Mateo County, but City does not have access to the detailed cost data for the GI component. Private project and public project costs differ in key ways: public projects must contend with the removal and modification of existing street infrastructure; conflicts with existing utilities, space limitations, pedestrian safety and grade limitations, and may require payment of prevailing wage. San Mateo County tends to have higher construction costs than other Bay Area counties, and California in general has higher construction costs than the nationwide average. In addition, GI detailing can vary widely from jurisdiction to jurisdiction, making it difficult to make cost comparisons among projects.

Current (2019) capital costs for a bioretention area can range from $50 to $150 per square foot, a span highly dependent on local context, grading required, water and power sources, storm drain connection proximity, and selected plant palette and irrigation system. Permeable paving can range from $25 to $100 per square foot, depending on the depth of the section and whether it is necessary to work around existing utilities or trees. Capital costs of $129,000 to $187,000 per acre of impervious area managed[18] were quoted for projects in Onondaga County, New York, which would work out to roughly $258,000 to $374,000 for construction costs of curb extensions installed at an intersection which treats 2 acres of impervious area. Limited recent bid result data in San Mateo County suggest that a similar project here would cost in excess of $500,000 to construct.

- **Planning and Design Costs.** Planning and design costs for capital projects are typically around 10-20% of the capital costs. Integrating GI into other capital programs can reduce both the construction costs for GI as well as the design costs. The SMCWPPP Green Infrastructure Design Guide *(Design Guide)* clarifies the application of GI on public projects. As GI becomes more common on public projects and GI designs are standardized, GI projects will become less expensive to plan and design.
- **Operation and Maintenance (O&M) Costs.** Limited data is available on maintenance costs, because maintenance is often performed by City staff as part of their regular course of business, making it difficult to separate time spent on maintenance of standard City landscaping and streets versus GI. It is possible that due to the specialized nature of the maintenance of GI measures, or if staff are otherwise at capacity on maintenance of other City infrastructure, the City may need to contract maintenance work to an outside vendor. Vendors may in the future have special GI

[18] *The Real Costs of Green Infrastructure*. (2015, December 2). Stormwater Report. https://stormwater.wef.org/2015/12/real-cost-green-infrastructure/.

maintenance certifications not held by staff, such as the Bay Friendly Landscaping certification or the National Green Infrastructure certification by the Water Environment Federation. In Onondaga County, New York, maintenance costs for bioretention areas were approximately $2,000 per acre of impervious area managed per year[19]. This would be $4,000 per year for curb extensions installed at an intersection which treats 2 acres, or $200,000 in total over a 50-year life of the system. Again, these costs are likely lower than what would be anticipated in San Mateo County, and do not reflect inflation or the rising cost of construction projects. The *Design Guide* further clarifies GI maintenance needs, leading to standardized maintenance practices and lower maintenance costs.

- **Outreach and Education Costs.** The City will continue to participate in outreach and education for stormwater quality through the SMCWPPP Public Information and Participation (PIP) subcommittee. However, due to its limited budget and various priorities (e.g., trash and litter reduction as well as outreach to businesses and construction sites to coordinate with the stormwater inspection programs), the PIP subcommittee may have limited ability to offer outreach related to GI. However, ongoing outreach and education will step toward implementation, as outreach not only leads to a better understanding of the measures being installed, but also helps build support for a dedicated GI or environmental protection funding source. This may result in the construction of GI elements within individual homes and businesses on a voluntary basis.
- **Inspection Program Costs.** The City inspects private GI projects in accordance with its Enforcement Response Plan and Provision C.3.h of the MRP. A typical inspection, including time for coordinating with the site representative and writing an inspection report, takes approximately three (3) hours per site. If follow-up inspections are required, an additional three (3) hours is often required for each follow-up visit. The frequency of inspections is specified in the City's ERP, but generally sites are inspected on a 5-year interval or more frequently, and 20% of the City's private GI projects are inspected each year. It is estimated that approximately four (4) sites are inspected per year, at a cost of approximately $4,000 to $6,000 per year. As additional GI projects are constructed, this cost will increase.

Figure 22 depicts the estimated relative costs of the GI program elements for a GI project with an assumed $500,000 construction cost consisting of stormwater curb extensions at an intersection. Limited data is available to ascertain these relative costs, so they have been assumed until more data becomes available.

[19] *The Real Costs of Green Infrastructure*. (2015, December 2). Stormwater Report. https://stormwater.wef.org/2015/12/real-cost-green-infrastructure/.

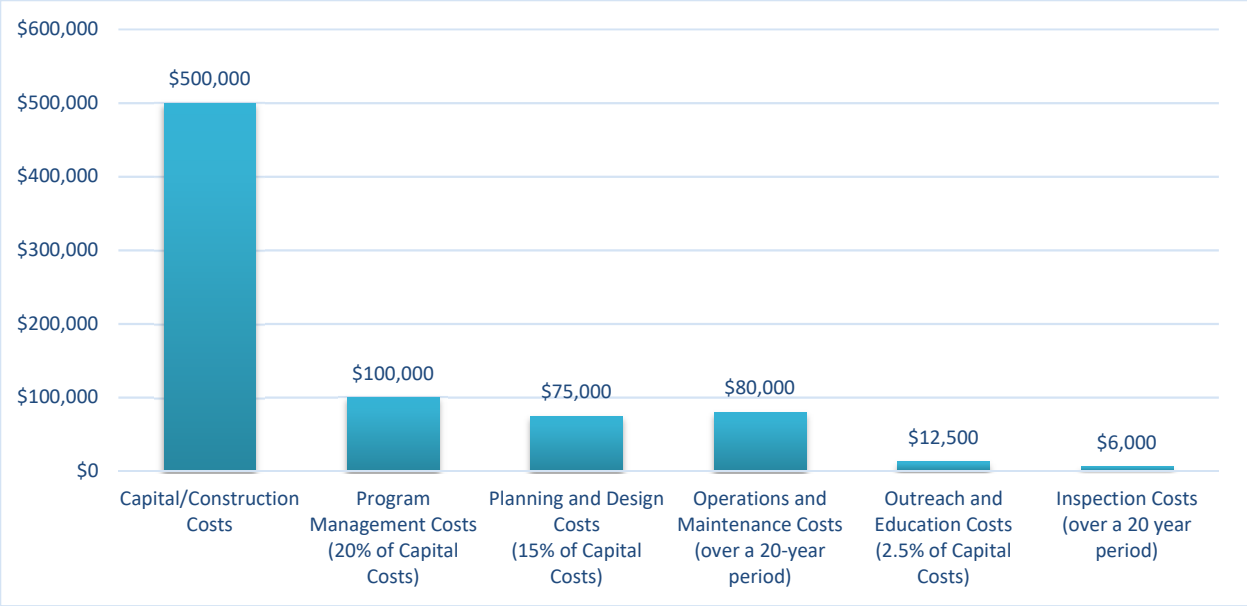


Figure 22. *Estimated Relative Costs of Green Infrastructure Program Elements.*

8.2.2 Future Assessment of GI Costs

Section 8.2.1 describes the costs associated with the elements of a GI program based on limited funding information available in San Mateo County and in other areas of the United States. Estimated costs for GI will be improved over time with agency-specific and County-specific knowledge as the GI program is implemented. Future sources of cost estimating data will include bid results from GI projects; proposals received from designers and construction management firms to design and inspect GI projects; actual consultant and staff time spent providing program management, planning, and outreach services; public works maintenance staff time performing maintenance on GI systems; and time spent performing inspections. It will likely be difficult to assess time spent by staff on tasks relating to GI, as it will not necessarily be tracked separately from other staff time.

The City may also draw from other published resources available to estimate the costs of GI. For example, the SFPUC has made its cost estimating model available to other municipalities to use for planning-level analyses. This Excel-based model can be used as a planning tool to plan and budget for GI maintenance obligations for labor and costs. The user will be able to input user-defined project attributes (e.g., BMP type, size, date), and the model will yield long-term maintenance costs and staffing obligations as outputs.

8.3 Funding Strategies

Through the GI TAC, the City and SMCWPPP developed a GI Funding Nexus Evaluation document for jurisdictions within San Mateo County with the goal of expanding the pool of existing stormwater funding sources and supplementing them with strategies in line with GI implementation goals. The Nexus Funding Evaluation describes and evaluates funding mechanisms, outlines funding needs, and provides strategies to procure such funding for design and construction of new GI. This subsection is intended to describe the City-specific approach to the funding strategies discussed in the Nexus Evaluation. Rather than repeating

the information available in the Nexus Evaluation, this subsection can be used in connection with the Nexus Evaluation to further explore those funding options that align with the City's priorities. It is anticipated that the evaluation of funding options for GI will be an ongoing process and revisited in the future as the program develops.

Bioretention area located at Foster City Hotel, Inc., Retail and Restaurant.

BALLOTED APPROACHES

The most sustainable and formative funding approach, but also the most challenging. Successful balloted approaches are most inclined to provide significant funding for stormwater management and stormwater-related projects. The two (2) biggest challenges for balloted approaches are planning the strategy for the proposed project/program and effectively presenting the project and vision to the voting community. Examples of balloted approaches include the following:

- **Parcel Taxes**
- **Other Special Taxes**
- **Property-Related Fees**
- **General Obligation Bonds**

City-Specific Approach: At this time, the City does not plan to pursue GI-specific parcel taxes, other special taxes, property-related fees, or general obligation bonds, but will revisit these funding approaches at a later date as its program develops. Other local agencies may move forward with these funding strategies in the coming years. By delaying implementation of these funding strategies, the City can build upon the efforts of those early adopters.

NON-BALLOTED APPROACHES

These include funding strategies that do not require a ballot or voter approval. Non-balloted approaches may encounter lack of support from the general public; therefore, a nexus study/cost analysis (or a report which defines the purposes, rationale, and structure of the associated fees) will be necessary to determine relevant user costs. Taxes need not have a direct nexus to a service received, as opposed to fees, which require that a nexus be established between cost and service provided. Examples of non-balloted approaches include the following:

- **Senate Bill 231**
- **Regulatory fees**
- **Developer Impact Fees**
- **Realignment**
- **Grants**
- **Loans**

City-Specific Approach: The City may pursue grant opportunities as they arise, as the City is able to identify CIP projects with GI potential. At the Countywide level, the City will advocate for the inclusion of GI funding in transportation grants, stormwater grants, and other grants for capital programs that lend to integration with GI.

Senate Bill 231, signed by Governor Brown on October 6, 2017, helps to clarify that "sewer" is intended to be used interchangeably to mean "storm sewer" and "sanitary sewer" to gain access to funds made available by Proposition 218. However, there is no legal precedent for an agency's instituting stormwater fees without a ballot measure, and it is important for any agency considering such an approach to consult with other agencies and industry groups to coordinate their efforts in a strategic manner. The City will continue to support Senate Bill 231 at a Countywide level through SMCWPPP and C/CAG.

The City does not currently have regulatory or developer impact fees which might be used to design and/or construct GI but may revisit these funding approaches later as the program develops.

SPECIAL FINANCING DISTRICTS

Financial frameworks that were constructed by the local government to levy fees, taxes, and assessments for any improvements and services conducted. Most special financing districts are required to conduct a ballot that includes affected property owners, but in most cases, special financing districts administer small areas or apply to an individual land owner. Examples of special financing districts include the following:

- **Benefit Assessments**
- **Community Facilities District**
- **Business Improvement Districts**
- **Enhanced Infrastructure Financing Districts (EIFD)**

City-Specific Approach: As sites are redeveloped, the City will enforce C.3 stormwater treatment requirements to ensure that GI measures are constructed on site. However, the City is unlikely to expand treatment requirements for private development beyond the C.3 requirements currently in place.

The City will continue to work with SMCWPPP to advocate for GI as a source of economic vitality to the surrounding areas, and through this outreach, may be able to convince local businesses of the benefits of GI. Priority areas may be serve as candidates for formation of a future business improvement district. The City will continue to seek opportunities to promote public and private partnerships for implementation of GI.

PARTNERSHIPS

Partnerships are effective strategies to acquire additional funds and resources needed for GI improvement projects. Collaborative efforts do not guarantee direct additional funding, but they can establish alternative benefits that will assist the overall resources necessary to complete proposed GI projects. By distributing resources and funding throughout different entities, GI improvement projects and programs are capable of being delivered more cost-effectively. Examples of partnerships include the following:

- **Multi-Agency Partnerships (includes Regional Projects)**
- **Transportation Opportunities**
- **Caltrans Mitigation Collaboration**
- **Public-Private Partnerships (P3)**
- **Financial Capability Assessment**
- **Volunteers**

City-Specific Approach: The City may explore opportunities to partner with other agencies to construct regional projects which help improve water quality Countywide and contribute to the City's reduction in Regulated pollutants to meet their associated total maximum daily loads (TMDLs). The City may pursue transportation funding which can be used to mitigate transportation challenges and incorporate GI. As for

Caltrans Mitigation Collaboration, State Route 92 passes horizontally through the City, but the City does not have any drainage that goes to Caltrans right-of-way.

The majority of GI within the City is privately owned and maintained. As the number of public GI projects grows, staff may seek opportunities to collaborate with the public and build community support of GI measures through cooperation with community groups and other volunteers to assist in maintenance of GI.

The remaining funding strategies in this section (Public-Private Partnerships and Financial Capability Assessment) will not be pursued but remain options for future exploration.

ALTERNATIVE COMPLIANCE

Previously, the Regional Water Quality Control Board has provided alternative compliance options in Provision C.3.e.i of the MRP 2.0 which can be utilized on Special Projects that meet certain criteria and cannot feasibly install the required amount of LID treatment onsite. The alternative options include the following:

- **Construction of a joint stormwater treatment facility with the ability to treat combined runoff from two (2) or more Regulated projects**
- **Construction of a stormwater treatment system off-site**
- **Payment of an in-lieu fee for regional projects**

These and other alternative compliance options can also be used on non-Regulated projects, but with more flexibility than what could be used on Regulated projects. On Regulated projects, the alternative compliance site must be within the same watershed as the site to be mitigated and be constructed within three (3) years of the site to be mitigated. Regional project timelines may be extended up to five (5) years. These same restrictions would not apply to non-Regulated projects.

Examples of alternative compliance include the following:

- **In-Lieu Fees**
- **Credit Trading**

City-Specific Approach: Under the terms of the current MRP, in-lieu fees cannot be implemented with adequate simplicity and flexibility to ensure successful funding of GI projects. If the regulations change to offer more flexibility, the City may reassess opportunities for in-lieu fees on regulated projects.

The City is interested in a future credit trading program and will continue to work with SMCWPPP and the GI TAC to explore this option further.

Bioretention area located at One Hundred Grand mixed-use commercial/residential development.

8.4 Integration of GI with the Capital Improvement Program

One difficulty of funding a GI program is that the City must balance the many needs of the community in keeping the City operational and well-maintained while working towards the goals and vision set forth in the City's General Plan. Pavement maintenance, replacement and repair of underground utilities, transportation improvements, performing facility needs assessments and making facility upgrades, and parks improvements are all key facets of the City's Capital Improvement Program (CIP).

The City can adopt innovative approaches to working within the framework of the existing CIP and budget in order to fund GI.

Though it is primarily an outgrowth of a stormwater or environmental program, GI can be considered an expansion of many different CIPs because it provides benefits beyond simply improving water quality, as shown in Figure 23 on the next page.

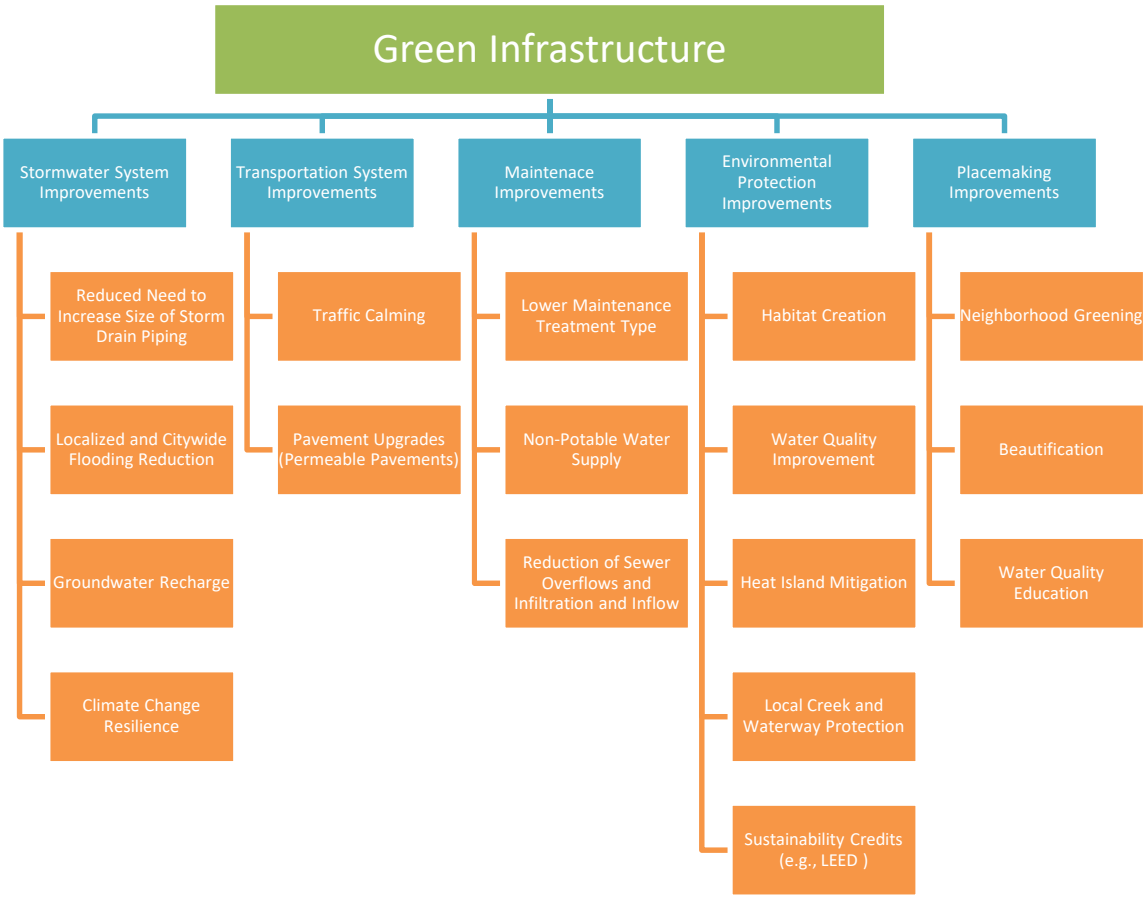


Figure 23. *Integration of Green Infrastructure with other types of Improvements.*

8.5 Integration of Green Infrastructure with Adopted Budget

The City of Foster City currently uses a combination of federal and state grants along with local funding sources to fund construction of projects in its CIP and other programs.

The City's major funding sources are listed below, and are more particularly described in the City's 2018-2019 Capital Improvement Program:

- General Fund
- Enterprise Funds
- Development Impact Fees
- Community Benefit Funds
- Park In-Lieu Fees
- Measure A Funds
- State Gas Tax
- Measure M Vehicle Registration Tax
- Local Grants
- Federal/State Grants

In order to facilitate the future integration of GI in the CIP, a sample list of potential GI measures which may be considered in various types of projects is shown in Table 12.

Bioretention area located at Lincoln Center.

Table 12. *Sample Integration of Potential GI Measures with Adopted Budget.*

TYPES OF PROJECTS	FUNDING SOURCES	POTENTIAL GREEN INFRASTRUCTURE MEASURES										OTHER TREATMENT MEASURES
		Stormwater Planter / Rain Garden	Stormwater Curb Extension	Tree Well / Stormwater Tree / Interceptor Tree	Infiltration System	Pervious Pavement	Green Roof	Rainwater Harvesting	Vegetated Swale	Green Gutter	Green Wall	Hydrodynamic Separator Media Filter High-Flow Rate Tree Well Filter
Pavement Rehabilitation	Special Revenue Fund OBAG Grant Measure A Gas Tax Measure M SB1	✓	✓	✓	✓	✓			✓	✓		
Transportation	Special Revenue Fund OBAG Grant Measure A Gas Tax Measure M SB1 City General Fund	✓	✓	✓	✓	✓			✓	✓		
Stormwater	City General Fund	✓	✓	✓	✓							✓
Park Improvements	Park In-Lieu Fees City General Fund	✓		✓	✓	✓		✓	✓			
Non-Stormwater / Facilities	City General Fund	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

9.0 OUTREACH AND EDUCATION

9.1 Introduction

The MRP states that each Permittee under a Green Infrastructure (GI) Plan shall perform the following tasks:

> *Provision C.3.j.i.(4)(a): "Conduct public outreach on the requirements of this provision, including outreach coordinated with adoption or revision of standard specifications and planning documents, and with the initiation and planning of infrastructure projects. Such outreach shall include general outreach and targeted outreach to and training for professions involved in infrastructure planning and design."*
>
> *Provision C.3.j.i.(4)(b): "Train appropriate staff, including planning, engineering, public works maintenance, finance, fire/life safety, and management staff on the requirements of this provision and method of implementation."*
>
> *Provision C.3.j.i.(4)(c): "Educate appropriate Permittee elected officials (e.g., mayors, city Council members, county supervisors, district board members) on the requirements of this provision and methods of implementation."*

The three (3) primary goals of the outreach and education effort are summarized in Table 13:

***Table 13**. Outreach and Education Goals, Objectives, and Audiences.*

Outreach and Education Goal	Objective	Audience
Public Outreach	Conduct public outreach on the GI requirements, including outreach coordinated with adoption or revision of GI guidelines and standards and planning documents, and with the initiation and planning of infrastructure projects.	Both the general public and professionals involved in GI planning and design.
Training of Appropriate Staff	Conduct training on the GI requirements and the methods of implementation.	Planning, Engineering, Public Works Maintenance, Finance, Fire/Life Safety, and Management Staff.
Informing Elected and Appointed Officials	Provide information regarding GI requirements and methods of implementation.	Mayor, City Council, and Planning Commission.

One of the first steps in the development of a GI Plan is to inform a municipality's staff, managers, and elected officials about the purposes and goals of GI, the required elements of the GI Plan, as well as the steps needed to develop and implement the GI Plan. Support by the City Council, Planning Commission, and City staff is important to ensure proper design, construction, and maintenance.

Outreach efforts began in FY 15-16 and will continue after GI Plan adoption. Promoting the many benefits of GI to members of the public will serve as a critical step to successful implementation over the next several decades.

9.2 Public Outreach

9.2.1 Local Efforts

The City has conducted outreach in coordination with approval of the GI Workplan and GI Plan. **Refer to Section 9.4, Provision of Information to Elected and Appointed Officials.**

In addition, the City developed a GI Webpage using ArcGIS online to feature the existing and potential GI projects within the City. **Refer to Section 5.3, City Public-Facing Project Tracking System.**

9.2.2 SMCWPPP Efforts

SMCWPPP has several committees which discuss ideas, plans, and schedules for new and ongoing participation in processes to promote GI, such as the New Development (ND) Committee, GI Technical Advisory Committee (GI TAC), and the Public Information and Participation (PIP) Committee.

SMCWPPP's Public Information and Participation (PIP) Committee releases an internal bi-monthly document detailing its recent and future public outreach efforts targeting audiences of municipal staff and elected officials. This outreach work includes distribution of information about rain barrel rebates, provision of public-facing GI presentations and outreach materials, and dissemination of information about public outreach and citizen involvement events, as well as the Flows to Bay website (see Figure 24) which explains GI basics and provides links to documents relevant to municipal staff and elected officials. Documents hosted on the Flows to Bay website include the *Design Guide* and *C.3 Regulated Projects Guide*; the *Sustainable Streets Master Plan* (SSMP) will also be hosted on this website, once the SSMP is developed.

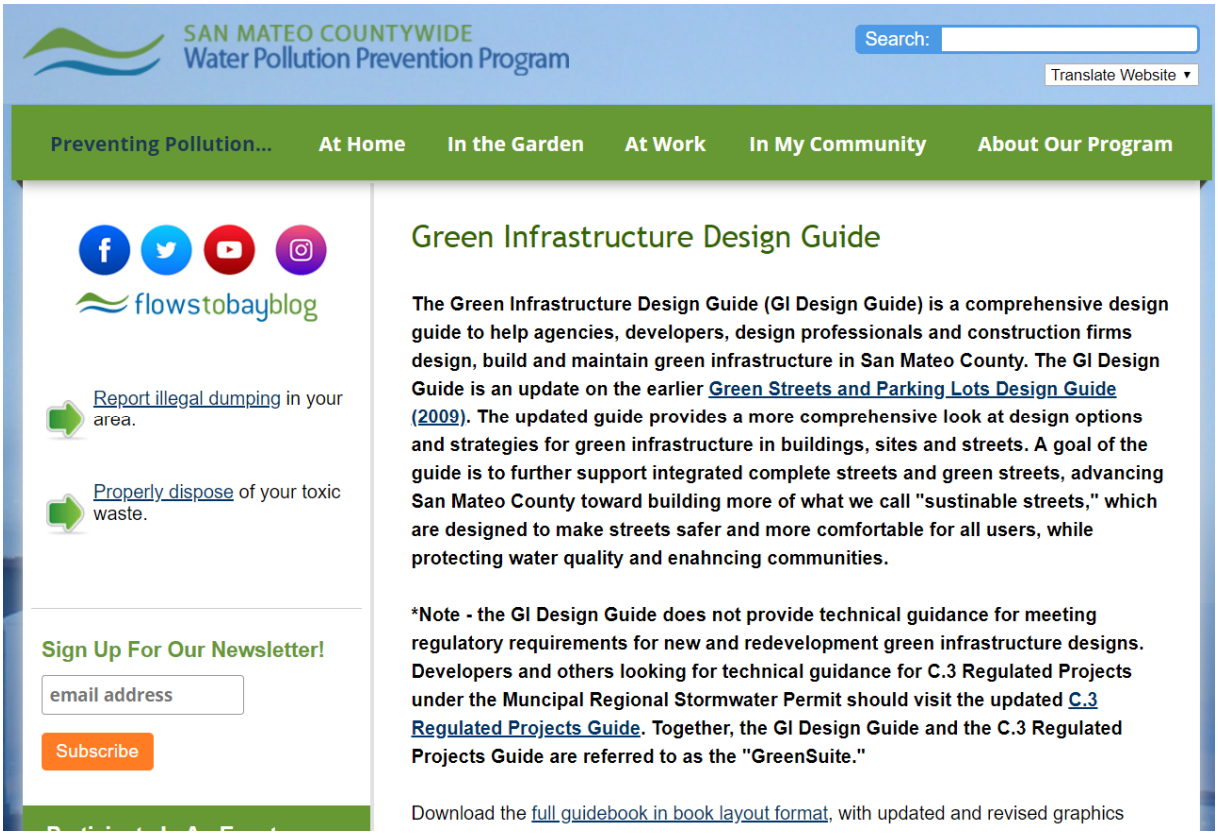


Figure 24. *SMCWPPP "Flows to Bay" Webpage, featuring the Green Infrastructure Design Guide.*[20]

On June 18, 2019, SMCWPPP hosted a training event for municipality staff and design professionals to cover the new and updated guidance documents produced, including the *Design Guide* and *C.3 Regulated Projects Guide*.

SMCWPPP also engaged the public during the development of the Stormwater Resources Plan (SRP), which established a prioritization protocol for GI projects and an initial list of prioritized projects. Key public engagement efforts included the following (SMCWPPP 2017):

- Four (4) presentations to the SMCWPPP Stormwater Committee (public meetings) between January and November 2016.
- Presentation of the SRP planning process by C/CAG staff at the Sustainable San Mateo County's November 2015 Water Indicator Summit and San Mateo County's Office of Sustainability's Sea Level Rise in July 2016.
- Following completion of the draft SRP, C/CAG hosted three (3) public workshops to solicit public and stakeholder feedback in January 2017. At these workshops, C/CAG described the upcoming GI plans and how the SRP relates to that effort.

[20] https://www.flowstobay.org/gidesignguide.

- C/CAG staff and consultants promoted the SRP workshops through social media (Facebook and Twitter).
- A press release was distributed to local media outlets, including both print and online publications to advertise the workshop. The press release also called attention to the Flows to Bay website (www.flowstobay.org), where the public could review the draft SRP and submit comments.

9.3 Training of Appropriate Staff

Permittees must conduct training for appropriate staff on the MRP GI requirements and methods of GI implementation. The City began this process in FY 16-17 with the development of the GI Workplan and continued to engage staff to discuss GI implementation. Interdepartmental coordination and staff training efforts included the following:

- Convening of meetings with management and staff of appropriate departments, to discuss GI requirements and GI plan development. Outside of meetings, communication was maintained via email to update staff on progress of the GI Plan and receive feedback on a regular basis.
- Discussion of the potential for incorporation of GI on capital projects and continued to refine and add to the City's list of planned and potential GI projects. This list will continue to be updated in future years as part of the GI Plan implementation process.
- Participation in SMCWPPP training events.
- Participation in the SMCWPPP GI Subcommittee, New Development Subcommittee, and Public Information and Participation Subcommittee. All these subcommittees discussed GI implementation and outreach.

9.4 Provision of Information to Elected and Appointed Officials

The City of Foster City GI Workplan was approved by the City Council on June 5, 2017. The GI Workplan includes educational material about GI and was reviewed by the Council prior to submittal to SFRWQCB. The "What is Green Infrastructure?" section of the workplan focused on raising awareness of the nature of GI, its importance, and its benefit to the health and quality of life of City residents, employees, and visitors.

At the City Council Vision and Summit on February 4, 2019, the City's Strategic Focus Areas and Objectives were discussed. GI was included as one of the goals in Focus Area #5 – Environmental Sustainability and Social Equity.

The GI Plan sets milestones, establishes processes and approaches for identifying and prioritizing projects, and has been crafted to align with other local planning documents. It will help to define the way in which the City approaches infrastructure in projects which have GI potential over the next 20 years and beyond.

This GI Plan, as well as changes made to local planning documents and municipal code to support GI implementation, will have been reviewed by the Planning Commission prior to its adoption by the City Council, anticipated for August 2019.

9.5 Next Steps

The City will continue to engage the public while implementing the GI plan to advertise the many benefits of GI and build support for GI projects.

As part of the FY 18-19 Annual Report, a plan and schedule for new and ongoing participation in processes to promote GI at the regional level will be developed. The following future approach and potential activities were discussed at a recent New Development Subcommittee:

- Continue actions related to the Regional Roundtable[21], including creating an Executive Summary and Action Plan for the Roundtable "Roadmap" under a supplemental contract as part of the *Urban Greening Bay Area* grant.
- Continue to work with Caltrans on funding opportunities and GI implementation.
- Continue to work with MTC to get GI integrated into transportation plans and funding.
- Conduct workshops and trainings on asset management for GI, possibly in coordination with CASQA, the SFRWQCB and/or EPA.

[21] Made up of participants including the San Francisco Bay Area Planning and Urban Research Association (SPUR), Caltrans, Save the Bay, Bay Area Stormwater Management Agencies Association (BASMAA), and San Francisco Estuary Partnership (SFEP).

10.0 IMPLEMENTATION APPROACH

10.1 Overview

MRP Provision C.3.j.i.(3) requires each Permittee to do the following:

> *"Adopt policies, ordinances, and/or other appropriate legal mechanisms to ensure implementation of the Green Infrastructure Plan in accordance with the requirements of this provision."*

The various elements of the GI Plan comprise an implementation toolbox (Figure 25 on the next page) that the City will access over the life of the GI Plan to foster improved water quality through design and construction of public and private Green Infrastructure (GI) facilities. As the GI program develops, the City will apply an adaptive management strategy for flexibility in the face of changing conditions, development climates, and forecasts. Additional implementation strategies may be evaluated in the future.

Bioretention area located at the Gilead Sciences Campus.

Figure 25. *City's starting Green Infrastructure Implementation Toolbox.*

10.2 Private Development Program and Policies

10.2.1 Standard Operating Procedures

The City is committed to shifting its conventional "gray" storm drain infrastructure, which is designed to collect and convey runoff as quickly as possible to the storm drain system (resulting in water quality impairments on receiving waters), to resilient, sustainable stormwater management which reduces runoff volumes, disperses runoff to vegetated areas, harvests and uses runoff where feasible, promotes infiltration and evapotranspiration, and utilizes natural processes to detain and treat runoff. This will include implementing, to the extent practicable, Low Impact Development (LID) features and facilities such as pervious pavement, bioretention facilities ("rain gardens"), green roofs, and rainwater harvesting systems.

The City will continue to use its Planning, Zoning, and Building authorities to require proposed new and redevelopment projects to incorporate LID features and facilities in accordance with the New Development and Redevelopment (Provision C.3) requirements and the current edition of the San Mateo County Water Pollution Prevention Program C.3 Guidelines.

The City's development review process is summarized in flowcharts in **Appendix D** for each of the following project phases:

- Entitlement Pre-Application Review
- Development and Redevelopment C.3 Applicability Review
- Entitlement Review
- Plan Review
- Construction Oversight
- Closeout / Acceptance / Occupancy

These flowcharts summarize the process by which both Provision C.3 Regulated and Non-C.3 Regulated Projects are reviewed, and at which level of detail for each project phase. They show the coordination efforts needed between City departments and external agencies. The City will utilize the attached flowcharts to train existing and new staff and will periodically update them as necessary to reflect new MRP requirements.

The City of Foster City utilizes Standard Conditions of Approval (COAs) to enforce implementation of GI in private developments. These COAs include requiring that applicants complete and submit the following: 1) a C.3 and C.6 checklist[22], which identifies source control, site design, and treatment measures used to mitigate the impacts of urban development in accordance with the MRP; 2) a checklist for NPDES Permit Requirements (if the project is C.3 Regulated); and 3) a Stormwater Control Plan. Applicants are additionally required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) during construction to reduce or eliminate construction-related pollutants.

[22] If the project will replace and/or develop 2,500 square feet or more of impervious surface.

Acknowledgement of, and agreement to abide by, NPDES Best Management Practices (BMPs) must also be included with plans and enforced during construction.

10.2.2 Municipal Code

The City has reviewed its existing ordinances and policies to identify whether sufficient legal authority had been acknowledged in existing documents for implementation of the GI Plan for compliance with the MRP. The City enforces two (2) Codes, namely, the Foster City Municipal Code (FCMC) and the Estero Municipal Improvement District Code (EMID Code). The EMID Code administers all operations relating to water or sewer improvements, and the FCMC addresses all other operations. The EMID service area is approximately four (4) square miles covering all of Foster City and a portion of the City of San Mateo having a broad cross-section of commercial and light industrial development but which remains predominantly residential.

Based on the existing Codes, the City currently holds the legal authority to require implementation of GI in both public and private projects which are Provision C.3 Regulated under the MRP.

The following section of the FCMC provides the City with the authority to require GI implementation:

- **Chapter 13.12 Stormwater Management and Discharge Control**

This new Chapter of the Municipal Code replaces the previous Code provisions related to stormwater management – Chapter 8.04, "Waste Material Control" of the FCMC. As with Chapter 8.04, Chapter 13.12 regulates the quantity and quality of discharges to the stormwater system with the intention of preventing detrimental impacts to the quality of receiving waters. Chapter 13.12 additionally includes definitions of GI and the GI Plan which help clarify the linkage between Green Infrastructure and reduction of pollutants in stormwater. This new Chapter underscores the City's role in monitoring and controlling dry- and wet-weather runoff and provides comprehensive standards for regulating stormwater discharges. The new Chapter will allow the City to protect and enhance the health and vitality of its watercourse, receiving waterbodies, and wetlands.

The new ordinance is scheduled to be considered by the Planning Commission for recommendation to the City Council on July 18, 2019. The City Council will review the ordinance for first reading on August 19, 2019 for the first reading, with second reading of the ordinance tentatively scheduled for September 3, 2019.

The following sections of the EMID Code provide the District with the authority to require GI implementation:

- **Chapter 8.80 Outdoor Water Conservation in Landscaping**
    - 8.80.120 Grading Design Plan
    - Chapter 8.80.170 Stormwater Management and Rainwater Retention
    - 8.80.170 Stormwater Management and Rainwater Retention (E)

The Code sections listed above provide requirements for low-impact strategies to manage stormwater, reduce runoff, and provide the City with the authority to prepare policy and regulations for eliminating pollutants in stormwater discharges imposed by the current MRP.

10.3 Maintenance Programs and Policies

An effective maintenance program helps ensure that GI measures continue to perform as designed.

Compared to conventional "gray" (pipe-based) stormwater facilities, GI facilities are much more maintenance-intensive, and their performance depends on the level of maintenance effected. A successful maintenance program has three (3) key elements: (A) consideration of maintenance issues during design of GI measures, (B) development of an Operation and Maintenance (O&M) agreement, and (C) implementation and enforcement of this O&M agreement.

The City is responsible for ensuring that storm sewer system components within the City's right-of-way, such as conveyance pipes, manholes, catch basins, GI measures, and other BMPs are maintained and in good working order. Maintenance of these measures falls under the City's standard operating procedures for stormwater assets. Additional information about maintenance of stormwater treatment measures is provided in the *SMCWPPP GI Design Guide*, Chapter 6.

Most stormwater facilities located in Foster City are owned and maintained by private or outside public property owners, and not the City of Foster City. These property owners include entities such as Homeowners Associations (HOAs), property management companies, school districts, commercial/industrial site owners, and residential homeowners. They are responsible for the care and management of their facilities and are expected to conduct regular stormwater inspections.

To ensure successful maintenance of installed GI measures in any development project, the City requires the project proponent to sign a statement accepting responsibility for operation and maintenance through an O&M Agreement. Through such an agreement, the project proponent accepts responsibility for O&M of the installed GI measures until such responsibility is legally transferred to another entity. Acceptance of maintenance responsibility can be documented via external legally enforceable agreement or mechanism allowed per Provision C.3.h. of the MRP. Assumption of responsibility for O&M may be documented through various means. Such means may include written text included in project deeds or conditions, covenants and restrictions (CCRs) for multi-unit residential projects that require the homeowner's association, or, if there is no association, each individual owner, to assume responsibility for the O&M of the installed GIs.

The minimum requirements of any O&M Agreement are listed as follows:

- Full description of the stormwater treatment measures to be maintained;
- An O&M Plan describing the schedule for maintenance;
- Allows access to SFRWQCB staff, mosquito and vector control agency staff, and City/EMID staff;

- Requirements for property owner to maintain the function of the stormwater treatment system(s) and, if applicable, hydromodification management control(s); and
- Mechanism for denoting that O&M responsibilities "run with the land" (that is, are conveyed to the new owner when a property is transferred).

The City has developed a Business Inspection Plan (BIP) and Enforcement Response Plan (ERP) describing the process how the City inspects GI measures on development projects for enforcement of proper installation and maintenance.

10.4 Implementation of Public Green Infrastructure

10.4.1 Internal Policies that Support GI Implementation

The City maintains an ongoing list of prioritized GI opportunities, based on a screening of its Capital Improvement Program, as discussed in Chapter 4. This list is updated annually with new opportunities. The City will strive to incorporate GI on the following types of projects:

- New construction and substantial upgrades to City facilities, including public buildings, offices, stations, parking lots, corporation yards, which are found to have GI potential.
- 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, which are found to have GI potential.
- Storm drain capacity improvement or reconfiguration projects which are found to have GI potential.
- Parks improvements projects which are found to have GI potential.

When a project is found to be Provision C.3 Regulated, measures will be installed in accordance with the Provision C.3 requirements of the MRP. Otherwise, alternative sizing criteria might be used, as discussed in **Section 6.4.3**.

If a project is reviewed for GI potential and it is found that implementation of GI is infeasible, the reasons for infeasibility will be documented, and the project removed from the City's maps and list of prioritized projects.

10.4.2 Early Project Implementation

The City's existing and potential GI projects are summarized in Appendix C.

The City has few current opportunities to incorporate GI systems into Capital Improvement Program (CIP) Projects. A review of the City's upcoming CIP revealed that most projects have little or no GI potential, were in advanced stages of development and therefore could not be feasibly modified to incorporate GI, or were classified as maintenance projects.

Through the development of this GI plan, the City has explored various opportunities for incorporation of GI which are appropriate to the context and character of the City.

These opportunities include:

- **Integration of GI on upcoming Parks and Recreation Department projects.**
- **Foster City Boulevard/Chess Drive Median Modifications.** The City will review the potential to incorporate GI in this median modification project.

A concept sheet for the Foster City Boulevard/Chess Drive Median Modifications project, including a description and approximate schedule for completion, is included in Appendix E.

10.4.3 Workplan to Complete Prioritized Projects

MRP Provision C.3.j.i.(2)(j) requires each Permittee to complete the following:

> *"A workplan to complete prioritized projects identified as part of a Provision C.3.e. Alternative Compliance program or part of Provision C.3.j. Early Implementation."*

The schedule and early implementation concept sheet in Appendix E and the City's CIP serve as the initial workplan to complete prioritized projects. The City's list of prioritized projects will be continuously updated and will eventually include projects identified through the San Mateo Countywide SSMP.

10.5 Plan Updates Process

This GI Plan is intended to be a "living" document, periodically updated to reflect the outcomes of the City's adaptive management process, adjusting to reflect lessons learned and used to track progress in implementation of GI. The text of the GI Plan need not necessarily be updated in the future; however, as time progresses, the City may consider reassessing the adequacy of its tools, approaches, and implementation strategies intended to secure achievement GI Plan milestones as benchmarks for gauging advancement in environmental protection through mitigation of stormwater runoff and discharge of pollutants to area waters.

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GREEN INFRASTRUCTURE PLAN APPENDICES

A. Glossary

B. Capital Improvements Program Green Infrastructure Potential Screening Flowcharts

C. GI Project Prioritization Maps

D. Development Review Flowcharts

E. Early Project Implementation Concept Sheets

F. Key Green Infrastructure Technical Advsiory Committee Deliverables

G. Green Infrastructure Plan Adoption

APPENDIX A: Glossary

Several terms used in this green infrastructure may be unfamiliar to readers. For the reader's convenience, definitions of key terminology have been adapted from various sources in the table below.

Key Term	Definition	References
Bioretention Area	A type of low impact development treatment measure designed to have a surface ponding area that allows for evapotranspiration and filters water through 18 inches of engineered biotreatment soil. After the water filters through the engineered soil, it encounters a 12-inch layer of rock in which an underdrain is typically installed to convey treated water to the storm drain system. Also known as a "Stormwater Planter".	*C.3 Regulated Projects Guide* – Glossary (SMCWPPP 2016) *Green Infrastructure Design Guide* (SMCWPPP 2019b)
Bioswale	See "Bioretention Area".	
Biotreatment	A type of low impact development treatment allowed under Provision C.3.c. of the MRP. Biotreatment areas must be designed to have a surface area no smaller than what is required to accommodate a 5 inches/hour stormwater runoff surface loading rate and must use biotreatment soil as specified under the MRP (Appendix K of the C.3 Regulated Projects Guide).	*C.3 Regulated Projects Guide* – Glossary (SMCWPPP 2016)
Bulb-outs	Synonymous with "Curb Extension". Bulb-outs are extensions of the curb, gutter, and sidewalk into the roadway, typically located at street crossings such as intersections or mid-block crosswalks. They are a traffic calming and pedestrian safety enhancement measure that reduce the crossing distance for pedestrians. Stormwater curb extensions are curb extensions that incorporate the use of stormwater treatment	*Green Infrastructure Design Guide*

	through the use of stormwater planters or other green infrastructure measures.	(SMCWPPP 2019b)
Complete Streets	A complete street is 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. Every complete street looks different, according to its context, community preferences, the types of road users, and their needs.	Caltrans Division of Transportation Planning – Office of Smart Mobility and Climate Change
Detention Basin	Detention is the process of providing temporary storage of stormwater runoff in ponds, vaults, bermed areas, or depressed areas to allow treatment by sedimentation and metered discharge of runoff at reduced peak flow rates. In more urban situations, detention can also be provided by using rock filled trenches or suspended paving systems directly adjacent to other treatment measures to allow them to store water and treat it over a longer period.	*Green Infrastructure Design Guide* (SMCWPPP 2019b)
Directly Connected Impervious Area	The area covered by a building, impermeable pavement, and/or other impervious surfaces, which drains directly into the storm drain without first flowing across permeable land area (e.g., turf buffers).	*C.3 Regulated Projects Guide* – Glossary (SMCWPPP 2016)
Dry Weather Runoff	Runoff that occur during period without rainfall. In a natural setting, dry weather runoff result from precipitation that infiltrates into the soil and slowly moves through the soil to the creek channel. Dry weather runoff in storm drains may result from human activities, such as over-irrigation.	*C.3 Regulated Projects Guide* – Glossary (SMCWPPP 2016)
Evapotranspiration	Evaporating water into the air directly or through plant transpiration.	*C.3 Regulated Projects Guide* - Glossary (SMCWPPP 2016)

Fiscal Year	A fiscal year is twelve consecutive months ending on the last day of any month except December.	IRS.gov
Flow-through Planter Box	A flow-through planter box is a contained landscape area designed to capture and retain stormwater runoff. It is fully lined and connected via an underdrain to a stormwater system.	*Green Infrastructure Design Guide* (SMCWPPP 2019b)
Green Building	Green building is the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle from siting to design, construction, operation, maintenance, renovation and deconstruction.	United States Environmental Protection Agency https://www.epa.gov/land-revitalization/green-buildings (Accessed 6/12/19)
Green Gutters	Green gutters help capture and slow stormwater runoff within very arrow and shallow landscaped areas.	*Green Infrastructure Design Guide* (SMCWPPP 2019b)
Green Infrastructure	Green infrastructure comprises a range of natural and built approaches to stormwater management–such as rain gardens, bioretention, and permeable paving–that mimic natural systems by cleaning stormwater and letting it absorb back into the ground. Green infrastructure could reduce the amount of runoff that enters the traditional piped stormwater system below ground and could prevent overflows that pollute nearby water bodies.	United States Environmental Protection Agency
Green Roof	Green roofs are landscaped systems placed on rooftops designed to capture rainfall and allow to evaporate back into the air before runoff is created.	*Green Infrastructure Design Guide* (SMCWPPP 2019b)
Green Streets	Green Streets are defined as streets that maximize permeable surfaces, tree canopy, and landscaping elements in order to divert stormwater from the sewer system; filter and reduce the amount of polluted stormwater entering rivers and streams;	

	increase urban greenspace; improve air quality and reduce ambient air temperature; and improve watershed health. There is some evidence that Green Streets also improve pedestrian and bicycle safety and promote travel by these modes.	
Gray Infrastructure	Gray infrastructure is defined as traditional brick, mortar, and concrete construction to remove stormwater from its source and transport it to a downstream outfall or treatment facility.	Shamsi, U.M., J.W. Schombert, and L.J. Lennon. 2014. *SUSTAIN Applications for Mapping and Modeling Green Stormwater Infrastructure.* Journal of Water Management Modeling C379. doi: 10.14796/JWMM.C379
Groundwater Recharge	Groundwater recharge is the process in which surface flows are stored for a period sufficient for water to percolate into the soil or groundwater table.	Caltrans Willits Bypass Project Mitigation and Monitoring Proposal
Hydromodification	The modification of a stream's hydrograph, caused in general by increases in flows and durations that result when land is developed (e.g., made more impervious). The effects of hydromodification include, but are not limited to, increased bed and bank erosion, loss of habitat, increased sediment transport and deposition, and increased flooding.	NPDES No. CAS612008 Glossary
Impervious Surface	A surface covering or pavement of a developed parcel of land that prevents the land's natural ability to absorb and infiltrate rainfall/stormwater. Impervious surfaces include, but are not limited to, roof tops; walkways; patios; driveways; parking lots; storage areas; impervious concrete and asphalt; and any other continuous watertight pavement or covering. Landscaped soil and pervious pavement, including pavers with pervious openings and seams, underlain with pervious soil or pervious storage	NPDES No. CAS612008 Glossary

	material, such as a gravel layer sufficient to hold at least the C.3.d volume of rainfall runoff are not impervious surfaces. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for purposes of determining whether a project is a Regulated Project under Provisions C.3.b. and C.3.g. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling and meeting the Hydromodification Standard.	
Infiltration	The process of slowing, filtering, and soaking stormwater runoff into native soil. Greater infiltration can often be achieved, as necessary, by employing a specified biotreatment soil mix and aggregate storage prior to infiltration into native soil.	*Green Infrastructure Design Guide* (SMCWPPP 2019b)
Infiltration Trench	Infiltration systems are underground facilities and structures designed to collect and temporarily store runoff, such as a gravel filled trench, pipe or vault, and allows the water to infiltrate into surrounding subsurface soils. In some cases, it can include an underdrain.	*Green Infrastructure Design Guide* (SMCWPPP 2019b)
Low Impact Development (LID)	A sustainable practice that benefits water supply and contributes to water quality protection. Unlike traditional storm water management, which entails collecting and conveying storm water runoff through storm drains, pipes, or other conveyances to a centralized storm water facility, LID focuses on using site design and storm water management to maintain the site's pre-development runoff rates and volume. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall.	*Green Infrastructure Design Guide* (SMCWPPP 2019b)
Municipality	A municipality is a city, county, city and county,	California Air Resources

	special district, a public agency of the State of California, and any department, division, public corporation, or public agency of this State or two or more entities acting jointly, or the duly constituted body of an Indian reservation or rancheria.	Board FAQ
Non-Potable Water Supply	Any water, including reclaimed water, not meeting current potable water standards. Water which is suitable for beneficial uses excluding human consumption. Specifically excluded from this definition is "gray water."	California State Water Resources Control Board – Guidelines for Distribution of Nonpotable Water (1992).
Percolation	Percolation is the internal drainage rate of a substrate (in mm/hr) in the same way that infiltration indicates the capacity to infiltrate water into the surface of the substrate.	Caltrans Office of Stormwater Prevention – Soil Resource Evaluation
Pervious Surface	A natural, landscaped, or permeable hardscape (e.g., turf block, brick, natural stone, cobbles, gravel) that allows surface runoff to infiltrate into underlying soils.	*C.3 Regulated Projects Guide* – Glossary (SMCWPPP 2016)
Polychlorinated Biphenyls	PCBs are a group of man-made organic chemicals consisting of carbon, hydrogen and chlorine atoms. The number of chlorine atoms and their location in a PCB molecule determine many of its physical and chemical properties. PCBs have no known taste or smell, and range in consistency from an oil to a waxy solid. PCBs belong to a broad family of man-made organic chemicals known as chlorinated hydrocarbons. PCBs were domestically manufactured from 1929 until manufacturing was banned in 1979. They have a range of toxicity and vary in consistency from thin, light-colored liquids to yellow or black waxy solids. Due to their non-flammability, chemical stability, high boiling point and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications.	EPA.gov
Public Right-of-	Public right-of-way is defined as the right of passage	Black's Law Dictionary

Way	held by the public in general to travel on roads, freeways, and other thoroughfares.	1351 (8th ed. 2004).
Reasonable Assurance Analysis (RAA)	From a regulatory perspective, reasonable assurance is defined as the demonstration that the implementation of control measures will, in combination with operation of existing or proposed storm drain system infrastructure and management programs, result in sufficient pollutant reductions over time to meet total maximum daily load (TMDL) wasteload allocations, water quality-based effluent limits (WQBELs), or other water quality targets specified in a municipal separate storm sewer system (MS4) permit1 (United States Environmental Protection Agency [USEPA], 2017). From the perspective of a stakeholder in the watershed who is focused on the improvement of water quality or restoration of a beneficial use of a waterbody, reasonable assurance is the demonstration and a commitment that specific management practices are identified with sufficient detail (and with a schedule for implementation) to establish that necessary improvements in the receiving water quality will occur. From the perspective of an MS4 Permittee, reasonable assurance is a detailed analysis of TMDL wasteload allocations (WLAs), associated permit limitations, and the extent of stormwater management actions needed to achieve TMDL WLAs and address receiving water limitations. RAAs may also assist in evaluating the financial resources needed to meet pollutant reductions based on schedules identified in the permit, TMDL, or stormwater management plan, and in preparing associated capital improvement plans.	BASMAA (Bay Area Stormwater Management Agencies Association). 2017. *Bay Area Reasonable Assurance Analysis Guidance Document.* BASMAA, Oakland, CA.
Rainwater	Rainwater harvesting is defined as a method for	Boers, T. M. *Rainwater*

[1] All references to a permit in this document refer to the 2015 version (MRP 2.0).

Harvesting	inducing, collecting, storing, and conserving local surface runoff for agriculture in arid and semi-arid regions.	*Harvesting in Arid and Semi-Arid Zones*. International Institute for Land Reclamation and Improvement, 1997.
Regulated Projects	Development projects as defined in provision C.3.b.ii	NPDES No. CAS612008 Glossary
Special Projects	Certain types of smart growth, high density and transit-oriented development projects that are allowed, under Provision C.3.e.ii of the MRP, to receive LID treatment reductions.	*C.3 Regulated Projects Guide* – Glossary (SMCWPPP 2016)
Sustainable Streets	Sustainable streets are multimodal rights of way designed and operated to create benefits relating to movement, ecology and community that together support a broad sustainability agenda embracing the three E's: environment, equity, and economy.	*Green Infrastructure Design Guide* - Chapter 3 (SMCWPPP 2019b)
Vegetated Swale	Shallow landscaped areas designed to capture, convey, and potentially infiltrate stormwater runoff as it moves downstream.	*Green Infrastructure Design Guide* (SMCWPPP 2019b)
Wasteload Allocation	A portion of a receiving water's TMDL that is allocated to one of its existing or future point sources of pollution.	NPDES No. CAS612008 Glossary
Watershed	A watershed is defined as the area where precipitation drains to a common waterway, such as a stream, lake, estuary, wetland, or the ocean.	Merrick JRW, Parnell GS, Barnett J, Garcia M (2005). *A multiple-objective decision analysis of stakeholder values to identify watershed improvement needs.*

APPENDIX B: Capital Improvements Program GI Potential Screening Flowcharts

Part 1: Initial Screening	
No Potential	**Eliminate from List**
No exterior work (e.g., interior remodel)	
Exterior building upgrades or equipment	
Development or funding of municipal programs	
Technical studies, data collection, or training	
Construction of streetlights and traffic signals	
Minor bridge and culvert repairs/replacement	
Non-stormwater utility projects	
Equipment purchase or maintenance	
Irrigation system installation, upgrades, or repairs	
Too Late to Change	
Project has gone to bid or is under construction	
Project is too far along in design stage to make changes (up to Agency judgment based on schedule and budget considerations)	
Too Early to Assess	**Eliminate from list, but reconsider next FY**
Not enough information to assess project for GI potential	
Maintenance/Minor Construction	**Eliminate from List**
Project is for maintenance purposes only or is minor in nature, and maintains the existing lines, grades, and capacity of the original facility. In addition, the project is not concentrated in one location and includes multiple work orders throughout various locations in the City. For example:	
1. Pavement maintenance/replacement	
2. Sidewalk, curb and gutter repairs	
3. ADA ramps and other improvements	
Project meets the above criteria but includes at least 5,000 SF of impervious surface created or replaced in a single contiguous area.	**Move to Part 2**
All other projects	

Part 2: Assessment of GI Potential	
Project involves: Alternations to existing building's roof drainage New/replaced pavement or drainage structures Concrete work Landscaping, including tree planting Streetscape and intersection improvements	**Move to Part 3**
Project is of these retrofit types: Road Diet Bike/Ped Facilities Pavement Reconstruction Street Beautification Tree Planting Park/Landscaping Retrofit Drainage Reconstruction Parking Lot Building	
Project is a master planning document, such as a Bike/Ped Master Plan, Parks Master Plan, or Storm Drain Master Plan	Assess possibility of integrating green infrastructure into these Master Planning Documents. **Associated individual projects move to Part 3**
Project is subject to C.3 requirements	Project must include GI per Provision C.3 Requirements.
None of the above categories apply	Individually assess for GI Potential. If no potential exists, document why GI is impracticable.

Part 3: Preliminary Design

Step 1: Information Collection / Reconnaissance

- Locate roof leaders and discharge points.
- Look for opportunities to substitute pervious pavements for impervious pavements.
- Identify available landscaped or paved areas adjacent or downgradient from paved or roof areas.
- Locate nearby storm drains.
- Assess potential for infiltration and groundwater depth.
- Assess potential for connection of underdrain (typ. 2-2.5 below bioretention area surface).

Step 2: Preliminary Sizing and Drainage Analysis

- Delineate drainage areas.
- Identify pathways to direct drainage from roof and pavement areas to potential GI facilities.
- Preliminary sizing of GI facilities.

Step 3: Barriers and Conflicts

- Identify barriers and conflicts:
  - Utility conflicts.
  - Property ownership.
  - Availability of water supply for irrigation.
  - Integration of GI features vs. "add-on".
- Presence of barriers or conflicts does not necessarily mean GI is infeasible but may affect cost or public acceptance.

Step 4: Budget and Schedule

- Budget considerations:
  - Sources of funding that might be available for GI.
  - Potential savings achieved by integrating with other planned projects (e.g. bike/ped, beautification, etc.) or reducing cost of "gray" drainage facilities.
- Schedule considerations:
  - Constraints on schedule due to regulatory mandates, grant requirements, etc.
  - Whether schedule allows time for any design changes needed to incorporate GI.
  - Whether schedule allows time to align separate funding for GI features.

Step 5: Results of Assessment

- Does the project have GI potential?
  - Consider results of previous steps.
  - Consider ancillary benefits of GI.
- Does it make sense to include GI in this project, if funding was available for the incremental costs of GI elements?

APPENDIX C: GI Project Prioritization Maps

a. Water Resources

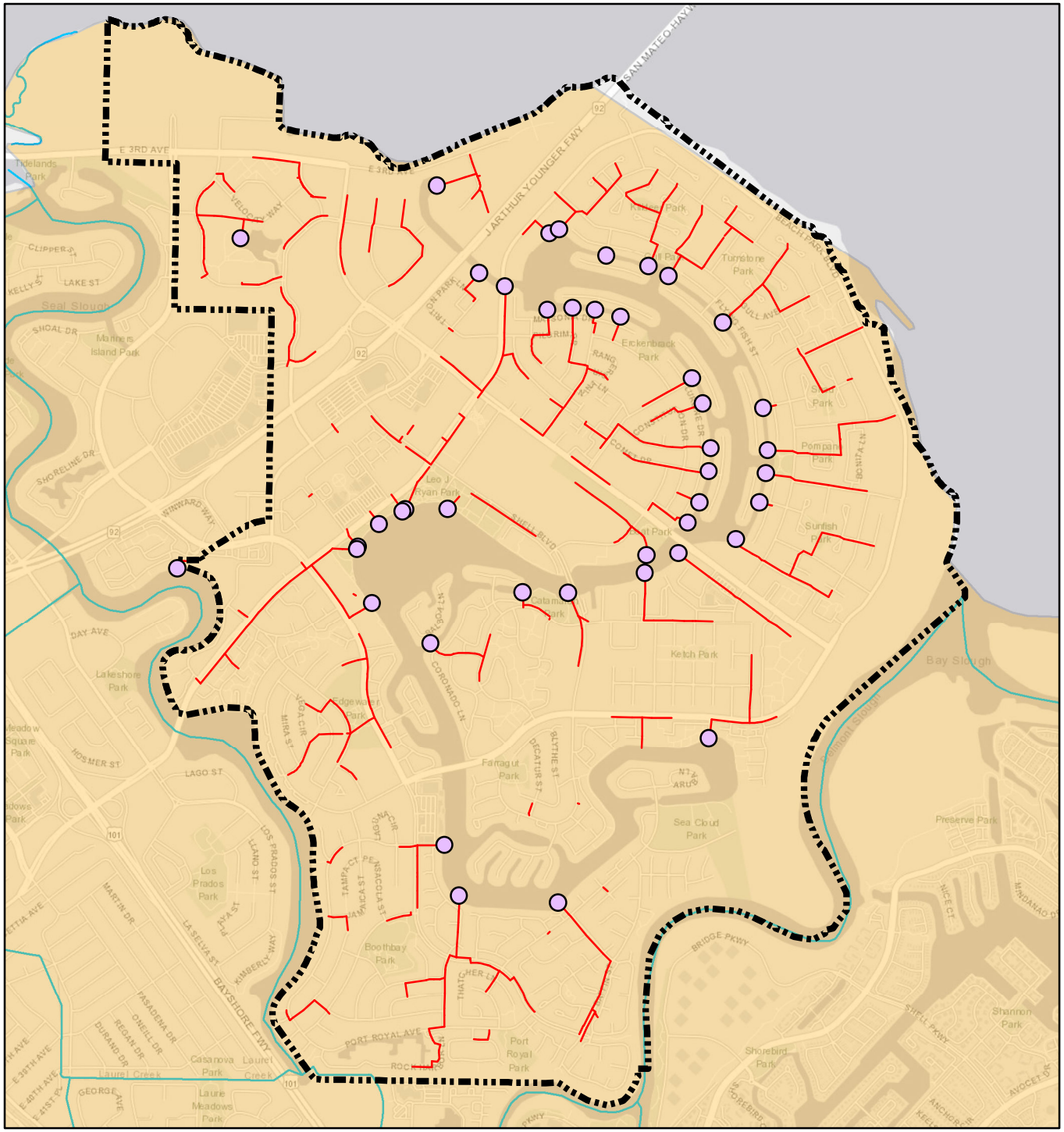
b. FEMA 100-yr Flood Plain

c. Sea Level Rise

d. Prioritized Green Streets Projects

e. Prioritized LID and Regional Projects

f. Existing and Potential Green Infrastructure Projects



City of Foster City: Water Resources

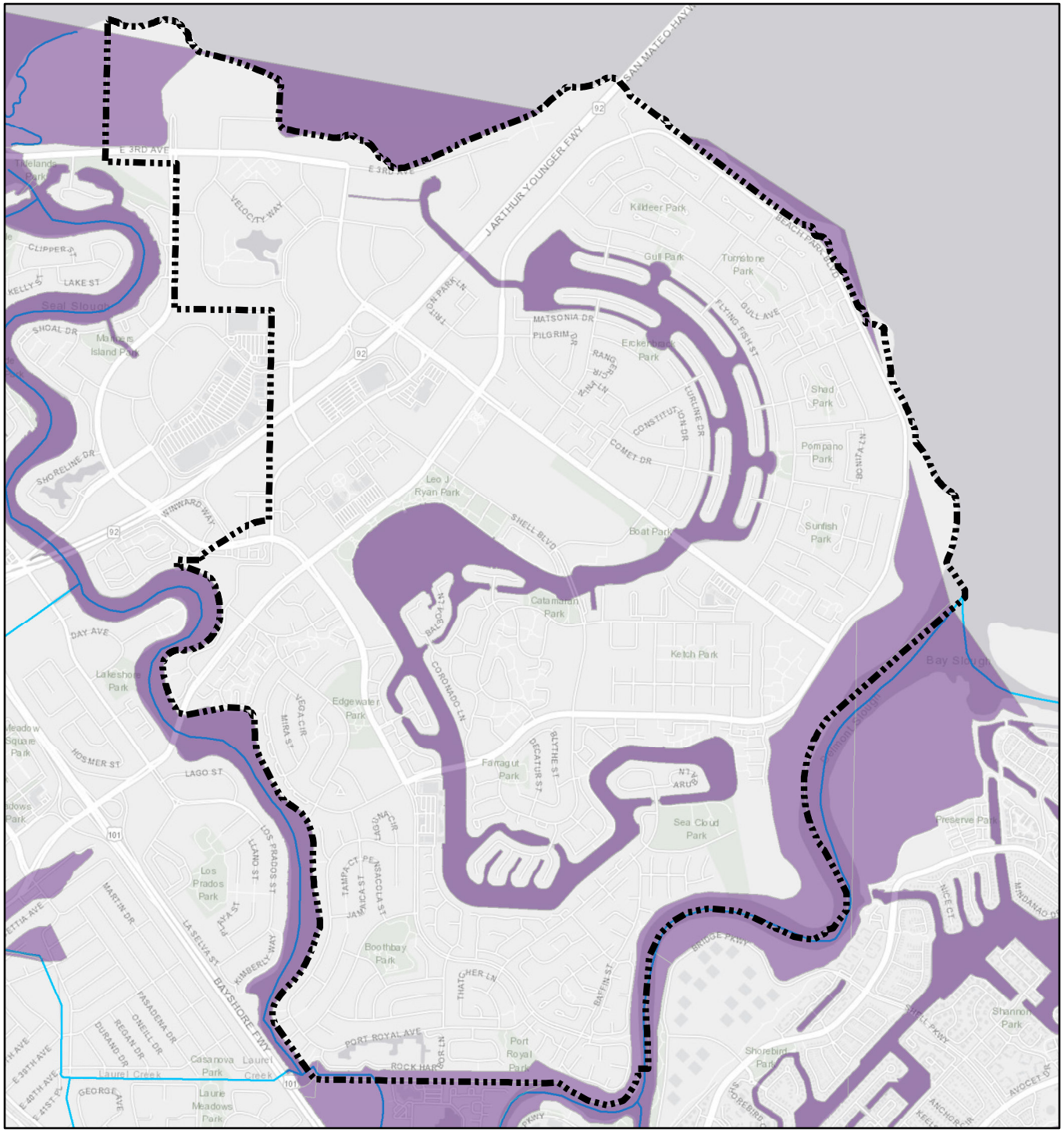
Legend

- City Boundary
- Streams
- Storm Drain Outfalls[1]
- Storm Drains[1]
- Groundwater Basins[1]

[1]San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). (2017, February). *Stormwater Resource Plan for San Mateo County*. Prepared by Paradigm Environmental & Larry Walker Associates, Inc. City/County Association of Government, SMCWPPP, Redwood City, CA. http://ccag.ca.gov/srp/

0 0.25 0.5 Miles

N



City of Foster City: FEMA 100-yr Flood Plain

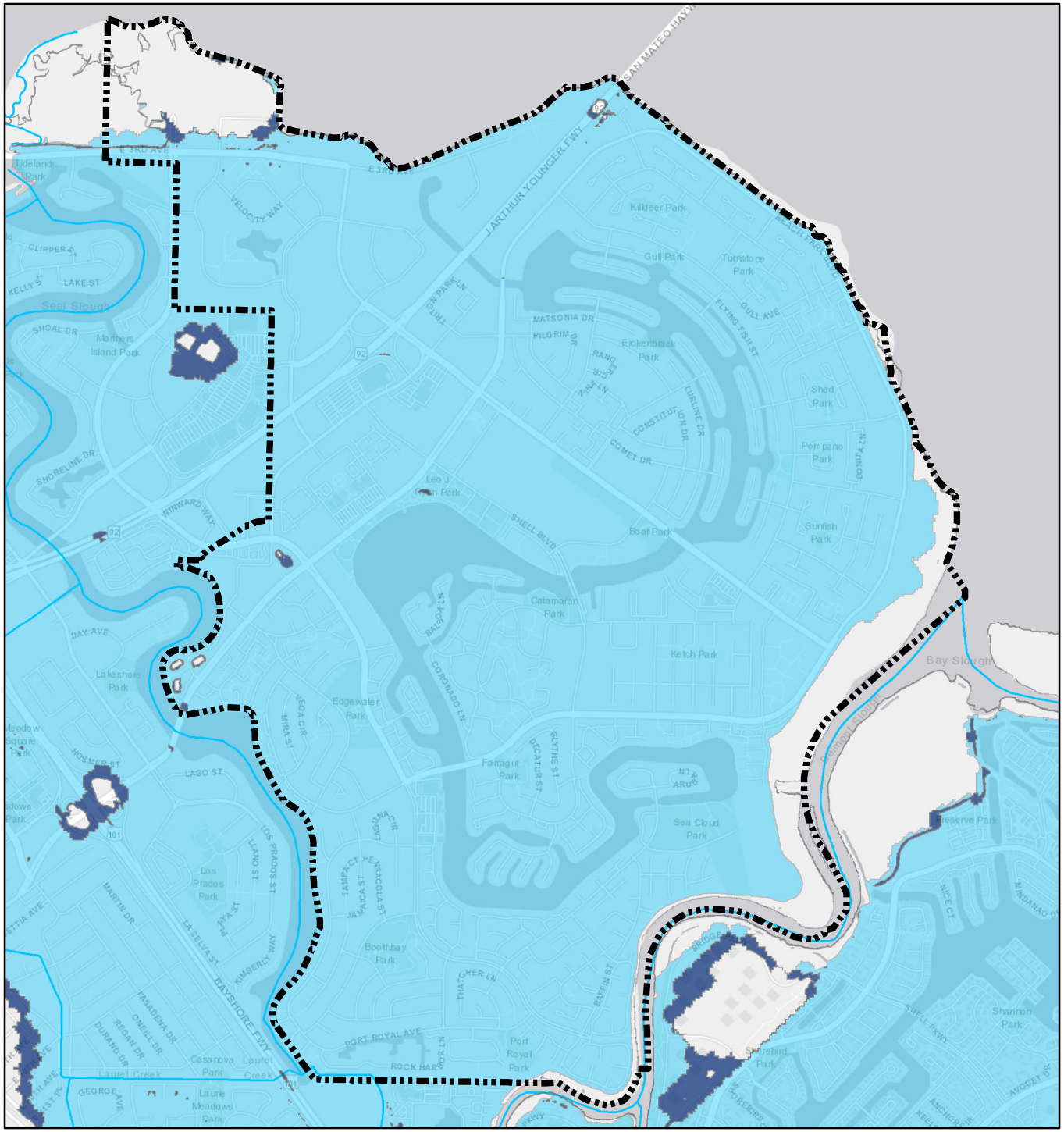
Legend

- City Boundary
- Streams
- FEMA 100-yr Flood Plain[1]

[1]San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). (2017, February). *Stormwater Resource Plan for San Mateo County.* Prepared by Paradigm Environmental & Larry Walker Associates, Inc. City/County Association of Government, SMCWPPP, Redwood City, CA. http://ccag.ca.gov/srp/

N

0 0.25 0.5 Miles



City of Foster City: Sea Level Rise

Legend

- City Boundary
- Streams
- Sea Level Rise 100 [1]
- Sea Level Rise 200 [1]

[1]San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). (2017, February). *Stormwater Resource Plan for San Mateo County.* Prepared by Paradigm Environmental & Larry Walker Associates, Inc. City/County Association of Government, SMCWPPP, Redwood City, CA. http://ccag.ca.gov/srp/

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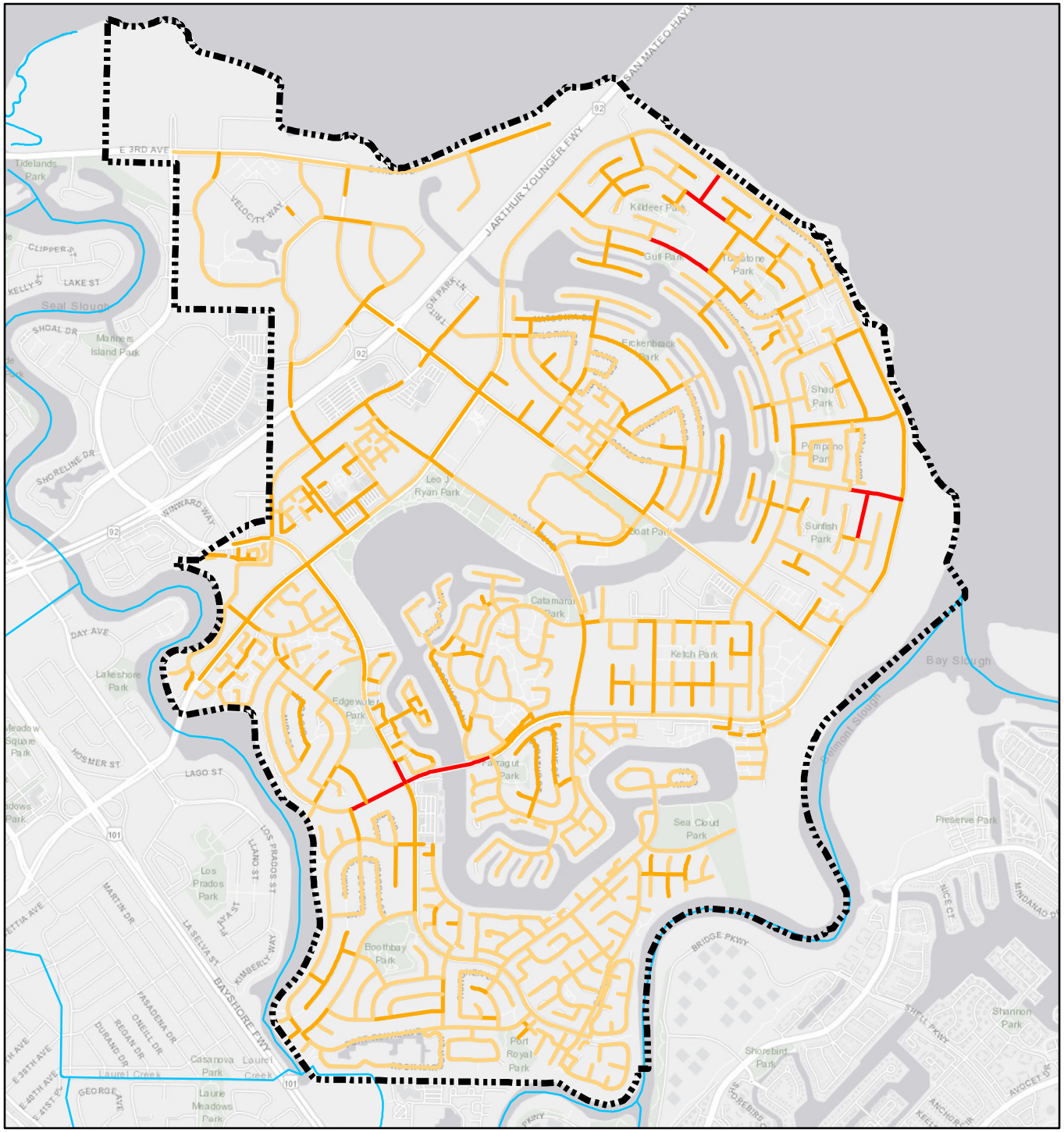
0 0.25 0.5 Miles



City of Foster City: Prioritized Green Streets

Legend

- City Boundary
- Streams

Green Streets Prioritized[1]

- Low Priority
- Medium Priority
- High Priority

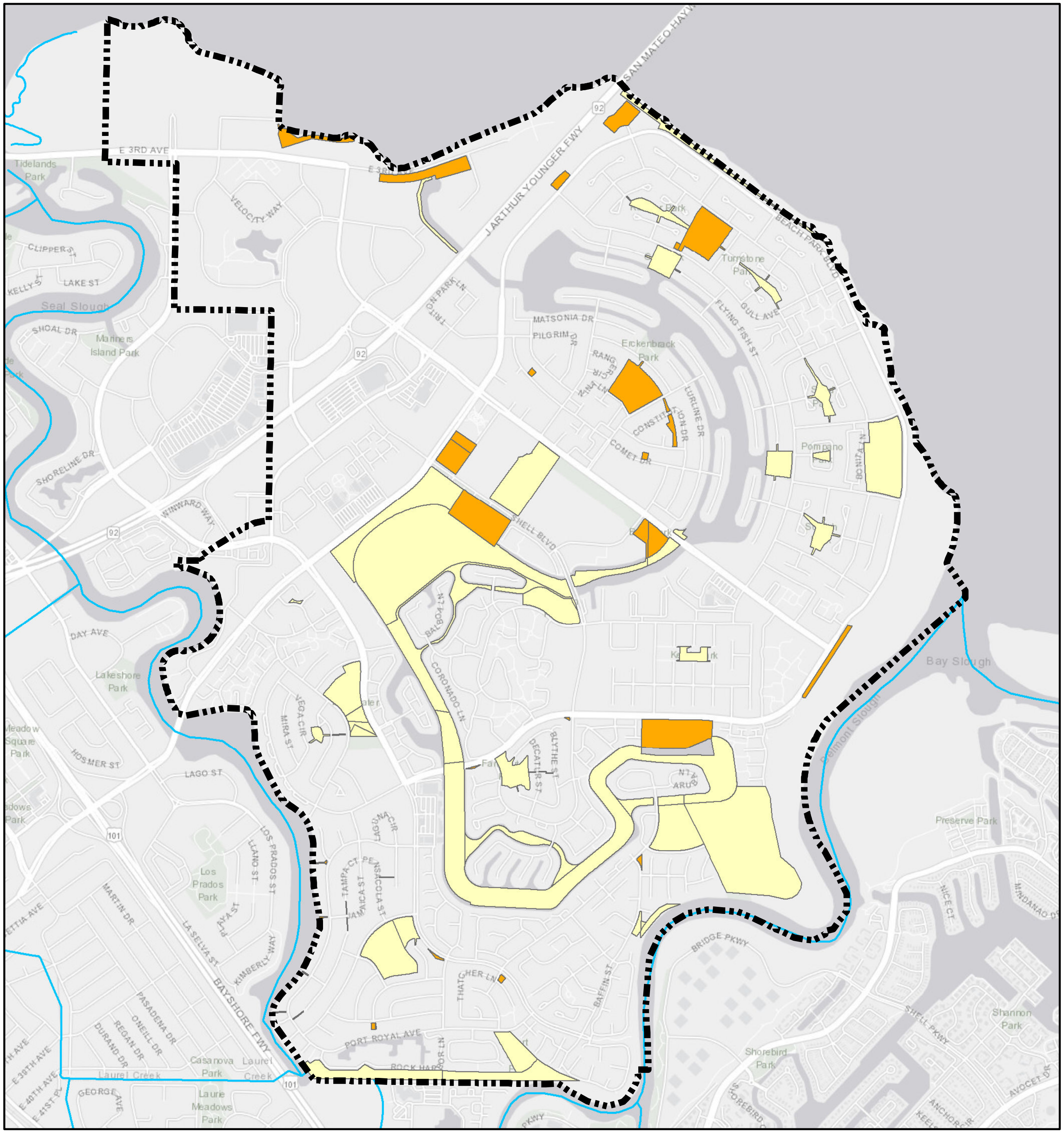
[1]San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). (2017, February). *Stormwater Resource Plan for San Mateo County.* Prepared by Paradigm Environmental & Larry Walker Associates, Inc. City/County Association of Government, SMCWPPP, Redwood City, CA. http://ccag.ca.gov/srp/

Note: The Stormwater Resource Plan for San Mateo County identified and prioritized green streets based on screening and prioritization criteria applied Countywide. This data will be further reviewed, refined, and added to as the Green Infrastructure Program develops with agency-specific knowledge. Part of this refinement effort will take place through the Sustainable Streets Master Plan (estimated 2021 completion).

N

0 0.25 0.5 Miles

City of Foster City: Prioritized LID and Regional Projects



Legend

City Boundary

Streams

LID Projects Prioritized[1]

Low Priority

Medium Priority

High Priority

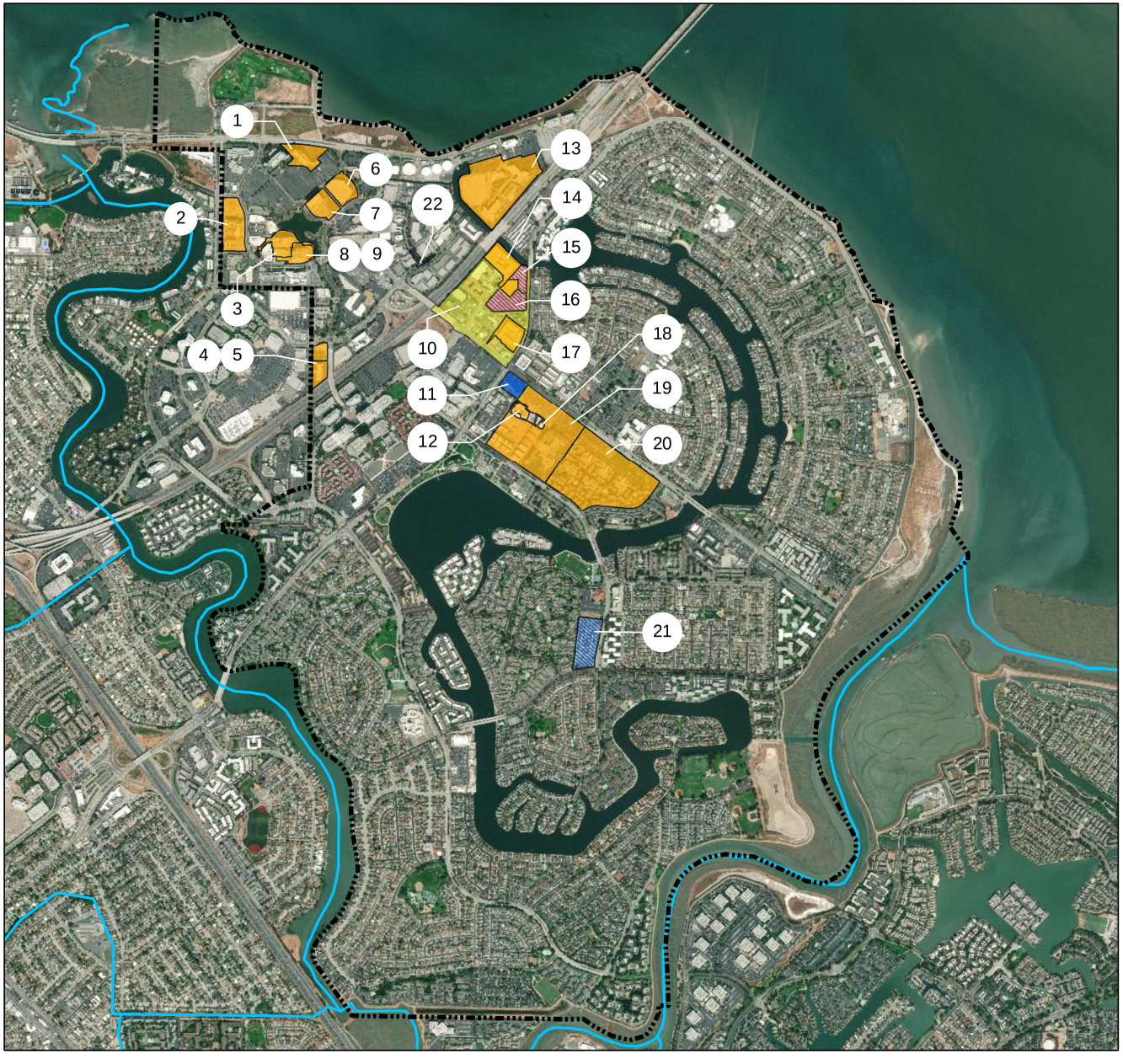
Regional Project Drainage Areas

[1]San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). (2017, February). *Stormwater Resource Plan for San Mateo County.* Prepared by Paradigm Environmental & Larry Walker Associates, Inc. City/County Association of Government, SMCWPPP, Redwood City, CA. http://ccag.ca.gov/srp/

Note: The Stormwater Resource Plan for San Mateo County identified and prioritized low impact development (LID) and Regional Projects based on screening and prioritization criteria applied Countywide. This data will be further reviewed, refined, and added to as the Green Infrastructure Program develops with agency-specific knowledge. Part of this refinement effort will take place through the Sustainable Streets Master Plan (estimated 2021 completion).

0 0.25 0.5 Miles

N



City of Foster City
Green Infrastructure

No.	Project
1	Gilead North Campus Parking Lot
2	Gilead NB 324 & PG 324
3	Gilead NLB-1
4	Foster City Hotel Inc., Retail and Restaurant
5	Foster City Hotel
6	Gilead PG 309
7	Gilead NB 309
8	Gilead NB 355
9	Gilead NB 357
10	CDS Unit
11	City Hall
12	Foster Square: Atria Senior Living
13	The Campus at Lincoln Centre (BioMed Realty)
14	The Waverly
15	Waverly Cove (Waverly Townhomes)
16	PTP3 Townhomes & Workforce Apartments
17	Triton Pointe
18	Foster Square: Midpen Affordable Housing
19	Foster Square: For-Sale Condominiums
20	North Peninsula Jewish Campus
21	New Elementary School at Charter Square
22	Foster City & Chess Drive Median Modifications Project

Legend

- City Boundary
- Streams
- Private, Existing
- Private, Potential
- Public, Existing
- Public, Potential
- Public CDS Unit (Non-GI, Partial Treatment)

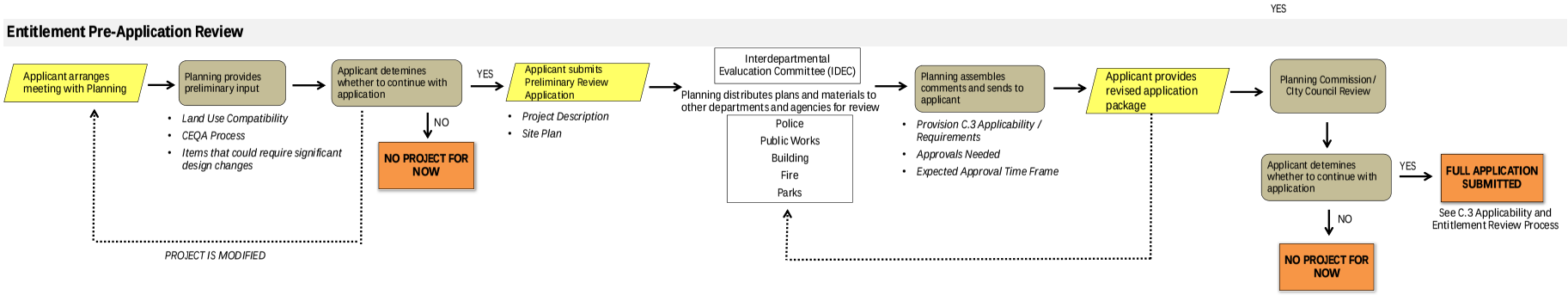
Miles
0 0.5 1

N

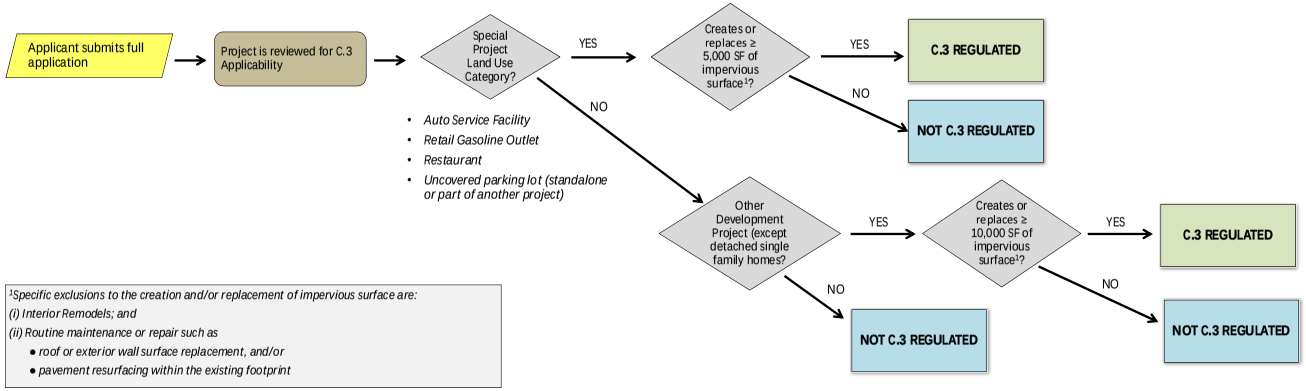
APPENDIX D: Development Review Flowcharts

DEVELOPMENT REVIEW PROCESS

Entitlement Pre-Application Review



Development and Redevelopment C.3 Applicability Review



[1]*Specific exclusions to the creation and/or replacement of impervious surface are:*
(i) Interior Remodels; and
(ii) Routine maintenance or repair such as
- *roof or exterior wall surface replacement, and/or*
- *pavement resurfacing within the existing footprint*

C.3 REGULATED PROJECT MEASURES

Applicant to complete the "C.3 and C.6 Development Review Checklist", and select appropriate:
- *Site Design Measures*
- *Source Control Measures*
- *Construction Best Management Practices*
- *Stormwater Treatment Measures*

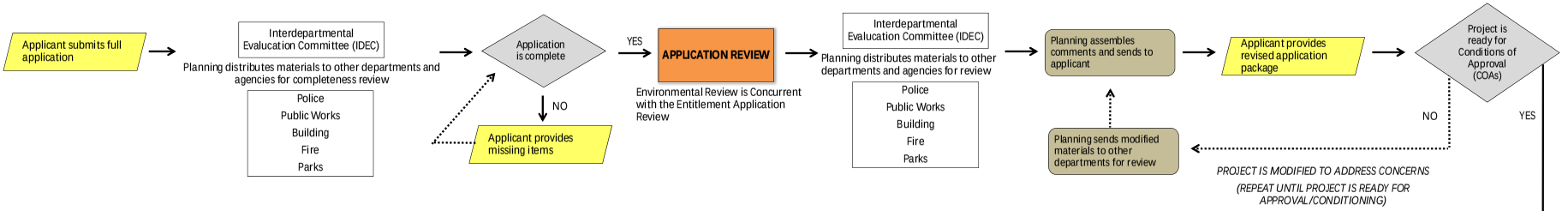
NON-C.3 REGULATED PROJECT MEASURES

For projects which create and/or replace 2,500 square feet or move of impervious surface, applicant must complete the "C.3 and C.6 Development Review Checklist" (see above). Otherwise, applicant to complete the "Stormwater Checklist for Small Projects", and select appropriate:
- *Site Design Measures**
- *Source Control Measures*
- *Construction Best Management Practices*

**One or more site design measures are required for projects that create and/or replace 2,500 square feet or more of impervious surface. Otherwise, these measures are optional.*

DEVELOPMENT REVIEW PROCESS

Entitlement Review

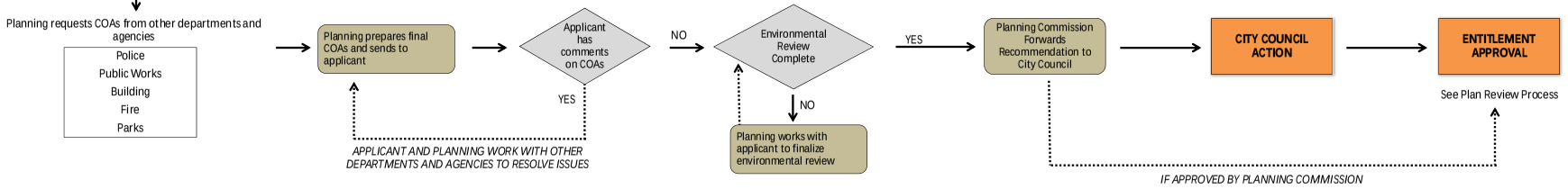


C.3 REGULATED PROJECT COMPLETENESS REVIEW (ENTITLEMENT)

- ❑ *C.3 and C.6 Development Review Checklist*
- ❑ *Preliminary Civil Drawings*
- ❑ *Geotechnical Report (with percolation testing and depth to groundwater, if infiltration will be used as a primary treatment measure)*
- ❑ *Stormwater Control Plan, which breaks up the site into Drainage Management Areas, and show how impervious areas are treated*
- ❑ *Existing Conditions Exhibit (Impervious/Pervious Areas)*
- ❑ *Preliminary Stormwater Treatment Sizing Calculations*
- ❑ *Any other infromation needed to ascertain design and/or land use issues that could require significant revisions to the project or additional likely cost or delays in the plan review/permitting stage*

NON-C.3 REGULATED PROJECT COMPLETENESS REVIEW (ENTITLEMENT)

- ❑ *Stormwater Checklist for Small Projects*
- ❑ *If the project includes permeable pavers, submit the supporting documentation as per the C.3 Regulated Projects Completeness Review, above.*



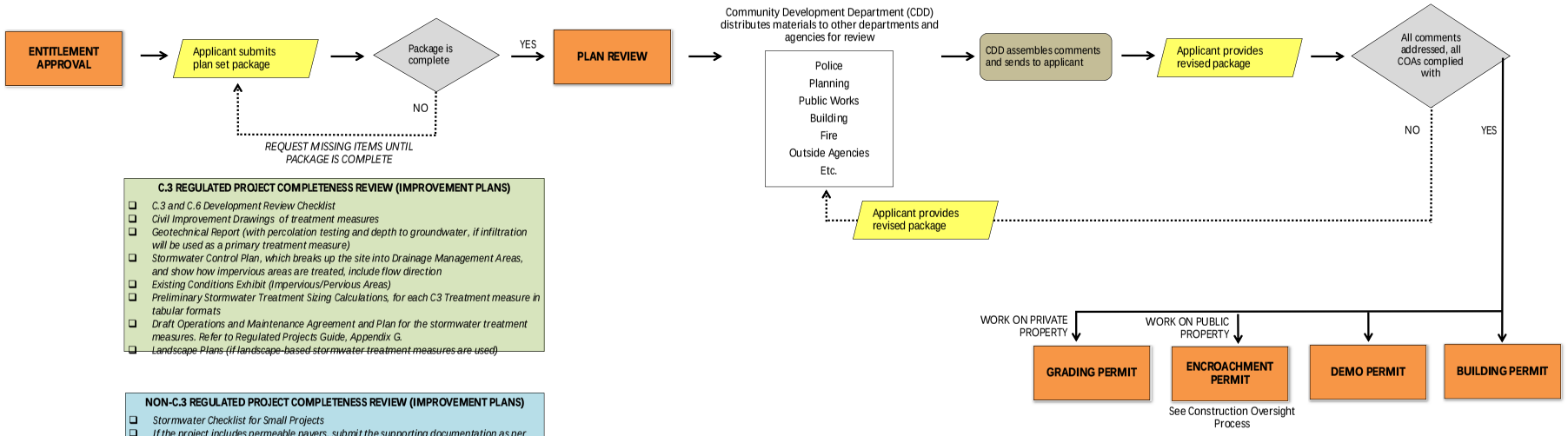
ENVIRONMENTAL REVIEW

Planning completes the initial study:

- *Categorical/Statutory Exemption - No further environmental review needed*
- *No Impact - Negative Declaration*
- *Minor Impact - Mitigated Negative Declaration*
- *Major Impact - Environmental Impact Report (EIR) Needed*

DEVELOPMENT REVIEW PROCESS

Plan Review



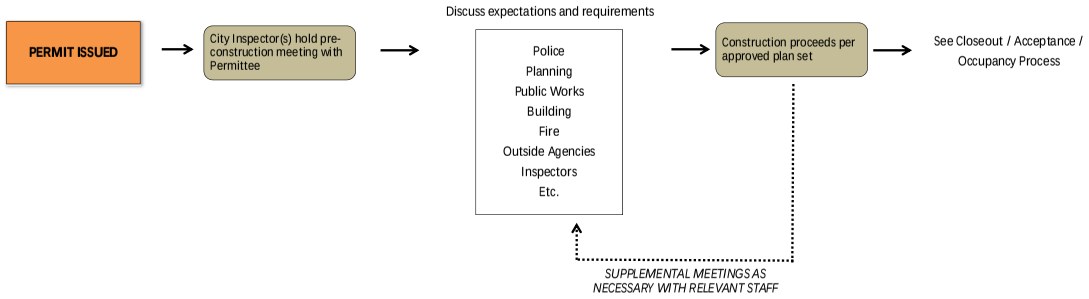
C.3 REGULATED PROJECT COMPLETENESS REVIEW (IMPROVEMENT PLANS)

- ❑ *C.3 and C.6 Development Review Checklist*
- ❑ *Civil Improvement Drawings of treatment measures*
- ❑ *Geotechnical Report (with percolation testing and depth to groundwater, if infiltration will be used as a primary treatment measure)*
- ❑ *Stormwater Control Plan, which breaks up the site into Drainage Management Areas, and show how impervious areas are treated, include flow direction*
- ❑ *Existing Conditions Exhibit (Impervious/Pervious Areas)*
- ❑ *Preliminary Stormwater Treatment Sizing Calculations, for each C3 Treatment measure in tabular formats*
- ❑ *Draft Operations and Maintenance Agreement and Plan for the stormwater treatment measures. Refer to Regulated Projects Guide, Appendix G.*
- ❑ *Landscape Plans (if landscape-based stormwater treatment measures are used)*

NON-C.3 REGULATED PROJECT COMPLETENESS REVIEW (IMPROVEMENT PLANS)

- ❑ *Stormwater Checklist for Small Projects*
- ❑ *If the project includes permeable pavers, submit the supporting documentation as per the C.3 Regulated Projects Completeness Review, above.*

Construction Oversight



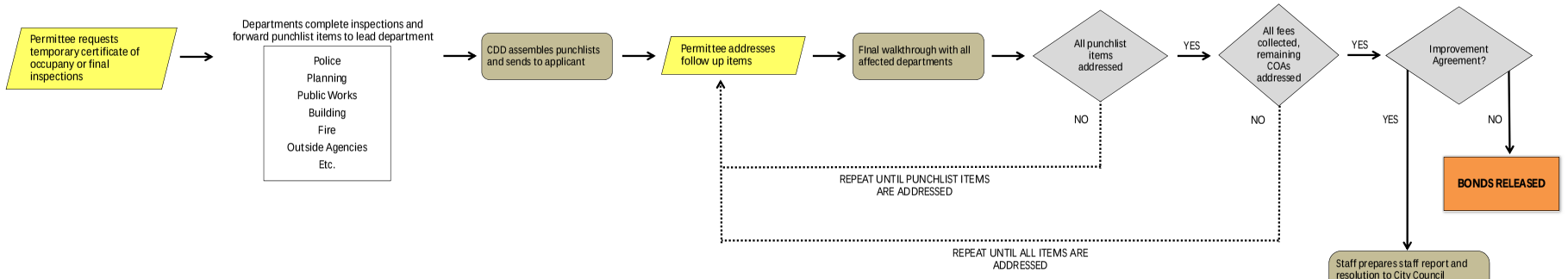
IN-PROGRESS C.3 REGULATED PROJECT INSPECTIONS

In-progress inspections of stormwater treatment measures are optional under the Municipal Regional Stormwater NPDES Permit (MRP), though are recommended to ensure the measures are constructed in accordance with the approved plan set. Any issues identified can be corrected in a timely fashion, well before project closeout. Inspections should occur at several stages of construction, for example:

- ❑ *Subgrade preparation*
- ❑ *Placement of material layers (filter fabric, subbase, base, soil, etc.)*
- ❑ *Installation of storm drain piping and structures*
- ❑ *Reinforcing steel and concrete formwork placement (if applicable)*
- ❑ *Installation of irrigation and planting*
- ❑ *After final landscaping*

DEVELOPMENT REVIEW PROCESS

Closeout / Acceptance / Occupancy



C.3 REGULATED PROJECT PUNCHLIST ITEMS

- ❑ *Final inspection performed for stormwater treatment measures and hydromodification management measures and found all measures to be constructed per plans and fully operational, with no observed issues*
- ❑ *As-built plans which fully reflect the field conditions*
- ❑ *Operations and Maintenance (O&M) Agreement, per local standards, has been reviewed and recorded*
- ❑ *O&M Plan, per Appendix G of the Regulated Projects Guide and local standards, has been reviewed and attached to the O&M Agreement*

NON-C.3 REGULATED PROJECT PUNCHLIST ITEMS

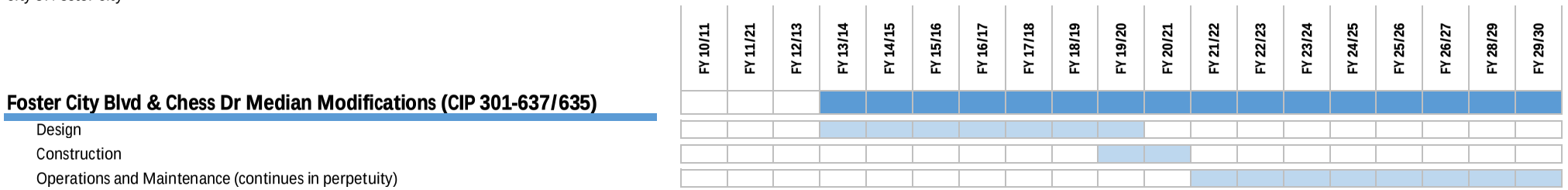
- ❑ *As-built plans which fully reflect the field conditions*
- ❑ *If the project includes permeable pavers, submit the C.3 Regulated Projects Punchlist Items, above.*

APPENDIX E: Early Project Implementation Concept Sheets

a. Chess Drive Median Modifications

DRAFT SCHEDULE FOR PRIORITIZED GREEN INFRASTRUCTURE PROJECTS

City of Foster City



Prioritized Project: Foster City Blvd & Chess Dr Median Modifications (CIP 301-637/635)

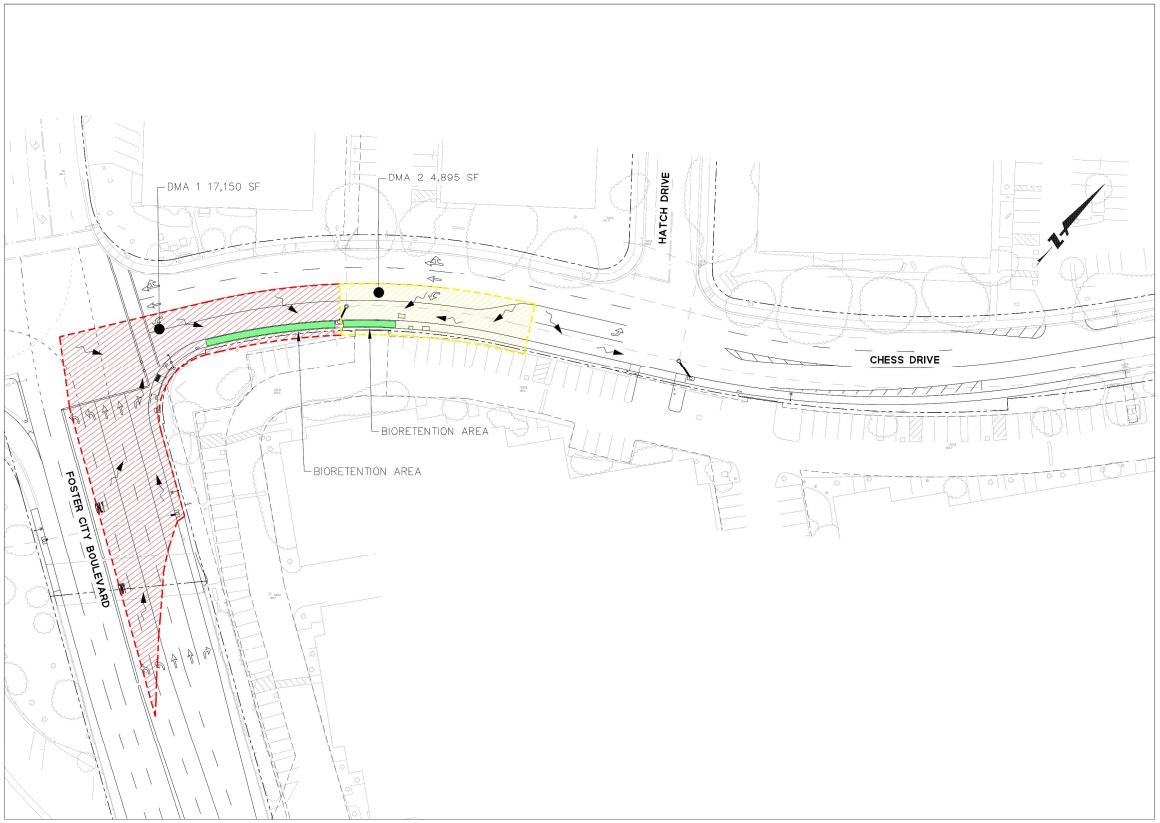


Image Source: BKF Project Concept (95%)

Site Information:

Location	Chess Drive and Hatch Drive Foster City, CA 94404
Capture Area	22,000 SF
Impervious Area (%)	100%
Possible GI Measures	Bioretention areas

Project Schedule:

The project is currently 95% designed. Alternatives for integrating green infrastructure are currently being reviewed. Construction is anticipated to begin in 2020.

Project Description:

This project is identified as Multi-Project #3, #4, #7, and #8 as part of an Engineering Feasibility Study Report prepared by Fehr & Peers. The project is intended to improve existing traffic operations and to accommodate projected traffic from new developments. The project will add a northbound right-turn lane on Foster City Boulevard at Chess Drive, lengthen the westbound left turn lane on Chess Drive at Foster City Boulevard, and add a westbound lane on Chess drive east of Foster City Boulevard.

Funding for the roadway improvements is collected from the Chess Drive Offices developers based on the terms of their Master Development Agreement.

Funding in the amount of $3,588,629 is available for this project, including design and construction.

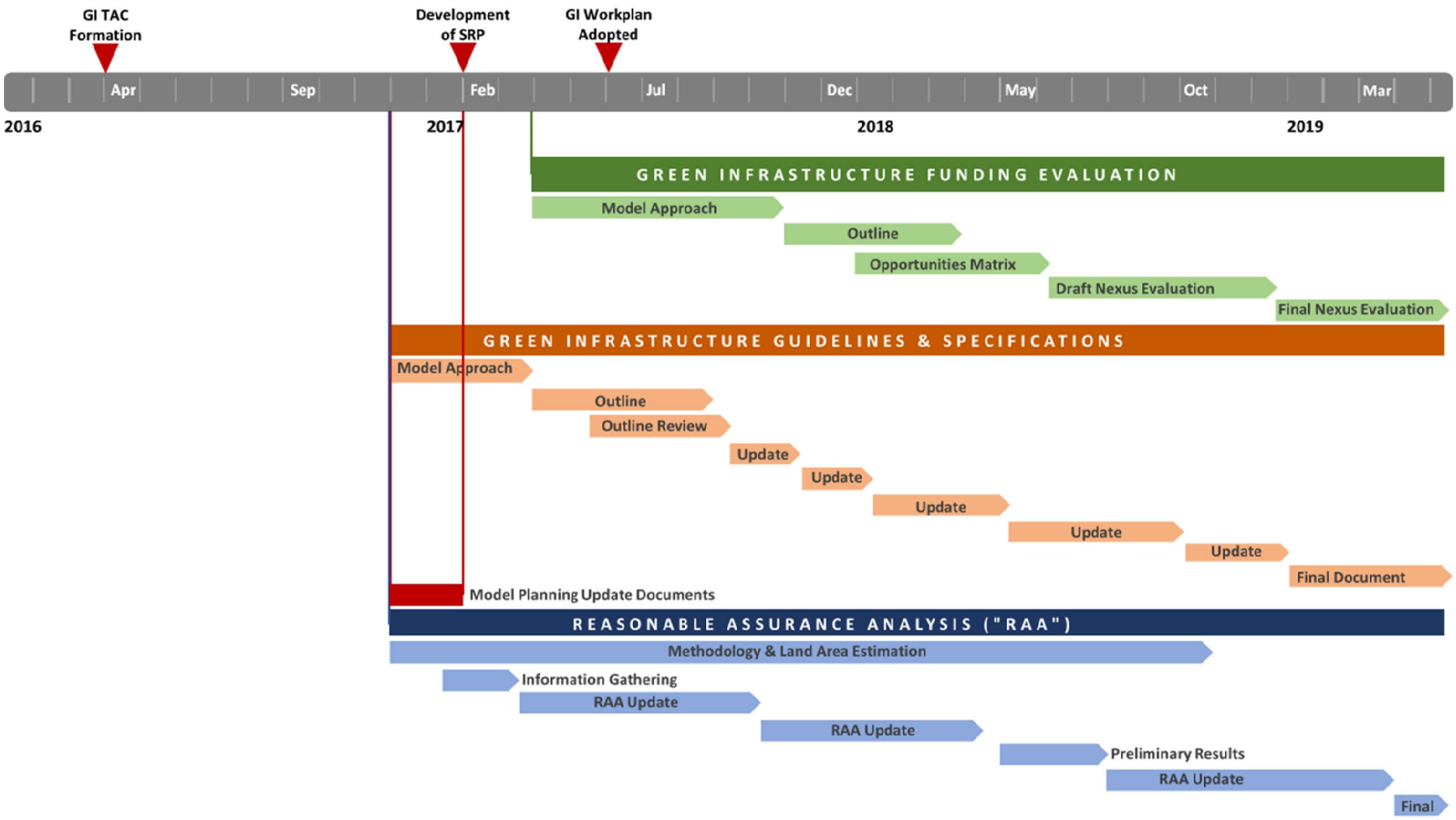
APPENDIX F: Key Green Infrastructure Technical Advisory Committee Deliverables

A timeline showing the development of the key work products developed through the GI TAC is provided on the next page. These and other deliverables include the following:

- **GI TAC.** Formation of a committee to aid coordination among the San Mateo County Permittees to develop the GI Plans.
- **SRP.** Development of the San Mateo Countywide Stormwater Resource Plan (SRP), which established a prioritization protocol for GI projects and a list of prioritized GI projects.
- **CIP Screening.** Training on the BASMAA GI screening process to aid cities in undertaking an annual evaluation of their Capital Improvement Program for GI potential.
- **GI Workplan.** GI Workplan materials development, including the template, sample staff report, and sample resolution.
- **Green Suite.** Development of Countywide GI Guidelines and Specifications, consisting of the *Design Guide* and *C.3 Regulated Projects Guide*, referred to as the "Green Suite".
- **GI Funding Analysis.** Evaluation of GI Funding Options, which was summarized in a Nexus Evaluation report developed by SCI Consulting Group on behalf of SMCWPPP, and with input from the GI TAC.
- **RAA.** Completion of a Reasonable Assurance Analysis (RAA), which sets milestones countywide for the amount of stormwater treatment capacity, impervious surface, and sediment reduction which will be provided by each Permittee in 2020, 2030, and 2040.
- **Planning Updates.** Model Planning Document Language, which was a review of various planning documents completed by CD+A on behalf of SMCWPPP and with input from the GI TAC.
- **Alternative Sizing Criteria.** BASMAA Guidance for Sizing GI Facilities in Street Projects & GI Facility Sizing for Non-Regulated Street Projects. This serves to address Provision C.3.j.i.(2)(g) of the MRP, which states, "Permittees may collectively propose a single approach with their GI Plans for how to proceed should project constraints preclude full meeting the C.3.d. sizing requirements."

These deliverables make up the key elements and backbone of the GI Plan. Developing these elements at a Countywide level was a significant effort, and required collaboration among the various agencies in San Mateo, all of which have a different local context and perspective. Each GI TAC meeting required a commitment on the part of member agency staff to (1) review discussion items several weeks prior to the meeting, (2) attend meetings a minimum of 2.5 hours in length either remotely or in person, and (3) provide feedback on in-progress or updated versions of deliverables within a few weeks of each meeting.

SMCWPPP Green Infrastructure Technical Advisory Committee Deliverables Timeline.



APPENDIX G: Green Infrastructure Plan Adoption

a. **Staff Report to Governing Body Adopting Plan**

b. **Resolution by Governing Body Adopting Plan**