GREEN INFRASTRUCTURE PLAN

CITY OF DALY CITY 333 90th Street, Daly City, CA 94015 • 650.991.8000

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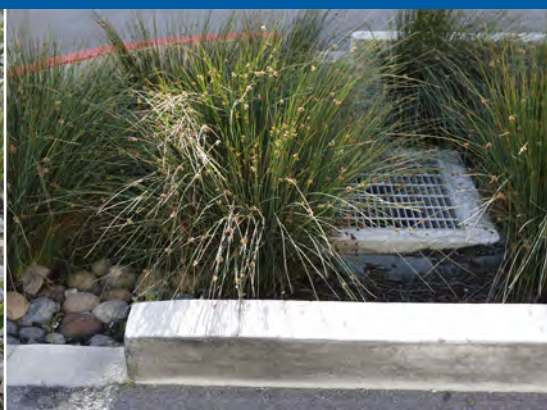

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PREFACE

Green Infrastructure (GI) is a cost-effective, resilient approach to managing water quality. It uses plants, soils, and other elements to mimic the natural water cycle and capture rainwater. Examples of GI include a variety of stormwater measures, such as stormwater planters or bioretention areas, infiltration systems, permeable pavement, green roofs, green walls, green gutters, and stormwater trees which mimic natural hydrologic processes such as filtration, infiltration, detention, and evapotranspiration.

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 the Cities of Fairfield, Suisun, and Vallejo, and the Vallejo Sanitation and Flood Control District. The City of Daly City is obligated to follow the mandates of the MRP to control stormwater discharge within City limits. The City of Daly City, as one of the 76 municipalities that are Permittees of the MRP, has developed this document, the Green Infrastructure Plan, in order to comply with the MRP's Green Infrastructure Planning and Implementation requirements.

This Green Infrastructure Plan describes how the City will, over time, transition its existing "gray" (i.e., 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 GI technologies advance.

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, bioretention areas, stormwater capture devices, and pervious paving, which will improve the quality of stormwater on private property and/or in City rights-of-way and facilities, via operation, repair and maintenance, replacement or reconstruction, and/or construction or conversion of small structures.

Preparation and implementation of this GI 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 GI 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 or facilities with GI that would have substantially the same purpose and capacity as the structures replaced.

The policies in this GI Plan further qualify as a Class 3 categorical exemption (CEQA Guidelines Section 1530) to the extent that new GI is incorporated into new construction or in the conversion of, and/or minor modifications to, existing small structures and facilities.

Lastly, the GI Plan qualifies as a 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 GI Plan, and a Notice of Exemption will be filed.

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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 Daly 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
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SFRWQCB	San Francisco Bay Regional Water Quality Control Board
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 (called "runoff") through a series of "gray" infrastructure (curbs, gutters, storm drain structures, and piping) and directs it to the receiving waters quickly and without treatment. This is often called a "collect and convey" approach to stormwater management, in which stormwater is treated as a waste, instead of a resource. 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 and 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 has led to the pollution of local waterbodies. In the case of the San Francisco Bay, the water quality is 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]

In contrast to traditional "gray" infrastructure, Green 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 patchwork 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.

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 GI.

[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. San Francisco Bay is impaired because mercury contamination is adversely affecting existing beneficial uses, including sport fishing, preservation of rare and endangered species, and wildlife habitat.

Figure 1. *Pre-Urban Development Water Cycle.*[2]

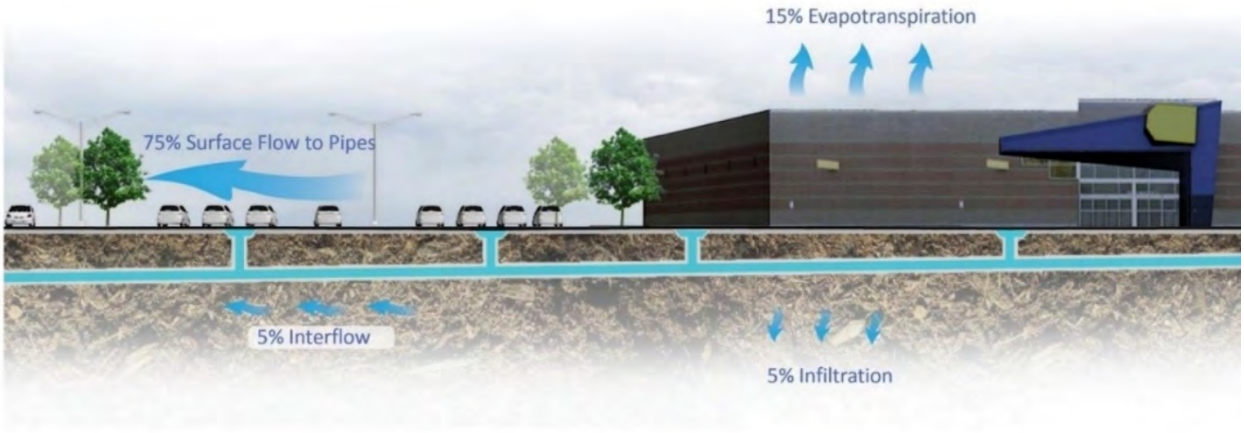


Figure 2. *Post-Urban Development Water Cycle.*[2]

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. This limits the discharge of pollutants to the storm drain system and promotes the infiltration of stormwater into the groundwater basin. GI also includes best management practices, like discharging impervious areas to landscape and minimizing of impervious surfaces on new developments, which act to remove pollutants and protect natural systems.

[2] *San Mateo County Sustainable Green Streets and Parking Lots Guidebook.* (2009). SMCWPPP.

Figure 3. *Balanced Development Water Cycle.*[3]

GI also provides amenities with many benefits beyond water quality improvement and groundwater replenishment, including the 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.

In addition to LID measures, non-LID measures such as mechanical treatment measures (e.g., media filters or high flow-rate tree well filters) can be used in areas where LID measures 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 measures, such as bioretention areas, to watershed-based practices which reduce pollutants to receiving waters, such as preservation of open space areas.

[3] *San Mateo County Sustainable Green Streets and Parking Lots Guidebook.* (2009). SMCWPPP.

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

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)*[4] and *C.3 Regulated Projects Guide*.[5]

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.*

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

[5] *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

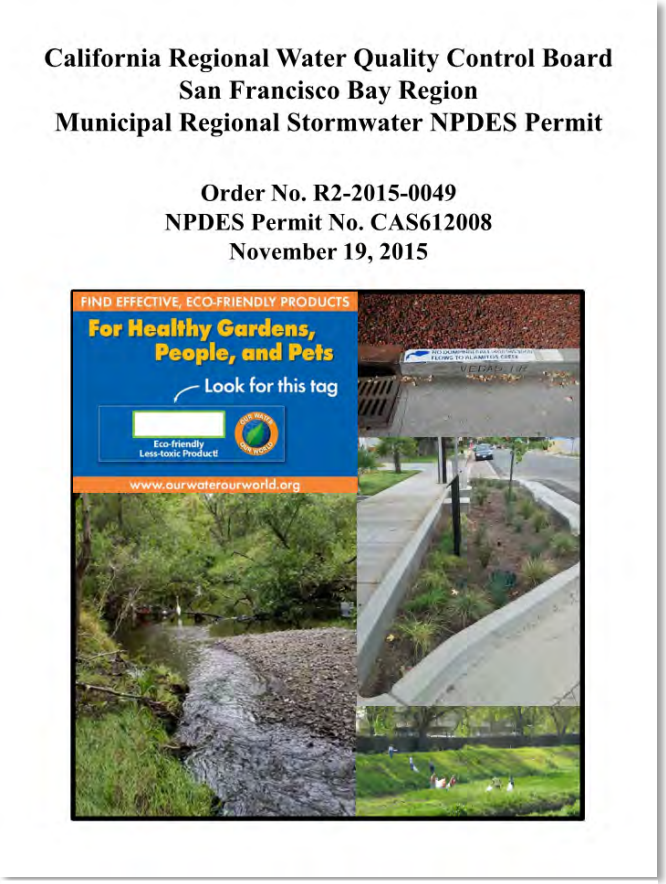
Green Walls

2-4 GREEN INFRASTRUCTURE DESIGN GUIDE

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

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 Daly 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 replacement 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 one or more travel lane(s) is added.

As of 2015, a new section of the MRP requires Permittees to develop and implement long-term GI Plans to address pollutants in stormwater discharges, including polychlorinated biphenyls (PCBs), mercury, trash, and pesticides, to meet Waste Load Allocation (WLA) and TMDL requirements. LID measures incorporated into GI design and retrofit projects can help remove these pollutants from stormwater runoff. For this reason, the MRP establishes a new linkage between public infrastructure retrofits and required reductions in 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 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.

1.1.3 Contributors to Pollution

Numerous human activities generate or otherwise contribute to pollution in stormwater and can cause impairments to the beneficial uses of receiving waterbodies. The following pollutants of concern have resulted in impairments of waters from San Mateo County watersheds[6]:

- **PCBs.** Sources of PCBs are transformers or capacitors with leaking hydraulic fluids, lubricants, 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 are therefore persistent once in the environment. In addition to treatment by GI, PCBs are managed through the City's PCB Demolition Program, which controls PCB-laden wastes resulting from building demolition, and through referrals of source properties to the SFRWQCB. After referral, the property owner is required to address the pollution.
- **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,

[6] *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.

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, mercury is reduced through implementation of a Mercury Control Program, which includes source control efforts at local mines.
- **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 (such as through construction activities, historic logging, and agriculture). 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 and beaches of the Pacific Ocean, and other 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. Other sources include sanitary sewer leaks and overflows, boat waste, litter from recreation, and direct deposit by wildfowl (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. Adopting and promoting the use of GI will ultimately lead to improved quality of urban water discharge.

GI is associated with a range of environmental and human health benefits, especially in urban areas. For example, a stormwater curb extension provides both improved water quality and traffic calming. “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 placemaking and community cohesion, greater energy savings, and habitat retention, in addition to higher property values (see Table 2). The City will prioritize types and locations of GI measures which provide multiple benefits.

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

The 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 convert infrastructure that directs runoff directly into storm drains and receiving waters with GI, which slows runoff by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and evapotranspiration, and utilizes bioretention and other GI practices to treat stormwater runoff.

The GI Plan also demonstrates the City's long-term commitment to GI implementation 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 are 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 Annie Street Subdivision.

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. Furthermore, it will include means and methods to track the area within the City's jurisdiction that is

treated by GI controls and the amount of directly connected impervious area (i.e. impervious area which drains directly to the storm drain system without first flowing across permeable land area).

The City will aim 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.

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 CIP projects • 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

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 redevelopments. 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.[7] 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 and will also continue to incorporate LID and GI into Capital Projects.

The City will plan, analyze, implement, and credit GI systems for pollutant load reductions on a watershed scale, as well as recognize all GI accomplishments within the City. 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. Additionally, the GI Plan also 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.[8]

1.2.3 Benefits of Developing a GI Plan

Currently, most of the infrastructure 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 GI implementation 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

[7] 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.

[8] 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.

- Assists in understanding of compliance costs as well as planning and budgeting for future implementation

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 Daly 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 participated in and supported regional (BASMAA) efforts, including the preparation of technical projects, memos, and reports.

A timeline showing the development of the key work products developed through the GI TAC is provided in Figure 5. 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 municipalities 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 GI Design Guide and 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 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 Green

Infrastructure 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.

In order to provide feedback on GI TAC deliverables in a timely manner, an unofficial interdepartmental task force headed by the Public Works Department which consisted of representatives of various other departments was formed. At various stages in the planning process, Public Works coordinated with Planning, the City Attorney, the City Manager's Office, and City Council to discuss the planning requirements and work products.

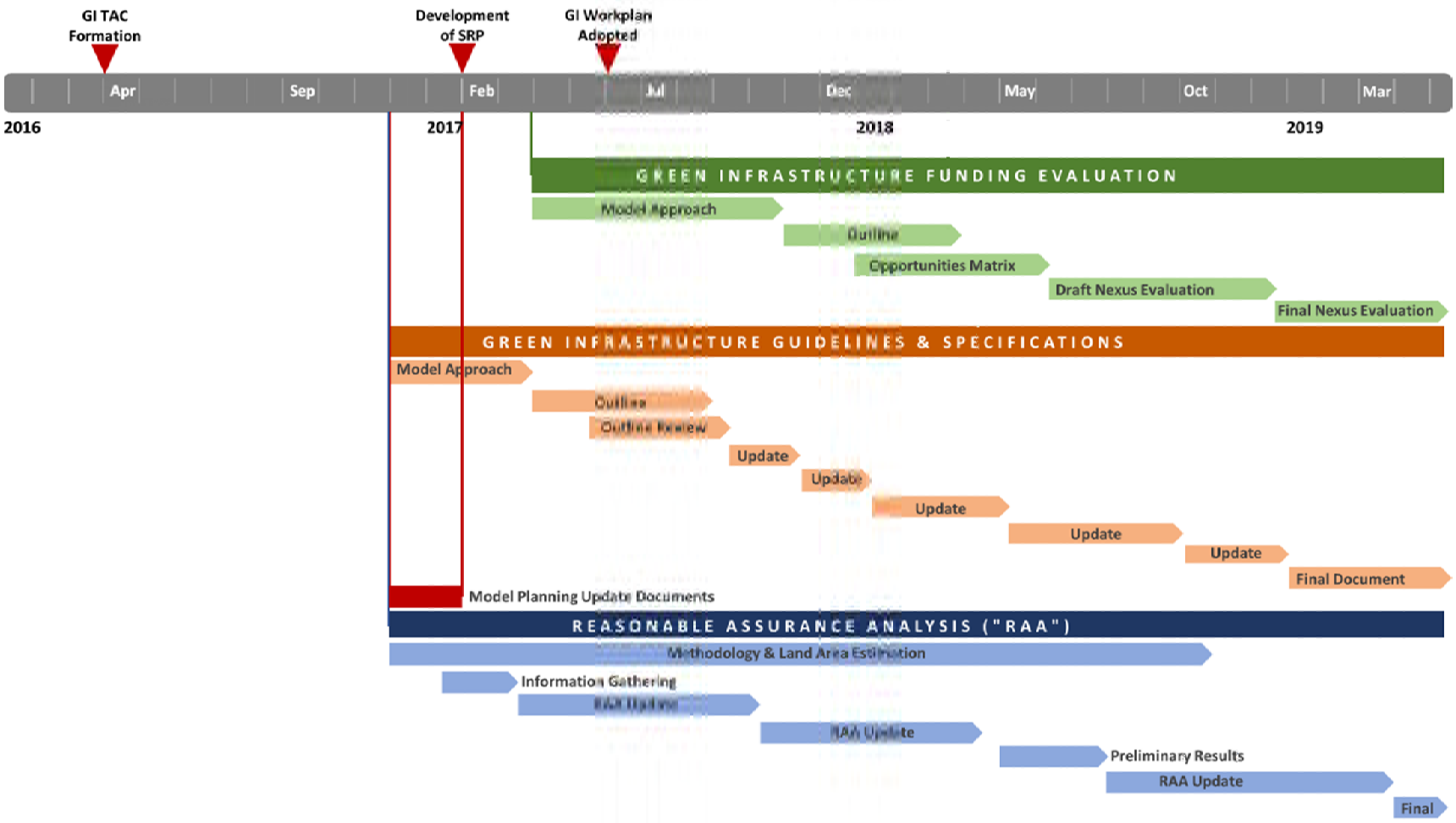
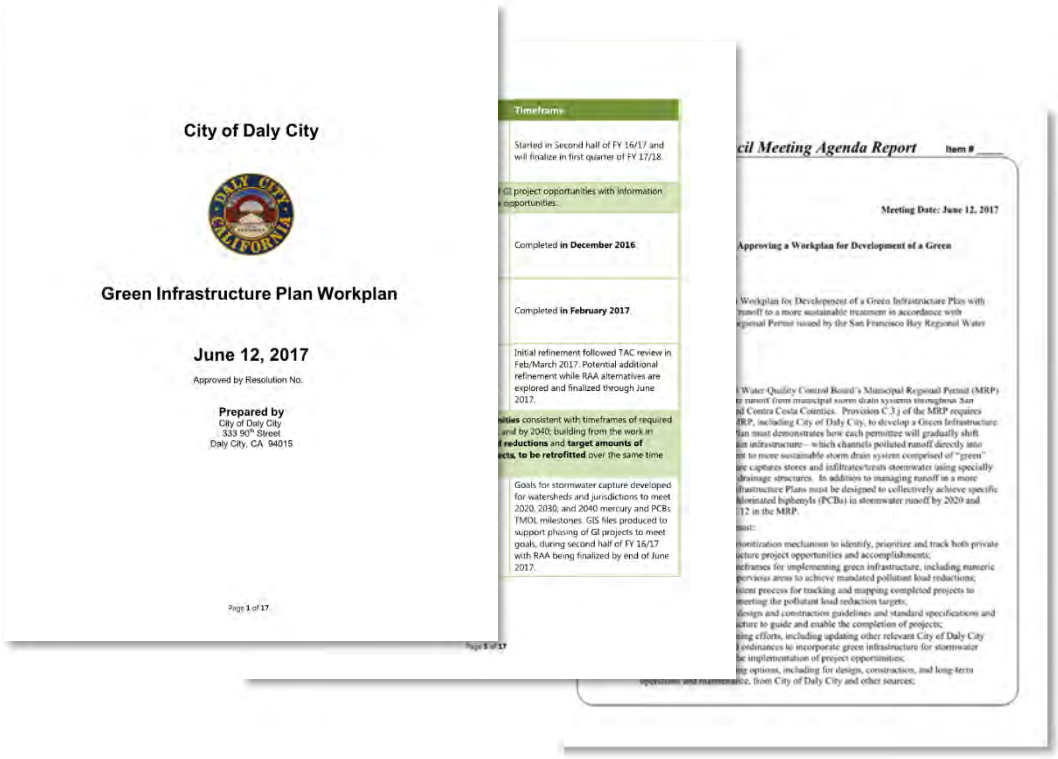


Figure 5. *SMCWPPP Green Infrastructure Technical Advisory Committee Deliverables Timeline.*

1.3.2 Workplan Development and Adoption

As part of the GI planning process, the MRP required all Permittees to adopt a GI Workplan by June 30, 2017 and submit it to the SFRWQCB by September 30, 2017. The workplan consisted of a framework for completing the GI Plan and included a statement of purpose, tasks, and timeframes to complete the required elements of the GI Plan.

The City of Daly City adopted a GI Workplan on June 12, 2017 through City Council Resolution 17-85.


City of Daly City

Green Infrastructure Plan Workplan

June 12, 2017

Approved by Resolution No.

Prepared by
City of Daly City
333 90th Street
Daly City, CA 94015

Page 1 of 17

Timeframe

Started in Second half of FY 16/17 and will finalize in first quarter of FY 17/18.

Completed in December 2016

Completed in February 2017

Initial refinement followed TAC review in Feb/March 2017. Potential additional refinement while RAA alternatives are explored and finalized through June 2017.

Goals for stormwater capture developed for watersheds and jurisdictions to meet 2020, 2030, and 2040 mercury and PCBs TMDL milestones. GIS files produced to support phasing of GI projects to meet goals, during second half of FY 16/17 with RAA being finalized by end of June 2017.

City of Daly City GI Workplan, adopted June 12, 2017.

1.3.3 Alignment with City Plans, Policies, and Programs

GI implementation aligns with many other City plans, policies, and programs, such as the General 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 GI implementation.

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

1.3.4 Outreach and Education

Chapter 9, "Outreach and Education", describes which outreach and education efforts were conducted at a City- or County-wide 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 GI implementation.

1.3.5 Project Oversight

The City convened interdepartmental meetings with affected department staff, including the Public Works and Planning Departments, to discuss and develop the GI Plan.

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 AGENCY DESCRIPTION AND BACKGROUND

2.1 Background and Land Use

Incorporated in 1911 and known as the "Gateway to the Peninsula", Daly City is the northernmost municipality in San Mateo County and is located adjacent to the City and County of San Francisco. The City has a jurisdictional area of 6.46 square miles (4,137.1 acres), extending from the Pacific Ocean in the west to the City of Brisbane in the east. To the south, Daly City is bordered by the San Bruno Mountains. The City's regional location is depicted in Figure 6.

Figure 6. *Daly City Regional Location.*[9]

The City has become a regional hub for retail, healthcare, and small business, and is central to two of the Bay Area's major job growth zones of San Francisco and San Mateo Counties. Because of its central location, diversified economy, excellent transportation links, and a growing young and productive labor force, Daly City is a desirable residential community.[10]

[9] *Daly City 2030 General Plan*. City of Daly City. Department of Economic and Community Development. Planning Division.

[10] *City Profile.* City of Daly City. Accessed April 10, 2019. http://www.dalycity.org/About_Daly_City/City_Profile.htm.

The City's major economic sectors include medical, education, retail, and government services, the largest of which is retail. In total, Daly City boasts approximately 3.1 million square feet of retail space. Major employers include the City of Daly City, the Jefferson Elementary School District, the Seton Medical Center, and the various retailers in the Serramonte Shopping Center.

Within the City limits, open space is preserved in the northern foothills of the San Bruno Mountains and the coastal zone, both of which are located on the outskirts of residential areas. The coastline is the largest scenic corridor in Daly City. Although access to the lower portion of the coastline is limited, the upper portions of the coastal bluffs provide visual access.

Land uses within Daly City are summarized in Table 4. Daly City is comprised of nine (9) land uses: Residential, Open Space, Retail, K-12 Schools, Public/Semi-Public, Private Recreational, Commercial and Services, Public Parks, and Industrial.

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

Land Use Category	Area (Acres)	Percent of Area
Residential	2481.9	60.0%
Open Space	406.9	9.8%
Retail	301.4	7.3%
K-12 Schools	253.4	6.1%
Public/Semi-Public	239.2	5.8%
Private Recreational	161.8	3.9%
Commercial and Services	144.9	3.5%
Public Parks	114.8	2.9%
Industrial	32.6	0.8%
TOTAL	**4137**	**100%**

Newer ABAG land use data was not available at the time of developing this Green Infrastructure (GI) Plan. Currently, ABAG is developing Plan Bay Area 2040, which will forecast land use, employment, population, and demographics in 2040.

Table 4 may include areas that would be considered non-jurisdictional, such as school district properties and Caltrans Right-of-Way. 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 flood control district.

Figures 7, 8, and 9 show the various land uses in Daly City. Figure 7 matches the land use categories from the 2006 ABAG data presented in Table 4, while Figures 7 and 8 show the City land uses by geographic location per the City's General Plan.

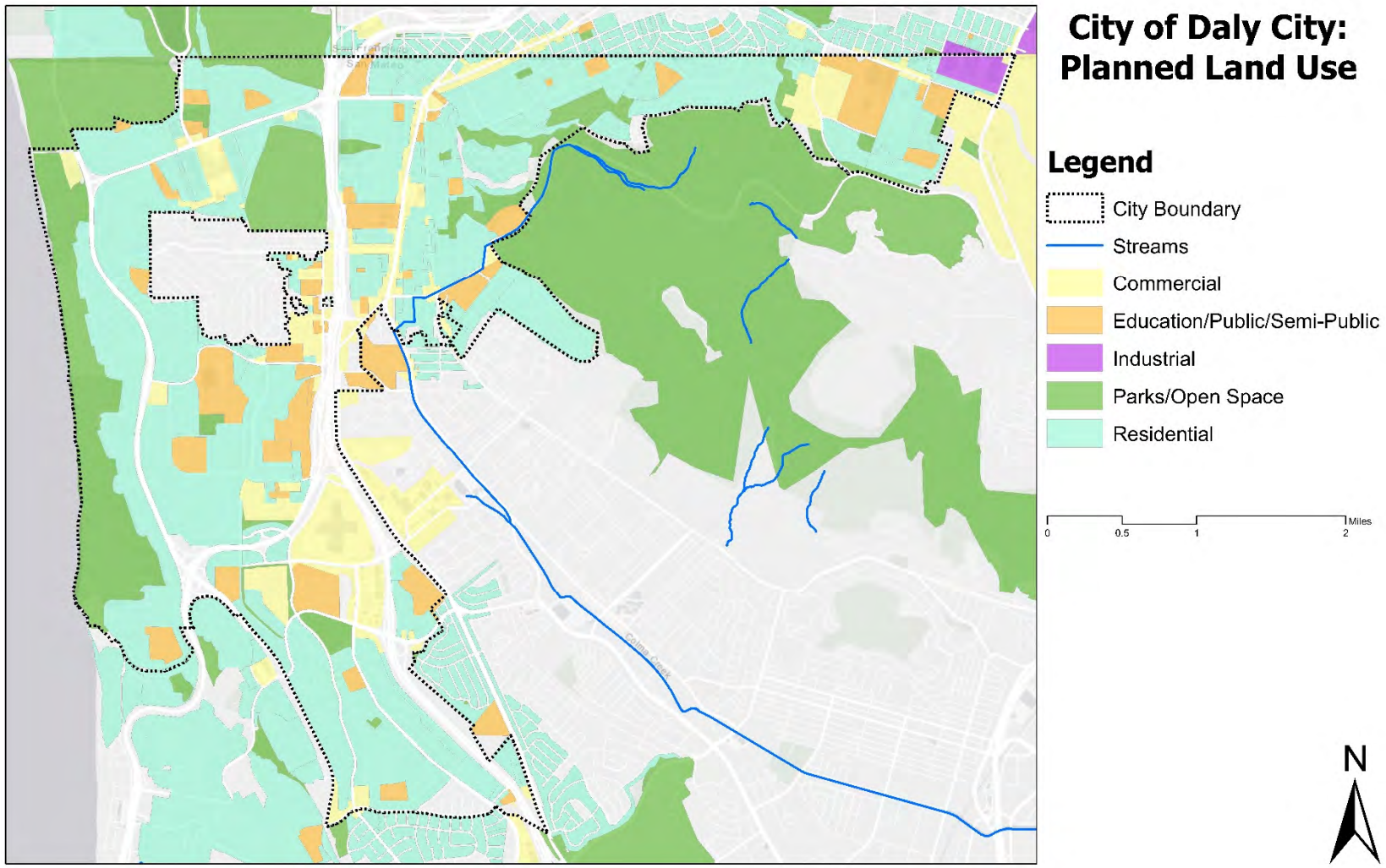


Figure 7. *Land Use Map (ABAG 2006 data).*

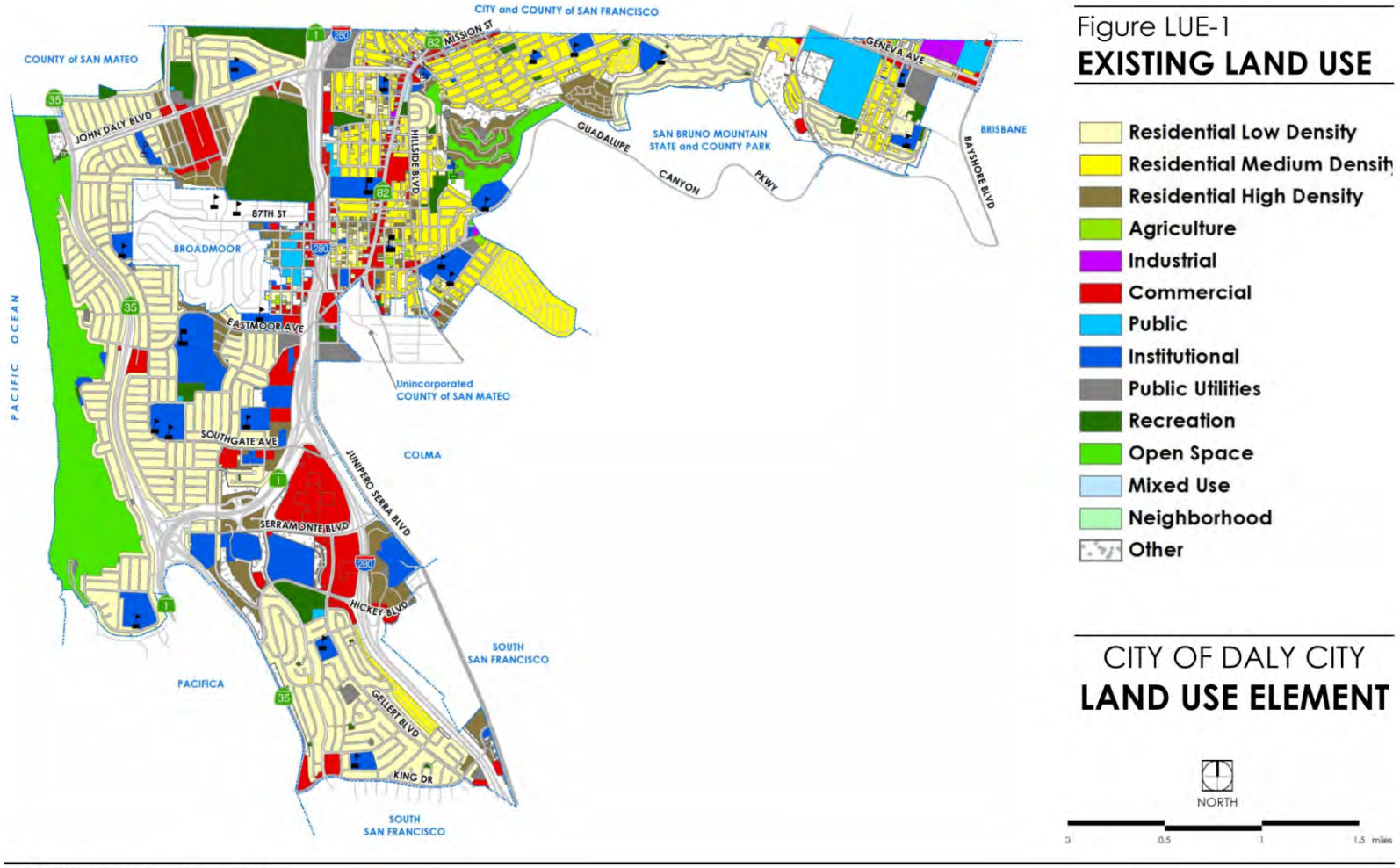


Figure 8. *Daly City Existing Land Use.*[11]

[11] *Daly City 2030 General Plan*. City of Daly City. Department of Economic and Community Development. Planning Division.

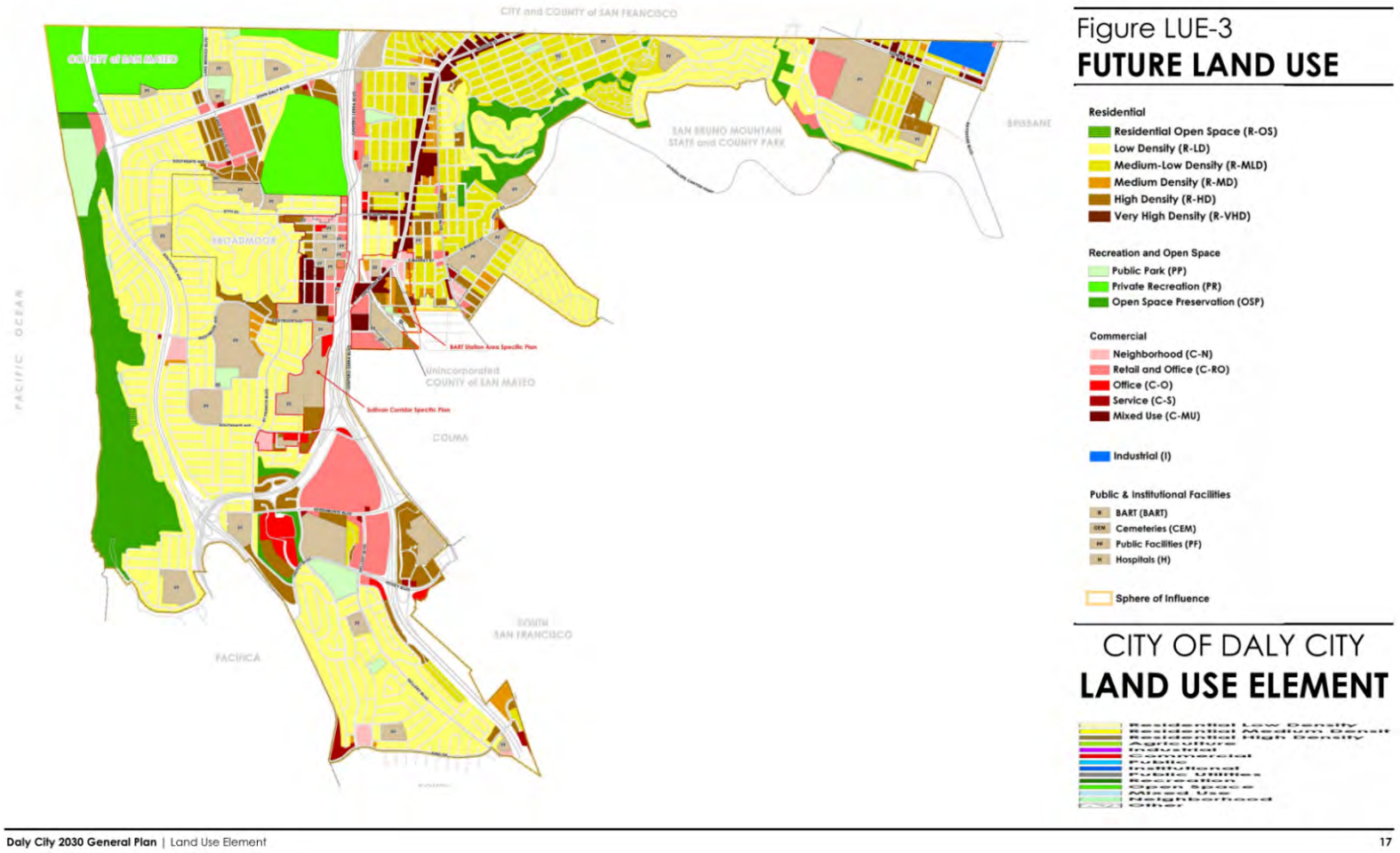


Figure 9. *Daly City Future Land Use.*[12]

[12] *Daly City 2030 General Plan*. City of Daly City. Department of Economic and Community Development. Planning Division.

2.2 Water Resources

2.2.1 Surface Water

Daly City lies within five watershed areas, the two largest being Vista Grande and Colma Creek. Except for the coastal regions, areas in Daly City are densely developed with a high percentage of impervious surfaces, such as roads, roofs, and parking lots.[13]

- **Vista Grande.** The northwestern portion of the City is within the Vista Grande watershed area. The Vista Grande portion of Daly City's stormwater collection system drains the northwestern area of Daly City and an unincorporated portion of San Mateo County (Broadmoor). The underground collection system routes storm flows northwest to the Vista Grande canal and tunnel. This water is discharged to an outfall structure at the beach below Fort Funston located in the City and County of San Francisco.
- **Colma Creek.** The southern portion of Daly City lies within the Colma Creek watershed area. The area is drained through Colma Creek, which extends from Guadalupe Canyon into South San Francisco and discharges into the San Francisco Bay just north of the San Francisco Airport. Most of the creek is channelized and/or conveyed underground to allow for urban development.
- **The Pacific Ocean.** The majority of the Coastal Zone, the western portion of the City, drains to the Pacific Ocean, apart from a northwest portion of the zone which drains into the Vista Grande watershed.
- **Islais Creek.** The City's northern areas of Crocker and Southern Hills along the City and County of San Francisco border falls within the Islais Creek watershed, which drains to the City and County of San Francisco Publicly Owned Treatment Works (POTW).
- **Sunnydale.** The City's northeastern Bayshore Planning Area is within the Sunnydale watershed, which drains to the San Francisco Bay via Brisbane.
- **City and County of San Francisco.** The northeastern portion of Daly City drains to the City and County of San Francisco, where storm drain runoff merges with sanitary sewer discharge and enters a combined treatment system.

2.2.2 Groundwater

The main groundwater aquifer which underlies most of Daly City is the Westside Groundwater Basin (Westside Basin). The basin extends from Golden Gate Park in the north and past the San Francisco Airport in the south. To the west, the basin extends beneath the Pacific Ocean at least as far as the San Andreas Fault and to the east an unknown distance beneath San Francisco Bay.

[13] *Environmental Impact Report, City of Daly City General Plan Update*. City of Daly City. Department of Economic and Community Development.

2.3 Transportation

Daly City's extensive transportation infrastructure includes Highway 82, Interstate 280, Skyline Boulevard, and the Bay Area Rapid Transit (BART) system. Interstate 280, which bisects Daly City, is a primary transportation corridor linking San Francisco with San Mateo and Santa Clara Counties. Daly City is approximately eight (8) miles south of downtown San Francisco, and the San Francisco International Airport is just nine (9) miles from the City; both are easily accessible via freeway or BART. Daly City is also served by the San Mateo and San Francisco transit systems.[14] Refer to Figure 10 on the next page.

Regional vehicular access to the City is also provided by Highway 1 passing horizontally through the center of the City and State Route 35 passing vertically along the eastern perimeter of the City.

The Daly City BART Station serves as a regional transit hub with connections to BART, San Mateo County Transit District, and San Francisco Municipal Transportation. Additionally, the City operates a free public shuttle service from the Bayshore neighborhood to the Daly City BART Station. San Francisco State University also provides a Shuttle service between the Daly City BART Station and main campus.

The City has approximately 27.3 miles[15] of existing bikeways and adopted the 2013 Bicycle and Pedestrian Master Plan (currently undergoing an update). The focus on the creation and enhancement of bicycle and pedestrian features throughout the City coincides with the goals of this GI Plan.

Bicycle parking at the Daly City BART station.

[14] *City Profile.* City of Daly City. Accessed April 10, 2019. http://www.dalycity.org/About_Daly_City/City_Profile.htm.

[15] *Daly City Existing Conditions Report for the Bike and Pedestrian Master Plan* (Public Draft). City of Daly City. Department of Economic and Community Development. By Eisen and Letunic.

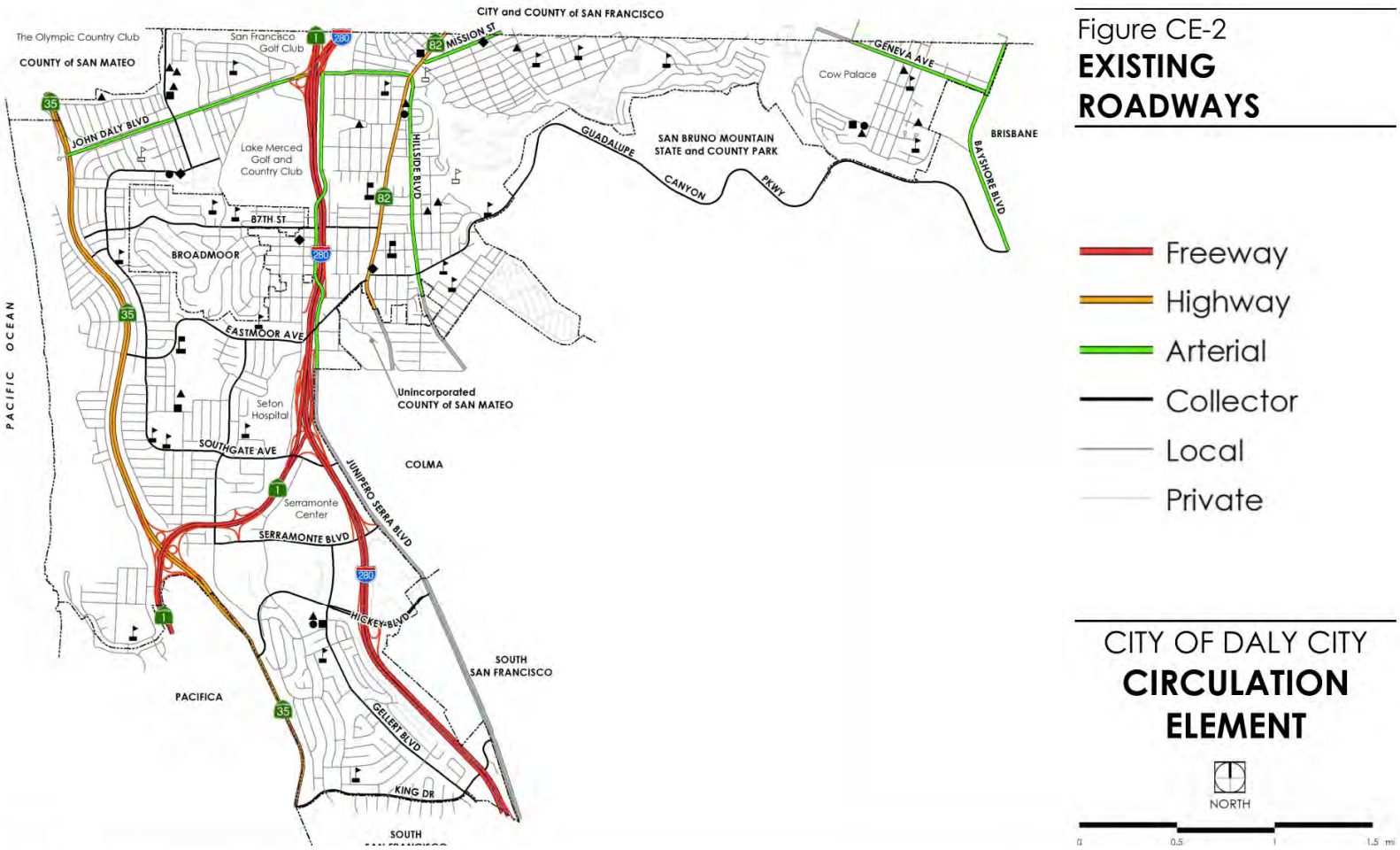


Figure 10. *Daly City Existing Roadways.*[11]

[11] *Estimates.* 2030 Daly City General Plan. State of California. Department of Finance. Accessed 2019. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/.

2.4 Population and Growth Forecasts

According to the 2018 California Department of Finance population estimate, Daly City has a population of 107,864[16], which makes it the largest city by population in San Mateo County. According to census data, Daly City's population shrunk by 2% from 2000 to 2010. Since then, the City has experienced a 7% population growth. The Association of Bay Area Governments predicts that Daly City's growth will increase dramatically over the next two decades, bringing the population to almost 130,000 by 2030.

As of 2011, Daly City has an average household size of 3.21 and a median household income of $79,743.[17] 59% of the population of the City is of working age. 23% are between the ages of 20 and 34. Figure 11 depicts the age distribution in the City.

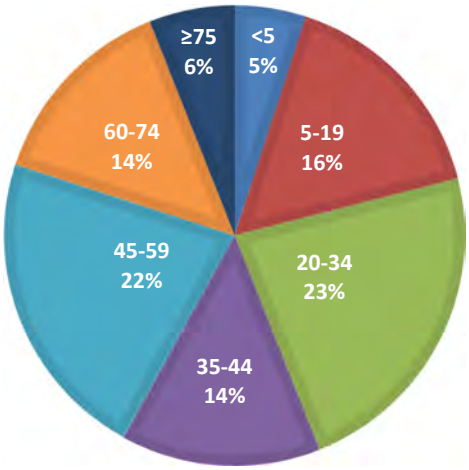


Figure 11. *Daly City Age Distribution (2009-2011 American Community Survey).*

2.5 Characteristics that Impact Green Infrastructure Implementation

Specific City characteristics that may restrict GI implementation include the following:

- **Limited Available Width for GI.** Some City streets are characterized by limited street width. Though right-of-way width may be adequate, front lawns tend to encroach into the right-of-way and would require reconstruction to allow enough space for GI measures. Parking is also highly limited when compared to parking demand; therefore, removing parking spaces in favor of GI may not be ideal in several locations. The City will assess available space for GI measures on individual projects as opportunities arise.
- **Congestion of Right-of-Way with Utilities.** Several utilities—including water, sewer, power, gas, and cable—have underground facilities within the street right-of-way, causing congestion and limiting the available space for GI. The SMCWPPP Green Infrastructure Design Guide (*Design Guide)* discusses how to address utility conflicts with GI measures in Chapter 4, which the City will refer to when assessing feasibility of GI opportunities.

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

- **Capital Improvement Program.** The City will continue to screen its CIP for projects that may have GI potential. The City has been successful in constructing public GI projects as part of its CIP. For

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

example, the Westlake Elementary School Green Streets Improvements Project includes bioretention areas at the intersection of Westlawn Avenue and Fieldcrest Drive.

- **Parks Master Plan.** There may be opportunities to coordinate parks improvements with GI. For example, the Alta Loma Tot Lot Project included underground detention and infiltration.
- **Pedestrian/Bicycle Master Plan.** There may be opportunities to coordinate pedestrian and bicycle improvements with GI.
- **Forecasted Future New and Redevelopment.** The City forecasts a large amount of future new and redevelopment in commercial and residential areas. Regulated projects will continue to include GI under Provision C.3 of the MRP.
- **Hydromodification Policy.** The City has a hydromodification policy which requires developments to maintain pre-development runoff flows. This policy may be met by including GI strategies such as infiltration, but may also consist of non-infiltrative measures such as detention in a large diameter pipe.

2.6 Conservation Efforts

Daly City has been a leader among San Mateo County municipalities in spearheading conservation efforts for over 35 years. In November 1982, Daly City was involved in drafting San Mateo County's *San Bruno Mountain Area Habitat Conservation Plan,* which focused on implementing conservation efforts to preserve the habitats of a variety of butterfly, moth, and bee species, some of whom are only found on San Bruno Mountain. As of the publication of this GI Plan, all animal species identified in the 1982 plan have managed to avoid extinction thanks to the continued preservation of their habitats.

In March 1984, Daly City published the *Daly City Coastal Element.* This document built upon the 1976 California Coastal Act, which itself built upon the 1972 Coastal Initiative (Proposition 20). This plan enacted policies which protected and restored coastal environments, maximized public access to the coast, assured priority for coastal-dependent development over other development on the coast, and encouraged state and local initiatives and cooperation.

3.0 GREEN INFRASTRUCTURE MILESTONES

3.1 Regulatory Background

Provision C.3.j of the MRP specifies that the Green Infrastructure (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 Countywide 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).

Bioretention area located at Christopher Highlands – Crestview Estates.

3.2 Determining Load Reduction Milestones

3.2.1 Reasonable Assurance Analysis (RAA) Background

Collectively, San Mateo County Permittees (including the City of Daly 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 use to accomplish the following:

1. Determine a quantitative municipality-specific 2040 load reduction goal. 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 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 modeling- and analytical-based approach to water quality requirements to a focus on the specific stormwater management strategies and processes that are 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 12.

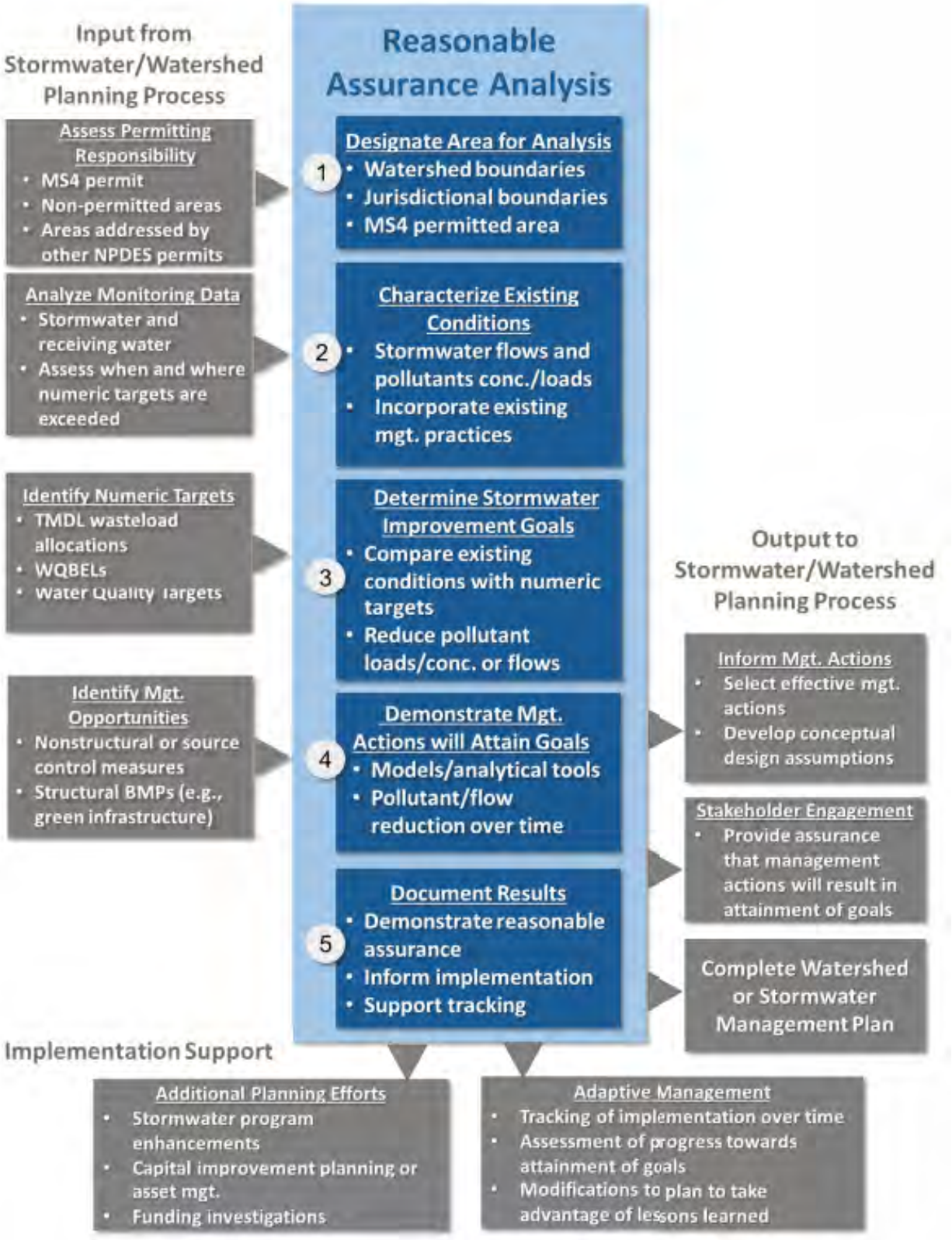


Figure 12. *Reasonable Assurance Analysis Process (USEPA 2017).*

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 Consulting 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 an 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 13.

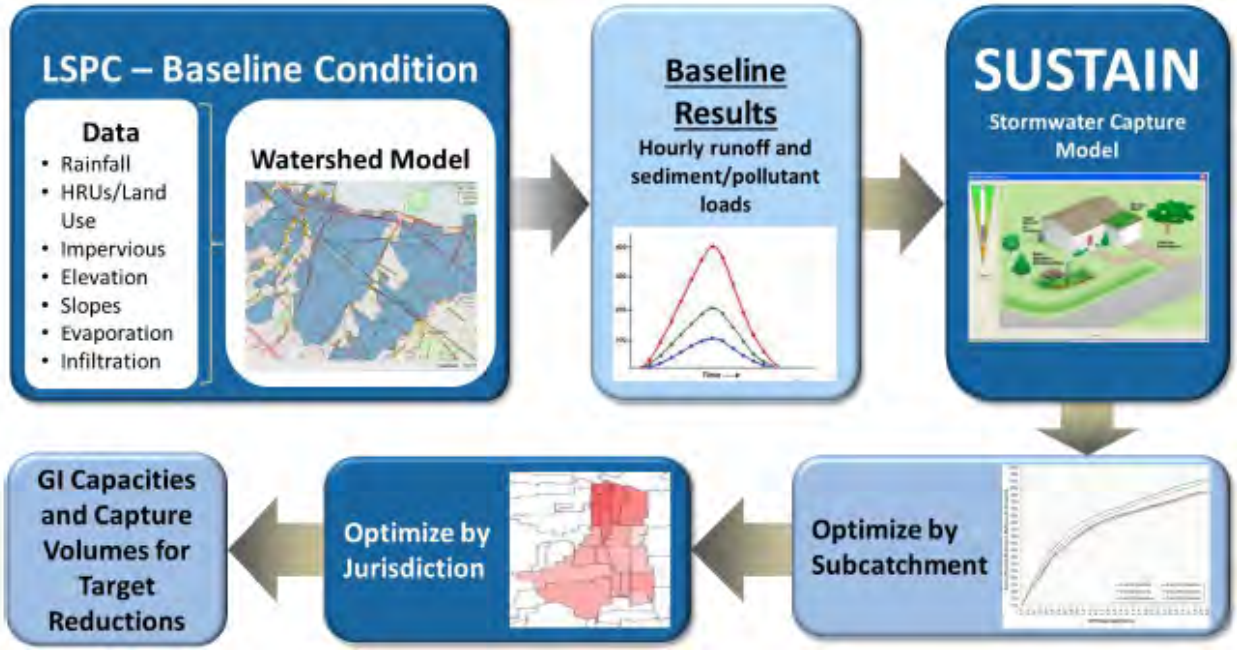


Figure 13. *Reasonable Assurance Analysis Modeling (SMCWPPP 2018a).*

3.2.3 Determination of Water Quality Goals

As discussed in Section 3.2.1, depending on the perspective of the regulators, stakeholders, or Permittees, the purpose and expectations of the RAA can vary in terms of how reasonable assurance is demonstrated. As a result, the output from the RAA must consider multiple perspectives and strike the right balance between detail and specificity while still leaving ample opportunity to allow for future adaptive management. 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 3.2.1.

- **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 preparing a Sustainable Streets Master Plan for San Mateo County, a tracking tool is under development 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 planned for completion in 2020. This is further described in Section 5.5.
- **Support Adaptive Management.** Given the relatively small scale of most GI projects (e.g., use of LID on an individual parcel or conversion of a single street block converted to a green street), numerous individual GI projects are needed to address pollutant reduction goals. All GI projects 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. The RAA sets the GI Plan "goals" in terms of the amount of GI implementation over time to address pollutant load reductions. As GI Plans are implemented and more comprehensive municipal engineering analyses (such as detailed, site-specific assessments of GI feasibility) are performed, the adaptive management process is vital to ensuring that goals are met. In summary, 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 GI implementation and direct the adaptive management process. These scenarios demonstrate multiple needs, such as the 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. The City of Daly City's wasteload allocation of PCBs and mercury was derived through the RAA based on population as well as area draining to the San Francisco Bay relative to other Permittees. 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, as well as sites covered under an industrial discharge permit), Caltrans right-of-way, and 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 14 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 14. *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 can be targeted for source control measures or 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 to meet the load reduction target.

- **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.

By targeting a total sediment load reduction rather than a pollutant-specific load reduction (such as reduction in level of PCBs), GI installed at any site in San Mateo County which drains to the San Francisco Bay can help contribute to the load reduction.

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 and the amount of area which drains to the San Francisco Bay.
- **Countywide Approach.** 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 cost reduction for 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. Refer to the "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 discharge to receiving waters, 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).** Low impact development uses a suite of technologies intended to imitate pre-urbanization (natural) hydrologic conditions. LID captures and treats runoff before it can reach downstream waterbodies. 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 are 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 galleries. 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 regional projects has been further refined since the SRP was developed to update the RAA. **For a map of prioritized regional projects, refer to Appendix C.**

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 a 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 the 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 15 represents how the GI opportunities

are sequenced to first take advantage of the projects with the lowest implementation cost before incorporating the use of more costly GI opportunities.

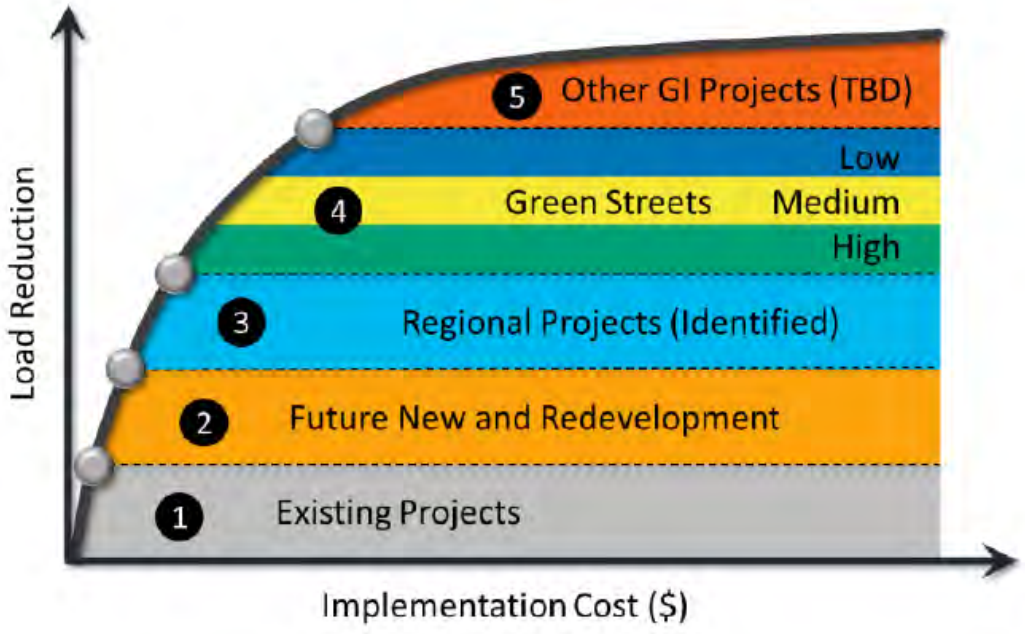


Figure 15. *Example implementation recipe showing general sequencing of GI projects.*[18]

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) 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 is dependent upon opportunities and funding.

3.4.1 Areas Draining to the City and County of San Francisco

A portion of the north side of Daly City in the Bayshore District drains to the City and County of San Francisco. GI constructed within this area does not contribute to the pollutant loading reductions in the San Francisco Bay, because it drains to San Francisco's combined sanitary sewer/storm drain system. When the RAA was developed, this area was included in the modeling for Daly City. At a later date, the RAA results will be adjusted to remove this area from the model.

[18] *Quantitative Relationship Between GI Implementation and PCBs/Mercury Load Reduction.* (2018, June). 2017-18 MRP Annual Report. Paradigm Environmental. SMCWPPP.

3.4.2 Jurisdictional Approach

Figure 16 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 GI 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.

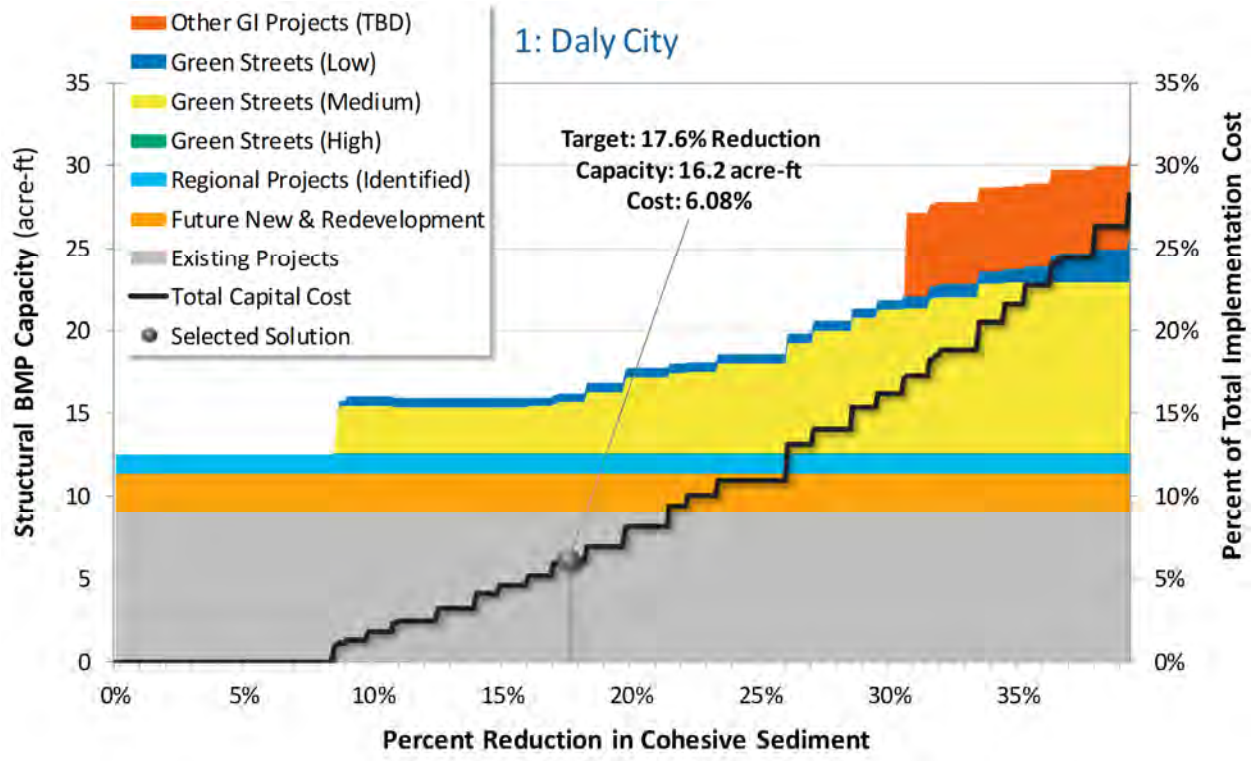


Figure 16. *Optimization summary for Daly City, sediment reduction goal (by jurisdiction).*

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 part of this line that touches a colored bar represents the structural BMP capacity required to reach the sediment reduction goal (in the above graph, this is 16.2 acre-feet). These 16.2 acre-feet will be achieved via existing projects (about 9.0 acre-feet), future new developments and redevelopments (about 2.5 acre-feet), regional projects (about 1.2 acre-feet) medium-priority green streets (about 3.0 acre-feet), and other GI projects (about 0.5 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 6.08%).

As the percent reduction in sediment increases, the 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 used first up to their capacity and then less efficient methods follow. For example, in the above graph, future new and redevelopment is used up before any medium-priority green street projects are introduced, and these in turn are at near-capacity before any other GI projects are introduced.

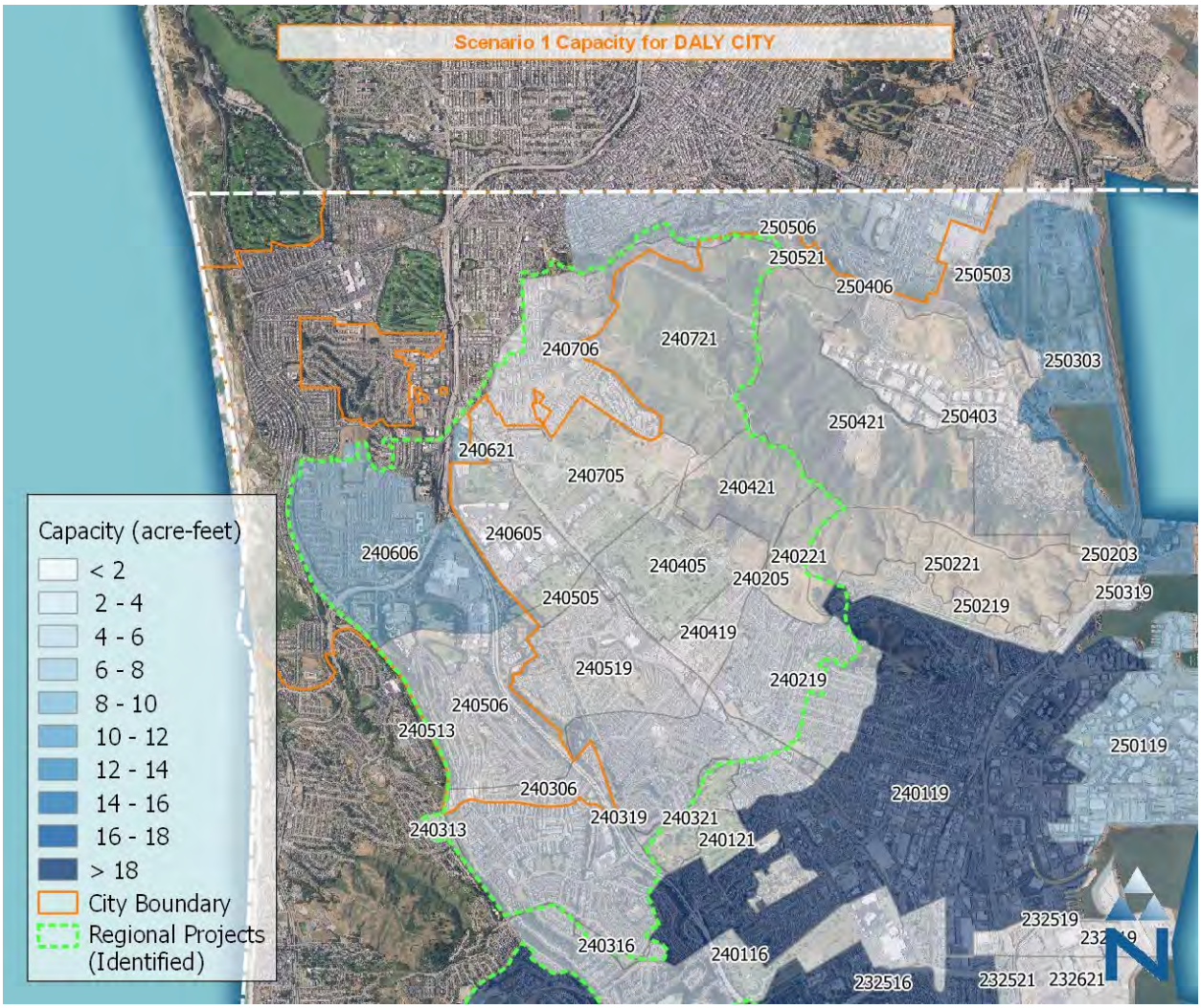


Figure 17. *Scenario 1: Daly City, sediment reduction goal (by jurisdiction).*

The above map (Figure 17) shows the various 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, Daly City: Sediment Reduction 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	Impervious Area Treated (acres)	Existing Projects	Future New & Redevelopment	Regional Projects	High	Medium	Low	Other GI Projects (TBD)	Total BMP Capacity (acre-ft)
240306	24%	30.97	2.80	--	0.05	0.07	--	0.28	--	--	0.4
240506	19%	98.89	11.24	0.83	0.00	0.29	--	0.50	--	--	1.6
240606	16%	132.12	48.08	7.67	0.30	0.48	--	--	--	--	8.5
240706	19%	112.03	12.74	0.24	0.27	0.33	0.06	0.12	--	--	1.0
250406	7%	0.00	0.00	--	0.00	--	--	--	--	0.00	0.0
250506	47%	6.33	95.89	0.25	1.75	0.01	--	2.78	0.56	--	5.3
Total	18.3%	380.3	170.7	9.0	2.4	1.2	0.1	3.7	0.6	0.0	16.8

Table 5 shows several points of data for each subwatershed as well as the overall total for the City. Using this table, one can determine which subwatersheds will contribute the most toward the City's overall sediment reduction, green street construction, and many other parameters. Table 5's data were calculated assuming the City will pursue the jurisdictional approach.

3.4.3 Countywide Approach

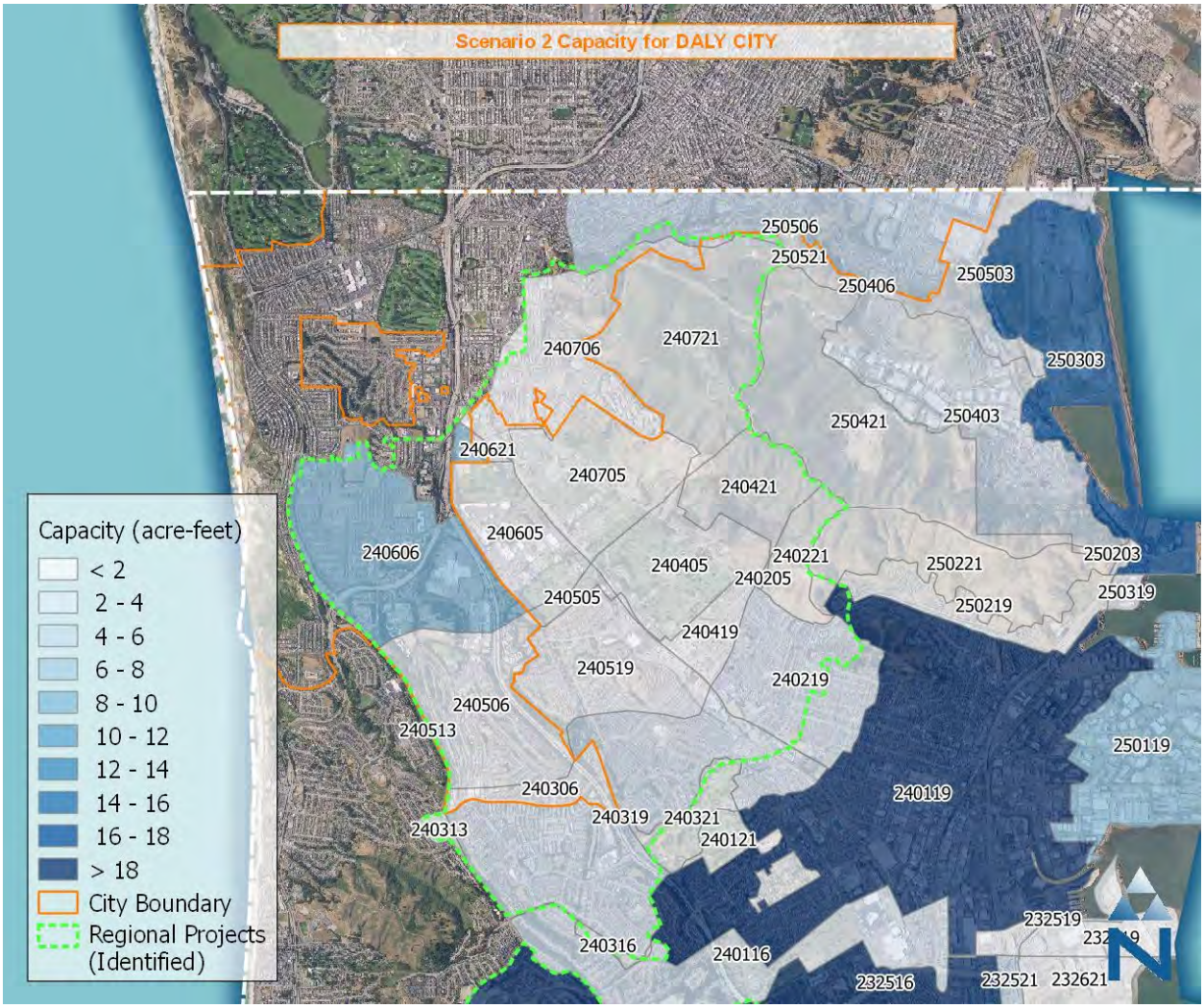


Figure 18. *Scenario 2: Daly City, sediment reduction goal (countywide).*

The above map (Figure 18) shows the various subwatersheds 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, Daly City: Sediment Reduction 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	Impervious Area Treated (acres)	Existing Projects	Future New & Redevelopment	Regional Projects	High	Medium	Low	Other GI Projects (TBD)	Total BMP Capacity (acre-ft)
240306	16%	19.68	2.77	--	0.05	0.07	--	--	--	--	0.1
240506	16%	79.76	11.24	0.83	0.00	0.29	--	--	--	--	1.1
240606	16%	132.12	48.08	7.67	0.30	0.48	--	--	--	--	8.5
240706	12%	69.24	12.74	0.24	0.27	0.33	0.04	--	--	--	0.9
250406	7%	0.00	0.00	--	0.00	--	--	--	--	0.00	0.0
250506	47%	6.33	95.89	0.25	1.75	0.01	--	2.78	0.56	--	5.3
Total	14.9%	307.1	170.7	9.0	2.4	1.2	0.0	2.8	0.6	0.0	15.9

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

3.4.4 Management Metrics

The RAA presents a "recipe" for GI implementation using various management metrics. Progress towards GI milestones is 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.

Actual locations, dimensions, and upstream drainage areas of projects constructed will depend upon site-specific constraints, feasibility, and availability of funding. Therefore, the number of projects constructed in various subwatersheds may vary significantly from the RAA results, which may affect their effectiveness. 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.**

3.4.5 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 over 20-year period. In the Countywide scenario, the model found that the installation of green streets in Daly City was only slightly less effective than green streets installations in other cities. 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[19] 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.** In the case of regional projects in the County (such as the Orange Memorial Park project), assumptions were made as to when the regional projects modeled would be built and operational. Generally, regional projects were assumed to be complete by 2030. Regional projects help to reduce the amount of GI which needs to be installed through other means, such as green streets.
- **Interim Milestone Assumption for Green Streets.** Thirty-three (33) percent of green streets required by 2040 are assumed to be implemented by 2030.

The resulting schedule presented in Figure 19 demonstrates 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 4, as discussed in **Section 3.4.1**) set the ultimate goal for GI planning efforts and tracking.

The City's goal under a jurisdictional approach would be a 18.3% reduction in sediment; under a countywide approach, the City's goal would be a 14.9% reduction. The reason the RAA model calls for an

[19] Community Design + Architecture. (2019).

18.3% reduction rather than a 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.

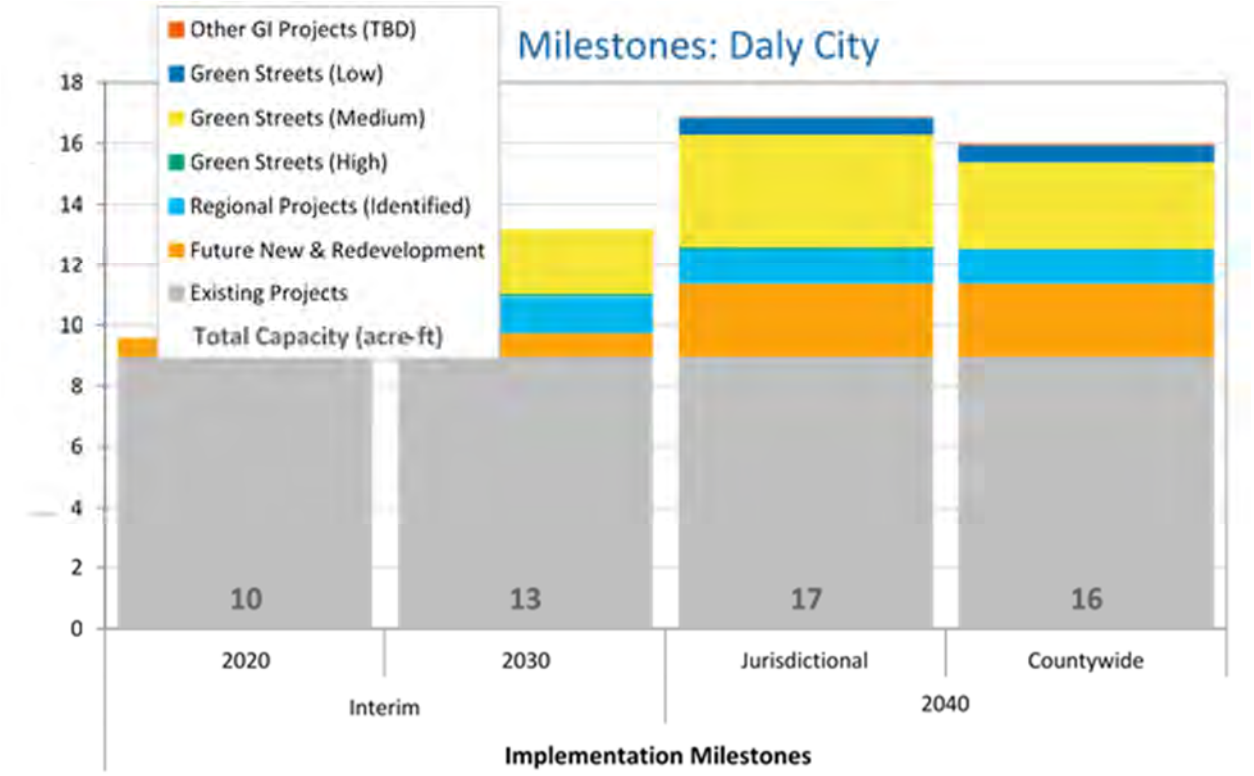


Figure 19. *Summary GI capacity for interim and final implementation milestones.*

Figure 19 displays the City's projected growth in structural BMP capacity via the 2020 and 2030 interim milestones under the jurisdictional approach as well as the 2040 goals under both the jurisdictional and countywide approaches.

Table 7. *Implementation Milestones: Daly City.*

Implementation Metrics		Implementation Milestones: Daly City					
		Incremental		Cumulative		Final 2040	
		2020-2030	2030-2040	2020	2030	Jurisdictional	Countywide
Index	% Load Reduction	5.3%	5.9%	7.0%	12.3%	18.3%	14.9%
	Volume Managed (acre-ft/yr)	103.5	115.5	161.4	264.8	380.3	307.1
	Treated Impervious (acres)	21.1	90.1	59.5	80.7	170.7	170.7
Capacities (acre-ft)	Existing Projects	0.0	0.0	9.0	9.0	9.0	9.0
	Future New & Redevelopment	0.1	1.6	0.6	0.8	2.4	2.4
	Regional Projects (Identified)	--	0.0	--	1.2	1.2	1.2
	Green Streets (High)	--	0.0	--	0.1	0.1	0.0
	Green Streets (Medium)	--	1.5	--	2.2	3.7	2.8
	Green Streets (Low)	--	--	--	--	0.6	0.6
	Other GI Projects (TBD)	--	--	--	--	0.0	0.0
	Total	0.1	3.1	9.6	13.2	16.8	15.9

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 maps in Appendix C.**

4.0 PROJECT IDENTIFICATION AND PRIORITIZATION

4.1 Introduction

Provision C.3.j of the MRP 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 (CIP), 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 publicly-owned 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 identifies 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 off 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, so as to spend more time focusing on how to implement GI on projects that have GI potential.

Permeable pavers located at the CVS Drugstore on Pierce Street.

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 allowing municipalities access to funding for stormwater and dry weather runoff capture projects. Senate Bill 985, which went into effect on January 1, 2015 requires the development of 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, such as the City's Bike and Pedestrian Master Plan under development. With the development of this GI Plan, the City is both formalizing and documenting its procedure for screening CIP 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 projects with potential for inclusion of GI measures that are planned for implementation during the permit term. The City also plans to annually update the map of the City's existing and potential GI projects in Appendix C to reflect current progress towards the GI plan implementation as well as future project opportunities.

Figure 20 summarizes the key factors that are taken into consideration when integrating GI into the CIP.

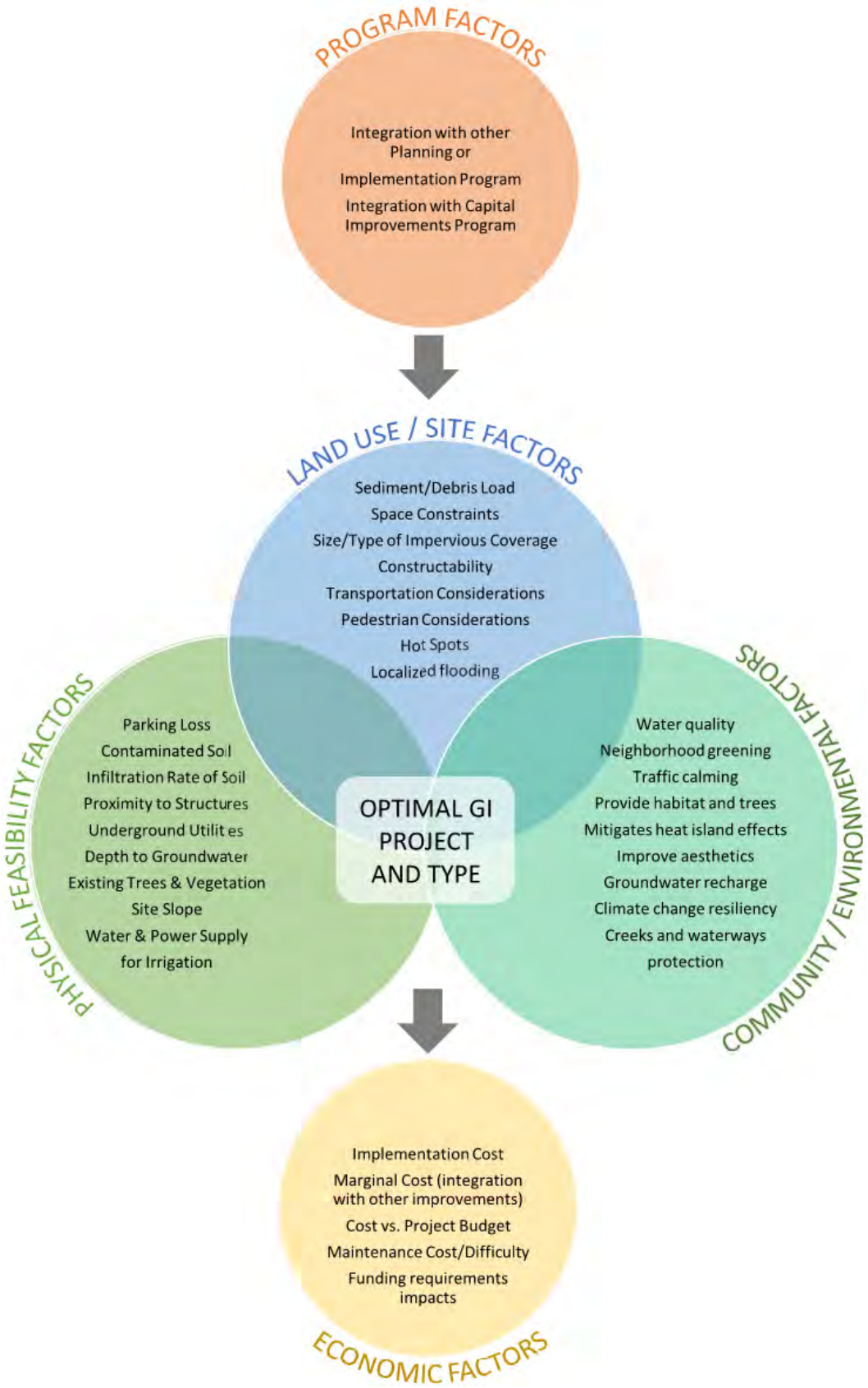


Figure 20. *Factors Impacting Selection of Optimal GI Projects.*[20]

The City screens its CIP using an adjusted version of the BASMAA Screening Process (BASMAA 2016). This process consists of three 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".**

As the GI Plan is implemented, there may be opportunities for outreach to or partnerships with private landowners which could result in GI on private property. Where possible, the City will work collaboratively with developers to explore public-private partnership opportunities for GI.

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,

[20] *Green Infrastructure Implementation.* (2014). Adapted from Figure 10.1, Decision process for selection of GI Types. Water Environment Federation.

rainfall, and pollutant wasteload), the SRP identifies and prioritizes projects to address water quality impairment, reduce flooding, and provide more natural groundwater recharge.[21]

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

- **Future New and Redevelopment**
- **Regional Projects**
- **Green Streets**

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

[21] *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.

Bioretention area located at Dick's Sporting Goods.

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 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 within 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 opens opportunities for cost-sharing and maximizes multiple benefits achieved by a single project. Higher priority scores were given to project opportunities 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 staff's and SMCWPPP's input, the prioritization criteria were weighted to arrive at the final project prioritization methodology. The process resulted in assigned prioritization scores for each identified GI opportunity within each of the three project categories (green streets, LID retrofits, and regional projects). These scores could later be further filtered or sorted to support ongoing prioritization of projects within the City of Daly 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 webviewer created by C/CAG: http://54.183.214.51/maps/SMC_project_prioritization. **Prioritization maps for the City of Daly City are provided in Appendix C.**

4.4 Potential Collaborations with Outside Agencies

The City may seek collaboration opportunities with outside agencies which fall within the City's limits but are in non-jurisdictional areas (areas not subject to the MRP under the City's MS4 permit). These include the following:

Public School Districts

There are five (5) public school districts within the City of Daly City and 21 public schools within the City limits, as listed in Table 10.

Table 10. *Daly City Public Schools.*

Public School Districts	Public Schools	
Bayshore Elementary School District	**Preschools**	**K-8 Schools**
Jefferson Elementary School District	General Pershing State Pre-School	The Bayshore School
Brisbane School District		Franklin Delano Roosevelt K-8
Jefferson Union High School District	**Elementary Schools**	
South San Francisco Unified School District	Daniel Webster Elementary	**Middle Schools**
	George Washington Elementary	Thomas R. Pollicita Middle
	John F. Kennedy Elementary	Fernando Rivera Intermediate
	Junipero Serra Elementary	
	Margaret Pauline Brown Elementary	**High Schools**
	Marjorie H. Tobias Elementary	Thornton High School
	Panorama Elementary	Westmoor High School
	Skyline Elementary	Jefferson High School
	Susan B. Anthony Elementary	**Adult Education Schools**
	Thomas Edison Elementary	Jefferson Adult Education
	Westlake Elementary	
	Woodrow Wilson Elementary	

The City does not have jurisdiction or planning and building authority over public school properties. As of early 2019, stormwater discharges from K-12 School Districts and Community College Districts are regulated through the Phase II Small Municipal Separate Storm Sewer System (MS4) Program[22] (Phase II Permit). State Universities were already covered under the Phase II Permit. The Phase II permit does not require the development of a GI Plan but does require the incorporation of GI measures through the Post Construction Storm Water Management Program (Provision E.12 of the Phase II Permit). Prior to 2019, school districts were not required to construct stormwater treatment measures, except in some municipalities (for example, as a required mitigation measure under a Coastal Development Permit).

Other Possible Agency Partners

- San Mateo County
- Caltrans
- California Coastal Commission
- California Department of Fish and Wildlife
- US Army Corps of Engineers
- Bay Area Rapid Transit (BART) – Daly City Station (500 John Daly Boulevard)

[22] As of the writing of this section, the amended Small MS4 General Permit was adopted by the California State Water Resources Control Board (CSWRCB) on December 19th, 2018, but is not yet certified by the CSWRCB clerk.

- SamTrans – Bayshore Shuttle and Bus Routes ECR, ECR Rapid, 24, 25, 110, 118, 120, 121, 122 and 130
- SFMTA – MUNI Routes 14R, 28, and 54

Bioretention area located at Edgeworth Nursery Residences.

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 to 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 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, projects are tracked on a local server database, which includes additional data, such as the type of treatment measures installed. The local server database is updated on a continuous basis and is also used to manage the City's GI Operations and Maintenance program.

GIS-based tracking of GI projects allows the City to integrate information from other City assets and programs. For example, mapping the John Daly Streetscape Project in GIS not only helps the City eventually calculate progress towards GI milestones, but also helps clarify project information for inspectors, such as the types of GI measures installed and the project limits. The City can use GIS to visualize, quantify, and prioritize potential GI projects, then select those which offer multiple project benefits or are ideally suited to GI implementation, such as synchronicity with the bicycle and pedestrian plan, mitigation of flooding, and proximity to storm drain systems.

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 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 local server database 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. This map features selected existing and potential GI projects within the City. This story map is an interactive, publicly-accessible web map that can be accessed from the City website at https://www.dalycity.org/TBD [City to provide webpage link]. This allows the public to see locations, descriptions, and photos of existing GI throughout the City.

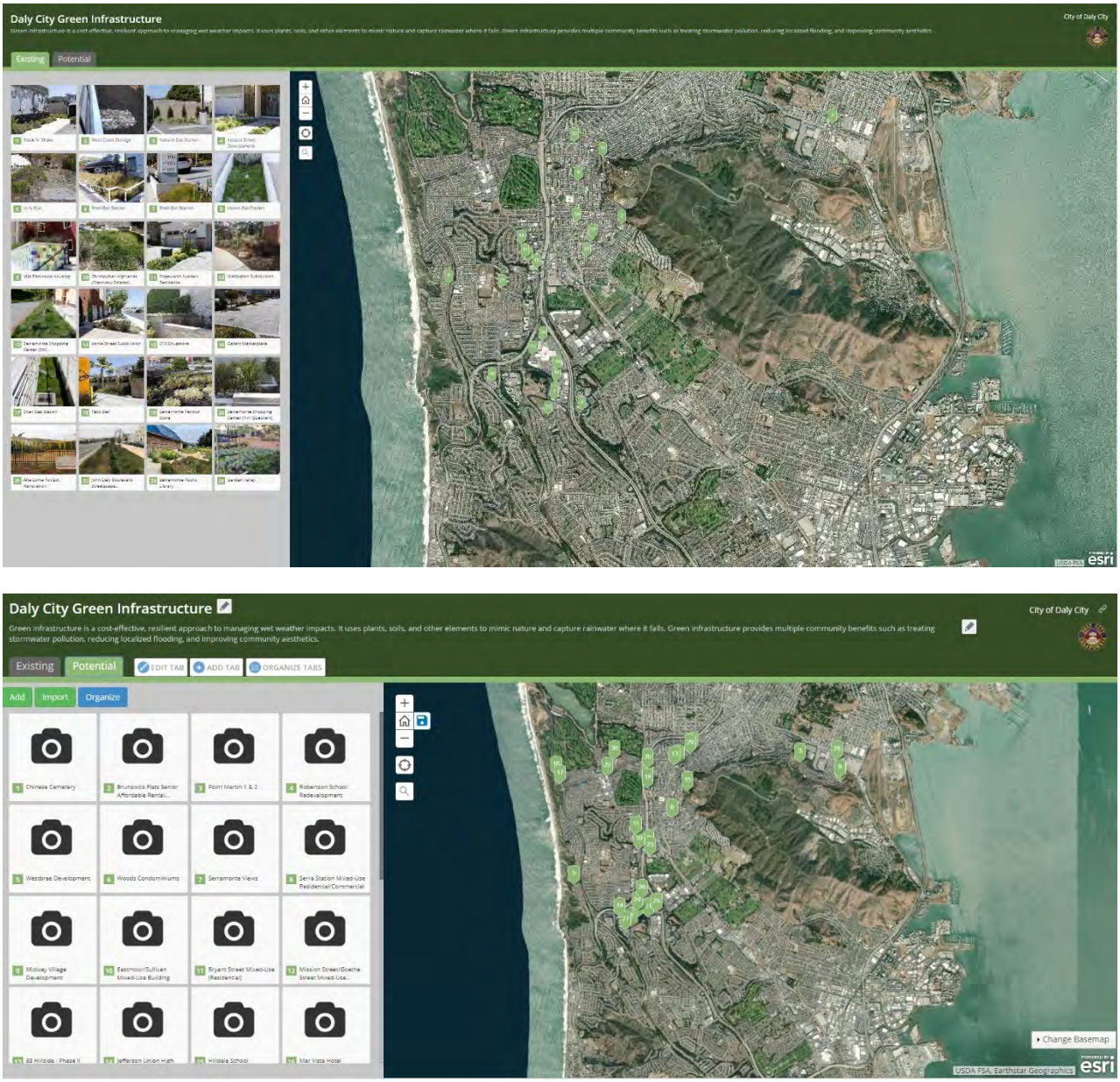


Figure 21. *Screenshots of the City's Green Infrastructure Map (2019).*

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 Plan, past inspection records, and records of any enforcement actions.

5.4.2 O&M Tracking of Non-Regulated Sites

The City will continue to design, construct, and maintain GI on public properties and rights-of-way. Non-Regulated Project installations of GI are 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. The City may later opt to track these small projects.

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 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.[23]

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

[23] 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).

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.

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. Aspects of the GI program are outside of the City's control—namely, that the development climate is uncertain, and projects that are anticipated to be constructed through future new and redevelopment may not actually come to fruition. 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—opportunities and funding for GI are likely to change between now and 2040.

There is also a possibility 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, additional GI measures 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 both driven by the goals set forth in the RAA, but that is also flexible, iterative, and allows for continuous improvement. GI is goal-driven, and its effectiveness is measured at a watershed scale. Figure 22 represents the adaptive management process.

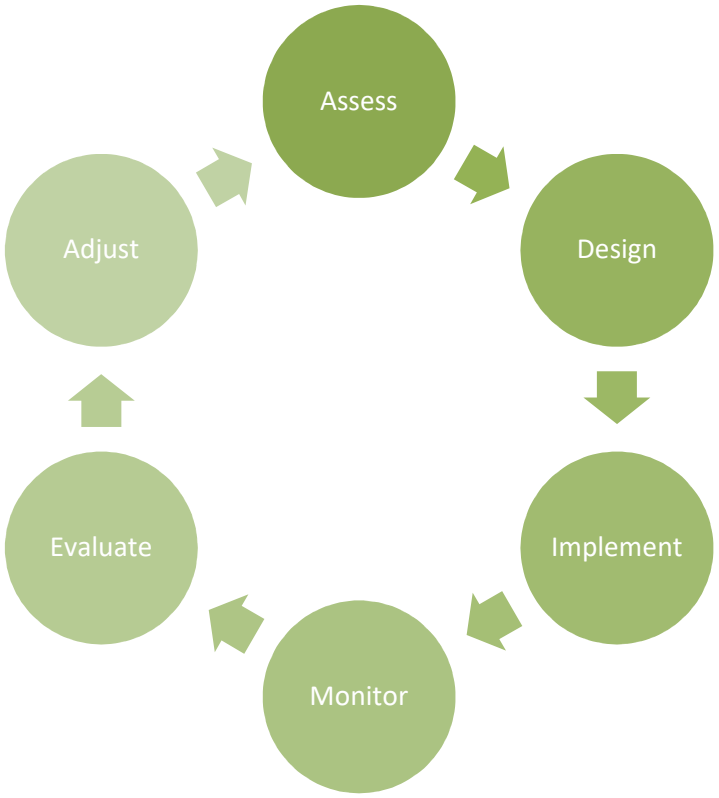


Figure 22. *Adaptive Management Process.*[24]

[24] *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.

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 GI Design Guide *(Design Guide).* The key content and organization of these guides is summarized in Figure 23.

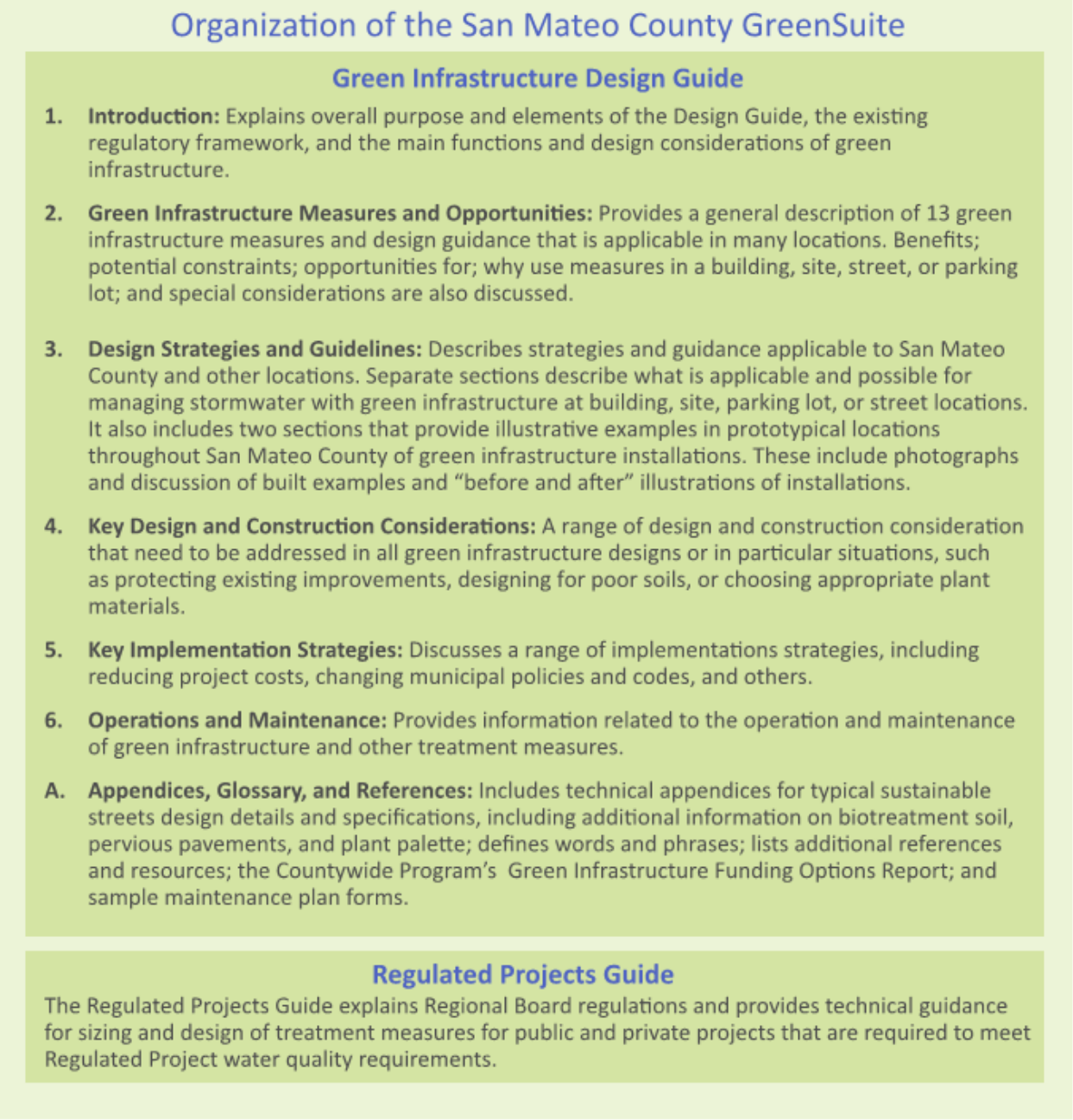


Figure 23. *Key Content and Organization of the San Mateo County GreenSuite.*[25]

Together, these documents 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.

[25] *San Mateo County Green Infrastructure Design Guide.* (2019b). SMCWPPP. https://www.flowstobay.org/gidesignguide.

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 cover certain measures like green gutters, green walls, stormwater trees, and vegetated swales. If a designer finds that landscape-based measures are not feasible on a project, they 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 Daly City, developed a countywide Green Infrastructure Design Guide *(Design Guide)* and its appendices 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 Section 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 of integrating GI into projects; introduction of complete streets concepts and design; discussion regarding BASMAA's regional approach for alternative sizing for Non-Regulated constrained green street projects; 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 into 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 guidance supports safe and effective multimodal travel with a focus on the comfort of people walking and cycling; shared use as public space and an attractive and functional public realm; use of appropriate measures for different street and land use contexts and types; and the achievement of 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 GI Guidelines

The City of Daly 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 GI projects are implemented in Daly City, portions of the Design Guide may be superseded by Daly City-specific updates or modifications based upon lessons learned and other factors experienced in or 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)* 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.

Bioretention area located at Garden Valley Subdivision.

6.3 GI Measure Sizing Approaches

6.3.1 Standard "C.3.d" Sizing

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. The definition of a "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 GI facilities, the City will pursue a flexible, adaptive approach. In other words, even if a small facility is constructed with a proposed project, smaller facilities still provide measurable stormwater 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 as such, green walls can be constructed to fit the site-specific context and available wall space.

6.3.2 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 limited to 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.

The City will aim to map drainage management areas for both Non-Regulated and Regulated Projects in GIS or similar format. **See Section 5.2, "City Internal Project Tracking System", for more information about how the City will track existing and potential GI projects.**

6.3.3 Alternative Sizing Approach

6.3.3.1 Alternative Approach Description (MRP C.3.j.2.g)

All GI 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, Dubin Environmental Consulting, assessed which sizing factors are needed—assuming a standard bioretention area cross section—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.

Hydromodification management control requirements were also assessed. Dubin Environmental Consulting determined that a standard bioretention facility sized to 4% of the tributary equivalent impervious area, having a 6-inch deep surface storage layer, 2-inches of freeboard, 18 inches of bioretention soil, and 12-inch deep gravel storage layer would meet the hydromodification standard at any location in the Bay Area.

Permeable pavers located at the Gellert Market Place.

6.3.3.2 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, 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 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 streetlights, 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 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 nearby storm drain facilities, or the lack of 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 the project infeasible to aim to treat the entirety of public and private runoff.
- The in-situ soil permeability and strength is 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 is highly 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 GI facilities on a public street.

Bioretention Area located on John Daly Boulevard.

7.0 INTEGRATION WITH OTHER PLANNING DOCUMENTS

7.1 Introduction

To ensure implementation of the Green Infrastructure (GI) Plan, the MRP states that the GI 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, Compete 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 undertook a review of its existing planning documents to determine if the documents: (1) contained opportunities for GI implementation; (2) have existing language and policies supporting GI implementation; and (3) hold potential for updates to further 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 unrelated to GI are not included in the GI Plan.

The City presents the key planning documents which include language that support or relate to GI implementation in section 7.3. Planning documents to be updated are discussed in section 7.4.

7.3 Existing Planning Documents Which Support GI Implementation

The implementation of GI is addressed in many of the City's existing planning documents' policies, goals, and objectives. Because of the multiple benefits that can be achieved through GI, the City can implement

GI as a strategy for flood reduction, climate change adaptation, traffic calming, and other City goals. Table 11 summarizes the City's existing documents and the method by which each document supports GI implementation.

Table 11. *Existing planning documents which support GI implementation.*

Planning Document	Related Sections and Pages
Mission Street Urban Design Plan 1991	p. 3) Public Improvements (landscaping and street trees) pp. 5, 7) Streetscape (median and street tree planting) p. 19) District Urban Design Plans (landscape improvements) p. 23) Urban Design Concepts (street trees) p. 30) Street Trees p. 31) Median Planting pp. 41, 45) Median Planting and Street Trees p. 64) Type 2 Development Areas (landscaping) p. 65) Planting and Open Space (landscaping requirements)
The Mission Street Urban Design Plan analyzes the assets and opportunities on Mission Street to create a Plan for redevelopment. Although the Plan was approved in 1991, some of the policies increase pervious surfaces by encouraging landscaping and requiring street trees which increase opportunities for evapotranspiration. Therefore, the Plan includes policies that support the goals of the GI Plan.	
BART Station Area Specific Plan 1993	p. 13) "Infrastructure" Section pp. 34-35) Street trees at pedestrian linkages p. 46) Infrastructure (stormwater drainage) p. 44) Water Supply and Distribution Policies (water source for landscaping) p. 47) Existing Deficiencies (paragraph 2 mentions SDMP) p. 48) Runoff Quality p. 50) Storm Drainage Policies p. 94) Street Tree Recommendations p. 119) Streetscapes: (landscaping and street trees)
The 1993 BART Station Area Specific Plan focuses on the development area around the Colma BART Station. Portions of this area are within the Daly City jurisdictional boundary. The Specific Plan designates specific land uses in the area and includes requirements for public infrastructure and street trees. Many of the policies such as those referencing street trees and run-off water quality improvement relate directly to the goals of the GI Plan. The construction of GI would meet the goals of the Specific Plan; therefore, the Plan supports GI Implementation.	

Daly City Sullivan Corridor Specific Plan 1998	pp. 9, 11, 12) Urban Design Improvements (Street trees) p. 35) Street Trees p. 37) Policy UD-7: Street trees and special paving p. 38) Policy UD-10: Street trees p. 39) Policy UD-16: Street trees p. 42) Street trees pp. 43, 44) Special landscaping and special paving p. 45) Street trees p. 49) Landscaping (landscaping and street trees)
The Sullivan Corridor Specific Plan boundaries are at the south side of Daly City, between Broadmoor and Highway 280. The Specific Plan encourages the planting of street trees throughout the area. Since street trees require landscaped areas that allow for runoff to percolate into the ground and provide opportunities for evapotranspiration, the Specific Plan supports the goals of the GI Plan.	
Daly City Tolerant Tree Guide 20__	p. 4) Benefits of urban Trees p. 5) Growing the Urban Forest
The City's Tolerant Tree Guide provides tree planting standards and tree-related information to residents and businesses. The document provides recommendations for the best species of tree in terms of survivability in Daly City. In addition, the guide explains how the trees benefit the urban environment by creating opportunities for groundwater recharge and evapotranspiration as well as improving water quality. The Tolerant Tree Guide supports GI implementation by educating the public and supporting the planting of trees and incorporation of an urban forest.	

General Plan 2013	p. 24) Task LU-2.4: Mentions landscaping p. 24) Task LU-3.2: Mentions infrastructure and streetscape p. 26) Policy LU-8: Landscape improvements p. 29) Task LU-17.1: infrastructure improvements p. 87) Land Costs: Mentions infrastructure improvements p. 114) Policy HE-25: Green building p. 114) Policy HE-26: Street trees p. 114) Policy HE-27: NPDES p. 152) Task CE-16.4: Bulb-outs p. 154) Complete Streets p. 181) Stormwater Management p. 188) Policy RME-2: drought resistant landscaping p. 188) Policy RME-3: recycled wastewater for irrigation p. 189-190) Stormwater
The Daly City General Plan outlines a roadmap for the City moving toward 2030. Policies and Actions can be found in the Land Use Element, Housing Element, Circulation Element, and Resource Management Element which support GI implementation, both directly and indirectly. Specifically, the policies create landscaping and infrastructure improvement opportunities which support GI implementation. In addition, the Housing Element contains a specific policy regarding compliance with the NPDES program. By complying with the program as a whole, the policy supports GI implementation.	

7.3.1 Sustainability Commitments and Community Expectations

The GI Plan is consistent with existing sustainability goals set by the City in its Climate Action Plan (CAP), titled "The Daly City Green Vision". The CAP focuses on actions the City has taken or can take to reduce its carbon footprint and combat climate change, with a goal of reducing greenhouse gas emissions to 85% of 2010 levels by 2020. Ten (10) strategies are identified, some of which are directly related to GI implementation, as listed below:

- Adopt a General Plan with measurable policies for sustainable development;
- Preserve the urban forest by replanting at least one tree for each tree removed by the City due to disease, and adopt a tree preservation and maintenance ordinance;
- Create a master pedestrian and bicycle plan and seek grant funding to expand the existing system;
- Develop a sustainability awareness campaign in partnership with the community; and
- Construct all new City facilities at a Leadership in Energy and Environmental Design (LEED) Gold standard.

These measures, while originally identified as methods to reduce greenhouse gas emissions, are also achieved by implementing GI. By converting old infrastructure to green streets, the City can create

landscaped spaces which absorb greenhouse gas emissions, promote sustainable development, preserve the urban forest, develop complete streets that promote alternative forms of transportation, promote awareness of sustainability through GI outreach, and achieve LEED standards by incorporating rainwater harvesting and stormwater treatment at City facilities.

In addition, the CAP includes "Green Guidelines", which educates employees about environmentally responsible practices. These include energy conservation (p. 24), water conservation (p. 25), stormwater pollution prevention (p.26), and community outreach and education relating to environmental responsibility (p.27). GI can be used to achieve all of these guidelines:

- A green roof can reduce heat flux more efficiently than a traditional roof, resulting in less energy required for cooling or heating.
- Rainwater harvesting systems can reduce the need for water for irrigation.
- GI measures improve the quality of urban runoff, resulting in the reduction or elimination of stormwater pollutants.
- Educational signage or events promoting GI can be tied to education and community outreach related to environmental responsibility.

Since the document includes goals through 2020, it can be updated in the future to allow for additional opportunities to incorporate the goals of the GI plan within this planning document.

In addition, the City's General Plan also outlines goals that highlight the importance of protecting the natural resources in Daly City which are aligned with the initiatives in this document. The goals outlined in the General Plan call for the City to reduce the usage of water-intensive landscaping, integrate complete streets infrastructure to expand sustainability efforts while aesthetically enhancing urban areas and neighborhoods, increase energy and water efficiency standards, and reduce the amount of pollutants in stormwater runoff. GI will allow the City to protect the quality of stormwater runoff while creating a more attractive streetscape. By adhering to the guidelines laid out in this document, the City is actively working toward achieving these long-term sustainability goals.

Bioretention area located at the Serramonte Shopping Center.

7.4 Planning Documents Updates Schedule

Daly City is currently updating the City's Climate Action Plan and General Plan with tentative completion dates in 2019 and 2020, respectively. During the update process, Planning Department and Public Works Staff will review the existing language for opportunities to build on policies that support the implementation of GI. Updates to existing planning documents require consideration by the City Council.

In future documents, Planning and Public Works staff will support the process of updating and developing planning documents in order to ensure that the requirements and policies of the GI Plan are incorporated. Table 12 lists the anticipated date of completion of planning document updates.

Table 12. *Schedule for update of planning documents.*

Name of Plan to be Completed / Updated	Anticipated Date of Completion / Update
Daly City Climate Action Plan	December 2019
Daly City General Plan – Circulation Element	March 2021
Daly City General Plan – Open Space and Conservation Element	March 2021
Daly City General Plan – Land Use Element	March 2021

7.5 Maintenance and Engineering Standards

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

7.6 Future Updates

In a review of existing planning documents, the City determined that an update of the General Plan could create a stronger connection to the goals of the GI Plan. However, since the General Plan was recently updated, the plan will not be updated again within the permit term. As the General Plan Elements are updated as required, the Planning Department and Public Works Department will work to ensure that policies that support the goals of the GI Plan are included.

7.6.1 Master Plans

Daly City is in the process of developing a Bicycle and Pedestrian Plan, Parks Master Plan, and ADA Transition Plan. These documents involve the development and redevelopment of private properties and public infrastructure, providing opportunities to implement GI. Staff from the Planning Department and Public Works Department are involved in the review process to ensure that the documents align with the goals and policies of the GI Plan. In future documents, Planning and Public Works staff will be involved in the development of planning documents to ensure that the requirements and policies of the GI Plan are incorporated.

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 CIP.

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 both 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 ranges 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.

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 CIP projects for GI potential, City staff will track

GI projects and monitor 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 Public Works, Planning, 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 type of measure(s) to be implemented, the 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, how steep the area is sloped, space limitations, and nearby existing utilities).

  Because of the limited construction cost data available for public GI projects in San Mateo County, it is difficult to estimate their cost. Several private projects have been constructed in San Mateo County, but often the City does not have access to the detailed cost data for the GI component(s). Private project and public project costs differ in key ways: public projects must contend with the removal and modification of existing street infrastructure, utility conflicts, space limitations, pedestrian safety and grade limitations, and must be constructed with prevailing wage labor forces. San Mateo County also 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. Limited recent bid result data in San Mateo County suggest that the construction cost of curb extensions installed at an intersection which treats 2 acres of impervious surface area would cost in excess of $500,000 to construct.

- **Planning and Design Costs.** Planning and design costs for CIP 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 are 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. Due to the specialized nature of the maintenance of GI measures, and due to a declining maintenance workforce being at capacity on maintenance of other City infrastructure, the City will need to contract maintenance work to an outside vendor. Vendors may in the future have special GI maintenance certifications not held by staff, such as the Bay Friendly Landscaping certification or the National Green Infrastructure certification by the Water Environment Federation. It is estimated, based on a recent maintenance proposal provided by a neighboring agency, that the cost to maintain curb extensions installed at an intersection which treats 2 acres would cost $4,000 to $8,000 per year to maintain, or $200,000 to $400,000 in total over a 50-year life of the system.

- **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 GI-related outreach. However, ongoing outreach and education is an important facet of GI implementation, because it can lead to not only a better understanding of the measures being installed, but also could 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. The City's O&M agreement template allows for the City to seek reimbursement of the inspection costs. 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 five (5) sites are inspected per year, at a total cost of approximately $2,500-$4,500 per year. As additional GI projects are constructed, this cost will increase.

Figure 24 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 are available to ascertain these relative costs, so they have been assumed until more data becomes available.

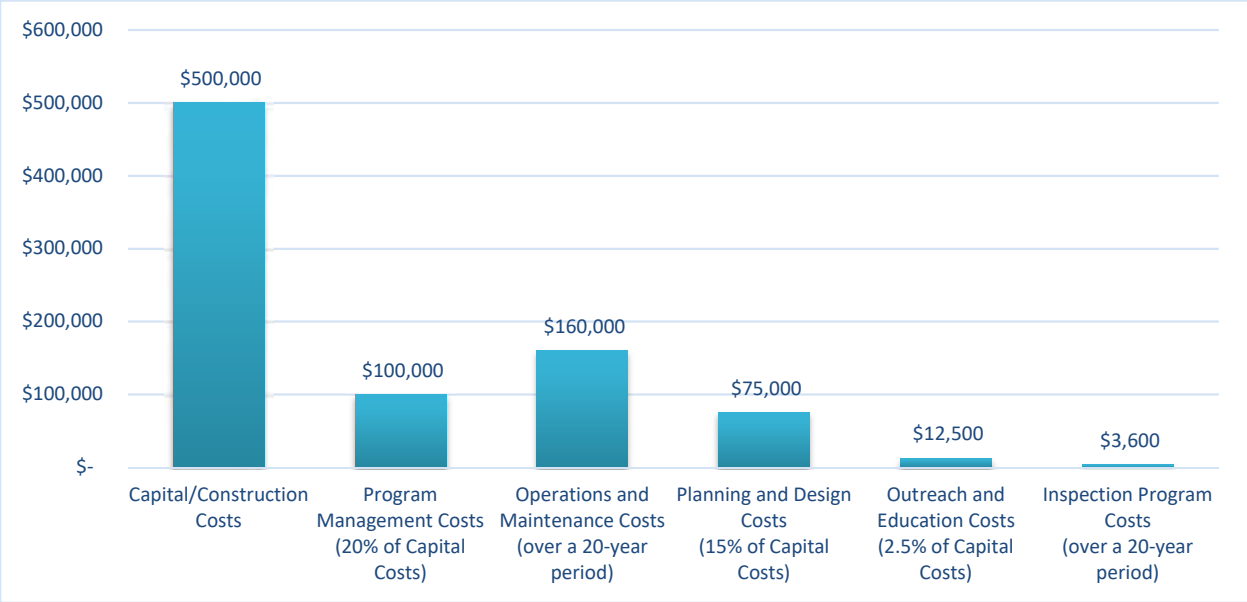


Figure 24. *Estimated Relative Costs of GI Program Elements.*

8.2.2 Future Assessment of GI Costs

Section 8.2.1 describes the costs associated with the various 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 on 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 is an ongoing process and will be revisited as the program develops.

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 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**

Daly City's Approach to Balloted Funding Strategies: The City already has an approved NPDES Parcel Tax which is used for street sweeping in the City and is fully utilized. Unless the funding is increased, the City will not be able to apply it toward GI implementation due to the continued need for street sweeping.

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 may revisit these funding approaches as the program develops. Other local agencies may implement these funding strategies in the coming years. By delaying implementation of these funding strategies, the City can build upon the efforts of these 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 is required to determine the middle-ground cost that would not be considered a tax to the payer of the fees. Examples of non-balloted approaches include the following:

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

Daly City's Approach to Non-Balloted Funding Strategies: 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 has an existing developer impact fee for stormwater. GI is a stormwater management strategy which can detain or retain stormwater flows, thereby reducing localized flooding and lessening the impacts of stormwater runoff on the storm drain system. It can also provide capacity, either above or below ground, to accommodate future development. By integrating GI in the City's stormwater management toolbox, the City can use funding normally reserved for storm drain improvements.

The City has been able to realign funds in the past to address multidisciplinary issues. For example, the Vista Grande Drainage Basin Improvement Project, which is targeted at addressing storm-related flooding in the Vista Grande Drainage Basin and unincorporated areas, consists of the installation of a debris-screening device, treatment wetland, as well as diversion and outfall structures, and is funded through sewer fees. The City will explore opportunities to realign funds where appropriate to allow for funding of GI measures.

The City will continue to pursue grant opportunities as they arise. At the Countywide level, the City will help to lobby for the inclusion of GI funding in transportation grants, stormwater grants, and other grants for capital programs which show potential for GI implementation.

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, these affect small areas or an individual landowner. Examples of special financing districts include the following:

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

Daly City's Approach to Special Financing Districts: The City does have one Special Financing District for the Linda Vista area which is intended for stormwater retention. GI can be used as a stormwater retention strategy because it can store and remove water from the storm drain system through evaporation, transpiration, and infiltration. However, in general, the City does not prefer the use of Special Financing Districts over other funding strategies.

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 supplement 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**

Daly City's Approach to Partnership Funding Strategies: The City will investigate opportunities to partner with other agencies to construct regional projects which help improve water quality Countywide and contribute to the City's GI implementation goals. The City may pursue transportation funding which can be used to mitigate transportation challenges as well as construct GI. The City is interested in collaborating with Caltrans for a project in the vicinity of Caltrans right-of-way (State Route 35 – Skyline Boulevard, Highway 280, and Mission Street).

Currently, the City has few public GI measures; the vast majority of GI within the City is privately owned and maintained. Therefore, the City does not plan to organize a volunteer workforce for the maintenance of GI measures at this time, but may look for other opportunities to collaborate with the public and build community support for GI measures.

The City will continue to work with SMCWPPP to advertise how GI can bring economic vitality to the surrounding areas, and through this outreach, may be able to convince local businesses of the benefits of GI. As the program develops, the City will continue to look for opportunities to promote public and private partnerships.

The City will review applicability for applying for a financial capability assessment. A financial capability assessment does not generate additional funding or allow avoidance of permit compliance but does allow the municipality to work with the EPA and Regional Board to draft an alternative compliance schedule depending on the community's financial capabilities. The median income in Daly City is lower than the county median, approximately a quarter of Daly City's residents are extremely or very low income, and another quarter are low income, as defined by the 2013 San Mateo County income limits.[26]

[26] *Housing Element.* (2014). RHNA 5 (2014-2022 Planning Period). City of Daly City, CA.

ALTERNATIVE COMPLIANCE

Previously, the SFRWQCB 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 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 must 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 do not apply to Non-Regulated projects.

Examples of alternative compliance include the following:

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

Daly City's Approach to Alternative Compliance: Under the terms of the current MRP, in-lieu fees cannot be implemented simply enough 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. As more GI projects are identified through the CIP screening process (see Chapter 4, Project Identification and Prioritization), there will be more opportunities to utilize alternative compliance.

8.4 Economic Vitality Benefits and Public-Private Cooperation

Establishing additional requirements for the installation of GI on private property may create an undue burden on private property owners and developers. At the same time, the costs to comply with the GI milestones are significant, and it is necessary to share some of these costs with the private sector.

By communicating the benefits of GI to local businesses, the City hopes to encourage voluntary implementation of GI and/or build support for a special financing district to avoid needing to resort to additional blanket-style requirements on developers. On a project-by-project basis, the City can assess opportunities to meet water quality goals and scale implementation to fit the project constraints. The City will continue to explore public and private cooperation opportunities as the GI program develops.

GI can help to support economic vitality by providing access to landscape and green spaces, which results in the following direct benefits to residential and commercial areas[27]:

- Higher property values and rent value
- Increased consumer spending in commercial districts
- Energy savings
- Reduced lifecycle and maintenance costs (for some treatment measures)
- Lower possibility of flood damage
- Lower water bills, if rainwater harvesting is used
- Reduced crime
- Improved health and job satisfaction for office employees
- Healthier and more sustainable communities
- Community placemaking
- Improved worker productivity
- Increased potential that patrons will linger longer on retail main streets
- Higher occupancy rates for apartments and shorter periods between leases

Bioretention area located at In-N-Out on Gellert Boulevard.

[27] *GI Design Guide,* 1st Edition. (2019, June). San Mateo County Water Pollution Prevention Program. Pages 1-13.

8.5 Integration of GI with the Capital Improvement Program

One obstacle to funding a GI program is that the City must balance the many needs of its community to both keep 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 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 CIP projects because it provides benefits beyond simply improving water quality (see Figure 25).

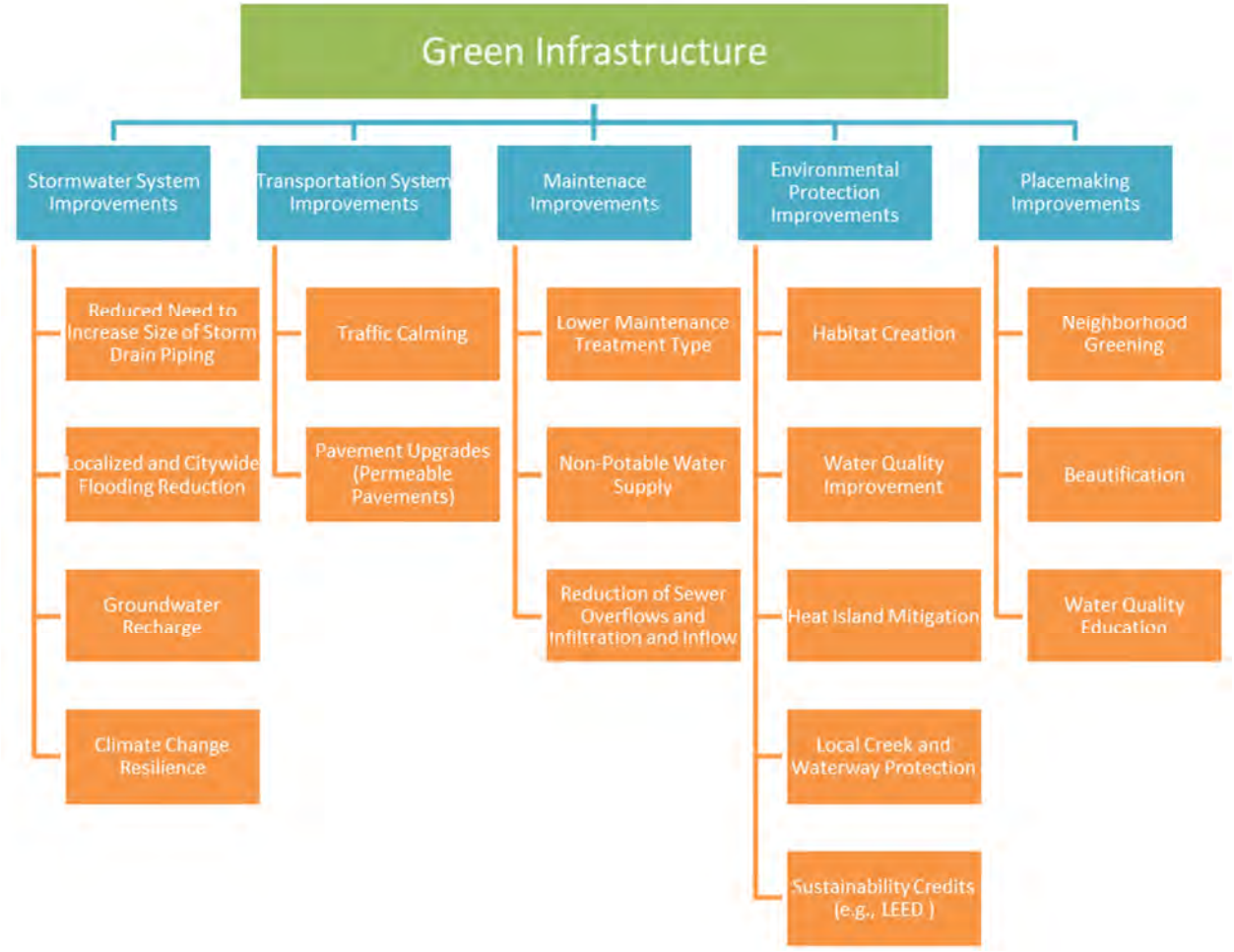


Figure 25. *Integration of GI with other types of improvements.*

By recognizing the many direct and ancillary benefits of GI, it becomes possible to integrate GI on several CIP projects if the project goals align with the GI benefits. Examples of projects that potentially lend to integration with GI include the following:

- Park or facility upgrades
- Pavement rehabilitation
- Storm drain repairs
- Complete streets projects

Some cost reduction is achieved by early incorporation of GI. By integrating GI into the project scope early, the project can incorporate GI more seamlessly, and in a way that does not greatly increase project costs. Prioritization and early screening of CIP projects is discussed in Chapter 4, Project Identification and Prioritization.

8.6 Integration of GI with Adopted Budget

The City of Daly City currently uses a combination of federal and state grants along with local funding sources to fund construction of projects in its Capital Improvement Program (CIP) and other projects.

The City's major funding sources are listed below, and are more particularly described in the City's 2019-2020 Capital Improvement Program:

- Transportation Fund
- General Capital Project Fund
- Sanitation District
- Park-In-Lieu Fees

The transportation fund has several dedicated funding sources, including the State Gas Tax (tax collected on the sale of gasoline), San Mateo County Measure A (sales tax collected in the County), Measure M (vehicle registration fees collected in the county), State and Federal Transportation Funds, grants, as well as the "new" SB1 gas tax increase known as the Road Maintenance and Rehabilitation Account (RMRA) funds. The City also received intermittent or one-time fees from private property developers to mitigate the impact of increased traffic generated from private development projects.[28]

In order to facilitate the future integration of GI in the CIP, a sample list of potential GI measures which may be integrated into various types of projects is shown in Table 13.

[28] *Comprehensive Biennial Capital Budget for Fiscal Years 2019 and 2020.* City of Daly City, CA.

Table 13. *Sample Integration of Potential GI Measures with Adopted Budget.*

TYPES OF PROJECTS	FUNDING SOURCES	POTENTIAL GI 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	Treatment Wetland	Hydrodynamic Separator Media Filter High-Flow Rate Tree Well Filter
Transportation • Westlake Elementary School Green Streets • Bike and Pedestrian Master Plan • Green Streets Project Serramonte Boulevard. • Green Streets Project • Junipero Serra Boulevard/D Street Improvements • Crocker Ave Sidewalk • Geneva Ave Streetscape • Hillside Boulevard Reconstruction • Mission St Grand Boulevard • Other Future Potential Projects	Transportation Fund General Capital Project Fund	✓	✓	✓	✓	✓			✓	✓			
Stormwater • Future Potential Projects	General Capital Project Fund	✓	✓	✓	✓								✓
Park Improvements • Alta Loma Park Renovation* • Future Potential Projects	Park-in-Lieu Fee General Capital Project Fund	✓		✓	✓	✓		✓	✓				
Non-Stormwater / Facilities • Serramonte Library Green Parking Lot* • Other Future Potential Projects	General Capital Project Fund	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Sanitation • Vista Grande Drainage Basin Improvement Project • Other Future Potential Projects	Sanitation District											✓	
**Existing GI Projects*													

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 primary goals of the outreach and education effort are summarized in Table 14:

***Table 14**. 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 as well as planning documents, and with the initiation and planning of infrastructure projects.	Both the general public and professionals involved in GI planning and design.
Train 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.
Education of Elected Officials	Conduct outreach on the GI requirements and methods of implementation.	Mayor and City Council

One of the first steps in the development of a GI Plan is educating department staff, managers, and elected officials about the purposes and goals of GI, the benefits of GI, the required elements of the GI Plan, and the steps needed to develop and implement the GI Plan. It is vital to earn the support of City Council, City

staff, and members of the public to ensure successful implementation of the GI Plan. Outreach and education efforts began in FY 15-16 and will continue even after GI Plan adoption.

9.2 Public Outreach

9.2.1 Local Efforts

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

In addition, the City developed a GI Map 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.** This map was made accessible to the general public in July 2019.

Underground detention and infiltration LID project located at the Alta Loma Tot Lot.

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 PIP Committee releases an internal bimonthly document detailing its recent and future outreach efforts. This outreach work includes distribution of information about rain barrel rebates,

provision of public-facing GI presentations and outreach materials, dissemination of information about public outreach and citizen involvement events, as well as the Flows to Bay website which explains GI basics and provides links to documents relevant to municipal staff and elected officials, such as the *C.3 Regulated Projects Guide* and *Design Guide* (see Figure 26).

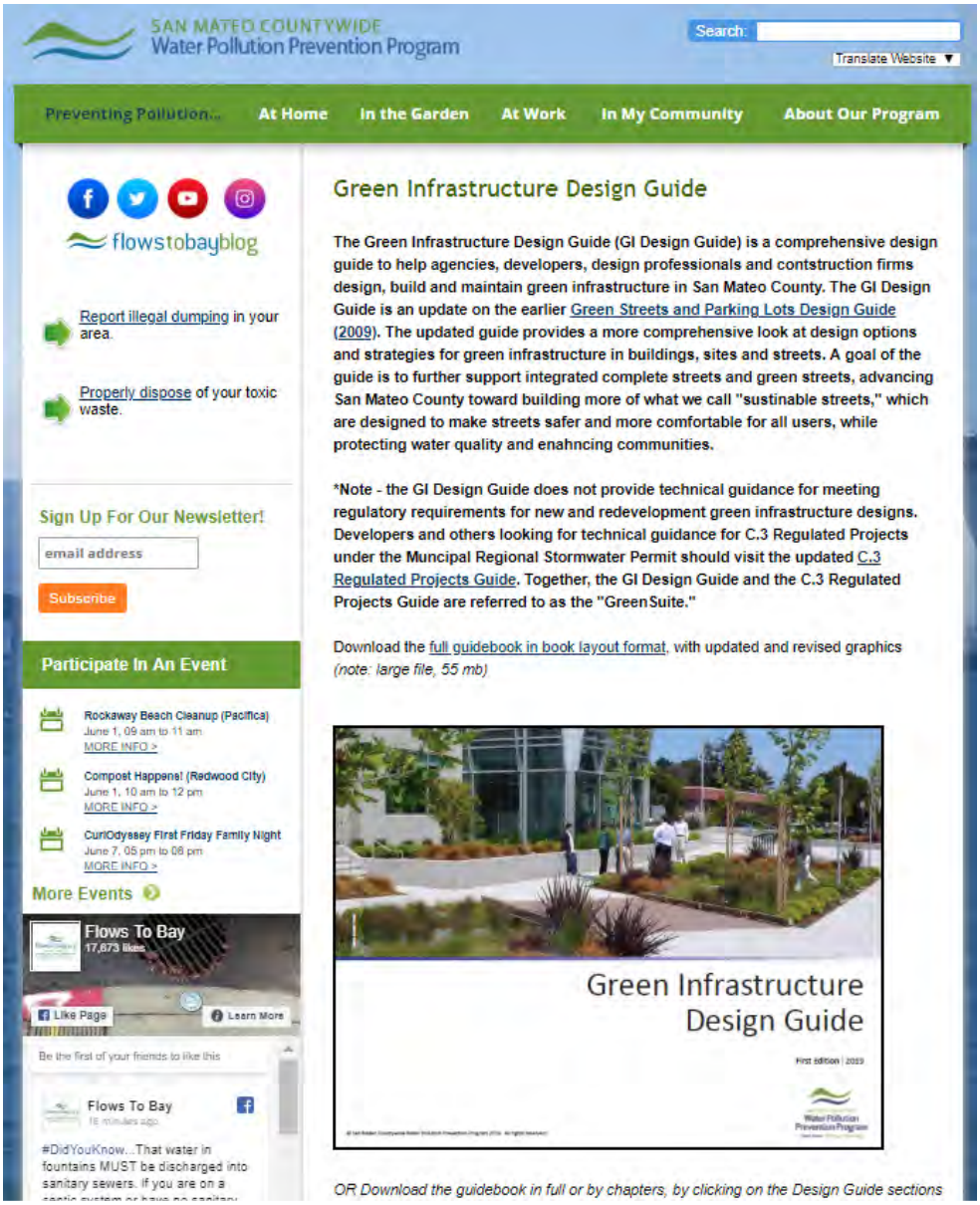


Figure 26. *SMCWPPP "Flows to Bay" Webpage, featuring the Green Infrastructure Design Guide.*[29]

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*.

[29] *San Mateo County Green Infrastructure Design Guide.* (2019b). SMCWPPP. https://www.flowstobay.org/gidesignguide.

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.
- C/CAG staff presented on the SRP planning process 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.
- When the draft SRP was complete, 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.
- 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 Train Appropriate Staff

Permittees must conduct training for appropriate staff on the requirements of the MRP and methods of GI implementation. The City began this process in FY 15-16 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:

- Convened interdepartmental meetings with affected department staff and management to discuss GI requirements and GI plan development. Key departments involved included Public Works and Planning. Outside of meetings, communication was maintained via email to update staff on the progress of the GI Plan and to receive feedback on a regular basis.
- Discussed the potential for incorporation of GI on CIP 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.
- Participated in SMCWPPP training events.
- Participated in the SMCWPPP GI Subcommittee, New Development Subcommittee, and PIP Subcommittee. All these subcommittees discussed GI implementation and outreach.

9.4 Education of Elected Officials

The City of Daly City conducted outreach to elected officials in advance of GI Plan approval. Matt Fabry from C/CAG presented to the City of Daly City during a public City Council meeting on January 14, 2019.[30] This type of presentation is applicable to any municipality within San Mateo County, and focused on raising awareness of what GI looks like, why it's important, and how it can benefit the quality of life and health of residents. When elected officials have a better understanding of GI and its benefits, they are much more likely to support its development.

The GI Plan was brought to City Council for approval in July 2019.

Changes made to local planning documents to support GI implementation are also reviewed and approved by the Planning Commission and City Council as applicable.

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 SMCWPPP 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 and reconvene the Roundtable with key participants such as San Francisco Bay Area Planning and Urban Research Association (SPUR), Caltrans, Save the Bay, and others. Bay Area Stormwater Management Agencies Association (BASMAA) and San Francisco Estuary Partnership (SFEP) will conduct tasks that address this idea, 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 GI implementation funding opportunities along State routes.
- Continue to work with MTC to integrate GI into transportation plans and funding.
- Conduct workshops and trainings on asset management for GI, possibly in coordination with CASQA, the SFRWQCB, and/or the EPA.

[30] http://sireweb.dalycity.org/sirepub/mtgviewer.aspx?meetid=1152&doctype=agenda&itemid=25473. (only viewable on Internet Explorer)

10.0 IMPLEMENTATION APPROACH

10.1 Overview

MRP Provision C.3.j.i.(3) requires each Permittee to complete 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 Green Infrastructure (GI) Plan comprise an implementation toolbox (Figure 27 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 GI facilities. As the GI program develops, the City will apply adaptive management strategies 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 Shell gas station on Hickey Boulevard.

Figure 27. *City's starting Green Infrastructure Implementation Toolbox.*

10.2 Private Development Programs and Policies

10.2.1 Standard Operating Procedures

The City is committed to shifting its conventional "gray" storm drain infrastructure to more 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 (as well as the level of detail required) for each project phase. They demonstrate the coordination efforts required between City departments and external agencies. Documenting this process and integrating key information from the MRP helps to avoid information or department "siloing", where the requirements or process are only understood by a few key individuals. The City will aim to use these flowcharts to train new staff. City staff will periodically update the flowcharts as necessary to reflect new MRP requirements.

The City of Daly City utilizes Standard Conditions of Approval (COAs) during the entitlement review phase to require implementation of GI in private developments. These COAs include requiring that applicants detain runoff onsite, incorporate Best Management Practices (BMPs), and minimize increases of impervious cover in accordance with the City's General Plan Policies. In addition, applicants must comply with the requirements of MRP Provision C.3, complete either the C.3 and C.6 Development Review Checklist or Stormwater Requirements Checklist for Small Projects, incorporate efficient landscaping systems, and, when feasible, incorporate landscaping that promotes surface infiltration, minimizes the use of pesticides and fertilizers, and incorporates sustainable landscaping practices. Applicants are

additionally required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) during construction to reduce or eliminate construction-related pollutants. Acknowledgement of, and agreement to abide by, NPDES BMPs must also be included with plans and enforced during construction.

The City can require implementation of GI on private development projects beyond traditional Provision C.3 requirements, such as requiring private developers to provide stormwater treatment within the public right-of-way for their frontage. During the development review process, the City will determine installation and maintenance responsibilities. Currently, the City is reviewing GI implementation requirements on a case-by-case basis, but may revise the Standard COAs or environmental document review policies to require additional GI implementation.

10.2.2 Municipal Code

The City reviewed its existing ordinances and other legal policies to identify whether sufficient legal authority exists to implement the GI Plan and comply with the MRP.

Based on the existing Municipal Code, 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 sections of the City of Daly City Municipal Code provide the City with the authority to require GI implementation (full versions of the Municipal Code can be accessed at https://library.municode.com/ca/daly_city):

- **Chapter 14.08 – Discharge Regulations and Requirements.** This code section references the NPDES Permit and federal laws such as the Clean Water Act. The discharge of pollutants into storm drains and waterways is prohibited and the code sections include punitive measures for non-compliance. The code also references the use "Best Management Practices" to prevent or reduce the discharge of pollutants, which can include GI, as well as other hydromodification measures, which control the volume and rate of stormwater runoff from new developments and redevelopments.
- **Chapter 17.41 – Water Conservation in Landscaping.** This code section requires stormwater best management practices to be incorporated into landscaping and grading plans to minimize stormwater runoff and increase onsite retention and infiltration. Green Infrastructure is a means of achieving these requirements.

The code sections above reference compliance with NPDES Permit No. CA 0029921 (the MRP). Given that the GI is a requirement of the MRP Provision C.3.j, compliance with the MRP includes the implementation of GI, in accordance with this GI Plan.

10.2.3 CALGreen Integration

The City adopted by reference Title 24, Part II, California Green Building Standards Code (CALGreen) in Section 15.22.010 of the Municipal Code. There is a great deal of crossover between CALGreen and the implementation of GI, namely with regards to the following:

- Management of trash and recycling
- Water efficiency and conservation
- Marking of storm drain inlets
- Use of Low Impact Development

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 measures 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 Green Infrastructure Design Guide,* Chapter 6.

Most on-site stormwater facilities located in the City of Daly City are owned and maintained by private property owners—not the City. These property owners include, but are not limited to, 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 on development projects, 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 another 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 GI measures.

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

- Full description of the stormwater treatment measures to be maintained;
- An O&M Plan describing the schedule for maintenance;

- Provisions for access by SFRWQCB staff, mosquito and vector control agency staff, and City staff;
- Requirements for property owner(s) 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 by which 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 CIP, 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, and 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.
- Private development projects which are under review by the City.

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 6.3.3.

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

10.4.2 Daly City Vision Zero

Daly City has adopted Vision Zero, an initiative to reduce fatal and serious injuries to zero on City streets. A fundamental aspect of this initiative is improving safety for bicyclists and pedestrians, the most

vulnerable roadway users. The desired outcomes of the initiative include increasing safe, healthy, and equitable mobility for all roadway users.

GI can play an important role in improving bicyclist and pedestrian safety by promoting traffic calming. GI can be integrated into curb extensions (also called "bulb outs"). Curb extensions increase the visibility of crosswalks, reduce curb radii, decrease crossing distance, reduce vehicle speeds, and improve the safety and comfort of users. Adding vegetation and trees to curb extensions further enhances safety by reducing the perceived width of the street and reducing speeding. Attractive green spaces can also help to improve mental and physical health and can encourage local residents to go outside and be more physically active.

10.4.3 Early Project Implementation

During the development of this GI Plan, the City explored various GI opportunities which are appropriate to the context and character of the City.

These opportunities include the following:

- **Parks Master Plan.** As projects identified in the Parks Master Plan are further developed and added to the CIP, they will be individually reviewed for GI potential through the CIP GI Potential Screening Process (discussed in Section 4.2.3.)
- **Cooperative Project Development.** The City allocates funding towards the development of new projects and grant fund applications. Under this project, the City could devote staff resources to applying for grant funds for GI projects.
- **Bike and Pedestrian Master Plan.** As projects identified in the Bike and Pedestrian Master Plan are further developed and added to the CIP, they will be individually reviewed for GI potential through the CIP GI Potential Screening Process (discussed in Section 4.2.3).
- **Long Term Vehicle Storage.** This project involves the installation of a long-term parking enclosure in the unused lot located off 92nd Street, next to 204 92nd Street. The project may be C.3 Regulated, but design has not yet begun. Possible GI measures could include permeable paving parking stalls.
- **Westlake Elementary School GI Improvements.** The Westlake Elementary School Green Streets Improvement Project includes the construction of new pedestrian curb extensions with stormwater bio-swales and accessible curb ramps at the intersection of Westlawn Avenue and Fieldcrest Drive located at the northwest corner of Westlake Elementary School.
- **Green Streets Project Serramonte Boulevard and Green Streets Project.** These projects involve beautification and landscaping on Serramonte Boulevard. There may be potential to integrate the streetscape improvements with GI, such as substituting the landscaping areas for bioretention areas, similar to the City's approach to the existing John Daly Boulevard Streetscape Project.

- **Junipero Serra Boulevard / D Street Improvements.** This project involves the construction of a new sidewalk on the northbound direction of Junipero Serra Boulevard. GI potential will be further assessed as the project develops, such as the potential use of permeable sidewalk.
- **Crocker Avenue Sidewalk.** This project involves the construction of a new sidewalk on Crocker Avenue. GI potential will be further assessed as the project develops, such as the potential use of permeable sidewalk.
- **Geneva Avenue Streetscape.** This project involves streetscape improvements on Geneva Avenue. The project is also targeted at improving street crossing and enhancing sidewalks. Various GI measures may be applicable to this project, including stormwater curb extensions which promote both traffic calming and improved water quality.
- **Hillside Boulevard Reconstruction.** This project involves significant reconstruction of Hillside Boulevard to repair the failed roadway and upgrade street crossing to current ADA standards. The project's C.3 regulation status and potential for incorporation of GI will be reviewed in the future. It's possible that while updating street crossing to ADA standards, the City could incorporate stormwater curb extensions.
- **Mission St Grand Boulevard.** The Mission Street Streetscape Master Plan includes enhanced sidewalks, improved street crossings, and landscaped median islands. The project currently includes a bioretention area.
- **Vista Grande Drainage Basin Improvement Project.** This project addresses storm-related flooding in the Vista Grande Drainage Basin in Daly City and in unincorporated Broadmoor Village in northwestern San Mateo County, while providing the additional benefit of augmenting the level of Lake Merced in San Francisco. The Project would also improve recreational access and reduce litter transfer and deposition along the beach south of Fort Funston. The Project would consist of partial replacement of the existing Vista Grande Canal to incorporate a debris screening device, a treatment wetland, and diversion and outfall structures to route some flows from the Canal to Lake Merced; replacement of the existing Vista Grande Tunnel to increase its peak capacity and extend its operating life; and replacement of the existing Ocean Outlet structure at Fort Funston.

Concept sheets for selected prioritized projects, including a description and approximate schedule for completion, are included in Appendix E. Appendix E also includes an approximate schedule for the City's current GI opportunities.

10.4.4 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 Update Process

The 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 GI implementation progress. The text of the GI Plan need not necessarily be updated in the future; however, as time progresses, the City may reassess the adequacy of its tools or implementation strategies to secure achievement of GI Plan milestones. Table 15 proposes a preliminary schedule for when various elements of the GI Plan may be revisited. The City may change or modify this schedule without updating this section.

Table 15. *Green Infrastructure Plan Update Schedule.*

GI Plan Implementation Element	GI Plan Reference Section	What will be updated	Update Schedule
GI Milestones Progress	Chapter 3.0, Green Infrastructure Milestones	Tracking of progress towards meeting GI milestones	**Annually.** This will be tracked via the City's internal database until 2021, or when the San Mateo Countywide SSMP is developed.
Capital Improvement Program Screening	Chapter 4.0, Project Identification and Prioritization	City's internal screening database	**Every two years** in the CIP Cycle, and mid-cycle as applicable.
Tracking of GI Projects	Chapter 5.0, Project Tracking	City's internal database and public GI map	**Annually or as needed.**
Tracking of GI Projects	Chapter 5.0, Project Tracking	Chapter 5.0, Project Tracking	**2021**, or when the San Mateo Countywide SSMP is developed.
Guidelines and Specifications	Chapter 6.0, Guidelines and Specifications	GI Guidelines and Standards	**Every 5 years**, the City will reassess the applicability of the Countywide GI Guidelines and Standards and review the potential for updating City-specific standards and details.
Planning Document Updates	Chapter 7.0, Integration with Other Planning Documents	Section 7.6, Future Updates	**2021**, or when planning document modifications are complete.
Funding Options	Chapter 8.0, Funding Options	Section 8.3, Funding Strategies	Revisit **every 5 years** to assess whether funding strategies are adequate.
Outreach and Education	Chapter 9.0, Outreach and Education	Internal outreach and education strategy	Participate at the Countywide level (estimated **2 times per year**) to support outreach and education about GI.
Programs and Policies	Chapter 10.0, Implementation Approach	Standard Operating Procedures, Municipal Code, and Policies	Revisit **every 5 years** to assess whether implementation approach is adequate.

BIBLIOGRAPHY AND DOCUMENT REFERENCE LIST

Bay Area Stormwater Management Agencies Association (BASMAA). (2016, May). *Guidance for Identifying Green Infrastructure (GI) Potential in Municipal Capital Improvement Program (CIP) Projects.* BASMAA, Oakland, CA.

Bay Area Stormwater Management Agencies Association (BASMAA). (2017, December 13). *Green Infrastructure Facility Sizing for Non-Regulated Street Projects.* Prepared by Dubin Environmental for BASMAA, Oakland, CA.

Bay Area Stormwater Management Agencies Association (BASMAA). (2018, September 6). *Guidelines for Sizing Green Infrastructure Facilities in Street Projects* (5th draft). Prepared by Dan Cloak Environmental Consulting & EOA Inc for BASMAA, Oakland, CA.

California Stormwater Quality Association (CASQA). (2003). *Stormwater Best Management Practice Handbook: New Development and Redevelopment.* CASQA, Menlo Park, CA.

Caltrans Division of Transportation Planning, Office of Smart Mobility and Climate Change. (Accessed 2019, May 9). Complete Streets Program. http://www.dot.ca.gov/transplanning/ocp/complete-streets.html.

City of Daly City. (2011). Green Vision—Ten for Twenty: A Climate Action Plan for 2011-2020 and Beyond.

City of Daly City. (2013, March 25). 2030 General Plan: City Profile & Natural Resources Element.

City of Daly City. (2014, January). *Long Term Trash Load Reduction Workplan.* Daly City, CA.

City of Daly City. (2017, June). *Green Infrastructure Plan Workplan.* Daly City, CA.

City of Daly City. (2019, April 22). *Daly City Municipal Code.* Current through Ordinance 1428. Daly City, CA.

City of San Mateo. (2015, February). *Sustainable Streets Plan.* Prepared by Nelson/Nygaard Consulting Associates, Community Design and Architecture, Local Government Commission, ChangeLab Solutions, & Urban Advantage. San Mateo, CA.

Contra Costa Clear Water Program. (2018, December 20). *Example Municipal Policies to Support Green Infrastructure Implementation*. Prepared by Dan Cloak.

National Association of City Transportation Officials (NACTO). (2017). *Urban Street Stormwater Guide.* Island Press, Washington, USA.

San Francisco Regional Water Quality Control Board (SFRWQCB). (2013). *San Francisco Bay Beaches Pathogens TMDL.* SFRQWCB, San Francisco, CA.

San Francisco Regional Water Quality Control Board (SFRWQCB). (2015). *NPDES Phase 1 MS4 Municipal Regional Stormwater Permit (MRP) for San Francisco Bay Region. Order No. R2-2015-0049.* SFRQWCB, San Francisco, CA.

San Francisco Regional Water Quality Control Board (SFRWQCB). (2016). *San Francisco Bay Mercury TMDL.* SFRQWCB, San Francisco, CA.

San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). (2007). *Trash Assessments in Six Watersheds in San Mateo County, California.* City/County Association of Government, SMCWPPP, Redwood City, CA.

San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). (2009, January). *San Mateo County Sustainable Green Streets and Parking Lots Guidebook.* City/County Association of Government, SMCWPPP, Redwood City, CA.

San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). (2016, June). C.3 *Regulated Projects Design Guide* (version 5.0). (formerly *C.3 Stormwater Technical Guidance*). City/County Association of Government, SMCWPPP, Redwood City, CA.

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..

San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). (2018a, June). *Quantitative Relationship Between Green Infrastructure Implementation and PCBs/Mercury Load Reduction.* Prepared by Paradigm Environmental. Part of the SMCWPPP 2017-18 MRP Annual Report. City/County Association of Government, SMCWPPP, Redwood City, CA.

San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). (2018b, June). *San Mateo County-Wide Reasonable Assurance Analysis Addressing PCBs and Mercury: Phase I Baseline Modeling Report.* Prepared by Paradigm Environmental & Larry Walker Associates, Inc. City/County Association of Government, SMCWPPP, Redwood City, CA.

San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). (2019a, January). *Green Infrastructure Planning: Green Infrastructure Funding Nexus Evaluation.* Prepared by SCI Consulting Group and Larry Walker Associates. City/County Association of Government, SMCWPPP, Redwood City, CA.

San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). (2019b, April). *Green Infrastructure Design Guide* (1st ed.). City/County Association of Government, SMCWPPP, Redwood City, CA.

San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). (2019c - under development). *San Mateo County-Wide Reasonable Assurance Analysis Addressing PCBs and Mercury: Phase II*

Green Infrastructure Modeling Report. Prepared by Paradigm Environmental & Larry Walker Associates, Inc. City/County Association of Government, SMCWPPP, Redwood City, CA.

United States Environmental Protection Agency (USEPA). (2017, February). *Developing Reasonable Assurance: A Guide to Performing Model-Based Analysis to Support Municipal Stormwater Program Planning.* Prepared by Paradigm Environmental. USEPA, Washington D.C., USA.

United States Environmental Protection Agency. (accessed 2019, May 9). *What is Green Infrastructure?* https://www.epa.gov/green-infrastructure/what-green-infrastructure.

United States Internal Revenue Service. (accessed 2019, May 9). *Tax Years.* https://www.irs.gov/businesses/small-businesses-self-employed/tax-years.

Water Environment Federation (WEF). (2014). *Green Infrastructure Implementation*. WEF, Alexandria, VA.

GREEN INFRASTRUCTURE PLAN APPENDICES

A. Glossary

B. Capital Improvements Program GI Potential Screening Flowcharts

C. GI Project Prioritization Maps

D. Development Review Flowcharts

E. Early Project Implementation Schedule and Concept Sheets

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-Year Flood Plain**

c. **Sea Level Rise**

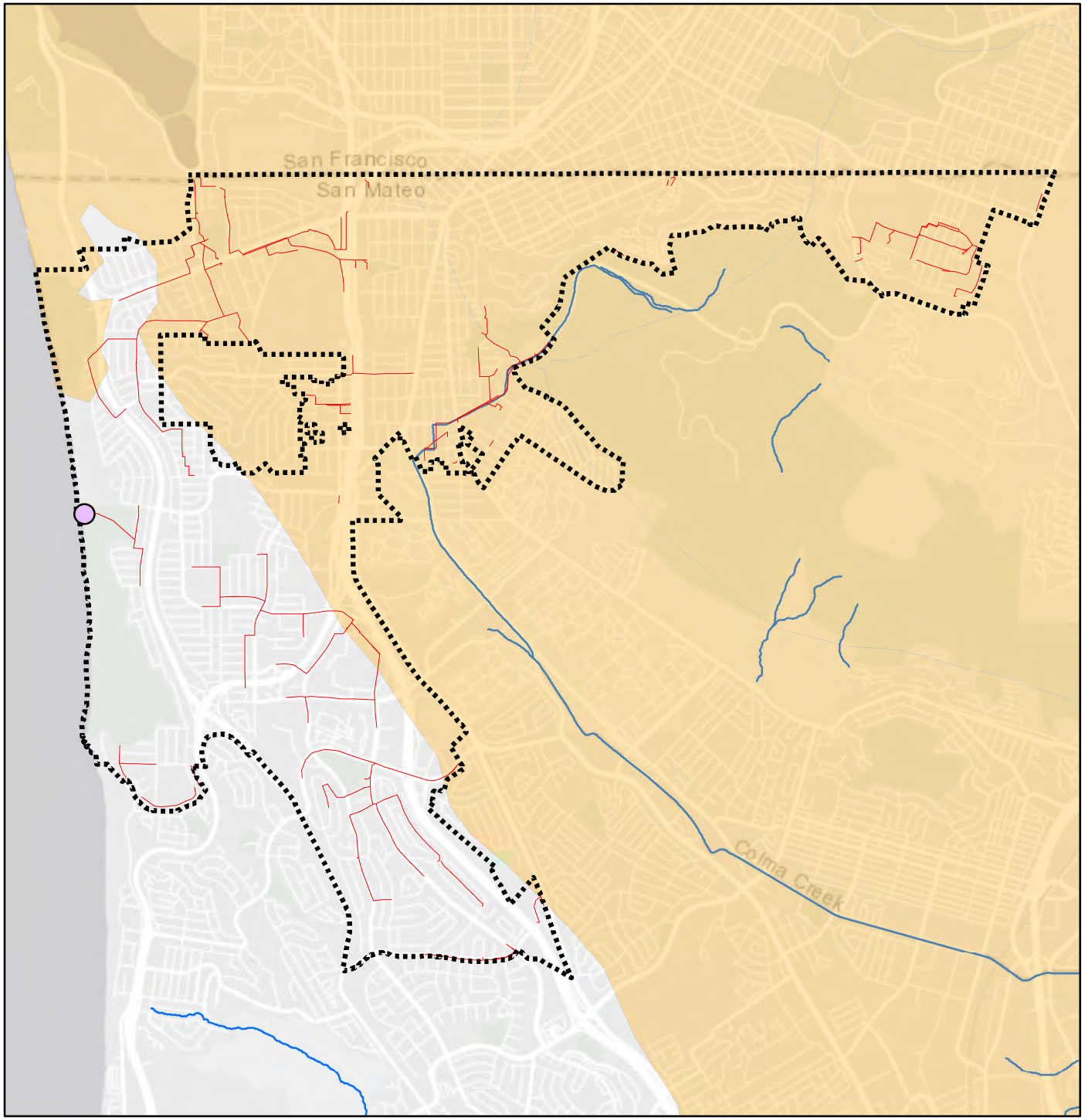
d. **Prioritized Green Streets Projects**

e. **Prioritized LID and Regional Projects**

f. **Existing and Potential Green Infrastructure Projects (A1)**

g. **Existing and Potential Green Infrastructure Projects (A2)**

h. **Existing and Potential Green Infrastructure Projects (B1)**



City of Daly 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/

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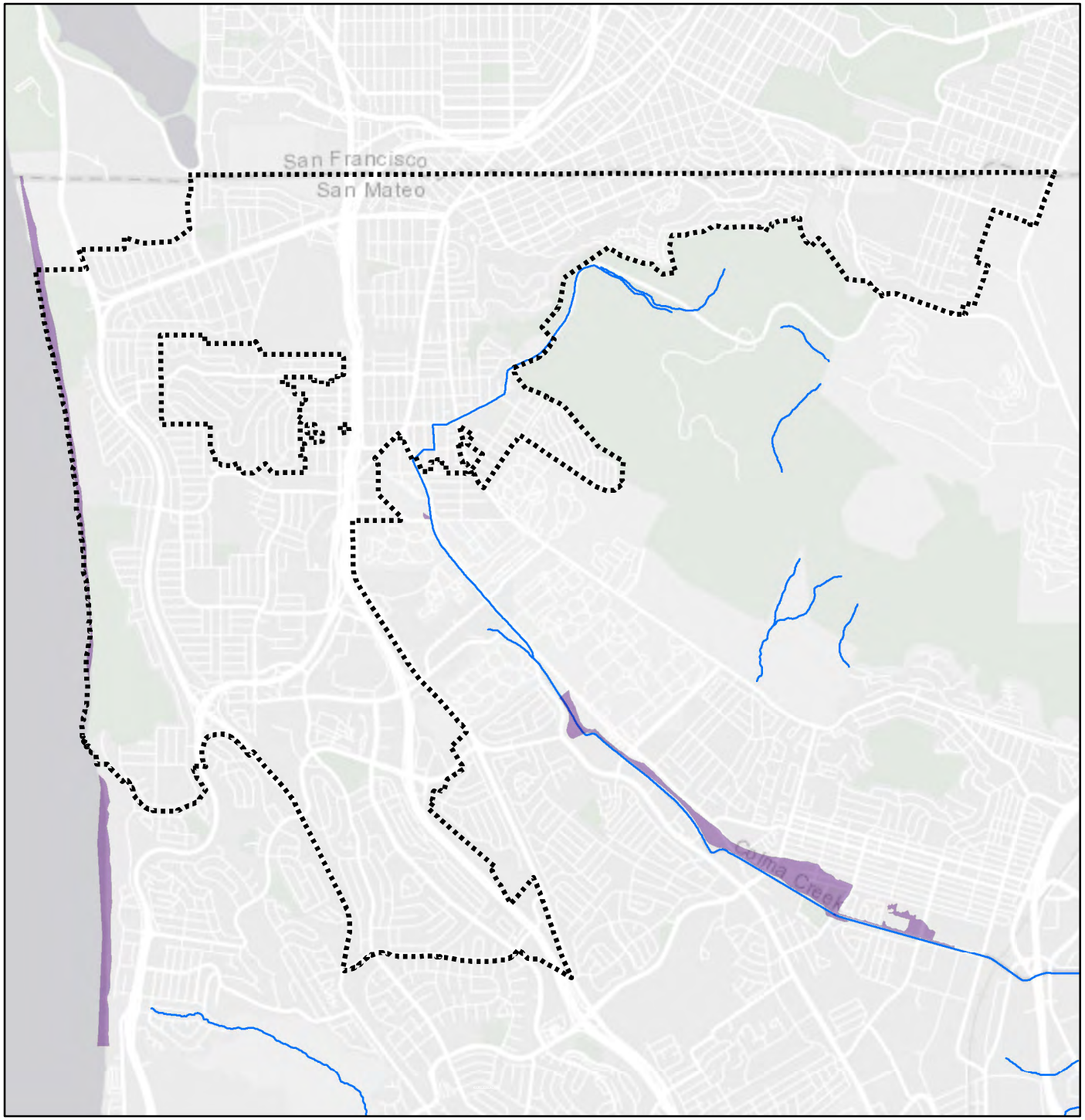

City of Daly City: FEMA 100-yr Flood Plain

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/

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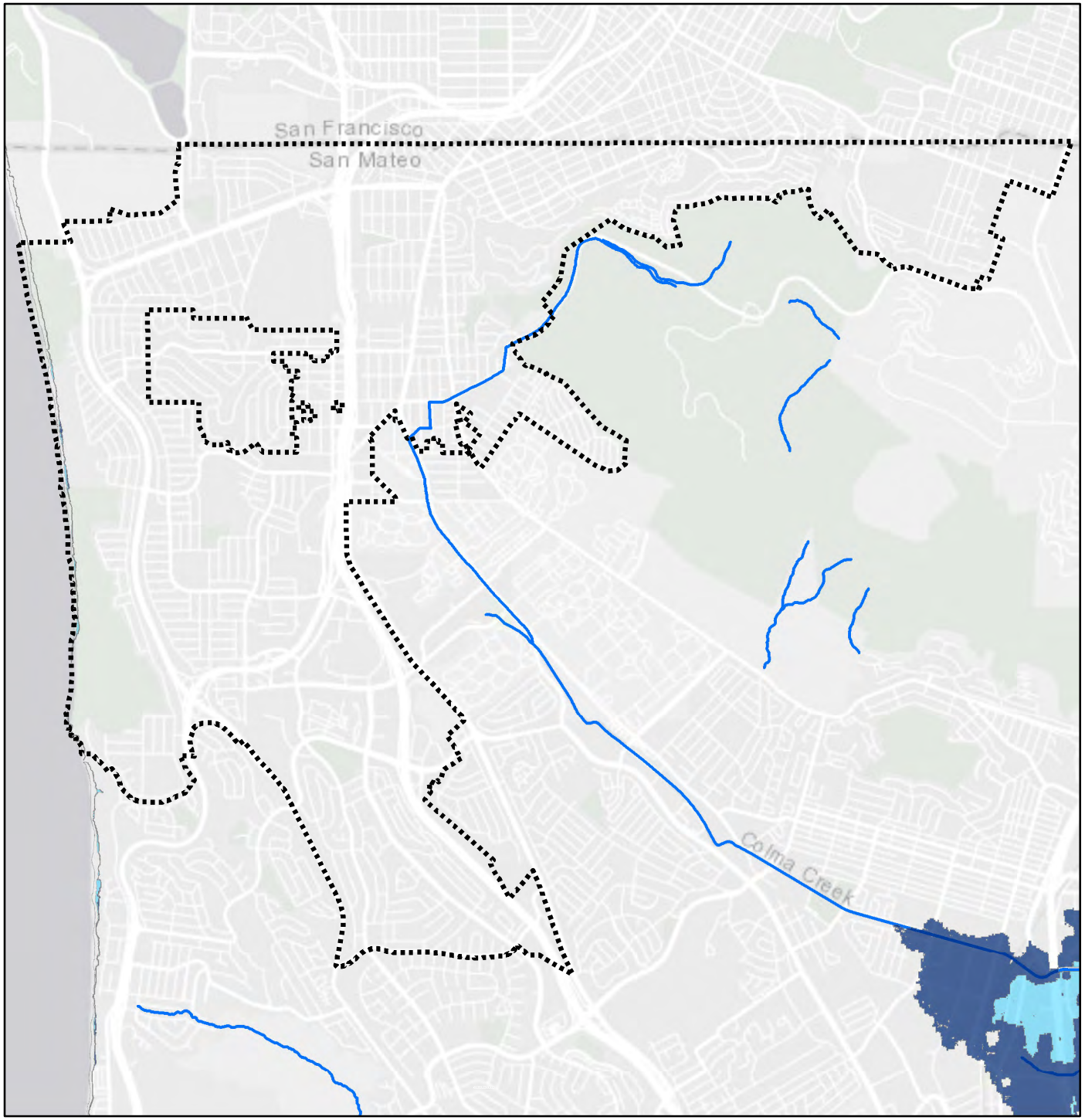

City of Daly City: Sea Level Rise

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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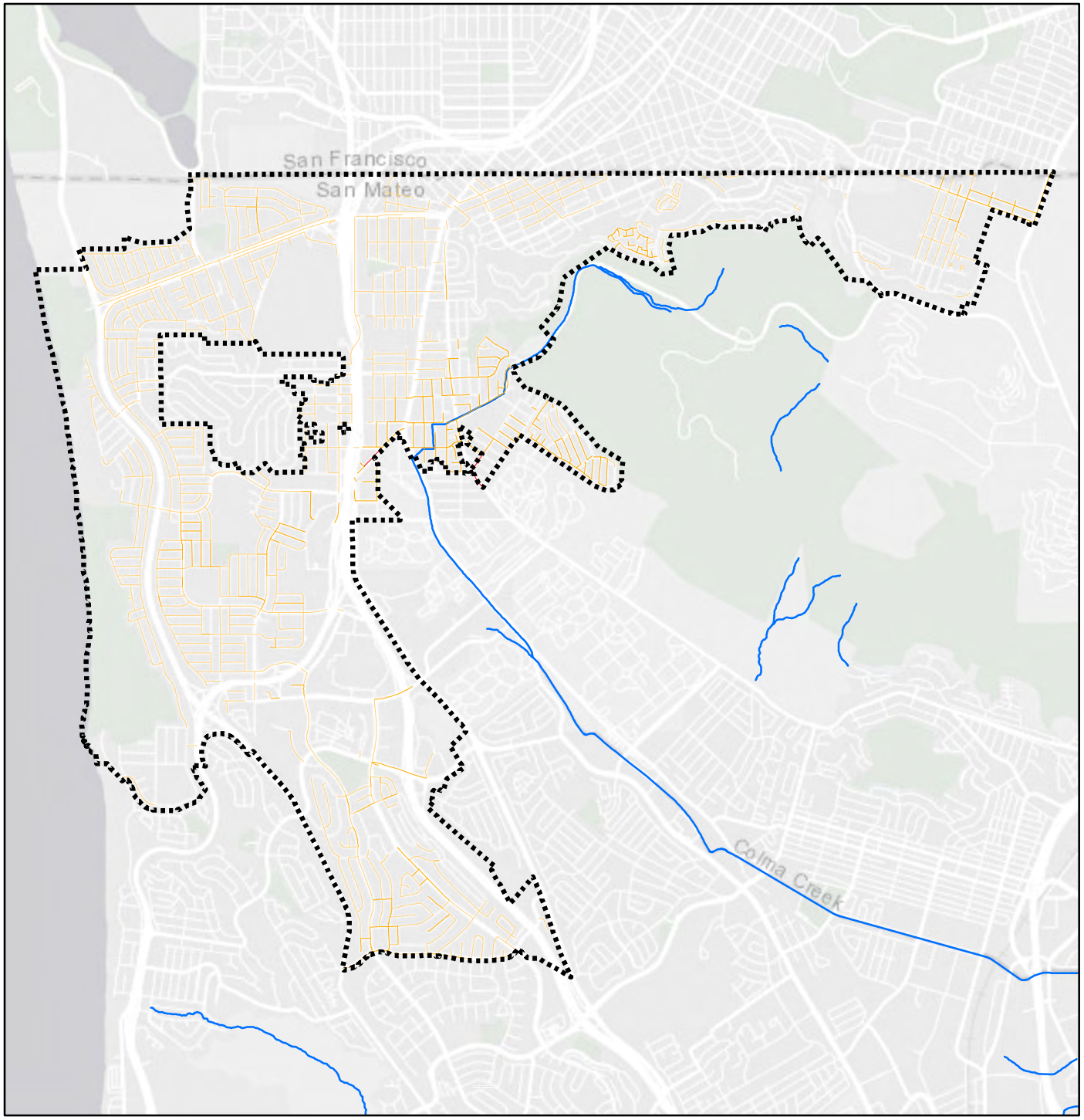

City of Daly City: Prioritized Green Streets

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).

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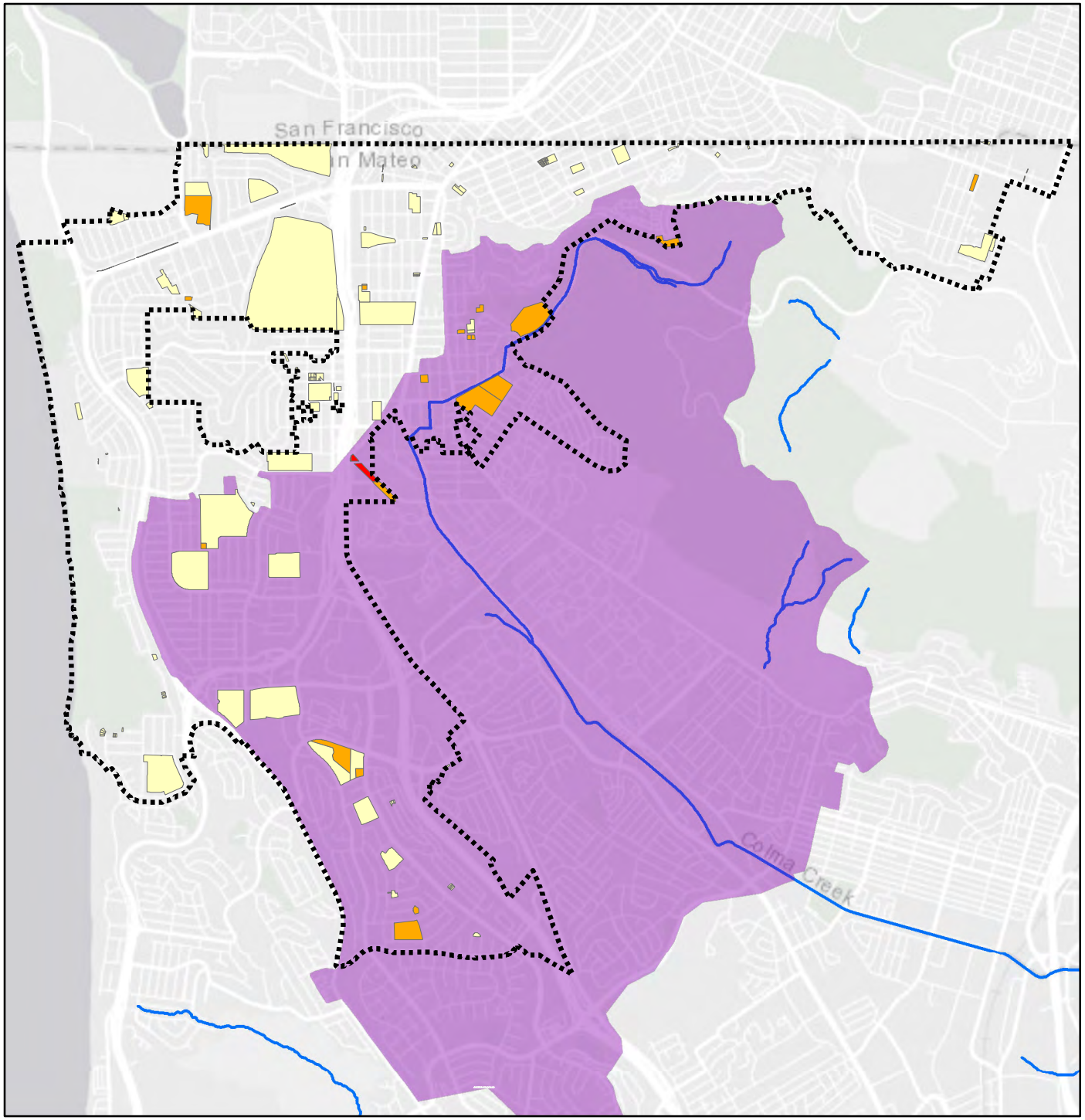

City of Daly City: Prioritized LID and Regional Projects

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).

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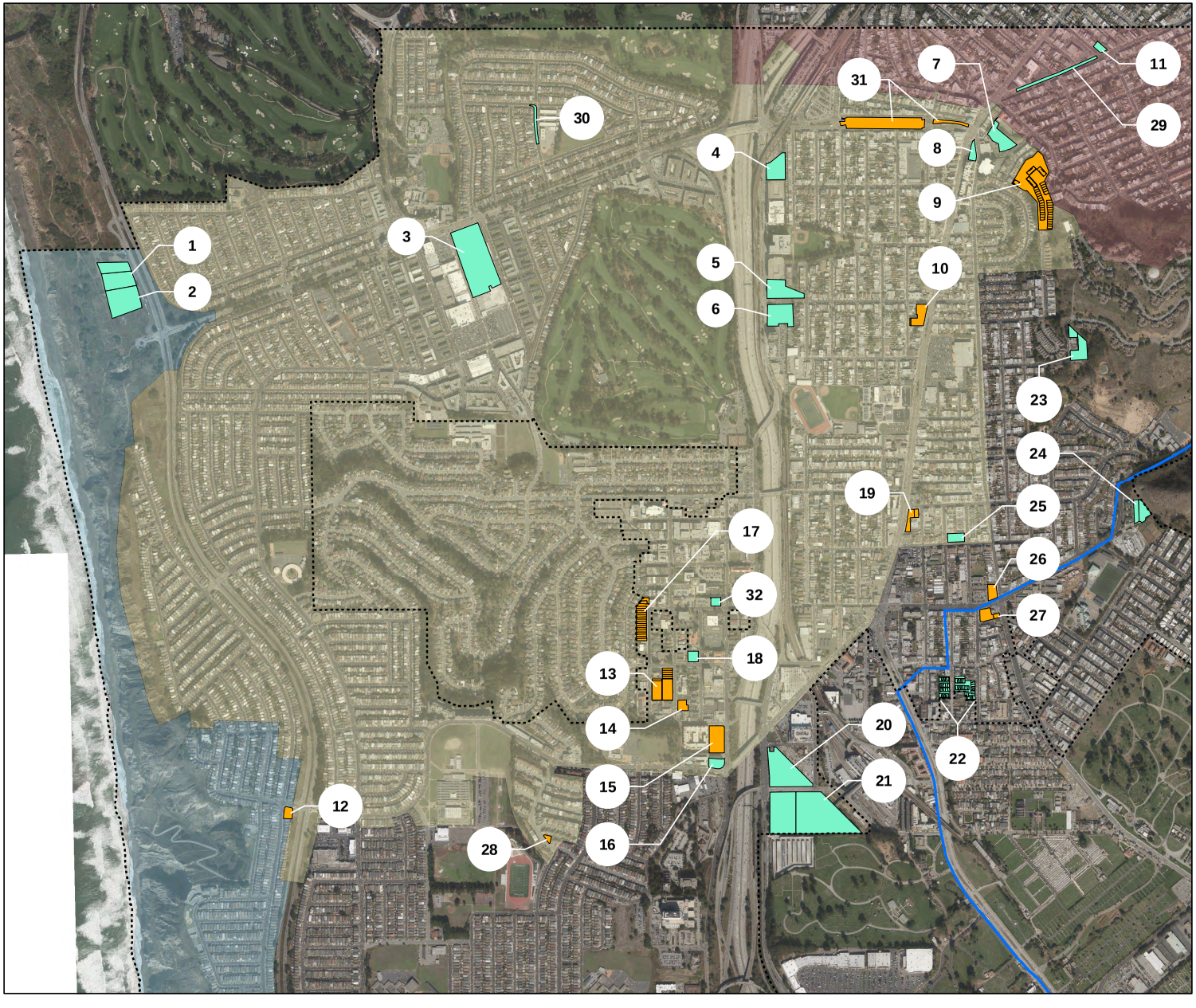
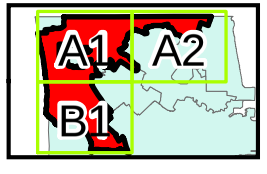
City of Daly City
Green Infrastructure



No.	Project (A1)
1	Mar Vista Hotel *
2	Olympic Way Retreat Center *
3	Westlake Shopping Center Apartments
4	City Redevelopment Parcel
5	Duggan's Mortuary Expansion
6	Carvana Vending Machine
7	Brunswick Flats Senior Rental Community
8	88 Hillside - Phase II Apartments
9	Wellington Subdivision
10	Mid Peninsula Housing
11	Mission St./Goethe St. Mixed-Use Building
12	Valero Gas Station *
13	Edgeworth Nursery Residence
14	Natural Gas Station
15	CVS Drugstore
16	Eastmoor/Sullivan Mixed-Use Building
17	Annie Street Subdivision
18	Bryant Street Mixed-Use Building
19	Taco Bell
20	Serra Station Mixed-Use Building
21	SamTrans Parking Lot Conversion
22	Garden Valley
23	Hilldale School Expansion
24	West Coast Storage
25	Woods Condominiums
26	Shell Gas Station: 950 Hillside Blvd.
27	Steak N' Shake
28	Alta Loma Tot Lot Renovation
29	Mission Street
30	Westlake Elementary
31	John Daly Boulevard Streetscape Improvements
32	Long Term Vehicle Storage
*	Project Drains to Ocean

Legend

- City Boundary
- Waterways
- Existing Green Infrastructure
- Potential Green Infrastructure
- Drains to the City and County of San Francisco Combined Sewer System
- Drains to the Pacific Ocean
- Drains to the Vista Grande Canal



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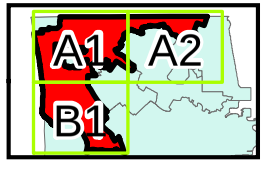
City of Daly City Green Infrastructure

No.	Project (A2)
33	Point Martin 1 & 2
34	Accacia Street Development
35	Bayshore Elementary School
36	Midway Village Development
37	Robertson School Redevelopment

Legend

- City Boundary
- Waterways
- Existing Green Infrastructure
- Potential Green Infrastructure
- Drains to the City and County of San Francisco Combined Sewer System
- Drains to The Pacific Ocean
- Drains to the Vista Grande Canal



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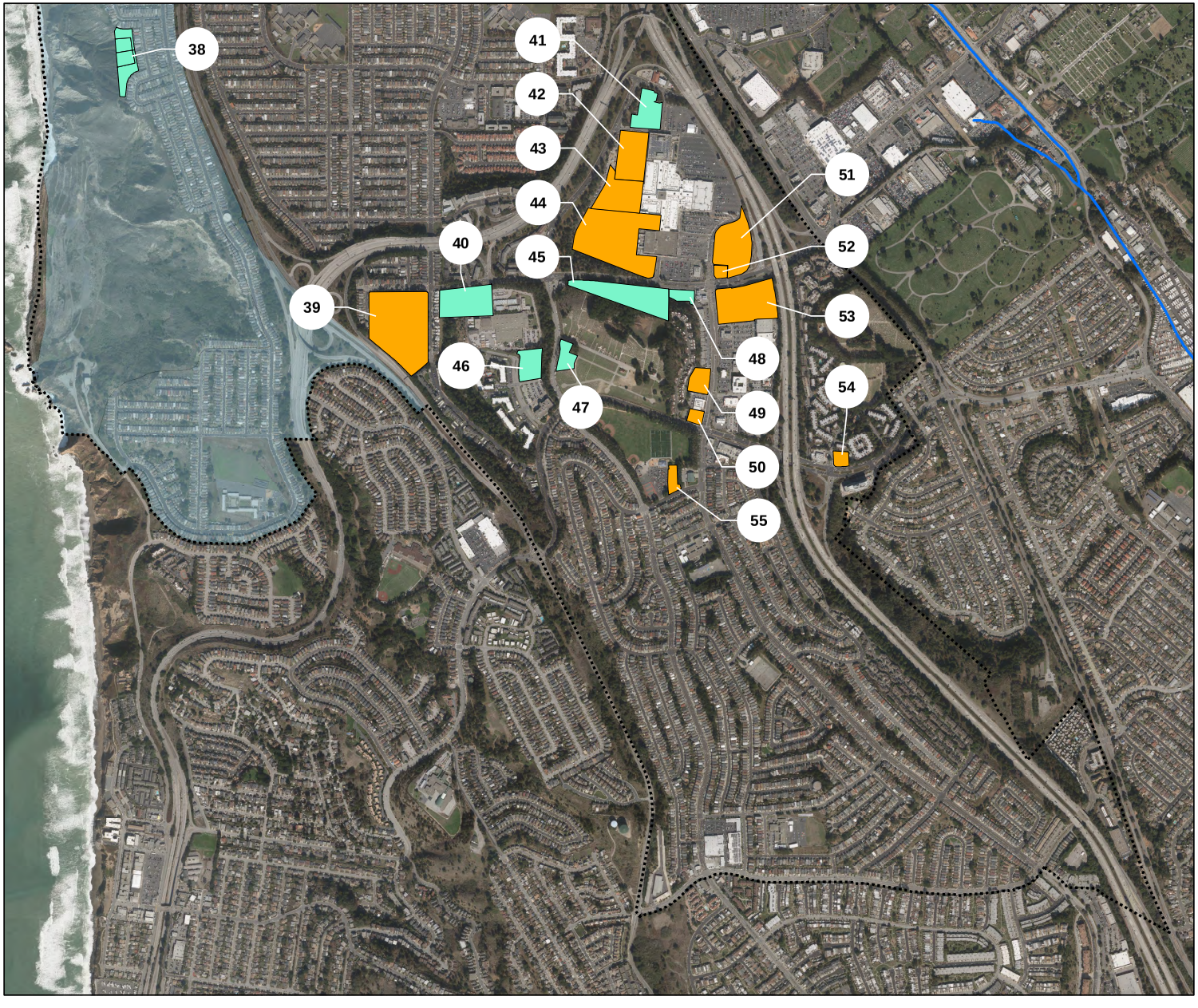


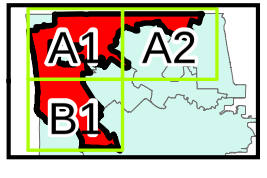
City of Daly City Green Infrastructure

No.	Project (B1)
38	Westbrae Development *
39	Christopher Highlands
40	Jefferson Union High School District Faculty and Staff Housing
41	Serramonte Shopping Center (NW)
42	Serramonte Shopping Center (Parking Garage)
43	Serramonte Shopping Center (SW)
44	Serramonte Shopping Center (SW)
45	Serramonte Views
46	Summit Charter School
47	Chinese Cemetery
48	McDonalds Reconstruction
49	In-N-Out Burger
50	Shell Gas Station: 398 Gellert Boulevard
51	Serramonte Shopping Center (SE)
52	Serramonte Verizon Store
53	Gellert Market Place
54	Shell Gas Station: 390 Hickey Boulevard
55	Serramonte Public Library

* Project Drains to Ocean

Legend

- City Boundary
- Waterways
- Existing Green Infrastructure
- Potential Green Infrastructure
- Drains to the City and County of San Francisco Combined Sewer System
- Drains to the Pacific Ocean
- Drains to the Vista Grande Canal



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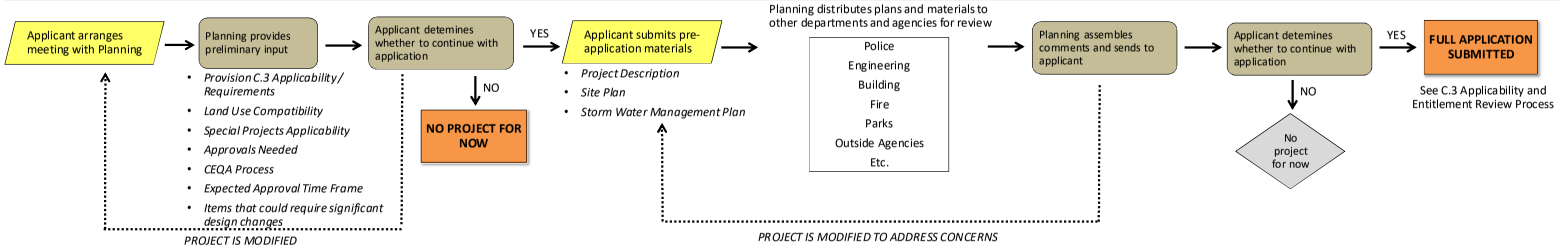
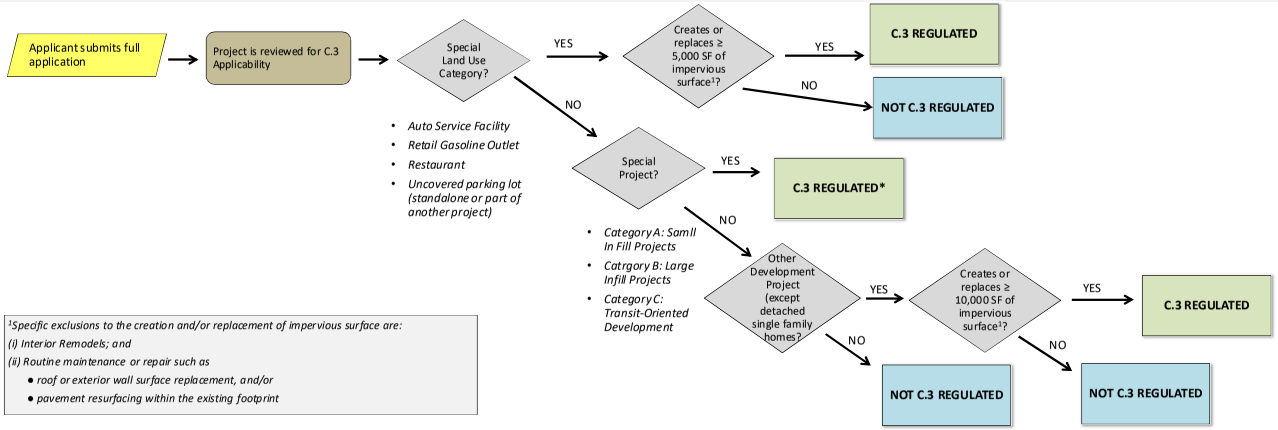
APPENDIX D: Development Review Flowcharts

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*
- *Hydromodification Management Controls (if applicable)*

*Special Projects need to complete the Special Projects Worksheet

- Special Projects may be allowed to use non-lid treatment for 100% of the C.3.d amount of runoff

NON-C.3 REGULATED PROJECT MEASURES

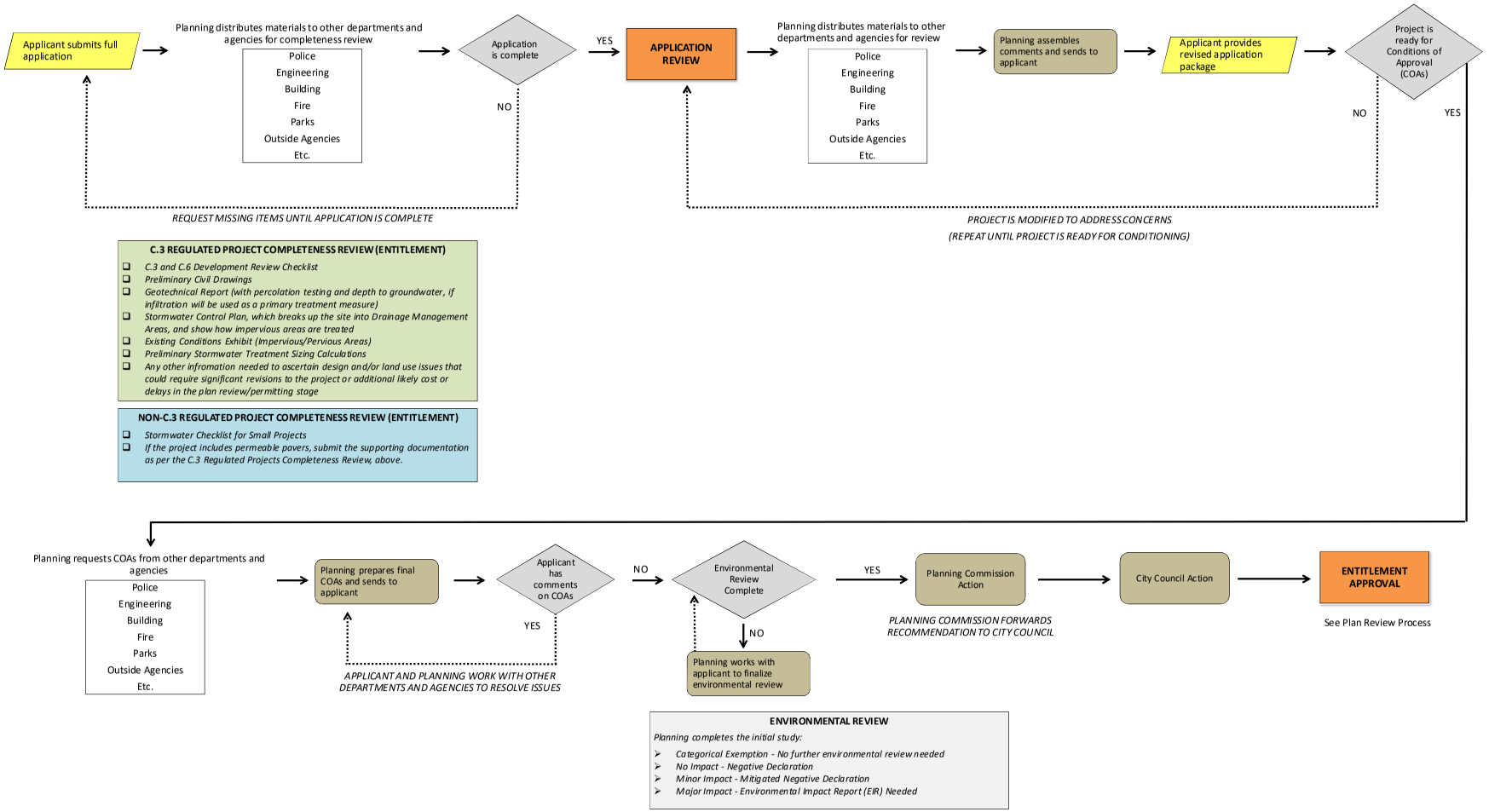
Applicant to complete the "Stormwater Checklist for Small Projects", and select appropriate:

- *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.*

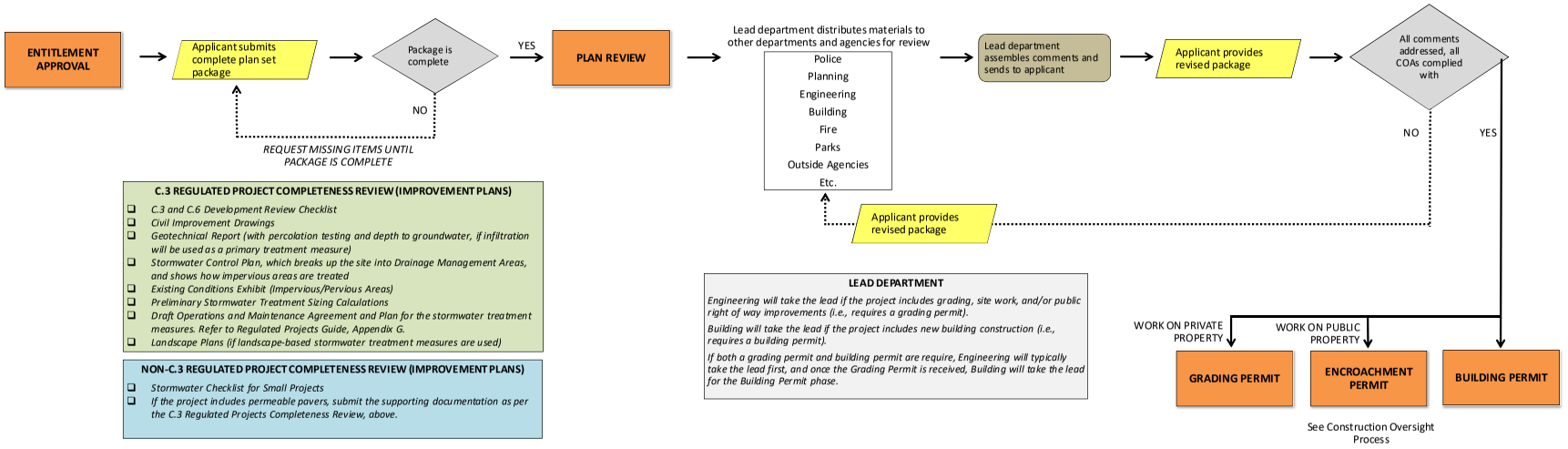
DEVELOPMENT REVIEW PROCESS

Entitlement Review

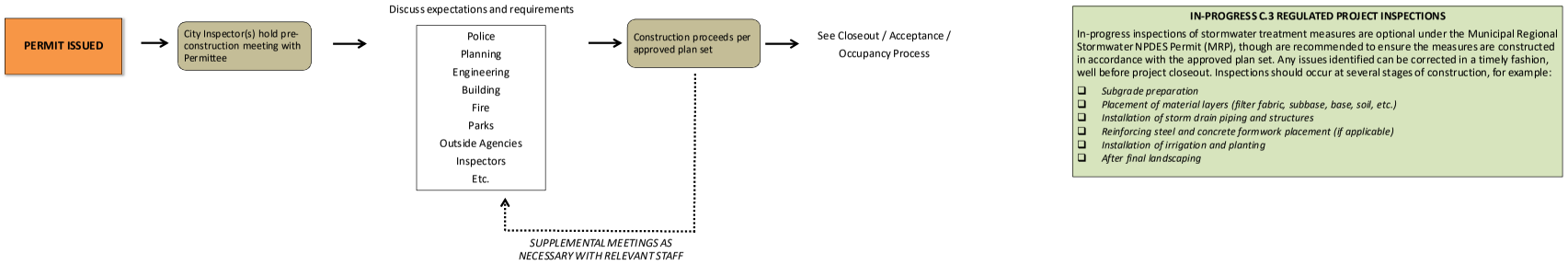


DEVELOPMENT REVIEW PROCESS

Plan Review

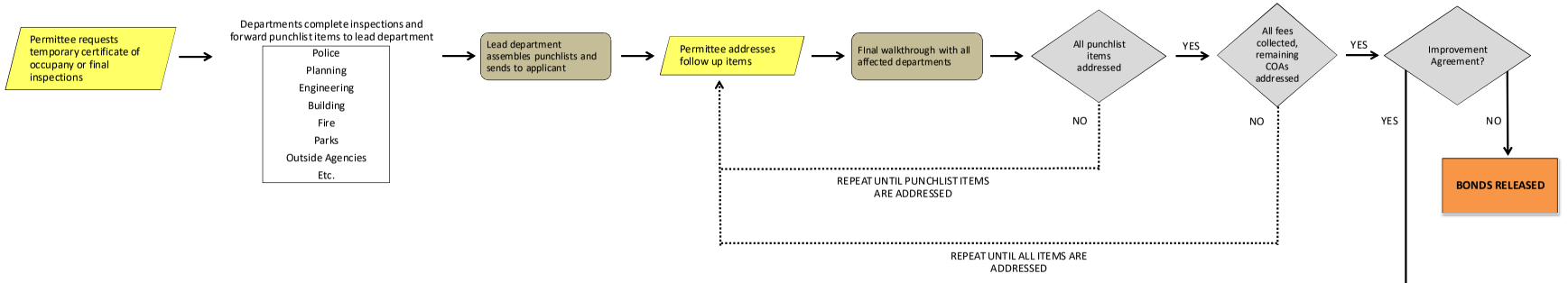


Construction Oversight



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 Schedule and Concept Sheets

a. **Draft Schedule for Prioritized GI Projects**

b. **Long Term Vehicle Storage**

c. **Westlake Elementary School Green Street Improvement Project**

d. **Green Streets Project Serramonte Boulevard**

e. **Mission Street Streetscape Project**

f. **Vista Grande Drainage Basin Improvement Project**

DRAFT SCHEDULE FOR PRIORITIZED GI PROJECTS

City of Daly City

Prioritized Project: 31-200-596 Long Term Vehicle Storage

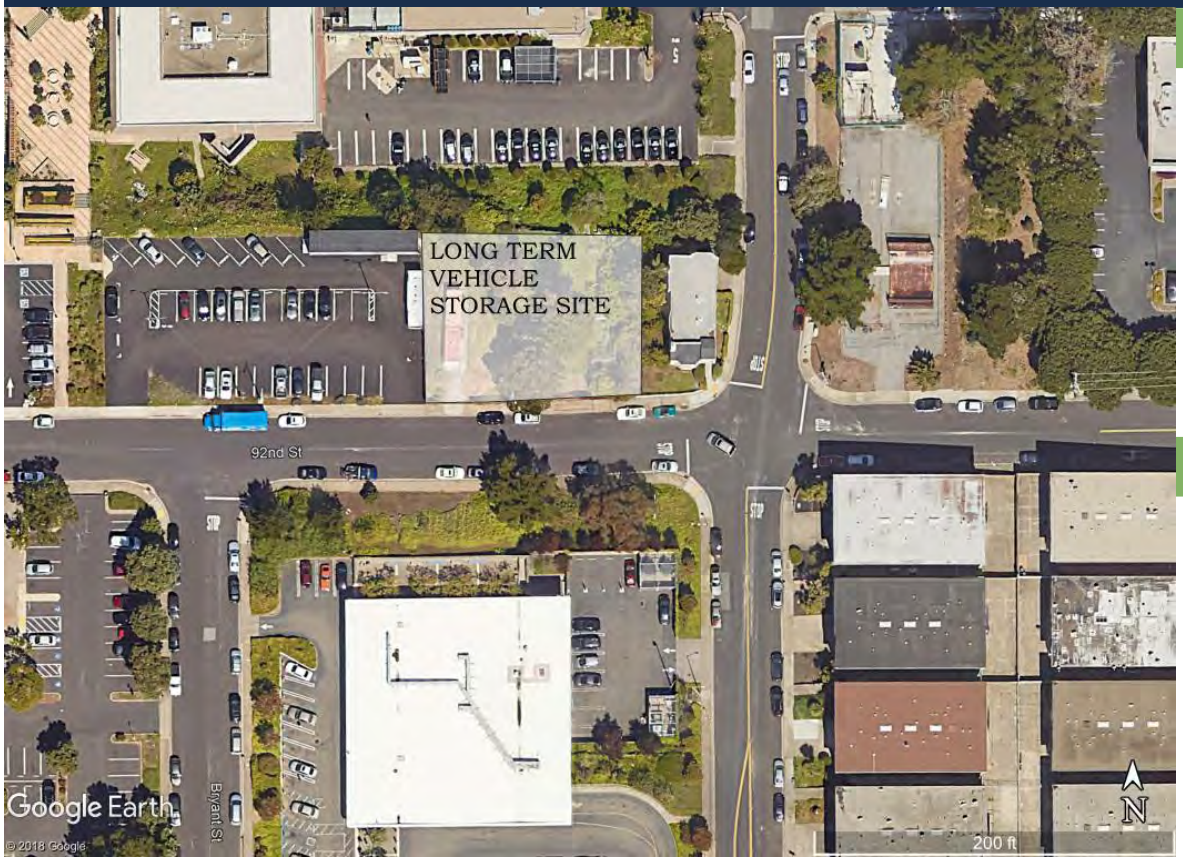


Image Source: Google Earth (2018)

Site Information:

Location	Unused lot located off 92nd Street, next to 204 92nd Street. Daly City, CA 94015
Capture Area (SF)	10,000 SF
Impervious Area (%)	100%
GI Measures	To be determined

Project Schedule:

Project design and construction is anticipated to occur in 2021.

Project Description:

This project involves the installation of a long-term parking enclosure in the unused lot located off 92nd Street, next to 204 92nd Street. The project would include removal of vegetation, grading of uneven ground, compacting and graveling the existing lot. The project would also include the installation of several hundred feet of security fencing and security lighting.

The site would be used by the police department for long-term storage of vehicles that are evidence in criminal cases which need to be secured for chain of custody. It can also be used to securely store high-value, grant-funded assets, such as the DUI bus, command trailer, armored rescue vehicle, and multiple logistics trailers.

The project has $500,000 of funding from a combination of the General CIP Fund ($300,000) and the AB1600 Police Fund ($200,000).

The project may be C.3 regulated, but design has not begun yet. Possible green infrastructures could include bioretention areas and permeable pavers.

Prioritized Project: Westlake Elementary School Green Streets Improvement Project

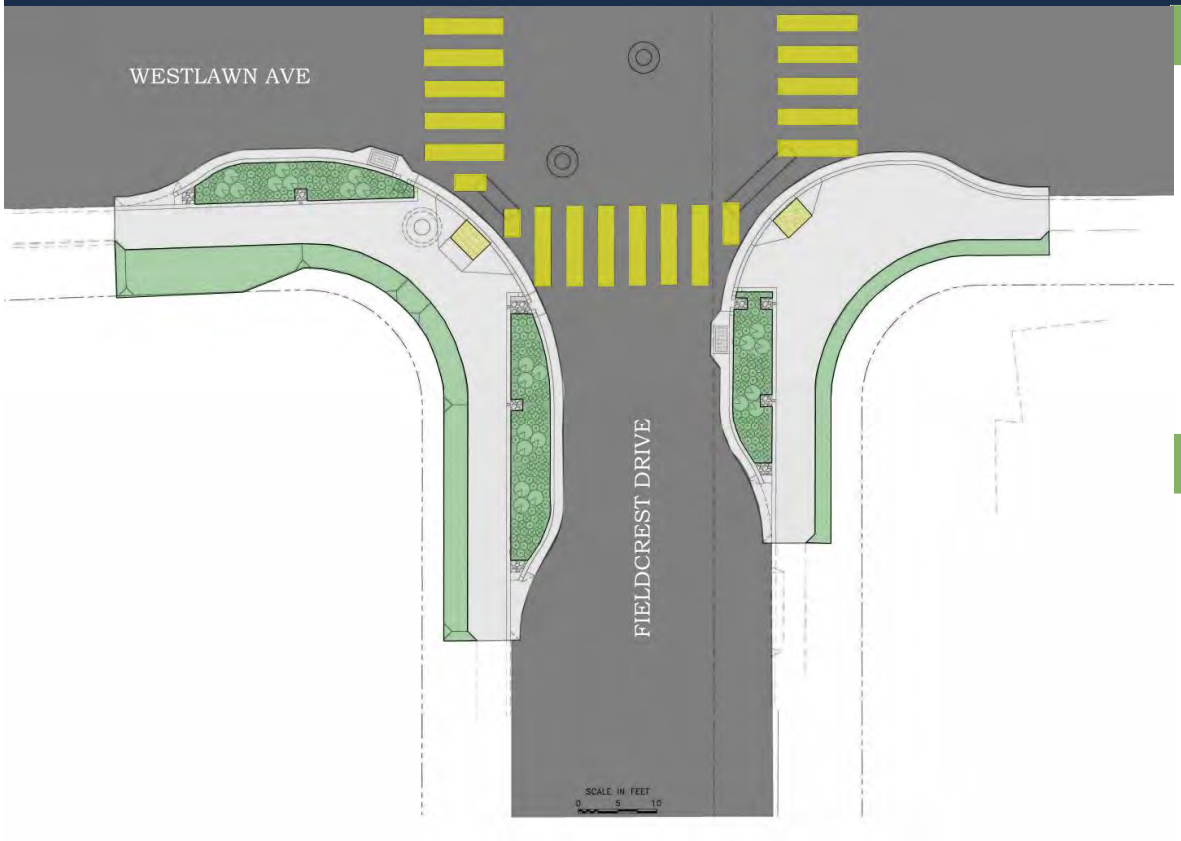


Image Source: Colorized version of project landscape plan, dated November 2018.

Site Information:

Location	80 Fieldcrest Drive Daly City, CA 94015
Capture Area (SF)	9,250 SF
Impervious Area (%)	100%
GI Measures	Bioretention areas

Project Schedule:

Project design is complete. Construction is anticipated to take place from June 15, 2019 to August 15, 2019.

Project Description:

This project includes the construction of new pedestrian stormwater curb extensions with 370 square feet of bioretention area and accessible curb ramps at the intersection of Westlawn Avenue and Fieldcrest Drive located at the northwest corner of Westlake Elementary School. The project will increase the safety of children walking and biking to school, while also will improve water quality, increase urban greening and enhancing the pedestrian environment.

The project estimated cost is $270,000 including the contract award of $199,762 for FBD Vanguard Construction, Inc., a 15% construction contingency, and $40K for design and construction management. An additional $25K needed to fully fund the project will be funded from Measure A funds.

Prioritized Project: Green Streets Project Serramonte Boulevard

Site Information:

Location	Serramonte Blvd Daly City, CA 94015
Capture Area (SF)	TBD
Impervious Area (%)	100%
GI Measures	TBD

Project Schedule:

Project design is anticipated to take place in 2019.
Construction is anticipated to take place in 2020.

Image Source: 2018 Google Earth Imagery.

Project Description:

This project involves beautification and landscaping on Serramonte Boulevard. There may be potential to integrate the streetscape improvements with GI, such as substituting the landscaping areas for bioretention areas, similar to the City's approach to the existing John Daly Boulevard Streetscape Project. The project will improve pedestrian access to commercial facilities, calm traffic, and street stormwater runoff.

The project estimated cost is $1,700,000.

Prioritized Project: Mission Street Streetscape Project

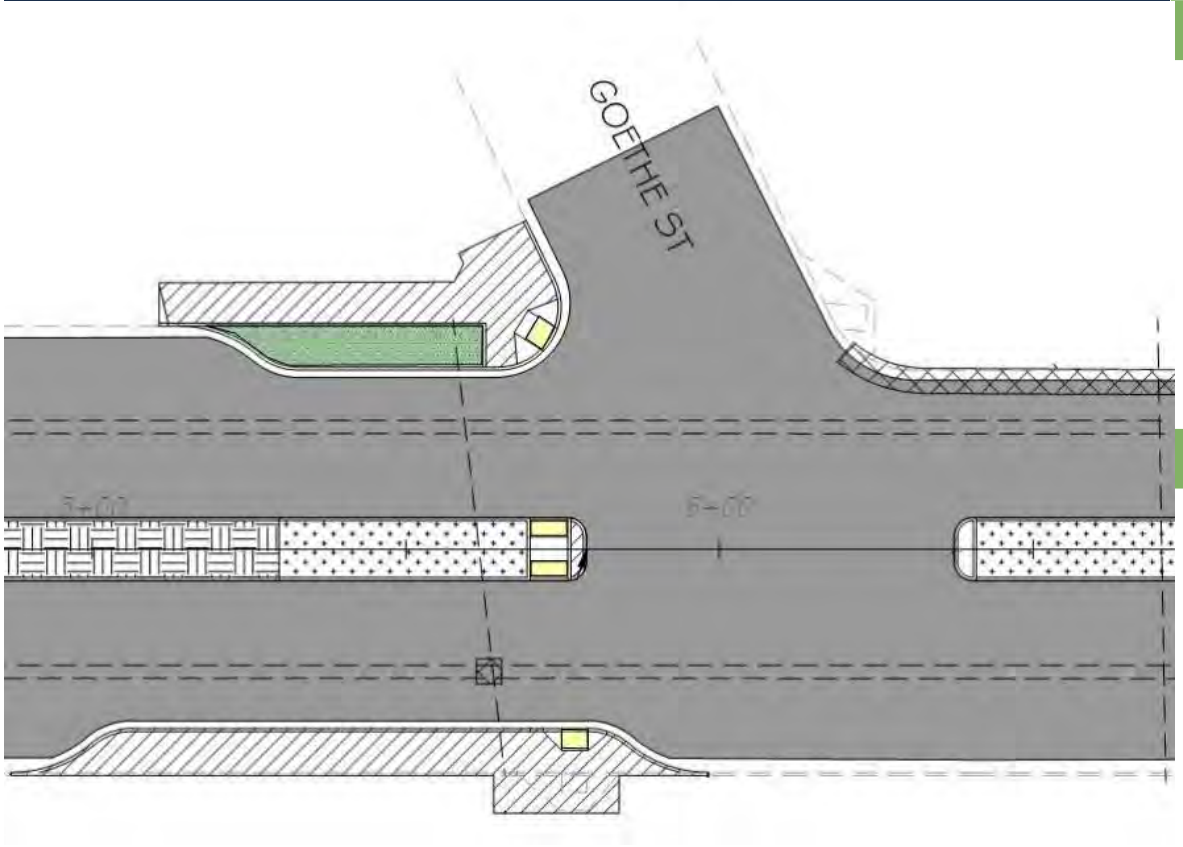


Image Source: Colorized version of 35% Project Plans, dated April 2019.

Site Information:

Location	Mission Street and Goethe St Daly City, CA 94015
Capture Area (acres)	TBD (6,000 – 10,000 SF)
Impervious Area (%)	100%
GI Measures	Bioretention area

Project Schedule:

Project design is complete. Construction is anticipated to take place from March 15, 2020 to July 15, 2020.

Project Description:

This project includes the construction of 265 square feet of bioretention area on northwest corner of Goethe/Mission. The project will improve water quality, urban greening and enhance the pedestrian environment.

The project estimated cost is $950,000.

Prioritized Project: Vista Grande Drainage Basin Improvement Project

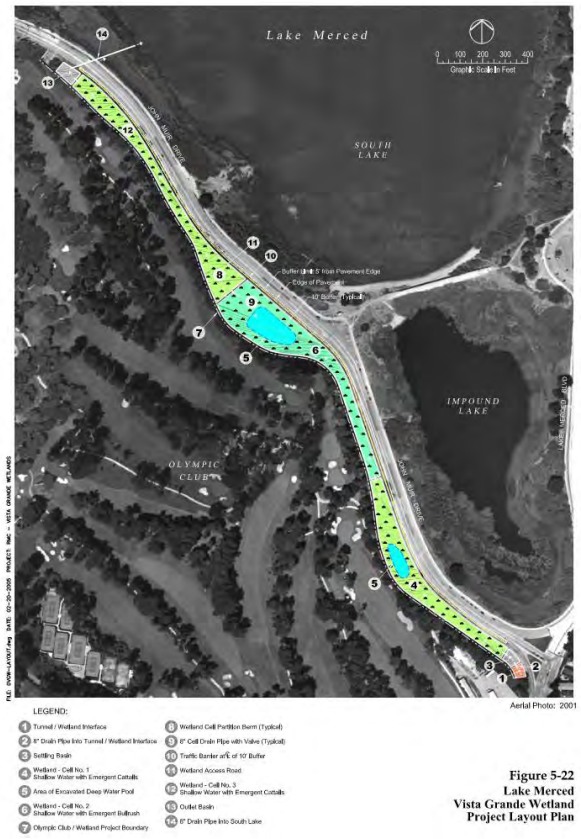


Figure 5-22
Lake Merced
Vista Grande Wetland
Project Layout Plan

Image Source: (LEFT) Vista Grande Drainage Basin Improvement Project, Final EIR/EIS (Responses to Comments), September 2017. (RIGHT) Vista Grande Watershed Study, 2006. Prepared by RMC Water and Environment.

Site Information:

Location	Mission Street and Goethe St Daly City, CA 94015
Capture Area (acres)	TBD
Impervious Area (%)	TBD
GI Measures	Treatment wetland

Project Schedule:

The project environmental review is complete, and the project design has been underway since 2018. Construction is anticipated to be completed in 2023.

Project Description:

This project addresses storm-related flooding in the Vista Grande Drainage Basin in Daly City and in unincorporated Broadmoor Village in northwestern San Mateo County, while providing the additional benefit of augmenting the level of Lake Merced in San Francisco. The Project would also improve recreational access and reduce litter transfer and deposition along the beach south of Fort Funston. The Project would consist of partial replacement of the existing Vista Grande Canal to incorporate a debris screening device, a treatment wetland, and diversion and outfall structures to route some flows from the Canal to Lake Merced; replacement of the existing Vista Grande Tunnel to increase its peak capacity and extend its operating life; and replacement of the existing Ocean Outlet structure at Fort Funston.

The project goal is to meet the level of service standard to capture the 4-hour, 25-year storm event to relieve localized stormwater surcharge, and to provide for stormwater recharge of Lake Merced.

The project funding allocation is $101,030,000.