City of Cupertino

Green Stormwater Infrastructure Plan

DRAFT

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Approved by: The City Council of the City of Cupertino

Submitted by:
City of Cupertino
10300 Torre Avenue
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In compliance with Provision C.3.j.i.(2) of Order R2-2015-0049

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LIST OF ACRONYMS

ABAG	Association of Bay Area Governments
BASMAA	Bay Area Stormwater Management Agencies Association
Caltrans	California Department of Transportation
CFD	Community Facilities District
CIP	Capital Improvement Program
DOF	Department of Finance
EPA	United States Environmental Protection Agency
FY	Fiscal Year
GI	Green Infrastructure
GIS	Geographic Information System
GSI	Green Stormwater Infrastructure
IRWMP	Integrated Regional Water Management Plan
LID	Low Impact Development
MRP	Municipal Regional Stormwater NPDES Permit
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resource Conservation Service
O&M	Operation and Maintenance
PDA	Priority Development Area
PICP	Permeable Interlocking Concrete Pavers
PP	Permeable Pavers
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
State Water Board	State Water Resource Control Board
STORMS	Strategy to Optimize Resource Management of Stormwater
SWRP	Storm Water Resource Plan
Valley Water	Santa Clara Valley Water District
Regional Water Board	San Francisco Bay Regional Water Quality Control Board

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EXECUTIVE SUMMARY

Development of this Green Stormwater Infrastructure (GSI) Plan is required by the City's Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit. Urban development has traditionally involved replacing natural landscapes with solid pavements and buildings, using underground metal-pipe storm drainage systems to carry increased amounts of stormwater runoff and pollutants directly into local creeks, which empty into San Francisco Bay. To reduce the impact of urban development on waterways, Bay Area municipalities are required to begin augmenting traditional stormwater drainage systems with Green Stormwater Infrastructure (GSI) treatments.

GSI features mimic nature, and use plants, soils, and/or pervious surfaces to collect stormwater, allowing it to soak into the ground and be filtered by the soil. This reduces the quantity of water and pollutants flowing directly into local creeks. The City began the process of incorporating GSI into public projects in 2014, with the completion of the 18-acre Stevens Creek Corridor Park and Restoration.

The City of Cupertino has prepared this GSI Plan, specifically in accordance with its MRP requirements, to guide the siting, implementation, tracking, and reporting of GSI projects on City-owned land, including the public right of way, over the next several decades (2020 – 2040).

Cupertino's GSI Plan describes the City's approach to identifying and prioritizing potential areas for implementing GSI, and estimating targets for the City's area that could be addressed by GSI through 2040. The Plan lays out the City's GSI implementation strategy and includes maps of the City's prioritized areas and potential project opportunities. Key elements of the strategy include: coordination with State-mandated GSI requirements for private development and opportunities in adjacent public rights-of-way; identification of GSI opportunities in capital projects; and aligning GSI goals and policies with other City planning documents to achieve multiple benefits and provide safer, sustainable, and attractive public streetscapes. The Plan contains guidance and standards for GSI project design and construction, and describes how the City will track and map constructed GSI projects and make the information available to the public. Lastly, it explains existing legal mechanisms to implement the GSI Plan, and identifies potential sources of funding for the design, construction, and maintenance of GSI projects.

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1. INTRODUCTION

Urban development has traditionally involved replacing natural landscapes with solid pavements and buildings, and using storm drain systems to carry increased amounts of stormwater runoff and pollutants directly into local streams. Green stormwater infrastructure (GSI), however, uses plants and soils to mimic natural watershed processes, capture stormwater and create healthier environments. Bay Area cities and counties are required by State and regional regulatory agencies to move from traditional (grey) stormwater conveyance systems to GSI systems over time. This GSI Plan serves as an implementation guide for the City of Cupertino (City) to incorporate GSI into storm drain infrastructure on public and private lands where feasible over the next several decades.

1.1 Purpose and Goals of the GSI Plan

The purpose of the City's GSI Plan is to demonstrate the City's commitment to gradually transform its traditional storm drainage infrastructure to green stormwater infrastructure. The GSI Plan will guide the identification, implementation, tracking, and reporting of green stormwater infrastructure projects within the City. The GSI Plan will be coordinated with other City plans, such as the General Plan, the Climate Action Plan, the Bicycle Transportation Plan, the Pedestrian Transportation Plan, and other specific and master plans, to achieve multiple potential benefits to the community, including improved water and air quality, reduced local flooding, increased water supply, traffic calming, safer pedestrian and bicycle facilities, climate resiliency, improved wildlife habitat, and a more pleasant urban environment.

Specific goals of the GSI Plan are to:

- Align the City's goals, policies and implementation strategies for GSI with the General Plan and other related planning documents;
- Identify and prioritize GSI opportunities throughout the City;
- Establish targets for the extent of City area to be addressed by GSI over certain timeframes;
- Provide a workplan and legal and funding mechanisms to implement prioritized projects; and
- Establish a process for tracking, mapping, and reporting completed projects

1.2 City Description

Incorporated in 1955, the City of Cupertino is located in Santa Clara County, on the western edge of Silicon Valley against the foothills of the Santa Cruz Mountains. It has a jurisdictional area of 7,235 acres (11.3 square miles).

1.2.1 Population Size and Growth

According to the General Plan, "Community Vision 2040", Cupertino's population grew from 3,664 in 1960 to over 50,500 in 2000. Most of the population growth was from tract development during the 1970s and 1980s and annexation of unincorporated County land. Between 2000 and 2010 the City of Cupertino's population increased by 15.3 percent, from 50,546 (18,204 households) to 58,302 persons (20,181 households), with a population density of 5,179 people per square mile and average household size of 2.87. A portion of this population growth can be attributed to the City's annexation of 168 acres

of land between 2000 and 2008. As of 2019 according to the California Department of Finance (DOF)[1], the estimated population is 59,879. The City's population is projected to grow to 66,110 by 2040 (Plan Bay Area, 2013), which is approximately a 12% increase over 30 years.

1.2.2 City Characteristics

Cupertino's land use pattern was largely built on a conventional suburban model, with predominantly single-family residential subdivisions and distinct commercial and employment centers. This development pattern was also heavily influenced by the topography of the area, with more intensive growth located on the valley floor and lower design residential on the foothills. The western area by the foothills is semi-rural with steep terrain, larger residential lots and access to open space. The pattern becomes more suburban immediately west of Highway 85 where residential neighborhoods have a more uniform pattern with smaller lots and older commercial and industrial areas along Stevens Creek Boulevard and Bubb Road. The land use pattern becomes more urban east of Highway 85, with a relatively connected street grid and commercial development along major boulevards such as Stevens Creek, De Anza, Homestead, Stelling and Wolfe. This area also has significant amounts of multi-family development in and around the major boulevards.

The suburban pattern is also reflected in building locations, with most of the older buildings set back from the street with parking lots in the front. Streets have also been historically widened to accommodate larger volumes of traffic, often to the detriment of other forms of transportation such as walking, biking and transit. According to the 2015 General Plan Land Use Element, the City has made strides in the last 20 years towards improving walkability and bikeability by retrofitting existing streets to include bike lanes; creating sidewalks lined with trees along major boulevards; and encouraging development to provide a more pedestrian-oriented frontage with active uses, gathering places and entries lining the street.

1.2.3 Roadways

The City is defined by its four major roadways: Homestead Road, Wolfe Road, De Anza Boulevard and Stevens Creek Boulevard. These major mixed-use corridors have been the center of retail, commercial, office and multi-family housing in Cupertino for decades.

Common residential street widths range from 20 feet (for streets with no street parking) to 36 feet (for those with parking on both sides). Developers are typically required to install curb, gutters, and sidewalks. The City prefers detached sidewalks with a landscaped buffer in between the street and the pedestrian walk to enhance community aesthetics and improve pedestrian safety.

Two state highways traverse Cupertino. The City is linked to the cities of San Francisco and San José by Interstate Highway 280 which runs along most of the its northern border. State Route 85, which runs from Mountain View to South San José, cuts diagonally across the City at its northwest boundary to its southeast boundary. All state highways are owned and maintained by the California Department of Transportation (Caltrans).

[1] Source: State of California, Department of Finance, E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2018 and 2011. Sacramento, California, May 2019. Online at http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/.

The City has approximately 1.5 miles of rural road in the residential hillside area.

1.2.4 Hillsides and Water Resources

Cupertino's hillsides are an irreplaceable resource shared by the entire Santa Clara Valley. They provide important habitat for plants and wildlife; watershed capacity to prevent flooding in downstream areas; a wide vegetative belt that cleanses the air of pollutants; and a natural environment that provides a contrast to the built environment. Significant water bodies and water sources within Cupertino are:

- Stevens Creek
- Permanente Creek
- Regnart Creek
- Heney Creek
- Calabazas Creek

1.3 Regulatory Context

1.3.1 Federal and State Regulations and Initiatives

The U.S. Environmental Protection Agency (EPA) has authority under the Clean Water Act to promulgate and enforce stormwater related regulations. For the State of California, EPA has delegated the regulatory authority to the State Water Resources Control Board (State Water Board), which in turn, has delegated authority to the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) to issue National Pollutant Discharge Elimination System (NPDES) permits in the San Francisco Bay Region. Stormwater NPDES permits allow stormwater discharges from municipal separate storm sewer systems (MS4s) to local creeks, San Francisco Bay, and other water bodies as long as they do not adversely affect the beneficial uses of or exceed any applicable water quality standards for those waters. Since the early 2000's, the EPA has recognized and promoted the benefits of using GSI in protecting drinking water supplies and public health, mitigating overflows from combined and separate storm sewers and reducing stormwater pollution, and it has encouraged the use of GSI by municipal agencies as a prominent component of their MS4 programs.

The State and Regional Water Boards have followed suit in recognizing not only the water quality benefits of GSI but the opportunity to augment local water supplies in response to the impacts of drought and climate change as well. The 2014 California Water Action Plan called for multiple benefit stormwater management solutions and more efficient permitting programs. This directive created the State Water Board's "Strategy to Optimize Resource Management of Stormwater" (STORMS). STORMS' stated mission is to "lead the evolution of storm water management in California by advancing the perspective that storm water is a valuable resource, supporting policies for collaborative watershed-level storm water management and pollution prevention, removing obstacles to funding, developing resources, and integrating regulatory and non-regulatory interests."

These Federal and State initiatives have influenced approaches in Bay Area municipal stormwater NPDES permits, as described in Section 1.3.2.

1.3.2 Municipal Regional Stormwater Permit

The City is subject to the requirements of the Municipal Regional Stormwater NPDES Permit (MRP) for Phase I municipalities and agencies in the San Francisco Bay area (Order R2-2015-0049), which became

effective on January 1, 2016. The MRP applies to 76 municipalities and flood control agencies that discharge stormwater to San Francisco Bay, collectively referred to as permittees.

Over the last 13 years, under Provision C.3 of the MRP and previous permits, new development and redevelopment projects on private and public property that exceed certain size thresholds ("regulated projects") have been required to mitigate impacts on water quality by incorporating "Low Impact Development" (LID) measures, including 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.

Provision C.3.j of the 2016 MRP requires the City to develop and implement a long-term GSI Plan[2] for the inclusion of LID measures into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other elements. The GSI Plan must be completed and submitted to the Regional Water Board by September 30, 2019.

While Provision C.3.j of the MRP contains the GSI program planning and analysis requirements, other provisions (C.11 and C.12) establish a linkage between public and private GSI features and required reductions of pollutants in stormwater discharges. Permittees in Santa Clara County (County), collectively, must implement GSI on public and private property to achieve specified pollutant load reduction goals by the years 2020, 2030, and 2040. These efforts will be integrated and coordinated countywide for the most effective and resource-efficient program. As an indication as to whether these load reductions will be met, Permittees must include in their GSI Plans estimated "targets" for the amounts of impervious surface to be "retrofitted" as part of public and private projects (i.e., redeveloped or changed such that runoff from those surfaces will be captured in a stormwater treatment system or GSI measure) over the same timeframes (2020, 2030, and 2040).

A key part of the GSI definition in the MRP is the inclusion of GSI systems at both private and public property locations. This has been done in order to plan, analyze, implement and credit GSI systems for pollutant load reductions on a watershed scale, as well as recognize all GSI accomplishments within a municipality. The focus of the GSI Plan is the integration of GSI systems into public buildings, parks, parking lots, and rights-of-way (e.g. road or bike path). However, the GSI Plan may also establish opportunities to include GSI facilities at private properties or in conjunction with private development, so they can contribute to meeting the target load reductions on a county-wide level as well as implement GSI on a larger scale.

1.4 GSI Plan Development Process

1.4.1 GSI Plan Development and Adoption

The GSI Plan development process began with the preparation of the City's GSI Plan Framework (Framework), a work plan describing the goals, approach, tasks, and schedule needed to complete the GSI Plan. Development of the Framework was a regulatory requirement (Provision C.3.j.i(1) of the MRP)

[2] Although the MRP uses the term green infrastructure (GI), the agencies within Santa Clara County, including the City of Cupertino, prefer to use the term green stormwater infrastructure (GSI). Therefore, the term GSI is used in this document.

to demonstrate the City's commitment to completing the GSI Plan by September 30, 2019. The City completed the Framework and City Council approved it on April 18, 2017.

The City established a GSI Work Group, consisting of staff from the City's Public Works and Planning Departments. The GSI Work Group worked with a consultant team to develop the GSI Plan. Staff attended the Sustainability Commission on March 16, 2017 where SFEI's (San Francisco Estuary Institute) Robin Grossinger gave a presentation on healthier landscapes for people in nature (GSI concepts). City staff followed with an overview of the GSI Framework that City staff was in the process of developing. More recently, an overview of the MRP requirements and summary of the proposed Plan was presented to City Council on July 16, 2019. GSI presentations for soliciting comments and feedback were given to the Planning Commission on August 13, 2019 and the Sustainability Commission on August 15, 2019. The final GSI Plan was approved by the City Council on September 3, 2019.

1.4.2 Regional Collaboration

The City is a member of the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), an association of thirteen cities and towns in the Santa Clara Valley, the County of Santa Clara, and the Santa Clara Valley Water District (Valley Water) that collaborate on stormwater regulatory activities and compliance. The City's GSI Plan was developed in collaboration with SCVURPPP; SCVURPPP input included technical guidance, templates, and completion of certain GSI Plan elements at the countywide level. SCVURPPP guidance and products are discussed in more detail in relevant sections of the GSI Plan.

The City, via SCVURPPP, also coordinated with the Bay Area Stormwater Management Agencies Association (BASMAA) on regional GSI guidance and received feedback through BASMAA from MRP regulators on GSI expectations and approaches. BASMAA members include other countywide stormwater programs in Alameda, Contra Costa, and San Mateo Counties, and area-wide programs in the Vallejo and Fairfield-Suisun portions of Solano County, whose participating municipalities are permittees under the MRP.

1.4.3 Education and Outreach

One of the first and most important steps in the development of the GSI Plan is educating a municipality's department staff, managers, and elected officials about the purposes and goals of green infrastructure, the required elements of the GSI Plan, and steps needed to develop and implement the GSI Plan, and get their support and commitment to the Plan and this new approach to urban infrastructure. Another important first step is local community and stakeholder outreach to gain public support. The City of Cupertino began this process in FY 15-16 and FY 16-17 and completed the following tasks:

- Convened 3-4 interdepartmental meetings with Public Works, GIS, Capital Improvement Program (CIP), and Environmental staff and management to discuss GSI requirements and assigned tasks.
- Discussed with appropriate department staff the MRP requirements to analyze proposed capital projects for opportunities to incorporate GSI and completed the first list of planned and potential GSI projects.
- Provided training to department staff on GSI requirements and strategies via presentations and workshops.

- Invited elected officials to a SCVURPPP Green Infrastructure presentation to raise awareness of the goals and requirements in the MRP and the concepts, intent and multiple benefits of GSI.
- At the suggestion of the Vice Mayor, the Sustainability Commission invited guest speaker Robin Grossinger, a scientist from San Francisco Estuary Institute (SFEI), to give his presentation on the vision for a resilient Silicon Valley landscape[3].
- Public Works Environmental staff participated in the Green Infrastructure Leadership Conversation and the Regional Roundtable on Sustainable Streets

Public and stakeholder support is also essential for the successful implementation of the GSI Plan and future GSI projects. To this end, the City has coordinated with SCVURPPP and the Watershed Education and Outreach subgroup on a comprehensive outreach and education program. Key audiences include: the general public (countywide, and in the neighborhood or municipality where GSI projects are located); the development community (e.g., developers, engineers, landscape architects, and contractors); and elected officials. The GSI outreach and education program includes a GSI website[4], public presentations, and radio and online advertising to promote GSI features. The City of Cupertino will conduct or continue to conduct education and outreach activities as part of development of the GSI Plan and seek community input as specific projects are designed and constructed.

1.5 GSI Plan Structure and Required Elements

The remainder of the GSI Plan is structured as follows:

Chapter 2 describes the definition, purpose, and benefits of GSI, and describes the different types of GSI facilities.

Chapter 3 describes the relationship of the GSI Plan to other planning documents and how those planning documents have been updated or modified, if needed, to support and incorporate GSI requirements. For documents whose desired updates and modifications have not been accomplished by the completion of the GSI Plan, a work plan and schedule are laid out to complete them.

Chapter 4 outlines the materials being developed by SCVURPPP and the City to provide guidelines, typical details, specifications and standards for municipal staff and others in the design, construction, and operation and maintenance of GSI measures.

Chapter 5 presents information on the different types of GSI projects and the methodology and results for identifying and prioritizing areas for potential GSI projects.

Chapter 6 outlines the City's strategy for implementing potential GSI projects within the next ten years and through 2040, discusses the variety of mechanisms to be employed by the City in order to

[3] SFEI's recommendations for a more sustainable South Bay looks at what the City can do to integrate resilient landscape within the reality of new and re-development. From a practical perspective, the City of Cupertino can consider actions over the course of the next generations to improve the ecology of the area and how it can work with larger developments to incorporate these types of principles in its planning.

[4] http://www.mywatershedwatch.org/residents/green-streets/

implement the GSI Plan, and presents the estimated targets for the amounts of impervious surface to be "retrofitted" as part of public and private projects by 2020, 2030, and 2040.

The GSI Plan elements required by Provision C.3.j.i.(2) of the MRP and the section of the document in which each component can be found are summarized in Table 1-2 below.

Table 1-1 Summary of GSI Plan Elements required by Provision C.3.j.i of the MRP.

MRP Provision	GSI Plan Elements	GSI Plan Section
C.3.j.i.(2)(a)	Project Identification and Prioritization Mechanism	Chapter 5
C.3.j.i.(2)(b)	Prioritized Project Locations	Section 5.3
C.3.j.i.(2)(c)	Impervious Surface Targets	Section 6.6
C.3.j.i.(2)(d)	Completed Project Tracking System	Section 6.7
C.3.j.i.(2)(e,f)	Guidelines and Specifications	Chapter 4
C.3.j.i.(2)(g)	Alternative Sizing Requirements for Green Street Projects	Section 4.1
C.3.j.i.(2)(h,i)	Integration with Other Municipal Plans	Chapter 3
C.3.j.i.(2)(i)	Workplan for Integration of GSI Language into City Planning Documents	Section 3.1.8
C.3.j.i.(2)(j)	Workplan to Complete C.3.j. Early Implementation Projects	Section 6.3
C.3.j.i.(2)(k)	Evaluation of Funding Options	Section 6.5
C.3.j.i.(3)	Legal and Implementation Mechanisms	Section 6.4

2. WHAT IS GREEN STORMWATER INFRASTRUCTURE?

In natural landscapes, most of the rainwater soaks into the soil or is taken up by plants and trees. However, in urban areas, building footprints and paved surfaces such as driveways, sidewalks, and streets prevent rain from soaking into the ground. As rainwater flows over and runs off these impervious surfaces, this "urban runoff" or "stormwater runoff" can pick up pollutants such as motor oil, metals, pesticides, sediment, pet waste, and litter. It then carries these pollutants into the City's storm drains, which flow directly to local creeks and San Francisco Bay, without any cleaning or filtering to remove pollutants. Stormwater runoff is therefore a major contributor to water pollution in urban areas.

As urban areas develop, the increase in impervious surface also results in increases in peak flows and volumes of stormwater runoff from rain events. Traditional "gray" stormwater infrastructure, like most of the City's storm drain system, is designed to convey stormwater flows quickly away from urban areas. However, the increased peak flows and volumes can cause erosion, flooding, and habitat degradation in downstream creeks to which stormwater is discharged, damaging habitat, property, and infrastructure.

2.1 Green Stormwater Infrastructure

A new approach to managing stormwater is to implement green stormwater infrastructure. GSI uses vegetation, soils, and other elements and practices to capture, treat, infiltrate and slow urban runoff and thereby restore some of the natural processes required to manage water and create healthier urban environments. GSI facilities can also be designed to capture stormwater for uses such as irrigation and toilet flushing.

GSI integrates building and roadway design, complete streets, drainage infrastructure, urban forestry, soil conservation and sustainable landscaping practices to achieve multiple benefits. At the city or county scale, GSI is a patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the neighborhood or site scale, GSI comprises stormwater management systems that mimic nature and soak up and store water.[5]

2.2 Benefits of Green Stormwater Infrastructure

GSI can provide multiple benefits beyond just managing rainfall and runoff. These benefits include environmental, economic, and social improvements.

GSI measures can mitigate localized flooding and reduce erosive flows and quantities of pollutants being discharged to local creeks and the San Francisco Bay. Vegetated GSI systems can beautify public places and help improve air quality by filtering and removing airborne contaminants from vehicle and industrial sources. They can also reduce urban heat island effects by providing shade and absorbing heat better than paved surfaces, and provide habitat for birds, butterflies, bees, and other local species. When GSI facilities are integrated into traffic calming improvements such as curb extensions and bulb-outs at intersections, they can help increase pedestrian and bicycle safety and promote active transportation, which in turn can result in improved human health.

[5] https://www.epa.gov/green-infrastructure/what-green-infrastructure

GSI facilities designed with extra storage can capture stormwater for later use as irrigation water or non-potable uses such as toilet flushing and cooling tower supply, thus conserving potable water supplies.

Widespread implementation of GSI potentially offers significant economic benefits, such as deferring or eliminating the need for some gray infrastructure projects. By providing more storage within the watershed, GSI can help reduce the costs of conveyance and pumping of stormwater. When cost-benefit analyses are performed, GSI is often the preferred alternative due to the multiple benefits provided by GSI as compared to conventional infrastructure.

2.3 Types of Green Stormwater Infrastructure Facilities

Integrating GSI into public spaces typically involves construction of stormwater capture and treatment measures in public streets, parks, and parking lots or as part of public buildings. Types of GSI measures that can be constructed in public spaces include: (1) bioretention; (2) stormwater tree well filters; (3) pervious pavement, (4) infiltration facilities, (5) green roofs, and 6) rainwater harvesting and use facilities. A description of these facility types is provided below.

2.3.1 Biotreatment/Bioretention

Bioretention areas are depressed landscaped areas that consist of a ponding area, mulch layer, plants, and a special biotreatment soil media composed of sand and compost, underlain by drain rock and an underdrain, if required. Bioretention is designed to retain stormwater runoff, filter stormwater runoff through biotreatment soil media and plant roots, and either infiltrate stormwater runoff to underlying soils as allowed by site conditions, or release treated stormwater runoff to the storm drain system, or both. They can be of any shape and are adaptable for use on a building or parking lot site or in the street right-of-way.

Figure 2-1 Stormwater curb extension, Southgate Neighborhood, Palo Alto (Source: EOA)

Bioretention systems in the streetscape have specific names: stormwater planters, stormwater curb extensions (or bulb-outs), and stormwater tree well filters (described in the next section).

A stormwater curb extension (Figure 2-1) is a bioretention system that extends into the roadway and involves modification of the curb line and gutter. Stormwater curb extensions may be installed midblock or at an intersection. Curb bulb-outs and curb extensions installed for pedestrian safety, traffic calming, and other transportation benefits can also provide opportunities for siting bioretention facilities.

A stormwater planter is a linear bioretention facility in the public right-of-way along the edge of the street, often in the planter strip between the street and sidewalk. They are typically designed with vertical (concrete) sides. However, as shown in Figure 2-2, they can also have sloped sides depending on the amount of space that is available.

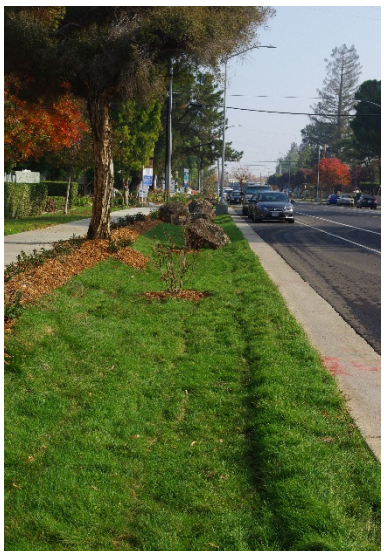


Figure 2-2 Stormwater planter, Hacienda Avenue, Campbell (Source: City of Campbell)

2.3.2 Stormwater Tree Well Filters and Suspended Pavement Systems

A stormwater tree well filter is a type of bioretention system consisting of an excavated pit or vault that is filled with biotreatment soil media, planted with a tree and other vegetation, and underlain with drain rock and an underdrain, if needed. Stormwater tree well filters can be constructed in series and linked via a subsurface trench or underdrain. A stormwater tree well filter can require less dedicated space than other types of bioretention areas.

Suspended pavement systems may be used to provide increased underground treatment area and soil volume for tree well filters. These are structural systems designed to provide support for pavement while preserving large volumes of uncompacted soil for tree roots. Suspended pavement systems may be any engineered system of structural supports or commercially available proprietary structural systems.

Stormwater tree well filters and suspended pavements systems are especially useful in settings between existing sidewalk elements where available space is at a premium. They can also be used in curb extensions or bulb-outs, medians, or parking lots if surrounding grades allow for drainage to those areas. The systems can be designed to receive runoff through curb cuts or catch basins or allow runoff to enter through pervious pavers on top of the structural support.

Figure 2-3 Stormwater tree well filter conceptual examples: modular suspended pavement system (left), column suspended pavement system (right). (Courtesy of Philadelphia Water Department)

2.3.3 Pervious Pavement

Pervious pavement is hardscape that allows water to pass through its surface into a storage area filled with gravel prior to infiltrating into underlying soils. Types of pervious pavement include permeable interlocking concrete pavers, pervious concrete, porous asphalt, and grid pavement. Pervious pavement is often used in parking areas or on streets where bioretention is not feasible due to space constraints or if there is a need to maintain parking. Pervious pavement does not require a dedicated surface area for treatment and allows a site to maintain its existing hardscape.

Figure 2-4 Permeable interlocking concrete pavers, Mayfield Playing Fields, Palo Alto (Source: EOA)

There are two types of pervious pavers: Permeable Interlocking Concrete Pavers (PICP) and Permeable Pavers (PP). PICP allows water to pass through the joint spacing between solid pavers, and PP allows water to pass through the paver itself and therefore can have tighter joints. Porous asphalt and pervious concrete are similar to traditional asphalt and concrete, but do not include fine aggregates in the mixture, allowing water to pass through the surface. All types are supported by several layers of different sizes of gravel to provide structural support and water storage.

2.3.4 Infiltration Facilities

Where soil conditions permit, infiltration facilities can be used to capture stormwater and infiltrate it into native soils. The two primary types are infiltration trenches and subsurface infiltration systems.

Figure 2-5 Infiltration trench, San Jose (Source: City of San Jose)

An infiltration trench is an excavated trench backfilled with a stone aggregate and lined with a filter fabric. Infiltration trenches collect and detain runoff, store it in the void spaces of the aggregate, and allow it to infiltrate into the underlying soil. Infiltration trenches can be used along roadways, alleyways, and the edges or medians of parking lots. An example of an infiltration trench is shown in Figure 2-5.

Subsurface infiltration systems are another type of GSI measure that may be used beneath parking lots or parks to infiltrate larger quantities of runoff. These systems, also known as infiltration galleries, are underground vaults or pipes that store and infiltrate stormwater while preserving the uses of the land surface above parking lots, parks and playing fields. An example is shown in Figure 2-6. Storage can take the form of large-diameter perforated metal or plastic pipe, or concrete arches, concrete vaults, plastic chambers or crates with open bottoms. Prefabricated, modular infiltration galleries are available in a variety of shapes, sizes, and material types that are strong enough for heavy vehicle loads.

Figure 2-6 Subsurface infiltration system (Source: Conteches.com)

2.3.5 Green Roofs

Figure 2-7 Green roof at Fourth Street Apartments, San José (Source: EOA)

Green roofs are vegetated roof systems that filter, absorb, and retain or detain the rain that falls upon them. Green roof systems are comprised of a layer of planting media planted with vegetation, underlain by other structural components including waterproof membranes, synthetic insulation, geofabrics, and underdrains. A green roof can be either "extensive", with 3 to 7 inches of lightweight planting media and low-profile, low-maintenance plants, or "intensive", with a thicker (8 to 48 inches) of media, more varied plantings, and a more garden-like appearance. Green roofs can provide high rates of rainfall retention via plant uptake and evapotranspiration and can decrease peak flow rates in storm drain systems because of the storage that occurs in the planting media during rain events.

2.3.6 Rainwater Harvesting and Use

Figure 2-8 Rainwater harvesting cistern, Environmental Innovation Center, San José (Source: City of San Jose)

Rainwater harvesting is the process of collecting rainwater from impervious surfaces and storing it for later use. Storage facilities that can be used to capture stormwater include rain barrels, above-ground or below-ground cisterns (Figure 2-8), open storage reservoirs (e.g., ponds), and various underground storage devices (tanks, vaults, pipes, and proprietary storage systems)(Figure 2-9). The captured water is then fed into irrigation systems or non-potable water plumbing systems, either by pumping or by gravity flow. Uses of captured water may include irrigation, vehicle washing, and indoor non-potable use such as toilet flushing, heating and cooling, or industrial processing.

The two most common applications of rainwater harvesting are 1) collection of roof runoff from buildings; and 2) collection of runoff from at-grade surfaces or diversion of water from storm drains into large underground storage facilities below parking lots or parks. Rooftop runoff usually contains lower quantities of pollutants than at-grade surface runoff and can be collected via gravity flow. Underground storage systems typically include pre-treatment facilities to remove pollutants from stormwater prior to storage and use.

Figure 2-9 Subsurface vault, under construction (Source: Conteches.com)

2.4 Existing GSI Facilities

The City of Cupertino completed an 18-acre Stevens Creek Corridor Park and Restoration project in July 2014. The City is also installing GSI measures at the McClellan Ranch Preserve as part of expansion and improvements at the site, with construction expected to be completed by September 1, 2019. GSI projects such as this, completed by the City prior to or during the current permit term (2016-2020), are also referred to in the permit as "Early Implementation" projects (see Section 5.1.1 of this GSI Plan). Both projects are described below. A description of the Apple Park project, which included GSI improvements in the public right-of-way, is also described below.

2.4.1 Stevens Creek Corridor and Creek Restoration project

The Stevens Creek Corridor and Creek Restoration project at Blackberry Farm in Cupertino consisted of two phases.

Phase 1 of the project restored a portion of Stevens Creek, enhanced natural hydrologic processes, and improved wildlife and habitat values. Impervious cover was reduced by 3.4 acres, including removal of an asphalt driveway and parking lot, and concrete surfaces in the creek corridor. The former parking lot, which drained directly into the creek, was replaced by a smaller green parking area, set back from the creek and made entirely of permeable material. Drive aisles are made of porous concrete that is colored to reduce heat gain. Parking bays were constructed using recycled plastic geocells to support vehicle weight filled with special soil and planted with turf grass (see Figure 2-10). During heavy rains, excess water flows to bioretention areas in a center median. Dozens of native trees were also planted. The design aimed to use all rain and storm flows to water native plantings. The project site is located within a flood plain. It was designed to accommodate being submerged during unusually high creek flows without damage to new infrastructure, water quality or wildlife and to retain stormwater onsite. The design enables the site's ability to attenuate flooding, and naturally filter and return rainfall and runoff from the site to groundwater.

Figure 2-10 Completed green parking bays (above left) and parking bays under construction, showing the recycled plastic geocells that support vehicle weight (above right).(Source: City of Cupertino)

Phase 2 of the Stevens Creek Corridor project included four new bioswales and an infiltration area installed on the adjacent golf course to capture and infiltrate runoff from the golf course, buildings, and the parking lot that previously flowed directly into the creek. Additionally, an all-weather trail was installed using pervious concrete (Figure 2-11). The trail material is compatible with floodplain standards and protects the fishery and wildlife.

Figure 2-11 Pervious concrete bike path and walkway at Blackberry Farm. (Source: City of Cupertino)

2.4.2 McClellan West Parking Lot

McClellan Ranch Preserve overflow parking had historically been relegated to the 1.4 acre vacant unimproved parcel which lies west of the Preserve and adjacent to Stevens Creek. The site experienced poor drainage and contributed to track out of sediment during all seasons. With the construction of the Environmental Education Center and other improvements within the Preserve, expanded community and school use, there was need for additional parking during large events and for oversized vehicles such as school buses. To meet the parking demand and provide habitat restoration, the project was designed to create a "green" meadow-style parking area compatible with the existing riparian setting. Components of this improvement include 0.53 acres of parking surface paved with permeable concrete including a gravel overflow area, planting thirty-seven native species trees, and adding approximately 20,000 square feet of new native riparian plants which will enhance the existing native habitat along Stevens Creek. Construction is expected to be completed by September 1, 2019.

2.4.3 Apple Park

Apple Park lies on 152 acres of land that was formerly occupied by more traditional office space with expansive impervious parking lots and multiple office buildings. Putting parking underground and emphasizing California native landscaping, the Apple project reduced the impervious surface from 5,085,000 square feet (117 acres) to 2,615,000 square feet (60 acres). There was an emphasis on planting native trees, enlisting the expertise of Stanford arborist, David Muffly. The campus drains to flow-through planter bioretention treatment before entering the Calabazas watershed and features 9,000 trees, nearly double the 4,596 trees at the pre-project site. The project exceeded regulatory requirements by providing stormwater treatment in the public right-of-way.

3. INTEGRATION WITH OTHER PLANNING DOCUMENTS

To ensure the success of the GSI Plan and its implementation, its goals, policies and implementation strategies should align with the City's General Plan and other related planning documents. The MRP requires that municipal agencies review such documents and include in their GSI Plans a summary of any planning documents aligned with the GSI Plan or updated or modified to appropriately incorporate GSI requirements. The GSI Plan must also include a workplan identifying how GSI measures will be included in future plans.

3.1 City Planning Document Review

The City completed a review of its existing planning documents to determine the extent to which GSI-related language, concepts and policies have been incorporated. The plans that were reviewed are listed below, with the General Plan as guiding planning document first, followed by remaining plans in order of most recently prepared/adopted:

- General Plan – Community Vision 2040 (2015)
- Pedestrian Transportation Plan (2018)
- Storm Drain Master Plan (2018)
- Bicycle Transportation Plan (2016)
- Climate Action Plan (2015)
- Heart of the City Specific Plan (2014)
- Citywide Parks & Recreation System Master Plan (Draft)

The following sections provide a brief discussion of each plan and the extent to which it supports GSI implementation. A prioritized workplan for the integration of GSI language into existing and future City planning documents is provided in Section 3.1.8.

3.1.1 General Plan – Community Vision 2040

The City's Community Vision 2040 functions as the City of Cupertino's State-mandated General Plan and covers a time frame of 2015–2040. Community Vision 2040 provides a framework for integrating the aspirations of residents, businesses, property owners and public officials into a comprehensive strategy for guiding future development and managing change. It describes long-term goals and guides decision-making by the City Council and appointed commissions. The document was last amended in October 2015 and includes language that is very supportive of GSI. Examples of supportive language in the plan are summarized below. No updates related to GSI are recommended at this time.

> ***ES-3: Context, Urban Ecosystems (page ES-6):****…the City is committed to enhancing the urban ecosystem in the form of urban forestry management, integration of green infrastructure, treatment of parks and open space, landscape and building requirements.*
>
> ***Strategy ES-1.1.1: Climate Action Plan (Page ES-14):*** *Integrate multiple benefits of green infrastructure with climate resiliency and adaptation*
>
> ***Goal ES-2.1.5 Urban Forest (Page ES-16):*** *Encourage the inclusion of additional shade trees, vegetated stormwater treatment and landscaping to reduce the "heat island effect" in development projects.*

SE-5.1.1 Landscaping (page ES-21): *Ensure that the City's tree planting, landscaping and open space policies enhance the urban ecosystem by encouraging medians, pedestrian crossing and curb-extension planting that is native, drought-tolerant, treats stormwater and enhances urban plant, aquatic and animal resources in both, private and public development.*

ES-5.1.2: Built Environment (page ES-21): *Ensure that sustainable landscaping design is incorporated in the development of City facilities, parks and private projects with the inclusion of measures such as tree protection, stormwater treatment and planting of native, drought tolerant landscaping that is beneficial to the environment.*

Policy ES-7.1 Natural Water Bodies and Drainage Systems (page ES-24): *In public and private development, use Low Impact Development (LID) principles to manage stormwater by mimicking natural hydrology, minimizing grading and protecting or restoring natural drainage systems.*

Policy ES-7.2: Reduction of Impervious Surfaces (page ES-24): *Minimize stormwater runoff and erosion impacts resulting from development and use low impact development (LID) designs to treat stormwater or recharge groundwater*

Strategy ES-7.2.1: Lot Coverage (page ES-24): *Consider updating lot coverage requirements to include paved surfaces such as driveways and ongrade impervious patios to incentivize the construction of pervious surfaces.*

Strategy ES-7.2.2: Pervious Walkways and Driveways (page ES-24): *Encourage the use of pervious materials for walkways and driveways…*

Policy ES-7.2.3: Maximize Infiltration (page ES-25): *Minimize impervious surface areas, and maximize on-site filtration and the use of on-site retention facilities.*

Strategy ES-7.3.1: Development Review (Page ES-25): *Require LID designs such as vegetated stormwater treatment systems and green infrastructure to mitigate pollutant loads and flows.*

Strategy ES-7.4.1 Storm Drainage Master Plan (Page ES-25): *Develop and maintain a Storm Drainage Master Plan which identifies facilities needed to prevent "10-year" event street flooding and "100-year" event structure flooding and integrate green infrastructure to meet water quality protection needs in a cost effective manner.*

Strategy ES-7.11.5 On-site Recycled Water (Page ES-27): *Encourage on-site water recycling including rainwater harvesting and gray water use.*

Strategy ES-7.11.7 Green Business Certification and Water Conservation (Page ES-27): *Continue to support the City's Green Business Certification goals of long-term water conservation within City facilities, vegetated stormwater infiltration systems, parks and medians, including installation of low-flow toilets and showers, parks, installation of automatic shut-off valves in lavatories and sinks and water efficient outdoor irrigation.*

Strategy INF-4.1.1: Stormwater Management (page INF-14): *Reduce the demand on storm drain capacity through implementation of programs that meet and even exceed on-site drainage requirements*

3.1.2 Pedestrian Transportation Plan

Cupertino adopted its Pedestrian Transportation Plan (PTP) in 2002; an update was completed in February 2018. The purpose of the PTP is to establish a guiding framework for the development and maintenance of pedestrian facilities throughout Cupertino and recommend policies, programs, and messaging to support and promote walking. Existing language in the PTP to support GSI is summarized here:

> ***Curb Extension Benefits (Page 38):*** *Extended sidewalk space can be used for plantings, street furniture, or green stormwater infrastructure.*
>
> ***Choker/Pinch Point Benefits (Page 41)*** *Stormwater and greenspace elements can be combined to calm traffic while also making the street more attractive.*

3.1.3 Storm Drain Master Plan

The latest version of the City's Storm Drain Master Plan (SDMP) dated September 2018, was accepted by City Council Resolution on January 15, 2019. The objective of the SDMP is to provide an examination of the flood risks within the City limits and recommend actions necessary to accomplish defined levels of service for storm drain systems owned by the City so as to appropriately manage flood risks. The SDMP includes a discussion of the C.3 MRP Requirements and a discussion of GSI. Existing language to support GSI is summarized here:

> ***Section 2.2.2 Future Land Use:*** *The majority of future development will involve the redevelopment of sites, such as infill projects. Future development will need to comply with C.3 requirements of the Municipal Regional Permit (MRP) for the Bay Area. These requirements to treat storm water runoff may result in a reduction of impervious surface…*
>
> ***Section 5.7 Green Infrastructure:*** *The City should look for and evaluate opportunities to incorporate green infrastructure and LID facilities into the design of capital projects recommended in the master plan.*

3.1.4 Bicycle Transportation Plan

The City adopted a Bicycle Transportation Plan (BTP) in 2011 that describes long-term goals with respect to the creation of a safe, convenient, and comprehensive network of bicycle facilities throughout the City. The BTP was updated in 2016 to identify which priority projects have already been completed and which remain to be implemented, and to identify any new projects that should be included for prioritization. The BTP currently does not include language to support GSI. However, all bike lane projects will be CIP projects and therefore reviewed annually as part of the review of projects for potential GSI opportunities (See Section 6.2).

3.1.5 Climate Action Plan

The Climate Action Plan (CAP) defines Cupertino's path toward creating a healthy, livable, and vibrant place for its current and future residents to live, learn, work, and play. The CAP seeks to identify emissions reduction strategies that are informed by the goals, values, and priorities of the community. The document was completed in January 2015. The CAP emissions reduction measures are organized into five goals, one of which is "Expand Green Infrastructure". Existing language in support of GSI is summarized below.

GHG Overarching Goals (Pages ES-14 and 66): *Expand Green Infrastructure: enhance the City's existing urban forest and landscapes on public and private land.*

Measure C-W-2 Recycled Water Irrigation Program (Page 116): *As an alternative to recycled water use…small-scale, on-site rainwater catchment systems could be installed to better utilize natural precipitation for irrigation purposes, as opposed to use of scarce potable water resources. The City will develop a demonstration project on municipal property …*

Goal 5 – Expand Green Infrastructure (Page 127): *In Cupertino, green space includes the urban forest, parks, landscaped medians and parkways, and natural stormwater-absorbing landscapes. Healthy and robust green infrastructure systems can mitigate the urban heat island effect, lower building energy use, provide natural stormwater management and wildlife habitat, improve local air quality, and increase community pride.*

Measure C-G-1 Urban Forest Program (Page 128): *The City should incentivize Green roofs for their role in "protecting water resources adversely impacted by climate change by reducing electricity usage and improving air quality.*

Measure C-G-1 Action D (Page 130)*: Evaluate opportunities to expand current ordinances and codes to prioritize expansion of City's green and cool roofs, as well as pervious and cool pavement.*

Measure C-G-1 Action F (Page 130): *Expand community and school gardens, and evaluate opportunities to develop prevalent demonstration garden that incorporates water-sensitive design and advanced irrigation control technology (if irrigation system is necessary.*

Measure M-F-7 Action E. Install Graywater and Rainwater Catchment Systems in New Construction and Major Retrofit Projects (page 186): *In the absence of access to utility-supplied recycled water in our community, Cupertino will strive to lead by example by installing graywater and rainwater catchment systems in new municipal construction and major retrofit projects…These projects can also serve as models for community members and businesses seeking to achieve the same environmental and financial benefits, and should be showcased to reconnect Cupertino's suburban residents to their backyard gardens and the natural water cycle.*

3.1.6 Heart of the City Specific Plan

The Heart of the City Specific Plan provides specific development guidance for the most important commercial corridor in the City of Cupertino. The purpose of the specific plan is to guide the future development and redevelopment of the Stevens Creek Boulevard Corridor in a manner that creates a greater sense of place and community identity in Cupertino. The Streetscape Element implements community design goals contained in the 1993 General Plan, design concepts subsequently developed and revised in the 1993 "Heart of the City" Design Charette, and any new policies and concepts identified in the 2005 General Plan. The document was enacted by the City Council in December 2014 and does not include language to support GSI. However, consistent with the City's strategy to ensure no missed opportunities (Section 6), any development related to the Heart of the City will go through the CIP review for identifying and evaluating GSI opportunities.

3.1.7 Citywide Parks & Recreation System Master Plan (Draft)

The City is preparing a Citywide Parks & Recreation System Master Plan (Draft), which provides guidance to create a park system for the future aligned with the community's values and priorities. The Master Plan creates a vision through the year 2040 to guide future development, renovation, management and activation of City parks and recreation facilities. Elements of the Master Plan goals include conservation of trees and natural areas which support wildlife and ecological functions and establish sustainable practices in management of parks and recreation facilities. Existing language in support of GSI in the draft plan dated January 2019 is summarized here:

> ***Conservation Goal 1.D.v (Page 39):*** *Embrace storm water management, incorporating green infrastructure elements such as rain gardens, bioswales, permeable pavers and detention ponds to help reduce flooding, filter pollutants and replenish groundwater during storm events.*
>
> ***Sustainability Goal 7.C.ix (Page 73):*** *Train staff in maintenance and stewardship of natural areas, green infrastructure, and bioswales, so that these features thrive and the integrity of natural resources on City property is maintained. Involve expert professional services as needed to support informed and ongoing care for habitat areas.*
>
> ***Sustainability Goal 7.C.xi (Page 74):*** *Focus on storm water management and green infrastructure when designing or renovating City parks. For example, consider installing a 'storm water management garden' on City or public property to showcase green infrastructure techniques.*
>
> ***Enhancements to Existing Parks, Creekside Park and Connection to Regnart Creek Trail (page 84):*** *Consider adding trail amenities, enhancing and protecting the riparian corridor, and adding green infrastructure. Encourage connections between school, parks and trail.*
>
> ***Enhancements to Existing Parks, Saratoga Creek Trail (Page 84):*** *Consider adding trail amenities, enhancing and protecting the riparian corridor, and adding green infrastructure. Encourage connections northward to Stevens Creek Blvd. and to regional destinations.*
>
> ***Enhancements to Existing Parks, Stevens Creek Trail (Page 84):*** *Consider adding trail amenities and adding green infrastructure. Encourage pedestrian and bike connections between trail, City parks, County parks and nearby schools.*

3.1.8 Workplan for Integration of GSI Language into Existing and Future City Planning Documents

The General Plan, Climate Action Plan, Pedestrian Transportation Plan, Storm Drain Master Plan, and the draft Citywide Parks and Recreation System Master Plan all include adequate language to support the implementation of GSI in Cupertino. The Heart of the City Plan was last amended with the General Plan in 2014. Unless there are development triggers, the Heart of the City Plan will be updated with GSI language during future General Plan amendments. Consistent with the City's strategy (See Section 6.1), any progress on the Heart of the City will go through the CIP review and green stormwater infrastructure will be considered as part of that review.

When preparing new planning documents, the City will review GSI Plan requirements during the planning process to ensure that GSI requirements and policies are incorporated. Examples of GSI related language can be found in existing City plans, and in references such as SCVURPPP's Model Green Infrastructure Language for Incorporation into Municipal Plans (2016).

3.2 Regional Plans

The City is collaborating with SCVURPPP, Valley Water, and other agencies on several large-scale planning efforts including those described below.

3.2.1 Santa Clara Basin Stormwater Resource Plan

A collaboration between SCVURPPP and Valley Water during 2017 and 2018, the Santa Clara Basin Storm Water Resources Plan (SWRP) supports municipal GSI Plans by identifying and prioritizing potential multi-benefit GSI opportunities on public parcels and street rights-of-way throughout the Basin (i.e., Santa Clara Valley) and allows them to be eligible for State bond-funded implementation grants. The SWRP includes a list of prioritized GSI opportunity locations for each SCVURPPP agency, including Cupertino. As described in Section 5.2, the City's GSI Plan builds on the SWRP output to further identify, evaluate, and prioritize potential projects.

3.2.2 Santa Clara Valley Water District's One Water Plan

Valley Water's Watershed Division is leading an effort to develop an Integrated Water Resources Master Plan to identify, prioritize, and implement activities at a watershed scale to maximize established water supply, flood protection, and environmental stewardship goals and objectives. The "One Water Plan" establishes a framework for long-term management of Santa Clara County water resources, which eventually will be used to plan and prioritize projects that maximize multiple benefits. The One Water Plan incorporates knowledge from past planning efforts, builds on existing and current related planning efforts; and coordinates with relevant internal and external programs. The One Water Plan has five goals:

1. "Valued and Respected Rain" – Manage rainwater to improve flood protection, water supply, and ecosystem health.
2. "Healthful and Reliable Water" – Enhance the quantity and quality of water to support beneficial uses.
3. "Ecologically Sustainable Streams and Watersheds" – Protect, enhance and sustain healthy and resilient stream ecosystems.
4. "Resilient Baylands" – Protect, enhance and sustain healthy and resilient baylands ecosystems and infrastructure.
5. "Community Collaboration" – Work in partnership with an engaged community to champion wise decisions on water resources.

Tier 1 of the effort, for which a draft plan was completed in 2016[6], is a countywide overview of major resources and key issues along with identified goals and objectives. Tier 2 (2016 to 2020) will include greater detail on each of the County's major watersheds. The City's GSI Plan aligns with the goals of the

[6] Santa Clara Valley Water District. 2016. One Water Plan for Santa Clara County. An Integrated Approach to Water Resources Management. Preliminary Draft Report 2016.

One Water Plan and may be able to coordinate with specific projects yet to be identified in the West Valley area.

3.2.3 Bay Area Integrated Regional Water Management Plan

The Bay Area Integrated Regional Water Management Plan (IRWMP) is a comprehensive water resources plan for the Bay region that addresses four functional areas: 1) water supply and water quality; 2) wastewater and recycled water; 3) flood protection and stormwater management; and 4) watershed management and habitat protection and restoration. It provides a venue for regional collaboration and serves as a platform to secure state and federal funding. The IRWMP includes a list of over 300 project proposals, and a methodology for ranking those projects for the purpose of submitting a compilation of high priority projects for grant funding. The Santa Clara Basin SWRP was submitted to the Bay Area IRWMP Coordinating Committee and incorporated into the IRWMP as an addendum. As SWRP projects are proposed for grant funding, they will be added to the IRWMP list using established procedures.

4. GSI DESIGN GUIDELINES, DETAILS, AND SPECIFICATIONS

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

The City, along with other SCVURPPP agencies, helped fund and provided input to the development of countywide guidelines by SCVURPPP to address the MRP requirements and guide the implementation of GSI Plans. The resulting SCVURPPP GSI Handbook (Handbook)[7] is a comprehensive guide to planning and implementation of GSI projects in public streetscapes, parking lots and parks. The Handbook consists of two parts, the contents of which are described in the following sections. The City intends to use this Handbook as a reference when creating City-specific guidelines and specifications to meet the needs of the various departments.

4.1 Design Guidelines

Part 1 of the Handbook provides guidance on selection, integration, prioritization, sizing, construction, and maintenance of GSI facilities. It includes sections describing the various types of GSI, their benefits, and design considerations; how to incorporate GSI with other uses of the public right-of-way, such as bicycle and pedestrian infrastructure and parking; and guidelines on utility coordination and landscape design for GSI. In addition, the Handbook also provides guidance on post-construction maintenance practices and design of GSI to facilitate maintenance.

Part 1 also contains a section on proper sizing of GSI measures. Where possible, GSI measures should be designed to meet the same sizing requirements as Regulated Projects, which are specified in MRP Provision C.3.d. In general, the treatment measure design standard is capture and treatment of 80% of the annual runoff (i.e., capture and treatment of the small, frequent storm events). However, if a GSI measure cannot be designed to meet this design standard due to constraints in the public right-of-way or other factors, the City may still wish to construct the measure to provide some runoff reduction and water quality benefit and achieve other benefits. For these situations, the Handbook describes (in Section 4.2) regional guidance on alternative design approaches developed by the Bay Area Stormwater Management Agencies Association (BASMAA) for use by MRP permittees.

4.2 Details and Specifications

Part 2 of the Handbook contains typical details and specifications that have been compiled from various sources within California and the U.S. and modified for use in Santa Clara County. The Handbook includes details for pervious pavement, stormwater planters, stormwater curb extensions, bioretention in parking lots, infiltration measures, and stormwater tree wells, as well as associated components such as edge controls, inlets, outlets, and underdrains. It also provides typical design details for GSI facilities

[7] SCVURPPP (2019) Green Stormwater Infrastructure Handbook. February. Online at http://scvurppp.org/scvurppp_2018/swrp/resource-library/

in the public right-of-way that address utility protection measures and consideration of other infrastructure in that space.

4.3 Incorporation of SCVURPPP Details and Specifications into City Standards

The City plans to reference the SCVURPPP GSI Guidelines and Specifications for design of GSI projects. The City will review these for consistency with its own local standards, and revise existing guidelines, standard specifications, design details, and department procedures as needed. The City will also reference details and build on its experience from design and construction of the Stevens Creek Corridor and Creek Restoration Project (Section 2.4.1).

5. GSI PROJECT PRIORITIZATION AND IMPERVIOUS TARGETS

To meet the requirements of the MRP, the City's GSI Plan must contain a mechanism to prioritize and map areas for potential and planned projects, both public and private, for implementation over the 2020, 2030, and 2040 milestones. The mechanism must include the criteria for prioritization and outputs that can be incorporated into the City's long-term planning and capital improvement processes.

This chapter describes different GSI project categories considered within the City, followed by a description of the process employed by the City to identify public lands that offer opportunities to implement GSI and prioritize those opportunities, and the results of the process.

5.1 Project Types

GSI project types that have been or may be implemented in the City fall into the following categories: Early Implementation Projects, C3 Regulated Projects, Green Streets, LID Retrofits, and Regional Projects. Green Streets, LID Retrofits, and Regional Projects are types of GSI capital projects that the City may implement to meet the water quality goals in the MRP and multi-benefit objectives defined in the GSI Plan. GSI capital projects are typically not regulated projects (although they must conform to the sizing and design requirements contained in Provision C.3, except under certain circumstances) and they are primarily public projects under control of the City. These three project types are the focus of the prioritization process described in Section 5.2, but all five GSI project types are considered as part of the City wide GSI strategy presented in Chapter 6. Several factors, such as change in scope of work, funding, site conditions, etc. determine the ability of the City to implement GSI capital projects.

5.1.1 Early Implementation Projects

Early Implementation Projects are GSI projects that have already been implemented by the City or are already scheduled and funded for implementation during the permit term (i.e., through December 2020). The City has already implemented one GSI projects, as discussed in Section 2.4. The City has identified an additional Early Implementation project through a review of its Capital Improvement Program (CIP), as discussed in Section 5.2.2 below.

5.1.2 Regulated Projects

C3 Regulated Projects are those implemented as part of new and redevelopment within the City, both private and public, that must meet the post-construction stormwater treatment requirements per Provision C.3 of the MRP. Regulated projects include private development or redevelopment projects, such as multi-family residential buildings, commercial office buildings, or shopping plazas, as well as public projects, such as libraries, police stations, and parking lots, exceeding the impervious surface thresholds. The "Apple Park" project, a 176-acre site that replaced the former Hewlett Packard industrial campus and includes LID measures, is an example of a regulated project.

5.1.3 LID Projects

LID projects mitigate stormwater impacts by reducing runoff through capture and/or infiltration and treating stormwater on-site before it enters the storm drain system. LID projects may include bioretention facilities, infiltration trenches, detention and retention areas in landscaping, pervious pavement, green roofs, and systems for stormwater capture and use. For the purposes of the GSI Plan, LID projects are GSI facilities that treat runoff generated from a publicly-owned parcel on that parcel.

5.1.4 Regional Projects

Regional projects capture and treat stormwater runoff from on-site and off-site sources, including surface runoff and diversions from storm drains. Benefits of regional stormwater capture projects can include flood risk reduction, stormwater treatment and use, and groundwater recharge. These projects may take a variety of forms such as detention and retention basins and subsurface vaults and infiltration galleries. The site characteristics will determine what types of regional projects are feasible, e.g., whether a project is on-line or off-line from the storm drain network, whether it is desirable to change the functionality of the site, whether the project is above ground or underground, and the size of the project.

5.1.5 Green Street Projects

Green street projects are GSI opportunities in the public right-of-way that capture runoff from the street and adjacent areas that drain to the street. The technologies used for green streets are similar to those used in LID projects but are limited to designs that can be used in the right-of-way. Green street projects may include bioretention (e.g., stormwater planters, stormwater curb extensions or stormwater tree filters), pervious pavement, and/or infiltration trenches. Green street GSI features can be incorporated into other improvements in the right-of-way, including complete streets designs and improvements for pedestrian and cyclist safety.

5.2 Identification and Prioritization Process

The City of Cupertino GSI opportunity identification and prioritization process involved two steps. The first step was the screening and prioritization methodology used in the Santa Clara Basin SWRP (see Section 3.2.1) to identify and prioritize GSI opportunities on public parcels and street segments within the region. The second step in the process involved overlaying City-specific priorities, planning areas, and upcoming City projects onto the regional prioritization results to align the results of the SWRP prioritization process with the City's priorities. These steps are described in detail below.

City projects in areas associated with a project opportunity identified in the SWRP can qualify for State bonded-funded stormwater capture project implementation grants (e.g., Proposition 1). Opportunities for GSI implementation that arise in areas that are not adjacent to a prioritized project opportunity identified in the SWRP may be considered on a case by case basis for feasibility, cost effectiveness, and availability of funding.

5.2.1 Step 1: Stormwater Resource Plan Prioritization

Building on existing documents that describe the characteristics and water quality and quantity issues within the Santa Clara Basin (i.e., the portion of Santa Clara County that drains to San Francisco Bay), the SWRP identified and prioritized multi-benefit GSI opportunities throughout the Basin, using a metrics-based approach for quantifying project benefits such as volume of stormwater infiltrated and/or treated, and quantity of pollutants removed. The metrics-based analysis was conducted using hydrologic/ hydraulic and water quality models coupled with Geographic Information System (GIS) resources and other tools. The products of these analyses were a map of opportunity areas for GSI projects throughout the watershed, an initial prioritized list of potential project opportunities, and strategies for implementation of these and future projects.

The process began by identifying and screening public parcels and public rights-of-way[8] that can support GSI. Project opportunities were split into the three categories described above – LID, regional, and green streets projects -- because of fundamental differences in GSI measures used, project scale, and measures of treatment efficiency. Screening factors are presented in Table 5-1.

After the identification of feasible GSI opportunity locations, screened streets and parcels were prioritized to aid in the selection of project opportunities that would be the most effective and provide the greatest number of benefits. In addition to physical characteristics, several special considerations were included in the prioritization methodology to consider coordination with currently planned projects provided by agencies, as well as consideration of additional benefits that projects could provide. A discussion of the screening and prioritization process for each project category is presented in the subsequent sections. Figure 5-1 presents the results of the various steps.

LID and Regional Stormwater Capture Project Opportunities

The screening criteria for LID and regional projects were ownership (focusing only on public parcels), land use, and site slope. As shown in Table 5-1, parcel size was used to determine whether a location could support a regional or LID project.

Parcels that met the screening criteria were prioritized based on physical characteristics such as soil group, slope, and percent impervious area, proximity to storm drains, proximity to flood-prone creeks and areas, proximity to potential pollutant sources (e.g., PCBs[9]), whether they were in a priority development area (PDA), whether they were within a defined proximity to a planned project, and whether the project was expected to have other benefits such as augmenting water supply, providing water quality source control, re-establishing natural hydrology, creating or enhancing habitat, and enhancing the community. Prioritization metrics for LID project scoring and regional project scoring are shown in separate tables in Appendix A. The result of the parcel prioritization was a list and map of potential project locations based on the above criteria. This subset of projects from the SWRP was carried over into Step 2 City-Specific Prioritization (Section 5.2.2).

Table 5-1 Screening factors for parcel-based and right-of-way project opportunities

Screening Factor	Characteristic	Criteria	Reason
Parcel-based			
Public Parcels	Ownership	County, City, Town, Valley Water, State, Open Space Agencies	Identify all public parcels for regional stormwater capture projects or onsite LID retrofits

[8] Public parcels can include those not owned by the City, such as public school grounds, County, State, and Federal properties, and property owned by the Water District.

[9] Polychlorinated biphenyls – manmade chemicals which resist extreme temps, and were used in electrical equipment such as transformers and capacitors; and building materials such as caulking, adhesives, mastics etc. primarily from 1950s through 1981. PCBs pose developmental or neurological risks to fetuses, babies, and children, and have been shown to cause cancer in animals and evidence supports cancer causing effect in PCB workers.

Screening Factor	Characteristic	Criteria	Reason
Parcel-based			
	Land Use	Park, School, Other (e.g., Golf Course)	
Suitability	Parcel Size	≥ 0.25 acres	Opportunity for regional stormwater capture project
		< 0.25 acres	Opportunity for on-site LID project
	Site Slope	< 10 %	Steeper grades present additional design challenges
Right-of-Way			
Selection	Ownership	Public	Potential projects are focused on public right-of-way opportunities
Suitability	Surface	Paved	Only roads with paved surfaces are considered suitable. Dirt roads were not considered.
	Slope	< 5%	Steep grades present additional design challenges; reduced capture opportunity due to increased runoff velocity
	Speed	≤ 45mph	Excludes higher speed roads such as major arterials and highways

Green Street Project Opportunities

The screening criteria for green streets projects in the public right-of-way were ownership, surface material, slope, and speed limit (Table 5-1). The screened public right-of-way street segments were then prioritized based on physical characteristics, proximity to storm drains, proximity to flood-prone creeks and areas, proximity to potential pollutant sources (e.g., PCBs[10]), whether they were in a priority development area, whether they were in proximity to a planned project, and whether the project was expected to have other benefits (similar to LID and regional projects). Prioritization metrics for green streets projects are shown in Appendix A.

The initial prioritization process resulted in a large number of potential green streets project opportunities within the Santa Clara Basin. In order to identify the optimal locations for green street projects, the street segments in each municipality's jurisdiction with scores in the top 10 percent of ranked green street opportunities were identified and mapped.

[10] Polychlorinated biphenyls – manmade chemicals which resist extreme temps, and were used in electrical equipment such as transformers and capacitors; and building materials such as caulking, adhesives, mastics etc. primarily from 1950s through 1981. PCBs pose developmental or neurological risks to fetuses, babies, and children, and have been shown to cause cancer in animals and evidence supports cancer causing effect in PCB workers.

5.2.2 Step 2: City-Specific Prioritization

The City reviewed the results from the SWRP prioritization (Section 5.2.1) and refined the list of parcels and street segments based on current knowledge of City plans and project opportunities. The resulting parcel-based and green street opportunities for the City of Cupertino are presented in Figure 5-1. The City's list of parcel-based and green street opportunities is provided in tabular format in Appendix B.

Next, as discussed in the remainder of this section, the City-specific prioritization incorporated local priorities for GSI project implementation, which include: 1) opportunities to implement GSI projects in conjunction with anticipated areas of private development and 2) upcoming capital improvement projects that can potentially be combined with GSI projects.

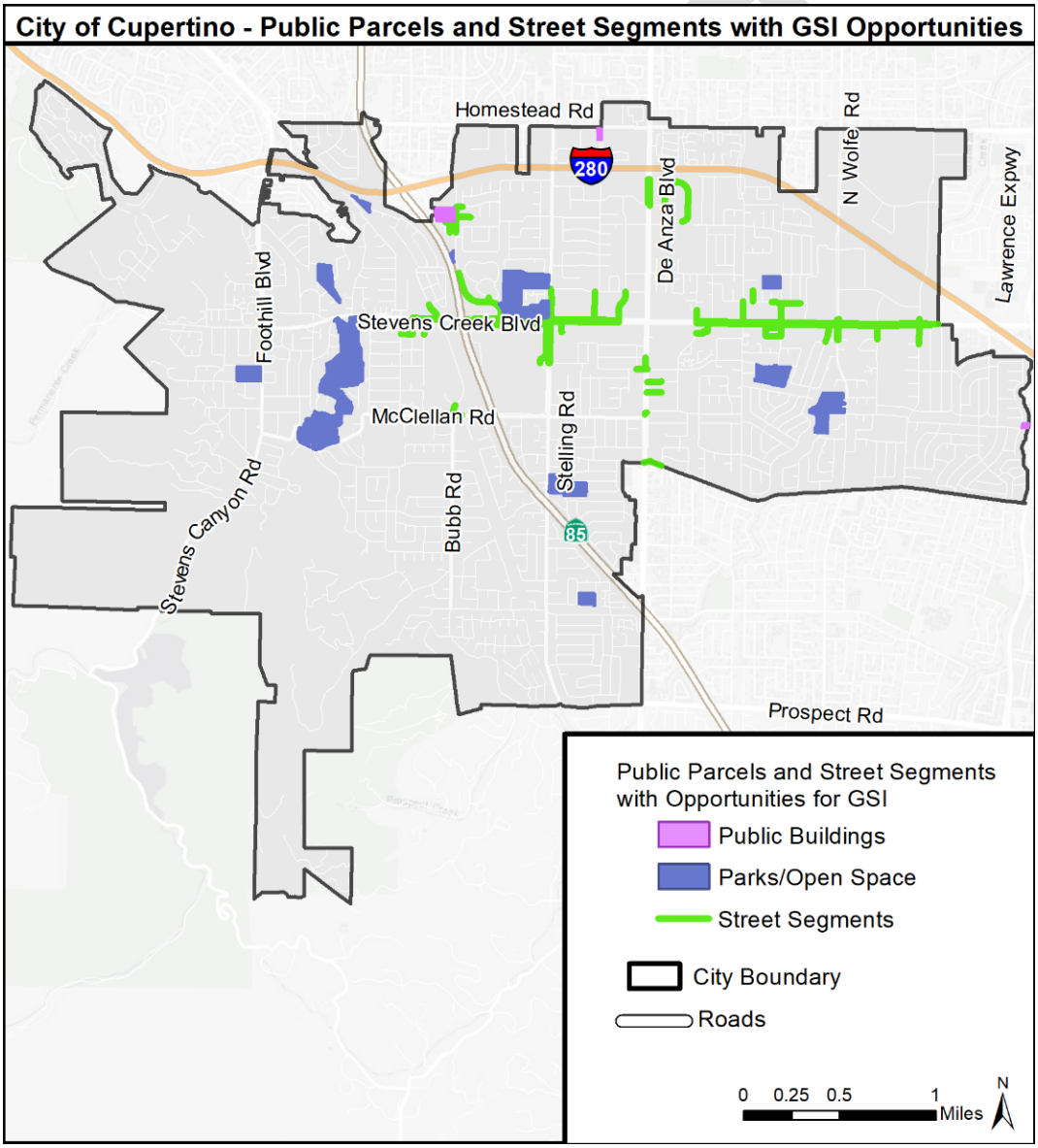


Figure 5-1 City of Cupertino Public Parcels and Street Segments with Opportunities for GSI (Source: EOA, and Santa Clara Basin Stormwater Resource Plan, 2018).

Priority Development Areas

Priority Development Areas, commonly known as PDAs, are areas within existing communities that local city or county governments have identified and approved for future growth. These areas typically are accessible by one or more transit services; and they are often located near established job centers, shopping districts and other services. PDAs are expected to accommodate 78% of new housing production (over 500,000 units) and 62% of employment growth (almost 700,000 jobs) in the Bay Area through the year 2040[11]. As PDAs are developed, they offer good opportunities to construct GSI facilities.

Cupertino's PDA area includes properties within a quarter mile of Stevens Creek Boulevard from Highway 85 to its eastern border and a portion of North and South De Anza Boulevards. The boundary of the PDA is shown in Figure 5-2.

Special Areas

The City's General Plan identifies nine Special Areas within Cupertino:

- Heart of the City
- Vallco Shopping District
- North Vallco Park
- South De Anza
- North De Anza
- Homestead
- Bubb Road
- Monta Vista Village
- Other Non-Residential/ Mixed-Use Special Areas

Each Special Area is located along one of the four major mixed-use corridors in the city, which represent key areas within Cupertino where future development and reinvestment will be focused. Goals for these areas include more bicycle- and pedestrian-friendly streets and improved walkable, bikeable connectivity to adjacent areas and services. Because these Special Areas are where the most development is expected to occur, they will likely have the best opportunities to construct GSI facilities. The GSI projects could be part of private redevelopment projects or public improvement projects.

The location of the Special Areas are shown on Figure 2-2, with the exception of the Other Non-Residential/ Mixed-Use Special Areas. These Other Non- Residential/Mixed-Use Special Areas are located throughout Cupertino and include the following: west side of Stevens Canyon Road across from McClellan Road; intersection of Foothill Boulevard and Stevens Creek Boulevard; Homestead Road near Foothill Boulevard; northwest corner of Bollinger Road and Blaney Avenue; and all other non-residential properties not referenced in an identified commercial area.

[11] From Table 4.2 and Table 4.3 of the Association of Bay Area Governments and Metropolitan Transportation Commission "Plan Bay Area 2040" Report, adopted July 26, 2017.

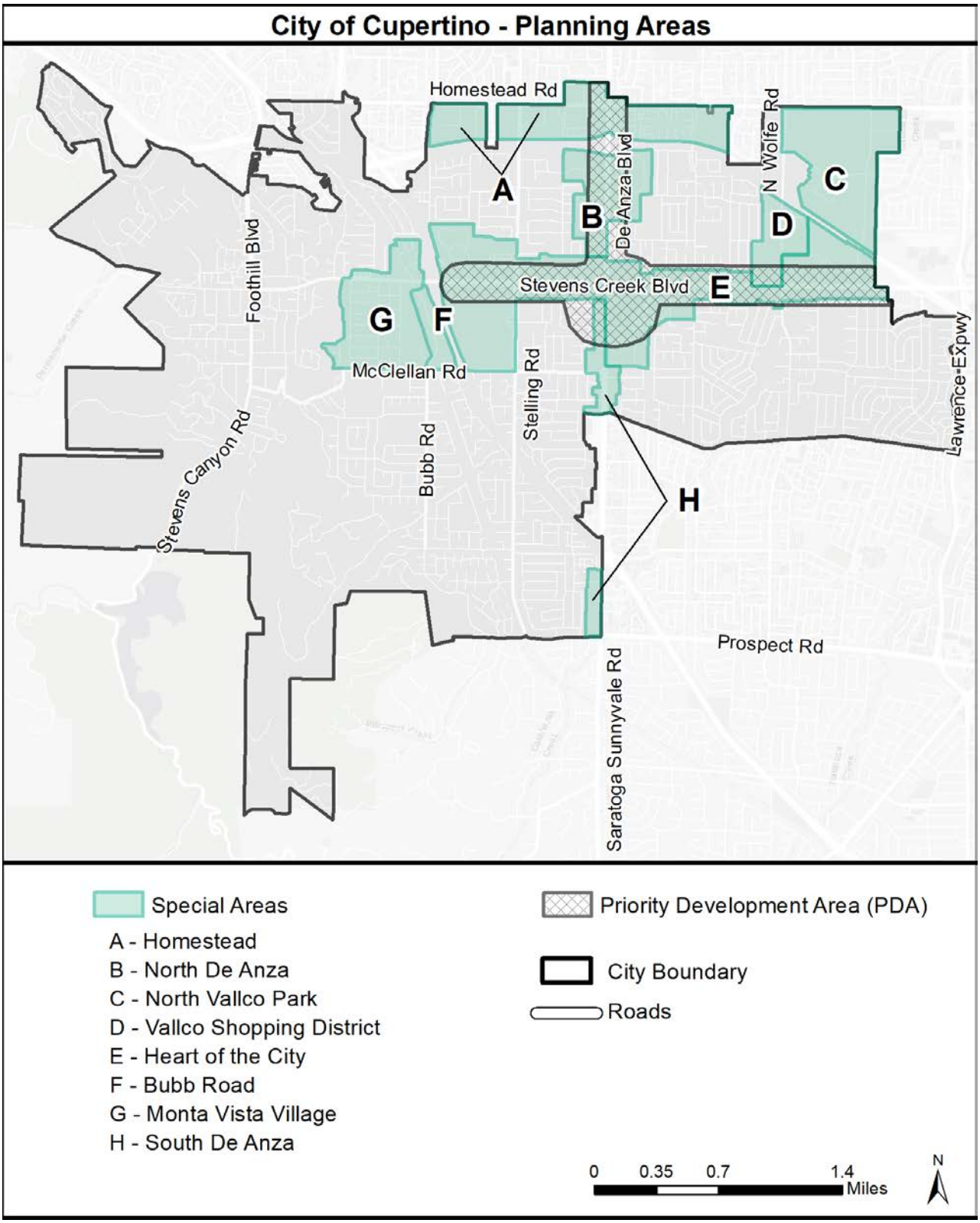


Figure 5-2. City of Cupertino Special Project Areas and Priority Development Area (Source: City of Cupertino General Plan)

Capital Improvement Projects

As required by the MRP, the City reviews its CIP project list annually to identify opportunities for GSI. Based on this review, the City prepares and maintains a list of any public GSI projects that are planned for implementation during the permit term and a list of public projects that have potential for GSI measures.

As discussed in Section 2.4.2, the City has completed one public GSI project (Stevens Creek Corridor and Creek Restoration Project). The second public GSI project (McClellan Ranch West Parking Lot Improvement) is under construction and expected to be completed in September 2019. The project locations are shown on the map in Figure 5-4.

In addition, through its CIP project review, the City identified the following projects as having potential to include GSI:

- **South Foothill Blvd and N. Foothill Blvd. Green Street:** Reconstruct the medians to reduce runoff and better infiltrate stormwater, and consider bioretention areas along the outer edges of the boulevard
- **Union Pacific Railroad Trail Feasibility Study:** Incorporate bioretention areas and pervious trails, if the study results in a project. Currently this is just a study.
- **Mary Avenue Greenbelt and Trail Project:** Create a wide bioretention-enhanced green belt on the west side of Mary Avenue. Include a pervious multi-use pathway to accommodate bicyclists, pedestrians, strollers, and joggers. Install bioretention tree wells at optimal intervals on the east side of the street to treat stormwater, and on the west side of the street where feasible to create a future tree canopy over Mary Ave.
- **Junipero Serra Trail Extension**: Incorporate bioretention areas and pervious trails where feasible.
- **Memorial Park Renovation:** Look for an opportunity to construct an infiltration basin at the park to treat runoff from Stevens Creek Blvd.
- **Regnart Creek Trail:** Incorporate bioretention areas and pervious trails where feasible.
- **Lawrence Mitty Park:** Pending the City acquiring the land, look for opportunities to incorporate GSI features to treat runoff from the adjacent expressway.
- **Stelling Road Potential Future Storm Drain and Street Upgrades:** Incorporate bioretention areas to treat street runoff where feasible.
- **Rainbow Drive Storm Drain Pipeline Rehabilitation:** Incorporate bioretention areas to treat street runoff where feasible.
- **Bike Boulevard Projects:** Cupertino is planning a network of bicycle-friendly routes along residential streets throughout the City in order to encourage bicycling. Traffic circles and bulb outs will be considered and designed, where feasible, to include GSI features.
- **Citywide Parks and Recreation Master Plan:** Install GSI at Linda Vista, Memorial, Monte Vista, Wilson, and Portal Parks where feasible.

These potential CIP project locations are shown on the map in Figure 5-3. A GSI concept for the Mary Avenue Greenbelt and Trail Project was completed for the SWRP. The project is currently unfunded, and the concept design is intended to assist with the grant application process should the City decide to pursue funding via Proposition 1 or other State bond-funded grant program.

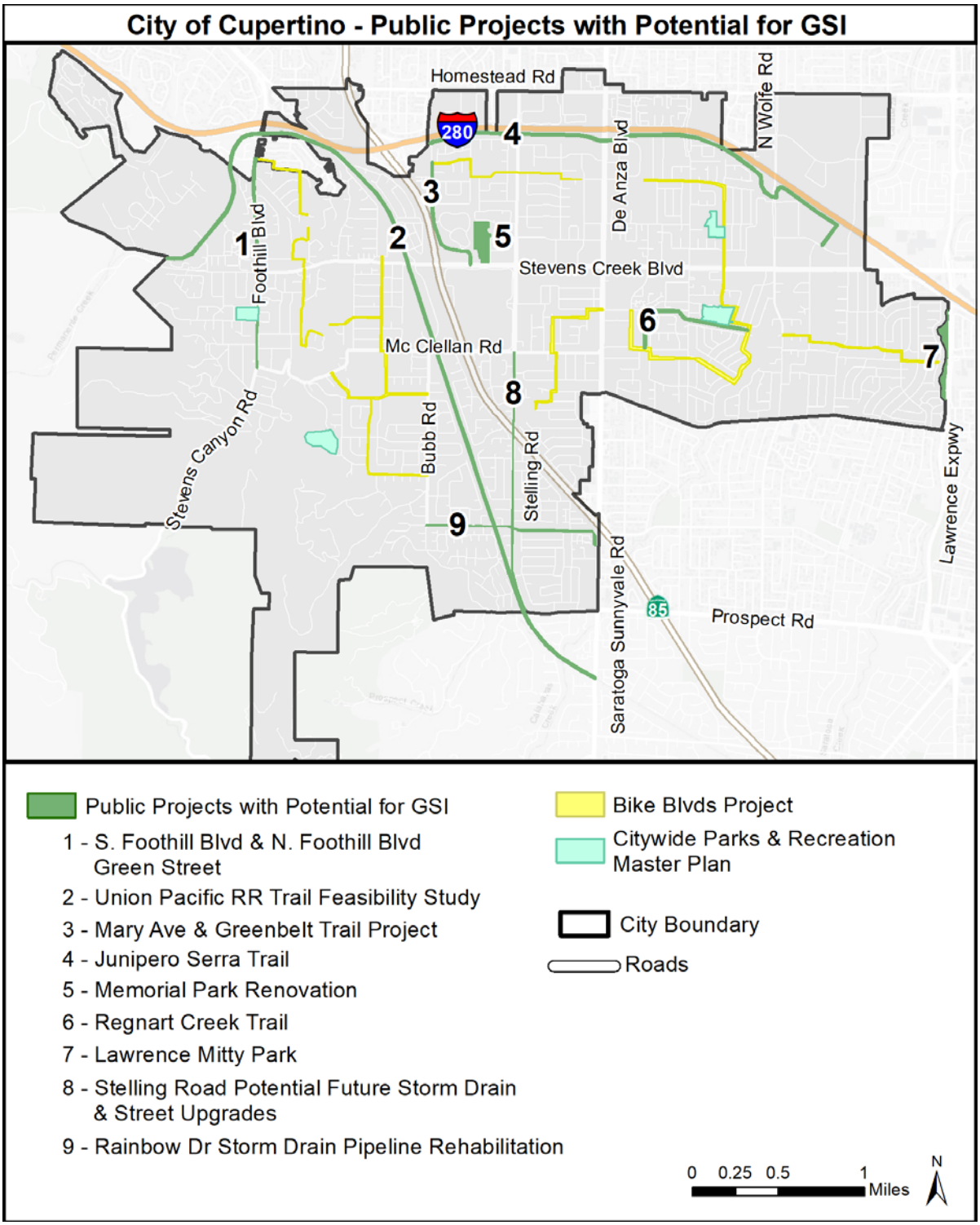


Figure 5-3. City of Cupertino Public Projects with Potential for GSI (Source: City of Cupertino FY 17-18 Annual Report, and 2018 Santa Clara Basin Stormwater Resource Plan)

5.3 Prioritization Output

The map in Figure 5-4 presents a compilation of the factors used to identify and prioritize the City's opportunities for GSI projects: the City's list of parcel-based and green street project opportunities, overlaid with the City's PDA, Special Areas, and CIP projects that may have potential to include GSI. The locations of the City's completed GSI projects, including the McClellan Ranch West Parking Lot project which is under construction and expected to be completed by September 2019, are also shown. As shown in Figure 5-4, a large number of the green street opportunities identified in the SWRP are located within the City's PDA and Special Areas. This indicates a strong correlation between the areas identified as having potential for GSI and the City's construction and redevelopment plans.

The City's list of parcel-based and green street opportunities is provided in tabular format in Appendix B. The list includes additional information for each parcel and green street opportunity, including general information such as APN, landowner and land use or street name, the SWRP prioritization score for each project opportunity, and co-location with a City criteria for prioritization (CIP project, PDA or Special Area).

An implementation plan is described in Section 6 to guide the development, design, and construction of GSI projects.

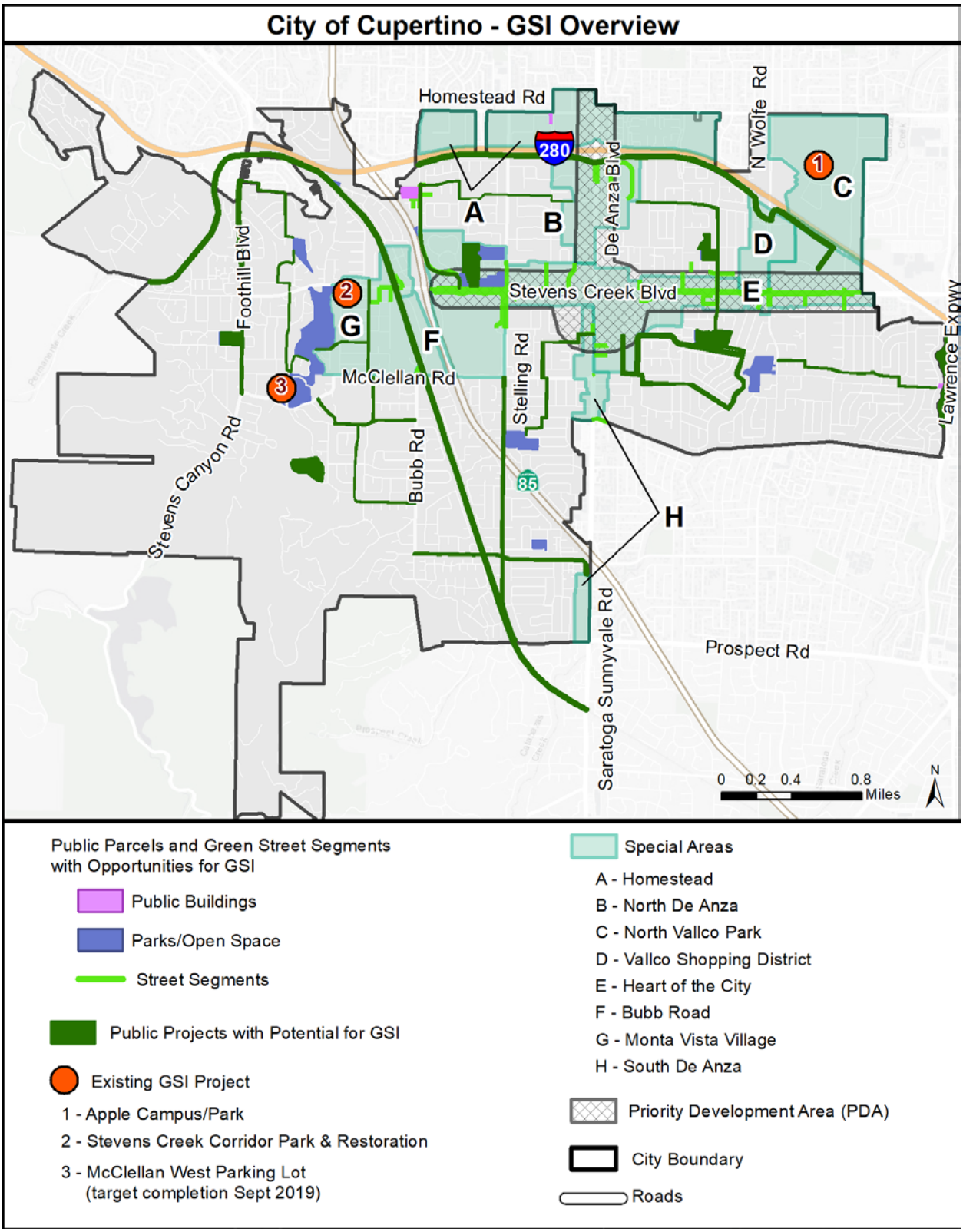


Figure 5-4 City of Cupertino GSI Overview

6. GSI Implementation Plan

This chapter provides an overall strategy and steps for implementing GSI within the City of Cupertino over the long term. The implementation plan has the following components: (1) the Citywide GSI strategy; (2) a process for identifying and evaluating GSI opportunities, (3) a workplan to complete Early Implementation Projects, (4) the legal and funding mechanisms that enable implementation, (5) estimated targets for the amounts of impervious surface to be "retrofitted" (i.e., redeveloped with GSI facilities to treat runoff from impervious surfaces), and (5) the technical tools that ensure the tracking of implemented projects.

6.1 City-wide GSI Strategy

The City of Cupertino's approach to GSI planning will be consistent with the City's Community Vision 2040 (See Section 3.1.1), which has as guiding principle to:

> *"Preserve Cupertino's environment by enhancing or restoring creeks and hillsides to their natural state, limiting urban uses to existing urbanized areas, encouraging environmental protection, promoting sustainable design concepts, improving sustainable municipal operations, adapting to climate change, conserving energy resources and minimizing waste."*

The City's approach will also be guided by various other existing plans that support the implementation of GSI, such as the Climate Action Plan, and the Storm Drain Master Plan. Cupertino has already completed one project, the Stevens Creek Corridor and Restoration Project (Section 2.1.4), which incorporated GSI and preserved an 18-acre site and restored creek habitat in the City to maintain biodiversity and ecological integrity of local natural systems. As the City seeks to achieve sustainability and community health objectives, future growth and retrofitting of existing infrastructure will create mixed-use, commercial, employment and neighborhood centers; pedestrian-oriented and walkable spaces for the community to gather; and distinct and connected neighborhoods with easy walkable and bikeable access to services, including schools, parks and shopping.

The City of Cupertino's GSI implementation strategy consists of the following:

- Priority Development Areas - The City will focus future change within the Special Areas that are located on Cupertino's major mixed-use corridors. These areas already have a mix of commercial, office, hotel and residential uses, and are located along roadways that will be enhanced with "Complete Streets" features, improved landscaping and expanded public spaces (e.g., parks and plazas). Complete Streets can be enhanced with GSI features to become green "Sustainable Streets".
- Evaluation of CIP Projects for Opportunities – The City will continue to review its CIP list annually for opportunities to incorporate GSI into CIP projects and evaluate the feasibility of such projects. The City has established a process for CIP review to avoid missing GSI opportunities (see Section 6.2).
- Evaluation of Opportunities Identified in the Stormwater Resource Plan – The public parcels and street segments identified in the SWRP (See Section 5.1 of this report) are opportunity areas for GSI projects. The City will use the SWRP list to help identify potential project locations for GSI implementation, as described in Section 6.2.

- Evaluation of Non-CIP Project Opportunities - As awareness of GSI increases, municipal staff or local community members may also identify and recommend GSI projects opportunities. These projects will be considered using the methodology described in Section 6.2.
- Coordination with Private Development – The City of Cupertino will explore working with private property developers to install green infrastructure facilities in public rights-of-way near the properties they are developing, such as along street frontages.
- Community Outreach and Engagement – The City will provide outreach to the Sustainability Commission, the Bike and Pedestrian Commission, the local community, and other stakeholders to get input and support for the implementation of the GSI Plan. The City will also continue to engage with San Francisco Estuary Institute (SFEI) and/or other potential partners that offer a regional perspective for enhancing sustainable natural landscaping with multi-faceted benefits.

The City will also continue to require future development projects to comply with C.3 requirements of the Municipal Regional Permit (MRP), and include site design, source control, treatment control, and hydromodification management measures as applicable.

6.2 Process for Identifying and Evaluating GSI Project Opportunities

The City will use the various mechanisms described in its strategy (Section 6.1) to identify GSI opportunities in public projects.

The City will use the guidance developed by BASMAA[12] (see Appendix D) and the SWRP prioritization criteria to evaluate public projects to determine the potential for the inclusion of GSI measures at the project planning level. The evaluation may include site reconnaissance, drainage area delineation, and cost analysis. If not already on the CIP list, projects identified through this process will be added to the CIP list when it is updated. Projects with a GSI component may be included in the CIP as funded or unfunded projects. An unfunded project's inclusion in the CIP demonstrates that it is a City priority pending adequate funding. The City prepares the CIP Budget biennially. The next Biennial CIP Budget will be prepared in 2020 covering FY 2020-21 and FY 2021-22.

The City will map all potential GSI project opportunities to determine their proximity to green street or parcel-based project opportunities identified in the SWRP (Section 5.2.1). Potential GSI projects that are adjacent to SWRP opportunity areas may be eligible for state bond funding. Projects with opportunities for GSI measures may be submitted to the SWRP during the SWRP update process if they are not already included in the SWRP. This will allow those projects to be eligible for future state bond funding. The SWRP will likely be updated in the 2022-2023 timeframe. At this time, SCVURPPP will reach out to all member agencies to provide their project lists for prioritization and inclusion in the updated SWRP.

6.3 Workplan to Complete Early Implementation Projects

As discussed in Section 5.2.2 of this GSI Plan, Provision C.3.j. of the MRP requires that the City identify, prepare, and maintain a list of GSI projects that are planned for implementation during the permit term (i.e., through December 2020), and infrastructure projects that have potential for GSI measures. The list

[12] BASMAA Development Committee (2016) Guidance for Identifying Green Infrastructure Potential in Municipal Capital Improvement Program Projects. May.

is submitted with each Annual Report to the Regional Water Board. Projects with GSI that are scheduled and funded for implementation during the permit term are considered "Early Implementation Projects". The City has already identified and completed one early implementation project (Stevens Creek Corridor and Creek Restoration Project), with a second project (McClellan West Parking Lot) currently under construction and expected to be completed by September, 2019(see Section 2.4).

The City will continue to review its CIP list annually, using the SWRP prioritization and the guidance developed by BASMAA for identifying opportunities to incorporate GSI into CIP projects. A copy of the BASMAA Guidance is provided in Appendix D.

6.4 Legal Mechanisms for GSI Implementation

Provision C.3.j.i.(3) of the MRP requires permittees to "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."

As described in Section 1.3.2, the City of Cupertino and other municipalities subject to Provision C.3 of the MRP must require post-construction stormwater control measures on regulated development projects. Post-construction stormwater controls reduce pollutants from flowing to streams, creeks, and the Bay and reduce the risk of flooding by managing peak flows. Section 9.18.100 (Permanent Stormwater Measures Required for Development and Redevelopment Projects) of the City's Municipal Code provides legal authority for the City to require regulated private development projects to comply with MRP requirements.

GSI projects are typically not regulated projects (although they must conform to the sizing and design requirements contained in Provision C.3 except under certain circumstances) and they are primarily public projects under control of the City. As part of the GSI Plan process, the City reviewed its existing policies, ordinances, and other legal mechanisms related to the implementation of stormwater NPDES permit requirements and found that it has sufficient legal authority to implement the GSI Plan. Adoption of the GSI Plan by the City Council will further strengthen the authority.

6.5 Evaluation of Funding Options

The GSI Plan prioritizes specific projects for near-term integration into CIPs and long-term integration into City planning efforts. Implementation of these projects is contingent upon the City identifying funding sources for GSI planning, design, construction, and maintenance.

The total cost of GSI includes costs for planning, capital (design, engineering, construction) and ongoing expenditures, including operations and maintenance (O&M), utility relocation, and feature replacement. It is likely that no single source of revenue will be adequate to fund implementation of GSI, and a portfolio of funding sources will be needed. There are a variety of approaches available to help fund up-front and long-term investments. This section discusses the City's current stormwater management funding sources and then describes additional funding strategies available to implement GSI that are being considered by the City for future funding.

6.5.1 Current Funding Sources for GSI Program Elements

The City of Cupertino currently uses a combination the City's General Fund and Federal, State, and other applicable grants to fund construction of projects in its capital improvement program (CIP) and other projects. The General Fund, and when applicable, CalRecycle grants, are used for public street, parking

lot and building maintenance; maintenance of stormwater control measures installed at public projects; and maintenance of other landscaped areas (e.g., parks, medians, public plazas, etc.)

6.5.2 Potential Future Funding Options

As required by the MRP, the City analyzed possible funding options to raise additional revenue for design, construction, and long-term operation and maintenance (O&M) of GSI projects. The City used the guidance on stormwater funding options developed by SCVURPPP (2018) as a reference for conducting its analysis. Table 6-1 summarizes the funding options that will be considered by the City as the Plan is implemented. For each type of funding mechanism, the table provides a brief overview and specifics related to GSI, pros and cons, and applicability to funding planning, capital, and/or long-term O&M costs.

6.6 Impervious Area Targets

As mentioned in Section 1.3.2, the focus of the GSI Plan is the integration of GSI systems into public rights-of-way. However, the MRP (Provisions C.11 and C.12) establishes a linkage between public and private GSI features and required reductions of pollutants in stormwater discharges. To help estimate the pollutant load reductions that can be achieved by GSI during the 2020, 2030, and 2040 timeframes, the MRP requires that Permittees include in their GSI Plans estimated targets for the amounts of impervious surface to be "retrofitted" (i.e. redeveloped with GSI facilities to treat runoff from impervious surfaces) as part of public and private projects during the same timeframes.

The City worked with SCVURPPP staff to develop a methodology to predict the extent and location of privately- and publicly-owned land areas that will be redeveloped in their jurisdictions and whose stormwater runoff will be addressed via GSI facilities, and to derive impervious surface targets for GSI retrofits associated with these redevelopment projects. The methodology and results are described in Sections 6.6.1 and 6.6.2 below.

6.6.1 Methodology

The first step in the process used historic development trends and City staff's knowledge of planned/projected redevelopment in the City to estimate the acres of redevelopment that will occur in the City by 2020, 2030, and 2040 via redevelopment of privately- and publicly-owned parcels that would trigger C.3 requirements under the current MRP (i.e. C.3 regulated projects). Stormwater runoff associated with these parcels will be addressed via GSI facilities, as required by the permit.

The second step was to estimate the acres of impervious surface associated with future redevelopment of these private and public parcels. To do this, it was necessary to predict the likely locations and types of land areas that are anticipated to be addressed by GSI in the future. Growth patterns and time horizons for development, along with algorithms to identify which parcels are likely to redevelop, resulted in preliminary estimates of the land area that is predicted to be addressed by GSI facilities in the City of Cupertino by 2020, 2030, and 2040. Using the current land uses of the predicted locations of GSI implementation and associated impervious surface coefficients for each land use type, estimates of the amount of impervious surface that would be retrofitted with GSI on privately-owned parcels were developed.

The methodology focused on parcel-based redevelopment as the location and timing of projects in the public right-of-way is uncertain and the contribution of these projects to overall impervious surface area treated by GSI expected to be minor relative to the acreage projected to be treated by C.3 projects.

Table 6-1 Potential GSI Funding Options

Section/Overview	GSI Specifics	Pros	Cons	Type of Funding
Parcel Taxes: revenue stream through taxing property or other system.	Can be used to set up, fund and maintain a stormwater program and MRP compliance.	• Well understood tax • Stable revenue stream over many years • Legally reliable • Can also be done by mail.	• High political threshold • Vulnerable to competition with other measures on the ballot. • Considerable effort and resources required with uncertain odds of success.	• Planning • Capital • O&M
Property-related Fees: fees on real property.	• Fee on property contributing stormwater runoff to MS4. • Can be used to set up, fund and maintain a stormwater program and MRP compliance.	• Most-commonly used mechanism for funding stormwater programs. • Easier to pass with 50% threshold and mailing process.	• Property-based fees must use a standardized methodology for calculating the fee. • Considerable effort and resources required with uncertain odds of success. • Approval process is more time consuming and expensive for staff. • Schools may have large fees and public schools may be exempt from fees depending on the agency's specific ordinance.	• Planning • Capital • O&M
General Obligation Bonds	• Tax on property owners through debt obligation taken on by municipality. • Long term payback period typically 10-30 years.	• Typically a lower interest rate than what is available from commercial banks. • Allows funds to be used in the near term and paid back over the long term.	• Interest rate variable depending on financial markets • Some risk to general fund for municipality if payments cannot be made. • Can only be used for capital costs – not O&M	• Planning • Capital

Section/Overview	GSI Specifics	Pros	Cons	Type of Funding
Development Impact Fees: paid by an applicant seeking approval of a development project.	Could potentially be used to fund retrofits of adjacent public right-of-way areas with GSI as part of development or redevelopment projects.	Cost for retrofitting streets can be leveraged through development activities.	If a fee is found to not relate to the impact created by the development project, or to exceed the reasonable cost of providing the public service, then the fee may be declared a "special tax" subject to approval by a two-thirds majority of voters.	• Planning • Capital
Grants: one time funds that require an application from a funding agency.	Could be used to plan, design and/or build GSI.	Can fund programs or systems that would otherwise take up significant general fund revenues.	• Usually a one-time source of funding only. • May need to create new programs and systems for each grant. • Usually have strings attached for matching funds and other requirements. • Little control over timing of applications and payment can lead to difficulties in coordination with other programs and grants. • Can be very competitive and resource intensive to apply. • No guarantee of success. • Post-project O&M costs must be borne by the agency.	• Planning • Capital
Benefit Assessment and Community Facility Districts	Typically used to build and/or maintain facilities such as GSI improvements and/or services.	Can be used to fund maintenance and operations.	Requires property owners and/or businesses to agree that the need is present and that they should be (at least partially) responsible for funding it.	• Capital • O&M

Section/Overview	GSI Specifics	Pros	Cons	Type of Funding
Business Improvement Districts	Businesses and property owners tax themselves and manage the funds to build or maintain GSI assets.	Can provide sense of ownership and pride in the neighborhood when results are visible.	Can burden businesses, property owners and others to the extent that they are unwilling to approve other funding measures.	• Planning • Capital • O&M
Infrastructure Financing Districts	Captures increase in ad valorum tax increases (similar to redevelopment agencies) for infrastructure improvements such as GSI	Can be jointly done with multiple cities.	Cannot capture any of the local school district's portion of tax increment.	• Planning • Capital • O&M
Motor Vehicle License Fees: fees on each motor vehicle that is registered.	Could be used to plan, design and/or build GSI.	Can be flexible in purpose and can supply a long-term stable revenue source.	• If the total number of new annual motor vehicle registrations decline over time (as may happen with car-sharing, transit increases, biking and walking and the rollout of automated vehicles) revenues will decline. • Difficult to achieve the 2/3 majority needed to pass due to Prop 26. • Only for activities that are deemed to help mitigate impacts from motor vehicles.	• Planning • Capital

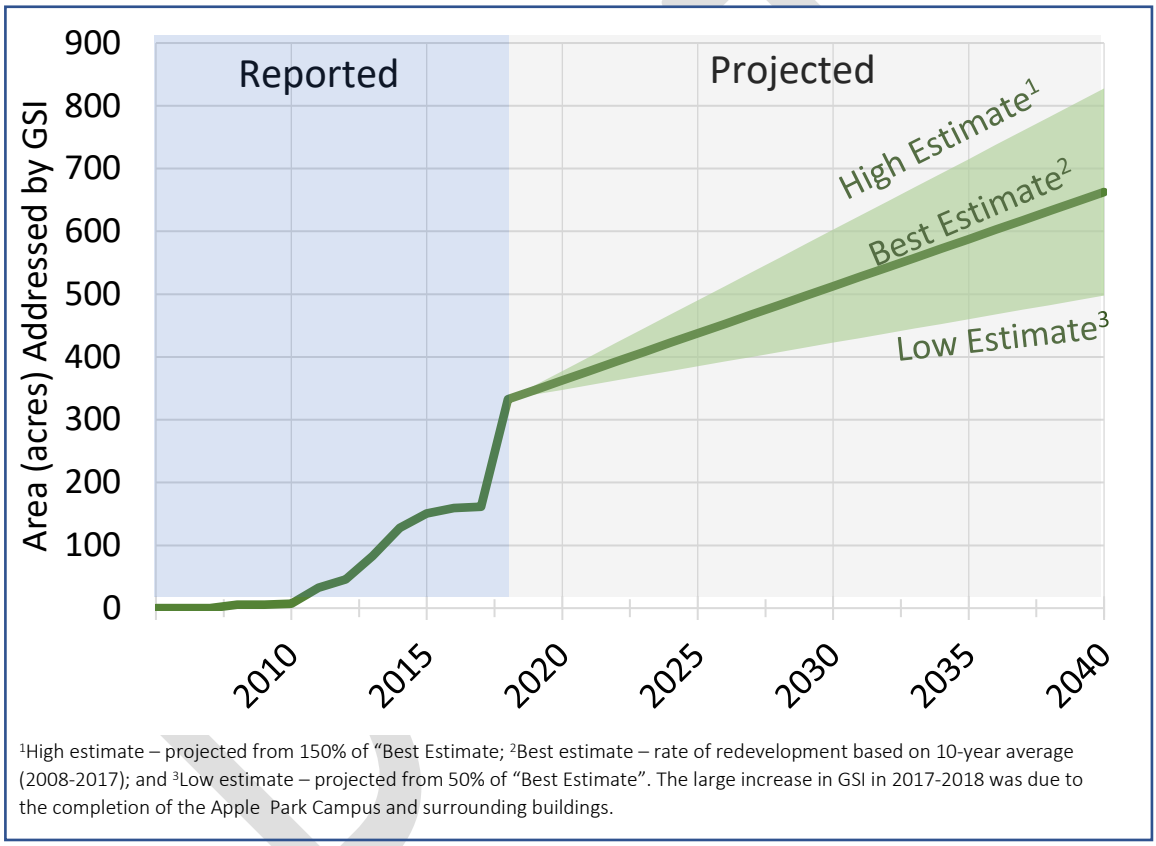
Section/Overview	GSI Specifics	Pros	Cons	Type of Funding
Realignment of Municipal Services: municipalities shift costs to programs where revenue can be increased such as sewer, water and trash.	Could be used to plan, design, build and/or maintain GSI where there is a nexus between the two programs.	A means of leveraging existing or new resources funded by non-balloted fee structures.	• Bureaucratic issues can be difficult to overcome. • Sewer, trash and water may be controlled by different agencies that may not be able to coordinate or share resources. • There may be political restrictions to significant increases in rates.	• Planning • Capital • O&M
Integration with Transportation Projects: transportation funding is leveraged to cost-effectively include stormwater quality elements.	Installation and maintenance of GSI facilities as part of integrated roadway programs.	• Roadway projects have more funding than stormwater programs and are generally more popular with the public. • Complete and green streets may be more popular with the public than traditional car-focused streets. • Green streets may be less expensive than traditional streets based on a life cycle cost analysis.	• Roadways have been designed in certain ways with expectations of costs and purposes for decades. • Many roadways are in poor condition and there is not enough funding to fix them all. • GSI is perceived as an “added” cost which, could reduce the number of roadways that can be maintained. • Transportation funding is often restricted to certain roadway construction elements.	• Planning • Capital

Section/Overview	GSI Specifics	Pros	Cons	Type of Funding
Alternative Compliance: Allows developers the flexibility to build, or fund through payment of an in-lieu fee, off-site stormwater treatment systems for regulated projects or set up credit trading programs.	Leveraging development activities to build and maintain GSI systems. In lieu fees can be used by developers who would rather make a lump sum payment and quickly complete their compliance requirements. Credit trading programs can incentivize non-regulated properties to retrofit impervious surfaces.	• Gives flexibility to site GI systems in locations that optimize pollutant loading reduction and other benefits to the community. • Allows for off-site stormwater treatment when stormwater management requirements can't be met within a regulated project site. • An in-lieu fee and/or credit trading system can be used to achieve additional retrofits and installation of GSI.	• Can be difficult to come up with viable alternative locations for GSI installations. • Can be difficult to quantify how much a developer should pay upfront for long-term maintenance costs that the municipality will bear. • May require agencies to modify the stormwater sections of their municipal codes to allow for the creation and/or use of the desired options/programs.	• Planning • Capital • O&M
Existing Permittee Resources: Utilize general funds for GSI.	Could be used to plan, design, build and/or maintain GSI.	Voter approval or new revenue sources not required.	• GSI must compete with many other municipal priorities and essential services. • Normally not a viable option for substantial GI implementation.	• Planning • Capital • O&M
Long Term Debt: borrow money up-front against a dedicated stream of revenue projected over the life of the program.	Can borrow money from future revenues to construct GSI systems in the present.	• Well understood process of raising funds. • Allows acceleration of improvements to compliance deadlines	• Need a dedicated stream of revenue to pay off debt. • If the general fund is used, can put the general fund at risk if jurisdiction cannot make the payments, credit rating will be downgraded jeopardizing other programs.	• Planning • Capital

Section/Overview	GSI Specifics	Pros	Cons	Type of Funding
Public-Private Partnerships (P3s): agreements or contracts between a municipality and a private company to perform specific tasks.	Can provide for the design, construction and maintenance of GSI systems over a long period.	• Leverages public funds while minimizing impacts to a municipality's debt capacity. • Access to advanced technologies. • Improved asset management. • Draws on private sector expertise and financing. • Benefits local economic development and "green jobs." • Relieves pressure on internal local government resources.	• Stormwater fee or other source of stable revenue over the life of the P3 contract is required. • Contracts out to the private sector the construction and maintenance of GSI systems, possibly removing some municipal control.	• Planning • Capital • O&M
Volunteer Programs: provide community-based volunteer labor for specific tasks.	Use volunteer programs to help build or maintain GSI facilities.	• A low-cost source of labor. • Educational program for community. • Can build support for a stormwater fee or other funding source.	• Can be time intensive for staff to set up and administer. • May not be dependable in the long run • May result in loss of municipal control depending on program specifics.	• Planning • Capital • O&M

6.6.2 Results

Using the methodology described above, a predicted redevelopment rate of 15 acres per year was calculated for the City of Cupertino. "Best" estimates of the magnitude of land areas that is predicted to be addressed by future GSI facilities by the 2020, 2030, and 2040 milestones were calculated using the rate. "High" (i.e., 50% > "best") and "Low" (i.e., 50% < "best") estimates of future GSI implementation were also calculated to provide a range of potential redevelopment levels and account for uncertainty in the "Best" estimate. Figure 6-1 and Table 6-2 present the outputs of the analysis and represent the total acreage known to be addressed by GSI in Cupertino through 2018, and the best estimate of the cumulative land area that will be addressed in 2020 (363 acres), 2030 (513 acres), and 2040 (663 acres) by GSI on privately- and publicly-owned parcels in the City of Cupertino.



[1]High estimate – projected from 150% of "Best Estimate; [2]Best estimate – rate of redevelopment based on 10-year average (2008-2017); and [3]Low estimate – projected from 50% of "Best Estimate". The large increase in GSI in 2017-2018 was due to the completion of the Apple Park Campus and surrounding buildings.

Figure 6-1 Existing and projected cumulative land area (acres) anticipated to be addressed via Green Stormwater Infrastructure facilities installed via private redevelopment in the City of Cupertino by 2020, 2030, and 2040.

Table 6-2 Projected cumulative land area (acres) anticipated to be addressed via Green Stormwater Infrastructure facilities via private redevelopment in the City of Cupertino by 2020, 2030, and 2040.

Year	Low[1]	Best[2]	High[3]
Existing GSI[4]	-	333	-
2020	348	363	378
2030	423	513	603
2040	498	663	828

[1]Low estimate – projected from 50% of "Best Estimate"; [2]Best estimate – rate of redevelopment based on 10-year average (2009-2018); and [3]High estimate – projected from 150% of "Best Estimate"; [4]Total area addressed by parcel-based redevelopment projects with GSI completed through 2018 (excludes non-jurisdictional and green street and regional projects).

Table 6-3 lists the impervious surface percentage for each land use class, based on impervious surface coefficients typically utilized, and the estimated impervious surfaces that are predicted to be retrofitted by 2020, 2030, and 2040 in the City via GSI implementation on private and public parcels: 275 acres by 2020, 431 acres by 2030 and 557 acres by 2040. Note that these predictions do not include impervious surface that may be addressed by projects in the public right-of-way, and that these predictions have a high level of uncertainty because future redevelopment rates may increase or decrease relative to the historic development trends and staff knowledge that the rate for Cupertino was based on. Therefore, actual impervious surface addressed by GSI by the various milestones may increase or decrease relative to what is presented in Table 6-3.

Table 6-3 Actual (2002-2018) and predicted (2019-2040) extent of impervious surface retrofits via GSI implementation on privately- and publicly-owned parcels in the City of Cupertino by 2020, 2030, and 2040.

Previous Land Use	% of Area Impervious [a]	Retrofits via GSI Implementation									
		2002-2018		2019-2020		2021-2030		2031-2040		Total (2002-2040)	
		Total Area (acres)	Impervious Area (acres)	Total Area (acres)[c]	Impervious Area (acres)	Total Area (acres)	Impervious Area (acres)	Total Area (acres)	Impervious Area (acres)	Total Area (acres)	Impervious Area (acres)
Commercial	83%	26	22	1	0	45	37	99	83	171	142
Industrial	91%	189	172	0	0	25	23	4	4	219	199
Residential - High Density	82%	26	21	0	0	24	20	16	13	66	54
Residential - Low Density	47%	4	2	0	0	0	0	0	0	4	2
Retail	96%	58	55	3	2	78	75	27	26	166	159
Urban Parks	20%	0	0	0	0	0	0	3	1	3	1
Open Space[b]	1%	30	0	1	0	3	0	0	0	34	0
Totals		333	272	4	3	176	155	150	126	662	557
Cumulative [d]		333	272	337	275	512	431	662	557		

[a] Source: Existing Land Use in 2005: Data for Bay Area Counties, Association of Bay Area Governments (ABAG), January 2006

[b] Development totals from 2002-2018 may include new development of open space and vacant properties.

[c] The total area for 2019-2020 is based on facilities that are currently under construction or planned to occur prior to 2020 and not the Phase I redevelopment rate and may therefore deviate from the "Best" acres presented for 2020 in Table 6-2.

[d] Totals in this table differ slightly from predictions presented in Table 6-2 due to the inclusion of entire parcels in this table, as opposed to more generic "land areas" projections presented in Table 6-2.

6.7 Project Tracking System

A required component of the GSI Plan is to develop a process for tracking and mapping completed public and private GSI projects and making the information available to the public. The City will continue to implement existing internal tracking procedures for processing public and private projects with GSI, meeting MRP reporting requirements, and managing inspections of stormwater treatment facilities. In addition, the City will provide data to SCVURPPP for countywide tracking of completed public and private GSI projects. This countywide tracking tool can be used to document a project's pollutant reduction performance as well as overall total progress toward city or county-level stormwater goals

6.7.1 City Project Tracking System (Regulated and GSI)

The City currently utilizes an internal tracking system to manage information about installed stormwater treatment measures (including GSI), operation and maintenance (O&M) of public facilities, O&M verification program inspections, and enforcement actions. The tracking system consists of a site specific GIS layer for installed stormwater treatment measures, an internal database (CityWorks) for O&M of public facilities, and a spreadsheet for installed LID O&M and enforcement actions on private property.

6.7.2 SCVURPPP Project Tracking System

SCVURPPP has developed a centralized, web-based data management system, with a connection to GIS platforms, for tracking and mapping all GSI projects in the Santa Clara Valley. The GSI Database provides a centralized, accessible platform for municipal staff to efficiently and securely collect, upload, and store GSI project data, and enhances SCVURPPP's ability to efficiently and accurately calculate and report water quality benefits associated with GSI projects. It also allows portions of the GSI project information to be made publicly available.

City staff will collect and manage information on GSI projects locally using the data management systems described above. City staff will directly enter project data into the SCVURPPP GSI Database on an annual basis through a web-based data entry portal for individual projects or upload data for multiple projects in batch using standardized formats.

Appendix A

Prioritization Metrics for Scoring GSI Project Opportunities

Table A-1. Prioritization Metrics for LID Project Opportunities

Metric	Points						Weighting Factor
	0	1	2	3	4	5	
Parcel Land Use			Schools/ Golf Courses	Park / Open Space	Public Buildings	Parking Lots	
Impervious Area (%)	X < 40	40 ≤ X < 50	50 ≤ X < 60	60 ≤ X < 70	70 ≤ X < 80	80 ≤ X < 100	2
Hydrologic Soil Group		C/D		B		A	
Slope (%)		10 > X > 5	5 ≥ X > 3	3 ≥ X > 2	2 ≥ X > 1	1 ≥ X	
Within flood-prone storm drain catchments	No					Yes	
Contains PCB Interest Areas	None			Moderate		High	2
Within Priority Development Area	No					Yes	
Co-located with another agency project	No					Yes	
Augments water supply	No	Opportunity for capture and use				Above groundwater recharge area and not above groundwater contamination area	2
Water quality source control	No	Yes					
Reestablishes natural hydrology	No	Yes					
Creates or enhances habitat	No	Yes					
Community enhancement	No	Opportunities for other enhancements				Within DAC or MTC Community of Concern	

Table A-2. Prioritization Metrics for Regional Stormwater Capture Project Opportunities

Metric	Points						Weighting Factor
	0	1	2	3	4	5	
Parcel Land Use			Schools/Golf Courses	Public Buildings	Parking Lot	Park / Open Space	
Impervious Area (%)	X < 40	40 ≤ X < 50	50 ≤ X < 60	60 ≤ X < 70	70 ≤ X < 80	80 ≤ X < 100	2
Parcel Size (acres)	0.25 ≤ X < 0.5	0.5 ≤ X < 1	1 ≤ X < 2	2 ≤ X < 3	3 ≤ X < 4	4 ≤ X	
Hydrologic Soil Group		C/D		B		A	
Slope (%)		10 > X > 5	5 ≥ X > 3	3 ≥ X > 2	2 ≥ X > 1	1 ≥ X	
Proximity to Storm Drain (feet)	X > 1,000	1,000 ≥ X > 500		500 ≥ X > 200		200 ≥ X	
Within flood-prone storm drain catchments	No					Yes	
Contains PCB Interest Areas	None			Moderate		High	2
Within Priority Development Area	No					Yes	
Co-located with another agency project	No					Yes	
Augments water supply	No	Opportunity for capture and use				Above groundwater recharge area and not above groundwater contamination area	2
Water quality source control	No	Yes					
Reestablishes natural hydrology	No	Yes					
Creates or enhances habitat	No	Yes					
Community enhancement	No	Opportunities for other enhancements				Within DAC or MTC Community of Concern	

Table A-3. Prioritization Metrics for Green Street Project Opportunities

Metric	Points						Weighting Factor
	0	1	2	3	4	5	
Imperviousness (%)	X < 40	40 ≤ X < 50	50 ≤ X < 60	60 ≤ X < 70	70 ≤ X < 80	80 ≤ X < 100	2
Hydrologic Soil Group		C/D		B		A	
Slope (%)		5 > X > 4	4 ≥ X > 3	3 ≥ X > 2	2 ≥ X > 1	1 ≥ X > 0	
Within flood-prone storm drain catchments	No					Yes	
Contains PCB Interest Areas	None			Moderate		High	2
Within Priority Development Area	No					Yes	
Co-located with another agency project	No					Yes	
Augments water supply	No	Opportunity for capture and use				Above groundwater recharge area and not above groundwater contamination area	2
Water quality source control	No	Yes					
Reestablishes natural hydrology	No	Yes					
Creates or enhances habitat	No	Yes					
Community enhancement	No	Opportunities for other enhancements				Within DAC or MTC Community of Concern	

Appendix B

City of Cupertino Street Segments and Parcels with Opportunities for GSI

City of Cupertino
Potential Parcel-based GSI Opportunities

Parcel Information			City Prioritization Criteria		SWRP Project Scoring[1]													
APN	Owner	Land Use	Co-location with Special Area	Co-location with Public project	Land Use Score	Impervious Score	Soil Group Score	Slope Score	Flood-prone Catchment Score	PCB Area Score	PDA Score	Co-located Project Score	Augments Water Supply Score	WQ Source Control Score	Re-established Natural Habitat Score	Enhances Habitat Score	Community Score	TOTAL SCORE
36230098	City of Cupertino	Park/Open Space			3	0	1	2	0	0	0	0	10	1	1	0	1	19
35706018	City of Cupertino	Park/Open Space			3	0	5	2	0	0	0	0	10	1	1	0	1	23
36915002	City of Cupertino	Park/Open Space			3	0	1	2	0	0	0	0	10	1	1	0	1	19
32614005	City of Cupertino	Park/Open Space			3	0	1	1	0	0	0	0	10	1	1	0	1	18
32609071	City of Cupertino	Public Buildings	Homestead		4	6	1	4	0	0	0	0	10	1	1	0	1	28
32649036	City of Cupertino	Park/Open Space			3	0	1	2	0	10	0	0	10	1	1	0	1	29
31631041	City of Cupertino	Park/Open Space		Citywide Parks and Recreation System Master Plan - Portal Park; Bike Boulevard Project	3	0	1	2	0	0	0	5	10	1	1	0	1	24
36904044	City of Cupertino	Park/Open Space		Citywide Parks and Recreation System Master Plan - Wilson Park	3	0	1	4	0	0	0	5	10	1	1	0	1	26
35925024	City of Cupertino	Park/Open Space		Jollyman Park pathway installation	3	0	1	3	0	0	0	5	10	1	1	0	1	25
37523047	City of Cupertino	Public Buildings		Lawrence Mitty Park	4	0	1	2	0	0	0	5	10	1	1	0	1	25
32627030	City of Cupertino	Park/Open Space		Mary Avenue Rennovation and Park	3	8	1	2	0	0	0	5	10	1	1	0	1	32

City of Cupertino
Potential Parcel-based GSI Opportunities

32606052	City of Cupertino	Public Buildings		Mary Avenue Rennovation and Park	4	8	1	2	0	10	0	5	10	1	1	0	1	43
32629022	City of Cupertino	Park/Open Space	Heart of the City	Memorial Park Renovation; Stevens Creek Blvd protected bike lanes (separated bike	4	6	1	3	0	0	5	5	10	1	1	0	1	37
32629006	City of Cupertino	Park/Open Space	Heart of the City	Memorial Park Renovation; Stevens Creek Blvd protected bike lanes (separated bike	3	0	1	3	0	0	5	5	10	1	1	0	1	30
34215038	City of Cupertino	Park/Open Space		S Foothill Blvd and N Foothill Blvd Green Street; Citywide Parks and Recreation Master Plan	3	0	1	3	0	0	0	5	10	1	1	0	1	25
35710008	City of Cupertino	Park/Open Space		Blackberry Farm Retreat Center; Orange and Byrne Avenue sidewalk improvements	3	0	5	1	0	0	0	5	10	1	1	0	1	27

[1]SWRP = Stormwater Resources Plan (SCVURPPP, 2018). See Appendix A for prioritization metrics and scoring of GSI opportunities.

City of Cupertino
Potential Green Street Project Opportunities

Street Information			City Prioritization Criteria		SWRP Project Scoring[1]												
SWRP Project ID	Street Name	Jurisdiction	Co-location with Public project	Co-location with Special Area	Impervious Score	Soil Group Score	Slope Score	Flood-prone Catchment Score	PCB Area Score	Priority Development Area Score	Co-located Project Score	Augments Water Supply Score	WQ Source Control Score	Reestablishes Natural Hydrology Score	Enhances Habitat Score	Community Enhancement Score	TOTAL SCORE
60501447	WHEATON DR	CUPERTINO	Bike Boulevard Project		6	1	5	0	0	5	5	10	1	1	1	1	36
60501446	WHEATON DR	CUPERTINO	Bike Boulevard Project		6	1	5	0	0	5	5	10	1	1	1	1	36
60501557	WHEATON DR	CUPERTINO	Citywide Parks and Recreation System Master Plan; Bike Boulevard Project		4	1	5	0	0	5	5	10	1	1	1	1	34
60500926	BILICH PL	CUPERTINO	Bike Boulevard Project		4	1	5	0	0	5	5	10	1	1	1	1	34
60500612	S DE ANZA BLVD	CUPERTINO	Bike Boulevard Project	South De Anza	10	1	5	0	0	5	5	10	1	1	1	1	40
60501621	BOLLINGER RD	CUPERTINO	Bike Boulevard Project		10	1	4	0	0	0	5	10	1	1	1	1	34
1000715919	CIVIK PARK LN	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	1	0	0	5	5	10	1	1	1	1	34
60501804	RODRIGUES AVE	CUPERTINO	Bike Boulevard Project	South De Anza	10	1	4	0	0	5	5	10	1	1	1	1	39
1000715916	TOWN CENTER LN	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	4	0	0	5	5	10	1	1	1	1	35
60501620	BOLLINGER RD	CUPERTINO	Bike Boulevard Project		10	1	4	0	0	0	5	10	1	1	1	1	34
60502513	RODRIGUES AVE	CUPERTINO	Bike Boulevard Project	South De Anza	10	1	4	0	0	5	5	10	1	1	1	1	39
60502170	N DE ANZA BLVD	CUPERTINO	Bike Boulevard Project	North De Anza	6	1	5	0	0	5	5	10	1	1	1	1	36
60500883	INFINITE LOOP	CUPERTINO	Bike Boulevard Project	North De Anza	6	1	3	0	0	5	5	10	1	1	1	1	34
60502172	N DE ANZA BLVD	CUPERTINO	Bike Boulevard Project	North De Anza	6	1	3	0	0	5	5	10	1	1	1	1	34
60500901	MARY AVE	CUPERTINO	Bike Boulevard Project		8	1	4	0	10	0	5	10	1	1	1	1	42
60500368	DORADO	CUPERTINO	Bike Boulevard Project		4	1	2	0	10	0	5	10	1	1	1	1	36
60502363	MARY AVE	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	4	0	0	5	5	10	1	1	1	1	35
60500370	MARY AVE	CUPERTINO	Bike Boulevard Project		6	1	4	0	10	0	5	10	1	1	1	1	40
60500369	MARY AVE	CUPERTINO	Bike Boulevard Project		6	1	4	0	10	0	5	10	1	1	1	1	40

City of Cupertino
Potential Green Street Project Opportunities

Street Information			City Prioritization Criteria		SWRP Project Scoring[1]												
SWRP Project ID	Street Name	Jurisdiction	Co-location with Public project	Co-location with Special Area	Impervious Score	Soil Group Score	Slope Score	Flood-prone Catchment Score	PCB Area Score	Priority Development Area Score	Co-located Project Score	Augments Water Supply Score	WQ Source Control Score	Reestablishes Natural Hydrology Score	Enhances Habitat Score	Community Enhancement Score	TOTAL SCORE
60500362	SEGOVIA	CUPERTINO	Bike Boulevard Project		6	1	4	0	10	0	5	10	1	1	1	1	40
60500367	DORADO	CUPERTINO	Bike Boulevard Project		6	1	3	0	10	0	5	10	1	1	1	1	39
60500902	METEOR DR	CUPERTINO	Bike Boulevard Project		8	1	4	0	10	0	5	10	1	1	1	1	42
60502362	PARKWOOD DR	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	4	0	0	5	5	10	1	1	1	1	35
60502218	MILLARD LN	CUPERTINO	Bike Boulevard Project		6	1	5	0	10	0	5	10	1	1	1	1	41
60502720	PACIFICA RD	CUPERTINO	Bike Boulevard Project	South De Anza	10	1	4	0	0	0	5	10	1	1	1	1	34
60500741	MARY AVE	CUPERTINO	Memorial Park Renovation; Stevens Creek Blvd protected bike lanes (separated bike lanes)	Heart of the City	6	1	4	0	0	5	5	10	1	1	1	1	35
60500568	GRANADA AVE	CUPERTINO	Bike Boulevard Project	Monta Vista Village	4	1	4	0	6	0	5	10	1	1	1	1	34
60501097	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	4	0	0	5	5	10	1	1	1	1	37
60501095	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	3	0	0	5	5	10	1	1	1	1	34
60501156	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	4	1	5	0	0	5	5	10	1	1	1	1	34
60501496	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	5	0	0	5	5	10	1	1	1	1	36
60501501	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	4	0	0	5	5	10	1	1	1	1	35
60500619	S STELLING RD	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	3	0	0	5	5	10	1	1	1	1	34
60500096	N WOLFE RD	CUPERTINO	Bike Boulevard Project	Heart of the City	10	1	4	0	0	5	5	10	1	1	1	1	39
60500913	SAICH WAY	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	4	0	0	5	5	10	1	1	1	1	37

City of Cupertino
Potential Green Street Project Opportunities

Street Information			City Prioritization Criteria		SWRP Project Scoring[1]												
SWRP Project ID	Street Name	Jurisdiction	Co-location with Public project	Co-location with Special Area	Impervious Score	Soil Group Score	Slope Score	Flood-prone Catchment Score	PCB Area Score	Priority Development Area Score	Co-located Project Score	Augments Water Supply Score	WQ Source Control Score	Reestablishes Natural Hydrology Score	Enhances Habitat Score	Community Enhancement Score	TOTAL SCORE
60500623	S STELLING RD	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	5	0	0	5	5	10	1	1	1	1	36
60501267	CAMPUS DR	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	3	0	0	5	5	10	1	1	1	1	34
60501940	PENINSULA AVE	CUPERTINO	Bike Boulevard Project	Monta Vista Village	8	1	4	0	10	0	5	10	1	1	1	1	42
60502506	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	4	0	0	5	5	10	1	1	1	1	37
60502021	S PORTAL AVE	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	3	0	0	5	5	10	1	1	1	1	34
60500628	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	4	0	0	5	5	10	1	1	1	1	37
60502508	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	4	0	0	5	5	10	1	1	1	1	35
60501977	IMPERIAL AVE	CUPERTINO	Bike Boulevard Project	Monta Vista Village	8	1	4	0	10	0	5	10	1	1	1	1	42
60500744	FINCH AVE	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	4	0	0	5	5	10	1	1	1	1	37
60500443	N TANTAU AVE	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	3	0	0	5	5	10	1	1	1	1	36
60501096	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	3	0	0	5	5	10	1	1	1	1	36
60501556	N PORTAL AVE	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	4	0	0	5	5	10	1	1	1	1	35
60501525	N WOLFE RD	CUPERTINO	Bike Boulevard Project	Heart of the City	10	1	4	0	0	5	5	10	1	1	1	1	39
60501507	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	10	1	4	0	0	5	5	10	1	1	1	1	39
60501508	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	10	1	4	0	0	5	5	10	1	1	1	1	39
60501509	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	5	0	0	5	5	10	1	1	1	1	38
60500889	SAICH WAY	CUPERTINO	Bike Boulevard Project	Heart of the City	10	1	4	0	0	5	5	10	1	1	1	1	39

City of Cupertino
Potential Green Street Project Opportunities

Street Information			City Prioritization Criteria		SWRP Project Scoring[1]												
SWRP Project ID	Street Name	Jurisdiction	Co-location with Public project	Co-location with Special Area	Impervious Score	Soil Group Score	Slope Score	Flood-prone Catchment Score	PCB Area Score	Priority Development Area Score	Co-located Project Score	Augments Water Supply Score	WQ Source Control Score	Reestablishes Natural Hydrology Score	Enhances Habitat Score	Community Enhancement Score	TOTAL SCORE
60501502	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	5	0	0	5	5	10	1	1	1	1	36
60501503	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	4	1	5	0	0	5	5	10	1	1	1	1	34
60502679	TORRE AVE	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	4	0	0	5	5	10	1	1	1	1	37
60501494	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	5	0	0	5	5	10	1	1	1	1	36
60500105	E ESTATES DR	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	5	0	0	5	5	10	1	1	1	1	38
60500206	PASADENA AVE	CUPERTINO	Bike Boulevard Project	Monta Vista Village	8	1	4	0	10	0	5	10	1	1	1	1	42
60500097	N WOLFE RD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	4	0	0	5	5	10	1	1	1	1	37
60502335	TANTAU AVE	CUPERTINO	Bike Boulevard Project	Heart of the City	10	1	4	0	0	5	5	10	1	1	1	1	39
60501500	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	4	0	0	5	5	10	1	1	1	1	35
60501571	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	4	0	0	5	5	10	1	1	1	1	37
60502035	BIANCHI WAY	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	3	0	0	5	5	10	1	1	1	1	34
60502507	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	5	0	0	5	5	10	1	1	1	1	38
60502493	N BLANEY AVE	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	3	0	0	5	5	10	1	1	1	1	36
60501217	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Monta Vista Village	8	1	3	0	10	0	5	10	1	1	1	1	41
60501524	MILLER AVE	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	5	0	0	5	5	10	1	1	1	1	38
60500104	E ESTATES DR	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	4	0	0	5	5	10	1	1	1	1	37
60500095	MILLER AVE	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	5	0	0	5	5	10	1	1	1	1	38

City of Cupertino
Potential Green Street Project Opportunities

Street Information			City Prioritization Criteria		SWRP Project Scoring[1]												
SWRP Project ID	Street Name	Jurisdiction	Co-location with Public project	Co-location with Special Area	Impervious Score	Soil Group Score	Slope Score	Flood-prone Catchment Score	PCB Area Score	Priority Development Area Score	Co-located Project Score	Augments Water Supply Score	WQ Source Control Score	Reestablishes Natural Hydrology Score	Enhances Habitat Score	Community Enhancement Score	TOTAL SCORE
60502505	PORTAL PLZ	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	4	0	0	5	5	10	1	1	1	1	35
60502197	S TANTAU AVE	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	5	0	0	5	5	10	1	1	1	1	38
60502331	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	10	1	5	0	0	5	5	10	1	1	1	1	40
60502367	VISTA DR	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	3	0	0	5	5	10	1	1	1	1	34
60502180	CAMPUS DR	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	4	0	0	5	5	10	1	1	1	1	35
60500666	BANDLEY DR	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	3	0	0	5	5	10	1	1	1	1	36
60501504	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	4	1	5	0	0	5	5	10	1	1	1	1	34
60502755	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	4	0	0	5	5	10	1	1	1	1	37
60500745	FINCH AVE	CUPERTINO	Bike Boulevard Project	Heart of the City	10	1	4	0	0	5	5	10	1	1	1	1	39
60500449	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Monta Vista Village	10	1	4	0	10	0	5	10	1	1	1	1	44
60502650	BANDLEY DR	CUPERTINO	Bike Boulevard Project	North De Anza	6	1	3	0	0	5	5	10	1	1	1	1	34
60502179	CAMPUS DR	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	4	0	0	5	5	10	1	1	1	1	35
60502756	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	4	0	0	5	5	10	1	1	1	1	37
60501523	N WOLFE RD	CUPERTINO	Bike Boulevard Project		8	1	4	0	0	5	5	10	1	1	1	1	37
60502753	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	4	0	0	5	5	10	1	1	1	1	35
60501499	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	5	0	0	5	5	10	1	1	1	1	38
60501497	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	10	1	4	0	0	5	5	10	1	1	1	1	39

City of Cupertino
Potential Green Street Project Opportunities

Street Information			City Prioritization Criteria		SWRP Project Scoring[1]												
SWRP Project ID	Street Name	Jurisdiction	Co-location with Public project	Co-location with Special Area	Impervious Score	Soil Group Score	Slope Score	Flood-prone Catchment Score	PCB Area Score	Priority Development Area Score	Co-located Project Score	Augments Water Supply Score	WQ Source Control Score	Reestablishes Natural Hydrology Score	Enhances Habitat Score	Community Enhancement Score	TOTAL SCORE
60502425	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Monta Vista Village	10	1	4	0	0	0	5	10	1	1	1	1	34
60500624	S STELLING RD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	4	0	0	5	5	10	1	1	1	1	37
60501506	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project		8	1	3	0	0	5	5	10	1	1	1	1	36
60501495	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	5	0	0	5	5	10	1	1	1	1	36
60501505	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project		8	1	5	0	0	5	5	10	1	1	1	1	38
60500740	MARY AVE	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	3	0	0	5	5	10	1	1	1	1	34
60501093	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	2	0	0	5	5	10	1	1	1	1	35
60500618	S STELLING RD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	4	0	0	5	5	10	1	1	1	1	37
60502509	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	4	0	0	5	5	10	1	1	1	1	35
60501094	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	6	1	4	0	0	5	5	10	1	1	1	1	35
60502328	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	10	1	5	0	0	5	5	10	1	1	1	1	40
60501252	N STELLING RD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	5	0	0	5	5	10	1	1	1	1	38
60502326	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	10	1	4	0	0	5	5	10	1	1	1	1	39
60501572	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	8	1	5	0	0	5	5	10	1	1	1	1	38
60500155	STEVENS CREEK BLVD	CUPERTINO	Bike Boulevard Project	Heart of the City	10	1	3	0	0	5	5	10	1	1	1	1	38
60500451	MC CLELLAN RD	CUPERTINO	Union Pacific RR Trail Feasibility Study; McClellan Road Bike Corridor (separated bike lanes)	Monta Vista Village	8	1	1	0	10	0	5	10	1	1	1	1	39

City of Cupertino
Potential Green Street Project Opportunities

Street Information			City Prioritization Criteria		SWRP Project Scoring[1]												
SWRP Project ID	Street Name	Jurisdiction	Co-location with Public project	Co-location with Special Area	Impervious Score	Soil Group Score	Slope Score	Flood-prone Catchment Score	PCB Area Score	Priority Development Area Score	Co-located Project Score	Augments Water Supply Score	WQ Source Control Score	Reestablishes Natural Hydrology Score	Enhances Habitat Score	Community Enhancement Score	TOTAL SCORE
60501944	BUBB RD	CUPERTINO	Citywide Parks and Recreation System Master Plan; Bike Boulevard Project	Monta Vista Village	6	1	4	0	10	0	5	10	1	1	1	1	40

[1] SWRP = Stormwater Resources Plan (SCVURPPP, 2018). See Appendix A for prioritization metrics and scoring of GSI opportunities.

Appendix C
GSI concept for the Mary Avenue Greenbelt and Trail Project

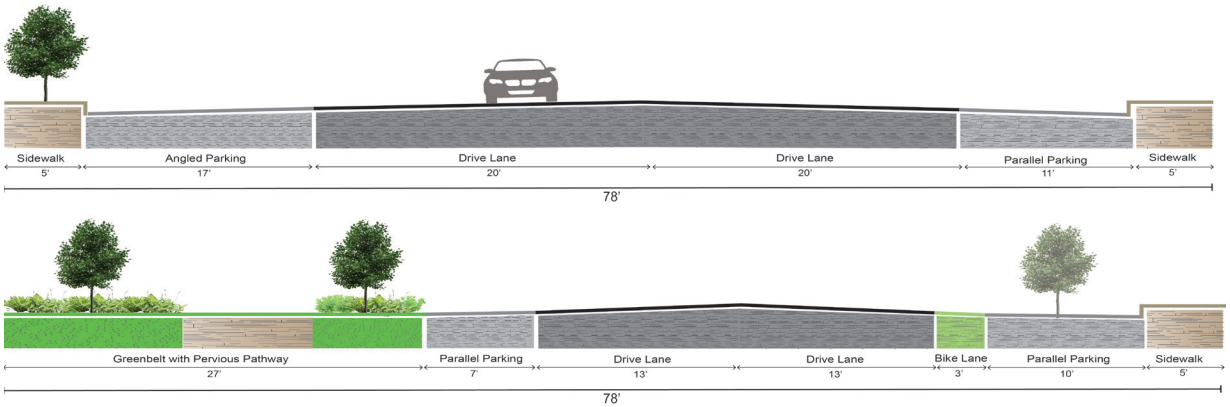
Mary Avenue Green Street

Cupertino

Concept Description

Mary Avenue is an important connector road in the City of Cupertino that is at the hub of many important destinations: Homestead High School, Dan Burnett bicycle-pedestrian bridge over I-280, Mary Avenue Dog Park, City of Cupertino Service Center, The Oaks shopping center, Cupertino Senior Citizen Center, De Anza College, Memorial Park, and the commercial corridor on Stevens Creek Blvd. The road has an 80-ft wide right-of-way with a variety of abutting land uses running 0.72 miles from Stevens Creek Blvd to I-280. It presents a tremendous opportunity for a "complete street" retrofit integrating stormwater management with multiple community and environmental benefits. The City has been considering a complete street concept on Mary Avenue for several years, with a vision of transforming the existing inefficient roadway into a multi-functional corridor.

Surveys have identified "trails and pathways" and "access to nature" as the top two most sought after community benefits among Cupertino residents. Stormwater, habitat, and community benefits will be realized by creating a wide bioretention-enhanced green belt on the west side of the street containing a pervious multi-use pathway to accommodate bicyclists, pedestrians, strollers, and joggers. Tree wells will be installed every 100 feet on the east side of the street to treat stormwater and, along with new trees in the green beltway, eventually form an arbor archway of green canopy over Mary Avenue. To create space for the proposed improvements, the City plans to remove the center turn lane, convert 20'-wide angled parking on the west side to 7'-wide parallel parking, and incorporate the existing bike lane on the west side into the green belt . A typical cross-section has been developed to show how the roadway could be reconfigured. Pervious pavement will be employed in the roadway closer to the Stevens Creek Blvd intersection where space is in higher demand. Bioretention has a 5% sizing ratio (based on available space and to achieve better performance), and the pervious pavement has a 20% sizing ratio (4 parts run-on area to 1 part pervious pavement).



Pre-construction (top) & Post-construction (bottom) Street Section

Concept Metrics

WATERSHED CHARACTERISTICS

Watershed
SUNNYVALE EAST CHANNEL

Drainage Management Area
12.1 AC

% Impervious of DMA
90

Total Runoff Volume
6.6 AC-FT/YR

FACILITY INFORMATION

Bioretention

Total Facility Area
23,958 SF

Number of Facilities
40

Maximum Surface Ponding
0.5 FT

Storage Volume
0.7 AC-FT

Pervious Pavement

Total Facility Area
9,583 SF
LOCATED IN PARKING LANE

Storage Volume
0.2 AC-FT

DESIGN CRITERIA

Total Storage
0.9 AC-FT

Infiltration Rate
0.2 IN/HR

Total Runoff Captured
6.6 AC-FT/YR (100%)

Concept Basemap

LEGEND

- Catch Basins
- Storm Drain Network
- Flow Direction
- Drainage Management Area
- Greenway with Integrated Stormwater Treatment
- Pervious Pavement
- Tree Wells
- A See Precedent Image on Next Page

0 250 500 ft

PARADIGM ENVIRONMENTAL Lotus Water

Mary Avenue Green Street

Example of Integration of Bioretention with Bike and Pedestrian Crossings in Lyon, France

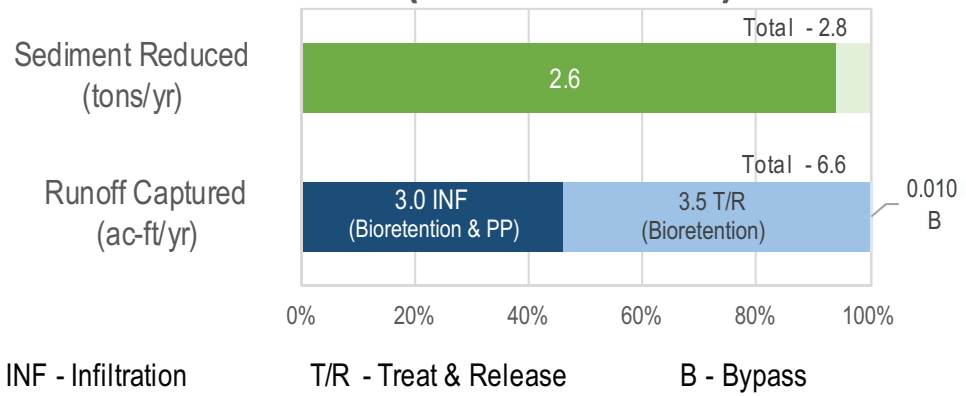
Example of Stormwater and Multi-modal Transportation Options in Lyon, France

Budget-Level Cost Estimates

DESCRIPTION	UNIT COST	UNIT	QUANTITY	SUBTOTAL
Utilities Protection/Relocation	$90,000	LS	1	$90,000
Demo, Excavation & Offhaul	$10	SF	33,541	$335,400
Curb and 36" Sidewalls	$185	LF	9,073	$1,678,600
Bio-soil Media	$250	CY	1,331	$332,800
Pervious pavement	$15	SF	9,583	$143,700
Underdrains	$5	SF	33,541	$167,700
Drain Rock Subbase	$150	CY	1,242	$186,300
Plantings & Mulch	$22	SF	23,958	$527,100
Catch Basin Relocation	$7,500	EA	11	$82,500
Storm Drain Connections	$5,000	EA	20	$100,000
			CONSTRUCTION SUBTOTAL	**$3,644,000**
Mobilization (10% Construction)				$364,000
Contingency (30% Construction)				$1,093,000
Design (15% Total)				$765,000
			TOTAL PROJECT COST (DESIGN + CONSTRUCTION)	**$5,866,000**

- These are planning-level cost estimates ($2018) for design and construction. Soft costs for City administration and project management and post-construction operations and maintenance are not included. Other factors that may affect the cost of future construction include escalation and market conditions.
- This cost estimate only includes stormwater management components appropriately sized to treat runoff from the project area. The City of Cupertino will procure additional funding for non-stormwater related components of the complete street retrofit.

Concept Effectiveness (Annual Average)



- Effectiveness is defined as the modeled ability of the proposed project to capture stormwater runoff from the management area, remove the identified constituents from that stormwater, and infiltrate or reuse the captured water.
- For planning purposes, recharge is approximated as being equivalent to infiltration if the project is located in the groundwater recharge zone.
- Modeling and performance estimates are based on an historical rainfall time series from water year 2007 through water year 2015.

Additional Potential Benefits

- Within Priority Development Area
- Augments Water Supply
- Groundwater Recharge
- Community Enhancement
- Reestablishes Natural Hydrology

Additional Considerations

This project concept is planning-level and subject to revision as additional information related to geotechnical, environmental, and stakeholder considerations becomes available. Factors to be considered include but are not limited to the following:

- Infiltration Potential. The project is in a designated recharge area. The map of Depth to First Groundwater for the Santa Clara Basin in Appendix A of the SCVURPPP C.3 Stormwater Handbook shows depth to groundwater as approximately 50 feet; therefore, no conflicts with groundwater are anticipated. The NRCS SSURGO database lists soils in the projects area as having an infiltration capacity of 0.20-0.57 in/hr; facilities are assumed to require installation of an underdrained. Undrained facilities are not lined and, therefore, a portion of the stormwater entering the facility will infiltrate into underlying soil. Site-specific infiltration tests should be performed during early design so that facilities are adequately sized and drained.
- Parking Analysis. Mary Avenue is currently used for all-day parking by visitors, particularly DeAnza College students. Instituting metering or parking permits would encourage students to park at the college, which appears to have capacity but is not free of charge.
- Utility Coordination. Additional spatial data showing all utility mains along the roadway corridor should be collected and evaluated for potential conflicts; proposed facility locations should be adjusted as necessary to avoid any identified conflicts.
- Historical Lead Contamination. There is historical lead contamination in the landscape between Mary Avenue and Hwy 85. Lead was detected above background levels and impacted soil offhauled for proper disposal during construction of the Mary Avenue Dog Park.
- Stakeholder Coordination. Outreach should be conducted to area residents and others that may be affected by roadway configuration changes and less on-street parking.
- The Oaks shopping center at the intersection of Stevens Creek Blvd is likely to be redeveloped in the coming years, and retrofit of its parking lot area may provide an additional synergy opportunity.
- Maintaining traffic flow and adequate parking while improving pedestrian and bicycle safety will transform Mary Avenue into a critical link in Cupertino's Safe Routes to School network.

Appendix C

Guidance for Identifying Green Infrastructure Potential in Municipal Capital Improvement Program Projects

BASMAA Development Committee

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

Background

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

MRP 2.0 defines Green Infrastructure as:

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

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

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

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

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

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

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

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

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

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

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

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

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

Procedure for Review of Planned Public Projects and Annual Reporting

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

Part 1 – Initial Screening

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

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

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

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

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

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

Part 2 – Assessment of Green Infrastructure Potential

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

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

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

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

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

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

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

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

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

Process for Assessing Green Infrastructure Potential of a Public Infrastructure Project

Initial Assessment of Green Infrastructure Potential

Consider opportunities that may be associated with:

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

Step 1: Information Collection/Reconnaissance

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

For street and landscape projects:

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

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

Step 2: Preliminary Sizing and Drainage Analysis

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

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

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

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

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

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

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

Step 3: Barriers and Conflicts

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

Note issues such as:

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

Step 4: Project Budget and Schedule

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

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

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

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

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

Attachment 1

Examples of Projects with No Potential for Green Infrastructure

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

Attachment 2

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

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

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

Comments:

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

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

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

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

Comments:

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

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

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

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

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

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

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