

City of Cupertino

Green Infrastructure Plan Framework



Approved on: April 18, 2017

Approved by: City of Cupertino City Council

Submitted by:



**PUBLIC WORKS DEPARTMENT
Environmental Programs**

Cheri Donnelly, Environmental Programs Manager
10300 TORRE AVENUE ~ CUPERTINO, CA 95014
(408) 777-3354 ~ (408) 777-3242

In compliance with Provision C.3.j.i.(1) of Order R2-2015-0049

Page Intentionally Left Blank

TABLE OF CONTENTS

TABLE OF CONTENTS.....	III
LIST OF TABLES	III
LIST APPENDICES.....	III
APPENDIX A. STAFF REPORT TO CITY COUNCIL ADOPTING GI PLAN FRAMEWORK	III
ABBREVIATIONS.....	IV
1.0 INTRODUCTION.....	1
1.1 WHAT IS GREEN INFRASTRUCTURE?	1
1.2 STORMWATER QUALITY REGULATORY REQUIREMENTS	1
1.3 PURPOSE OF GREEN INFRASTRUCTURE PLAN AND FRAMEWORK	2
1.4 CITY OF CUPERTINO DESCRIPTION AND BACKGROUND	3
1.5 CITY OF CUPERTINO GOALS AND OVERALL APPROACH	7
2.0 GREEN INFRASTRUCTURE PLAN ELEMENTS & APPROACH	10
2.1 SUMMARY OF REQUIRED ELEMENTS	10
2.2 APPROACH TO COMPLETION OF REQUIRED ELEMENTS	11
2.2.1 Outreach and Education	11
2.2.2 Project Identification and Prioritization	13
2.2.3 Prioritized Project Locations and Timeframes	14
2.2.4 Completed Project Tracking System.....	14
2.2.5 Guidelines and Specifications.....	14
2.2.6 Integration with Other Municipal Plans.....	14
2.2.7 Evaluation of Funding Options.....	15
2.2.8 Adoption of Policies, Ordinances, and Other Legal Mechanisms.....	16
2.2.9 Completion and Adoption of the GI Plan	17
3.0 GREEN INFRASTRUCTURE PLAN DEVELOPMENT SCHEDULE	19
This section describes the time frames for completion of the tasks presented in Section 2 to develop and adopt the City of Cupertino’s GI Plan.	
	19

LIST OF TABLES

Table 1. Cupertino’s Land Use Percentages	4
Table 2. Schedule for Municipal Plan Updates for GI	15
Table 3. Schedule for Municipal Policy and Ordinance Updates	16
Table 4. Schedule for Completion and Adoption of GI Plan.....	17
Table 5. Green Infrastructure Plan Development Schedule	19

LIST APPENDICES

APPENDIX A. STAFF REPORT TO CITY COUNCIL ADOPTING GI PLAN FRAMEWORK	
---	--

ABBREVIATIONS

BASMAA	Bay Area Stormwater Management Agencies Association
Caltrans	California Department of Transportation
CASQA	California Stormwater Quality Association
CEQA	California Environmental Quality Act
CIP	Capital Improvement Program
COA	Condition of Approval
EPA	Environmental Protection Agency
FY	Fiscal Year
GI	Green Infrastructure
GIS	Geographic Information System
GSI	Green Stormwater Infrastructure
Hg	Mercury
LID	Low Impact Development
LUS	Watershed Management Initiative Land Use Subgroup
MC	Management Committee
MEP	Maximum Extent Practicable
MRP	Municipal Regional Stormwater NPDES Permit
MS4	Municipal Separate Storm Sewer System
NGO	Non-Governmental Organization
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
PCBs	Polychlorinated Biphenyls
PIP	Public Information and Participation
POC	Pollutant of Concern
Program	Santa Clara Valley Urban Runoff Pollution Prevention Program
RFP	Request for Proposal
ROW	Right of Way
RWQCB	San Francisco Bay Regional Water Quality Control Board
SCBWMI	Santa Clara Basin Watershed Management Initiative
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SCVWD	Santa Clara Valley Water District
SFEI	San Francisco Estuary Institute
SFEP	San Francisco Estuary Partnership
State Board	State Water Resource Control Board
SWRP	Storm Water Resource Plan
SWRCB	State Water Resource Control Board
TMDL	Total Maximum Daily Load
Water Board	San Francisco Bay Regional Water Quality Control Board
Water District	Santa Clara Valley Water District
WDR	Waste Discharge Requirements
WMI	Watershed Management Initiative

PREFACE

This Green Infrastructure Framework (workplan) is a commitment by the City of Cupertino's decision makers to direct staff in several departments to develop and submit Cupertino's Green Infrastructure Plan by Sept 30, 2019 in compliance with Provision C.3.j.i.(2) of Order R2-2015-0049 (the MRP). The dates and specific activities are intended to guide the preparation of a complete and effective Plan over the next two years. The Framework is intended to be flexible regarding details and timeframes which may change as the Plan's development process evolves.

1.0 INTRODUCTION

1.1 What is Green Infrastructure?

“Green Infrastructure” (GI), also known as “Green Stormwater Infrastructure” (GSI), is 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 project site, green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water.

Examples of GI include resilient, sustainable systems that slow, filter, harvest, infiltrate and/or evapotranspire runoff such as: landscape-based stormwater “biotreatment” using soil and plants ranging in size from grasses to trees; pervious paving systems (e.g., interlocking concrete pavers, porous asphalt, and pervious concrete); rainwater harvesting systems (e.g., cisterns and rain barrels); and other methods to capture and treat stormwater. These practices are also known as Low Impact Development (LID) site design and treatment measures.

GI roadway projects are typically called “Green Streets”. Another term of art related to street design is “Complete Streets”. This term comes from the transportation field and deals with the designing of streets that incorporate all modes of travel equally - in particular to increase safety and access for cyclists and pedestrians. The integration of the goals of both Complete Streets and Green Streets has coined several new terms such as “Living Streets”, “Better Streets” and “Sustainable Streets”. This movement recognizes that environmentally and holistically designed streets achieve many benefits: increased multi-modal travel and safety; clean water and air; climate change resilience and mitigation; placemaking and community cohesion; habitat and energy savings; and higher property values.

1.2 Stormwater Quality Regulatory Requirements

The City of Cupertino is subject to the requirements of the recently reissued Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit for Phase I municipalities and agencies in the San Francisco Bay area (Order R2-2015-0049), also known as the Municipal Regional Permit (MRP), which became effective on January 1, 2016. The MRP applies to 76 large, medium and small municipalities (cities, towns and counties) and flood control agencies that discharge stormwater to San Francisco Bay, collectively referred to as Permittees.

Over the last 13 years, under 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 site design, pollutant source control, stormwater treatment and flow control measures as appropriate. LID treatment measures, such as rainwater harvesting and use, infiltration, and biotreatment, have been required on most

Regulated Projects since December 2011. Construction of new roads is covered by these requirements, but projects related to existing roads and adjoining sidewalks and bike lanes are not regulated unless they include creation of an additional travel lane.

A new section of the MRP requires Permittees to develop and implement long-term Green Infrastructure (GI) Plans for the inclusion of LID measures in storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other elements. The GI Plan must be completed by September 30, 2019. As part of the GI planning process, the MRP requires Permittees to adopt a *Green Infrastructure Plan Framework* (Framework) by June 30, 2017 and submit it to the Regional Water Quality Control Board (Water Board) by September 30, 2017. The Framework, a work plan for completing the GI Plan, must at a minimum include a statement of purpose, tasks and timeframes to complete the required elements of the GI Plan.

Other sections of the MRP include requirements for municipalities to control pollutants of concern to water quality in stormwater discharges, including polychlorinated biphenyls (PCBs), mercury, trash and pesticides. LID measures incorporated into green infrastructure can help remove these pollutants from stormwater runoff. For this reason, the MRP establishes a new linkage between public infrastructure retrofits and required reductions in discharges of certain pollutants, specifically PCBs and mercury. Over the next few decades, Permittees must reduce the loads of PCBs and mercury in stormwater discharges through various means, with a portion of these load reductions achieved through the installation of GI systems. Permittees in Santa Clara County, collectively, must implement GI on public and private property to reduce mercury loading by 16 grams/year and PCB loading by 37 grams/year by 2020. The load reductions will continue in future permits. Therefore, these efforts will be integrated and coordinated countywide for the most effective program. Other pollutants, including trash and pesticides, should also be coordinated with the GI program since, when properly designed, constructed and maintained, biotreatment systems may also be credited towards trash and pesticide reduction goals.

A key part of the GI definition in the MRP is the inclusion of both private and public property locations for GI systems. This has been done in order to plan, analyze, implement and credit GI systems for pollutant load reductions on a watershed scale, as well as recognize all GI accomplishments within a municipality. However, the focus of the GI Plan and Framework is the integration of GI systems into public rights-of-way. The GI Plan is not intended to impose retrofit requirements on private property, outside the standard development application review process for projects already regulated by the MRP, but may provide incentives or opportunities for private property owners to add or contribute towards GI elements if desired.

1.3 Purpose of Green Infrastructure Plan and Framework

The purpose of the City of Cupertino's GI Plan is to describe how the City will gradually transform its urban landscape and storm drainage systems from "gray" to "green"; that is, shift from traditional storm drain infrastructure, where stormwater runoff flows directly from impervious surfaces into storm drains and receiving waters, to a more resilient, sustainable system that reduces and slows runoff by dispersing it to vegetated areas, promotes infiltration and evapotranspiration, collects runoff for nonpotable uses, and

treats runoff using biotreatment and other green infrastructure practices. The GI Plan will also be used to demonstrate the City's long-term commitment to implementation of green infrastructure to help reduce loads of pollutants of concern, particularly mercury and PCBs, discharged in stormwater to local waterways. The GI 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 specific master plans, to achieve multiple potential benefits to the community, including improved water and air quality, reduced flooding, increased water supply, traffic calming, safer pedestrian and bicycle facilities, climate resiliency, improved wildlife habitat, and a more pleasant urban environment.

The purposes of this Framework are to:

1. Provide some background on the MRP requirements for GI Planning;
2. Describe the purpose, goals, and tasks to develop the City's *GI Plan*; and,
3. Outline the time frames for the creation of the City's GI Plan and other GI tasks required in the MRP.

This Framework was reviewed and approved for submittal to the Water Board by the City Council of the City of Cupertino. The City's Staff Report is attached as Appendix A.

This Framework is submitted by the City in compliance with MRP Provision C.3.j.i.(1).

1.4 City of Cupertino Description and Background

Incorporated in 1955, the City of Cupertino is located in Santa Clara County, and has a jurisdictional area of 7,206.4 acres. (11.26 square miles) According to the 2010 Census, the City had a population of 58,302, with a population density of 5,179 people per square mile and average household size of 2.87.

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). A portion of this population growth can be attributed to the City's annexation of 168 acres of land between 2000 and 2008. The Census Bureau estimated that Cupertino's population would be 60,572 by July 1, 2015, approximately a 3.7% increase from 2010. Cupertino's population was 58,302 at the time of the April 1, 2010 Census. The City's population is projected to grow to 66,110 by 2040 (Plan Bay Area, 2013), approximately a 12% increase over 30 years.

The City of Cupertino is best known as the home of Apple's corporate headquarters and the site of its new 176-acre campus, officially called Apple Park. The first employees will begin occupying their new offices in April 2017. Apple announced that it will take more than six months to move 12,000 employees, and some construction will continue

over the summer as employees move in. Upon completion, it is estimated that more than 23,400 Apple employees will be based in Cupertino.

Other companies located in Cupertino include Seagate Technology, Panasonic, Amazon Lab126, SugarCRM (customer resource management), A Carrot Inc. (computer systems and software). Though Cupertino is associated with technology companies, very little manufacturing takes place in the City. Cupertino's office parks are primarily dedicated to management and design functions.

Two quarries within the city's sphere of influence, Stevens Creek and Permanente (Lehigh Cement), are located in the unincorporated area outside city limits, and therefore, Santa Clara County has regulatory jurisdiction. There are no industrial sites or facilities within the jurisdictional boundaries of the City of Cupertino that are subject to the State's Industrial General Permit for discharges associated with industrial activities or any other individual industrial National Pollutant Discharge Elimination System (NPDES) permit.

A description of the the City of Cupertino's characteristics is provided below:

- 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.
- Percentages of the City of Cupertino's jurisdictional area within the seven (7) land use classes identified by ABAG (2005) are shown in the table below.

Table 1. Cupertino's Land Use Percentages

Land Use Category	Jurisdictional Area (Acres)	% of Jurisdictional Area
Residential	3,938.2	57.2%
Commercial and Services	483.2	7.0%
Retail	303.6	4.4%
Industrial	278.1	4.0%
K-12 Schools	243.7	3.6%
Urban Parks	101.9	1.5%
Other ¹	1,531.8	22.3%
Total	6,880.50	100%

- With the Completion of Apple's new headquarters, 176 acres of the City's industrial area (in the table above) will have been redeveloped, incorporating green infrastructure and LID features, such as reduction of impervious surfaces,

¹ "Other" includes open space and vacant land

underground parking with green roof style, landscape covering. The site is designed to be ~ 80% green space with 7,000 trees.

- Cupertino 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. In order to support local and regional commercial, office and housing needs, each of these corridors must be improved. They should be enhanced with more pedestrian, bicycle and transit facilities in order to meet the current and future needs of the community.
- There are nine Special Areas within Cupertino. 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, bikable connectivity to adjacent areas and services.
- Cupertino has approximately 400 acres of streets and roads.
- 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.
- The City has approximately 1.5 miles of rural road in the residential hillside area of Regnart Road.
- Cupertino's hillside 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.
- The City is currently updating its Storm Drainage Master Plan. While efforts in early years focused on expanding storm drain capacity and wastewater treatment, the approach today is to reduce and filter runoff through project design and management. Cupertino's storm drain system currently operates adequately, with some targeted upgrades or improvements likely over the next 25 years.
- Two state highways traverse Cupertino. The City is linked to the cities of San Francisco and San José by Interstate Freeway 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 (and freeways) are owned and maintained by the California Department of Transportation (Caltrans). Cupertino is defined by its four major roadways: Homestead Road, Wolfe Road, De Anza Boulevard and Stevens Creek Boulevard. These major mixed-use corridors have acted as the "spines" of the community for decades.

- Significant water bodies and water sources are;
 - Stevens Creek
 - Permanente Creek
 - Regnart Creek
 - Heney Creek
 - Calabazas Creek
- The McDonald-Dorsa quarry, which used to operate south of the Deep Cliff Golf Course and Linda Vista Park, was closed in the 1970s and is not a current source of minerals. The site has since been designated as residential, while the portion that is now Linda Vista Park is designated for parks and open space. However, since it was closed prior to the Surface Mining and Reclamation Act of 1975 (SMARA), redevelopment in the area should address soils stabilization and reclamation issues.
- Two expansive projects within the City, occurred between 2009 and 2017, incorporating green infrastructure design concepts and benefits that the City will consider applying toward its pollutant load reduction credit. The first was the 18-acre Stevens Creek Corridor Park and Restoration CIP project, phase 1 (completed in 2009) and phase 2 (completed in July 2014). The second green infrastructure project, which is expected to be complete in 2017, is owned by Apple. The project redeveloped 176 acres of private old industrial land which, according to Apple VP of Environmental Initiatives, Lisa Jackson, will be 80 percent green space. Green infrastructure amenities incorporated in these projects are described below.

Planned or Completed GI projects in Cupertino from 2009 - 2017

Phase 1 of the Stevens Creek Corridor and Creek Restoration project at Blackberry Farm in Cupertino 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 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. Vegetated parking bays were planted with turf rings to support vehicle weight and dozens of native trees were 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.

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. The trail material is compatible with floodplain standards & protects the fishery & wildlife.

“Apple Park”, the 176-acre site that replaced the former Hewlett Packard industrial campus, now includes several green infrastructure features, such as LID measures that will retain stormwater onsite, underground parking, the removal of a section of Pruneridge Avenue, the addition of orchards (a total of 7,000 trees), and sustainable landscaping. The former HP campus was previously covered in buildings, concrete parking lots and non-indigenous decorative trees ill-suited to the specific Pacific climate. The strongest of the trees are being replanted and augmented with sturdy species that will flourish to create large open expanses of greenery. The car park (with 14,200 spaces) is completely buried below the landscape. Due to its underground location, this will triple the amount of green area in the new Apple campus. One thousand bikes will be kept on the site and available to staff to get around the campus. The new campus will reportedly use recycled water and will use 13,300 feet of pipeline to share the supply between it and Cupertino.

1.5 City of Cupertino Goals and Overall Approach

The following principles, goals, strategies and visions are from the City of Cupertino's General Plan, Community Vision 2040.

Cupertino Guiding Principle #10 - 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.

General Plan Environmental Resources and Sustainability Element:

Strategy ES-2.1.5: Urban Forest. Encourage the inclusion of additional shade trees, vegetated stormwater treatment and landscaping to reduce the “heat island effect” in development projects. □ Page ES-17; Goal ES-2: Promote Conservation of Energy Resources, Policy ES-2.1: Conservation and Efficient Use of Energy Resources

Strategy ES-5.1.1: Urban Forest. Ensure that the City's tree planting, landscaping and open space policies enhance the urban ecosystem by encouraging medians, pedestrian crossing and curb-extensions planting that is native, drought tolerant, treats stormwater and enhances urban plant, aquatic and animal resources. □ Page ES-22; Goal ES-5: Protect the City's Urban and Rural Ecosystems, Policy ES-5.1: Urban Ecosystem

Strategy ES-5.1.2: Built Environment. 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. □ Page ES-

22; Goal ES-5: Protect the City's Urban and Rural Ecosystems, Policy ES-5.1: Urban Ecosystem

Strategy ES-7.2.1: Lot Coverage. Consider updating lot coverage requirements to include paved surfaces such as driveways and on-grade impervious patios to incentivize the construction of pervious surfaces. □ Page ES-25; Goal ES-7: Ensure Protection and Efficient Use of Water Resources, Policy ES-7.2: Reduction of Impervious Surfaces

Strategy ES-7.2.2: Pervious Walkways and Driveways. Encourage the use of pervious materials for walkways and driveways. If used on public or quasi-public property, mobility and access for the disabled should take precedence. □ Page ES-25; Goal ES-7: Ensure Protection and Efficient Use of Water Resources, Policy ES-7.2: Reduction of Impervious Surfaces

Strategy ES-7.2.3: Maximize Infiltration. Minimize impervious surface areas, and maximize on-site filtration and the use of on-site retention facilities. □ Page ES-25; Goal ES-7: Ensure Protection and Efficient Use of Water Resources, Policy ES-7.2: Reduction of Impervious Surfaces

Strategy ES-7.3.1: Development Review. Require LID designs such as vegetated stormwater treatment systems and **green infrastructure** to mitigate pollutant loads and flows. □ Page ES-26; Goal ES-7: Ensure Protection and Efficient Use of Water Resources, Policy ES-7.3: Pollution and Flow Impacts

Strategy ES-7.4.1: Storm Drainage Master Plan. 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. □ Page ES-26; Goal ES-7: Ensure Protection and Efficient Use of Water Resources, Policy ES-7.4: Watershed Based Planning

Strategy ES-7.11.7: Green Business Certification and Water Conservation. 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. □ Page ES-26; Goal ES-7: Ensure Protection and Efficient Use of Water Resources, Policy ES-7.4: Watershed Based Planning.

In the last 20 years, the City has made strides 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.

Cupertino has already preserved an 18-acre site and restored creek habitat (Stevens Creek Corridor and Restoration Project) in the City to maintain biodiversity and

ecological integrity of local natural systems. The City is now looking at opportunities in the built and natural environment to sustain and enhance biodiversity.

As the City seeks to implement 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 will look towards focusing future change within 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).

Cupertino has an abundance of natural resources, including hillsides, creek corridors, and sensitive animal and plant habitats along the foothills. Much of this land is preserved in low-intensity residential and agricultural uses or open space. As redevelopment occurs, the City will strive to preserve these natural areas through land use and building design decisions.

2.0 GREEN INFRASTRUCTURE PLAN ELEMENTS & APPROACH

2.1 Summary of Required Elements

To meet MRP requirements, the City of Cupertino's Green Infrastructure (GI) Plan will need to contain certain mandatory elements:

- **Project Identification and Prioritization Mechanism:** The GI Plan must describe the mechanism by which the City of Cupertino will identify, prioritize and map potential and planned projects that incorporate green infrastructure components in different drainage areas within the City of Cupertino. These include public and private projects that may be implemented over the long term, with milestones for implementation by 2020, 2030, and 2040. The mechanism must include the criteria for prioritization and outputs that can be incorporated into the City of Cupertino's long-term planning and capital improvement processes.
- **Prioritized Project Locations and Timeframes:** The GI Plan must contain the outputs resulting from the identification and prioritization mechanism described above, such as lists and maps of prioritized projects and timeframes for implementation. The outputs must also include "targets" or estimates of how much impervious surface within the City of Cupertino will be converted or "retrofit" to drain to a green infrastructure feature, such as a vegetated area or stormwater capture or treatment facility, by the 2020, 2030, and 2040 milestones.
- **Completed Project Tracking System:** The GI Plan must describe the City of Cupertino's process for tracking and mapping completed public and private projects and making the information available to the public.
- **Guidelines and Specifications:** The GI Plan must include general design and construction guidelines, standard specifications and details (or references to those documents) for incorporating green infrastructure components into projects within the City of Cupertino. These guidelines and specifications should address the different street and project types within the City of Cupertino as defined by its land use and transportation characteristics, and allow projects to provide a range of functions and benefits, such as stormwater management, bicycle and pedestrian mobility and safety, public green space, urban forestry, etc.
- **Integration with Other Plans:** The GI Plan must describe its relationship to other planning documents and efforts within the City of Cupertino and how those planning documents have been updated or modified, if needed, to support and incorporate the green infrastructure requirements. If any necessary updates or

modifications have not been accomplished by the completion of the GI Plan, the GI Plan must include a work plan and schedule to complete them.

- **Evaluation of Funding Options:** The GI Plan must include an evaluation of funding options for design, construction, and long-term maintenance of prioritized green infrastructure projects, considering local, state and federal funding sources.

In addition, the City of Cupertino must adopt **policies, ordinances, and/or other appropriate legal mechanisms** to allow implementation of the GI Plan. The City must also **conduct outreach and education** to elected officials, department managers and staffs, developers and design professionals, and the general public as part of development and implementation of the GI Plan and implementation of specific projects within the GI Plan.

2.2 Approach to Completion of Required Elements

The City of Cupertino is committed to working within its Public Works, Community Development, Sustainability, GIS, and Recreation & Community Services departments, and with the Santa Clara Valley Water District and SCVURPPP to complete the required GI Plan elements described in Section 2.1. This section describes the City of Cupertino's approach to each required element.

2.2.1 Outreach and Education

One of the first and most important steps in the development of the GI 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 GI Plan, and steps needed to develop and implement the GI 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 by completing the following tasks:

- Convened 3-4 interdepartmental meetings in 2016 with with Public Works, GIS, CIP and Environmental staff and management to discuss GI requirements and assigned tasks.
- Discussed with appropriate department staff the MRP requirements to analyze proposed capital projects for opportunities to incorporate GI, and completed the first list of planned and potential GI projects.
- Provided training to department staff on GI requirements and strategies with presentations by SCVURPPP's Assistant Program Manager on February 27th and March 6th 2017 at City Hall. Invited staff to attend SCVURPPP's Green Infrastructure workshop on April 19, 2017. Six (6) planning and public works staff participated in SCVURPPP's 2016 Green Infrastructure workshop.

- Invited elected officials to a Green Infrastructure presentation given by the SCVURPPP's Assistant Manager on March 6, 2017 in Community Hall to raise awareness of the goals and requirements in the MRP and the concepts, intent and multiple benefits of GI.
- At the suggestion of the Vice Mayor, on March 16, 2017, 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. SFEI's recommendations for a more sustainable South Bay looks at what we can be doing to integrate resilient landscape within the reality of new and re-development. From a practical perspective, we can consider what we can be doing over the course of next generations to improve the ecology of the area and how we can work with larger developments to incorporate these types of principles in our planning. Cupertino has a couple of opportunities that have been discussed in the last couple of years that could potentially integrate these types of principles.
- Coordinated with SCVURPPP and the Watershed Education and Outreach (WEO) subgroup on a comprehensive outreach and education program. Key audiences include: the general public (countywide, and in the neighborhood or municipality where GI projects are located); the development community (e.g., developers, engineers, landscape architects, and contractors); and elected officials.
- Public Works Environmental staff participated in the Green Infrastructure Leadership Conversation in Oakland on December 9, 2016 and the Regional Roundtable on Sustainable Streets held in Oakland on March 28, 2017.

The City of Cupertino will conduct or continue to conduct the following education and outreach activities as part of development of the GI Plan:

- Continue to hold inter-department meetings to collect input for the GI Plan.
- Continue to conduct internal training as needed, and encourage staff to attend SCVURPPP GI trainings.
- Continue to provide outreach to the general public and developers in coordination with SCVURPPP.
- Continue to keep elected officials updated on GI Plan development and schedule for adoption.
- Schedule a Council Study Session in 2019, prior to City Council's consideration of the final Plan at a regularly scheduled meeting to inform Council and the public of the features in the draft GI Plan.
- Provide outreach to Sustainability Commission, the Bike and Pedestrian Commission, the local community, and other stakeholders to get input and support for the GI Plan.

- 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.

2.2.2 Project Identification and Prioritization

The City of Cupertino will use the following approaches to identify, prioritize and map potential and planned projects that incorporate green infrastructure components in different drainage areas within the City.

- Coordination with the Santa Clara Basin Stormwater Resource Plan (SWRP):** The Santa Clara Valley Water District (District) and SCVURPPP obtained a Proposition 1 Stormwater Grant Program planning grant to develop a Stormwater Resource Plan (SWRP) for the Santa Clara Basin. The SWRP will support the development and implementation of GI Plans within the Basin (including the City of Cupertino's GI Plan) through identification of local and regional opportunities for GI projects and development of modeling tools for estimating pollutant load reductions over future timeframes (2020, 2030 and 2040). The resulting maps and tools will be available for local use by participating municipalities.

The Stormwater Resource Plan will also produce a list of prioritized GI projects eligible for future State implementation grant funds. Building on existing documents that describe the characteristics and water quality and quantity issues within the Santa Clara Basin, the SWRP will identify and prioritize multi-benefit GI projects 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 will be conducted using hydrologic/hydraulic and water quality models coupled with GIS resources and other tools. The products of these analyses will be a map of opportunity areas for GI projects throughout the watershed, an initial prioritized list of potential projects and strategies for implementation of these and future projects. The list of potential projects within the City of Cupertino will then be incorporated into the City's list for its GI Plan.

The draft SWRP will be completed by May 2018, and the final SWRP (after public input) completed by December 2018. Earlier stages of the process will provide input to GI Plan development, such as the identification of projects in fall 2017 and quantification of project benefits in early 2018.

- Review of Capital Improvement Program Projects for Green Infrastructure Opportunities:** As required by the MRP, the the City of Cupertino has begun and maintains a list of public and private GI projects that are planned for implementation during the permit term (2015-2020), and public projects that have potential for GI measures. The first such list was submitted with the FY 15-16

Annual Report. These lists will be used to provide potential projects for inclusion in the SWRP development and incorporation into the GI Plan.

The GI Plan will also describe the tools and approaches used, the criteria for prioritization, and the outputs that can be incorporated into the Cupertino's long-term planning and capital improvement processes.

2.2.3 Prioritized Project Locations and Timeframes

The GI Plan will include the prioritized list of projects and map of locations within the the City's jurisdiction resulting from Task 2.2.2 above, as well as timeframes for implementation. The outputs will also include "targets" or estimates of how much impervious surface within the City of Cupertino will be converted or "retrofit" to drain to a green infrastructure feature, such as a vegetated area or stormwater treatment facility, or converted to pervious surfaces, by the 2020, 2030, and 2040 milestones.

2.2.4 Completed Project Tracking System

This section of the GI Plan must describe the the City of Cupertino's process for tracking and mapping completed public and private projects and making the information available to the public. The City will work with SCVURPPP to develop a consistent countywide approach to tracking and mapping completed projects and estimating expected PCB and mercury load reductions resulting from these projects.

2.2.5 Guidelines and Specifications

The City of Cupertino will support and participate in the SCVURPPP process to develop and adopt GI Design Guidelines and Specifications for streetscapes and other public infrastructure. A set of model Guidelines and Specifications will be developed at the countywide level which will be used as a reference by the City. The City of Cupertino will evaluate the model Guidelines and Specifications for consistency with its own local standards, and revise existing guidelines, standard specifications, design details, and department procedures as needed.

The Guidelines and Specifications will also include the results of the regional analysis of alternative approaches to sizing GI facilities where project constraints (e.g., limited space in public right-of-way, utility conflicts, etc.) preclude fully meeting the permit-required sizing criteria for such facilities.

2.2.6 Integration with Other Municipal Plans

The City of Cupertino has reviewed its existing municipal planning documents and Identified which documents need to be updated or modified to support and/or be consistent with the GI Plan, and the timing for those updates or modifications. A summary of the results of the municipal plan review and the schedule for updates or modifications is presented in Table 2 below. If any necessary updates or modifications have not been accomplished by the completion of the GI Plan, the GI Plan will include a work plan and schedule to complete them.

Table 2. Schedule for Municipal Plan Updates for GI

Name of Plan	Last Updated	Next Projected Update	Includes Language to Support GI?	If No, Date to Complete GI Update
General Plan – Element 6	2015	2040	Yes	N/A
Climate Action Plan	2015		Yes	N/A
Pedestrian Transportation Plan	2002	2017	Yes, will include GI	Sep 2019
Bicycle Transportation Plan	2016	2021	TBD	Sep 2019
Storm Drain Master Plan	1992	2018	Yes, will include GI	Sep 2019
Urban Forestry Plan (Included in GP)	2015	2023	Yes	N/A
Citywide Parks & Recreation System Master Plan	N/A	2018	Yes, will include GI	N/A

2.2.7 Evaluation of Funding Options

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.)

The City of Cupertino will analyze possible funding options to raise additional revenue for the projects that will eventually be included in the City's GI Plan, including capital and operation and maintenance (O&M) costs of these projects. Options for capital project funding include the State Proposition 1 Stormwater Grant Program implementation grants, Prop 1 IRWMP grants, and California Urban Rivers Grants.

Additional funding options that will be explored by Cupertino include:

- **Treatment at an Offsite Location** – An alternative compliance option in which a private Regulated Project (one required to treat runoff from created and replaced impervious surface on the project) would instead treat runoff from an equivalent amount of impervious surface offsite, potentially in the public right-of-way, in LID treatment facilities it would pay to construct (and/or maintain). That is, the private developer would fund and oversee construction of a potential green infrastructure project identified by the City of Cupertino.
- **Payment of In-Lieu Fees** – An alternative compliance option in which the developer of a private Regulated Project, in lieu of constructing LID treatment facilities on-site, would pay equivalent in-lieu fees for construction and maintenance of a regional or municipal stormwater treatment (green infrastructure) facility.
- **Public-Private Partnerships** – An option in which green infrastructure facilities are jointly funded by the municipality and a private organization or land owner for the benefit of both parties.

2.2.8 Adoption of Policies, Ordinances, and Other Legal Mechanisms

The City of Cupertino will review its existing policies, ordinances, and other legal mechanisms related to current planning procedures and implementation of stormwater NPDES permit requirements to identify which documents may need to be updated or modified to help implement the GI Plan. A summary of the results of the policy, ordinance, and legal mechanisms review and the schedule for actions is presented in Table 3 below. All needed updates, modifications, or new mechanism(s) will be completed and adopted (if necessary) by September 30, 2019.

Table 3. Schedule for Municipal Policy and Ordinance Updates

Policy/Ordinance/Legal Mechanism	Description	Update Needed?	Update Schedule
Municipal Code Chapter 9.18 Stormwater Pollution & Watershed Protection	Municipal Code: remove outdated language; add requirements for GI in private development	TBD	Sept 2019
Environmental Programs/Public Works Conditions of Approval for Private Development Projects	If needed, update to require consideration of G.I. whenever feasible	TBD	Sept 2019

In the 2019 Annual Report or earlier annual reports, the City of Cupertino will describe any updates to ordinances, policies, plans or programs that were needed to implement the GI Plan and associated programs, or state that existing mechanisms are sufficient to implement the GI Plan.

2.2.9 Completion and Adoption of the GI Plan

The City of Cupertino will draft its GI Plan to contain all of the elements described above, obtain reviews and approvals by various departments, governing bodies, and the public as needed, and submit the GI Plan to the Water Board by September 30, 2019. Internal deadlines to complete and adopt the GI Plan are presented in Table 4 below.

Table 4. Schedule for Completion and Adoption of GI Plan

Task	Department/Group	Deadline
Prepare draft GI Plan Determine if a GI workgroup of municipal staff or a consultant is needed to develop the City's Plan. *(Input from SCVURPPP's developing Stormwater Resources Plan (SWRP) on the identification of projects and quantification of project benefits, will be available in fall 2017 and early 2018, respectively).	Public Works Environmental Prgs Mgr, Assistant Director, Engineer, and CIP Manager, with input from Assistant Comm. Dev Director, Sr. Planner, and mapping support from GIS Manager	Dec 2017 – Apr 2018
Review draft GI Plan *(SCVURPPP's draft SWRP to be developed by May 2018)	Community Development; Public Works; Sustainability, Parks and Community Services;	May - Jun 2018
Public input on draft GI Plan	Sustainability Commission, Bike/Ped Commission, (possibly Planning Commission)	July - Aug 2018
Update draft GI Plan	Public Works	Aug – Sept 2018
Approve draft GI Plan * The final SCVURPPP Santa Clara Basin SWRP (after public input) will be completed by December 2018.	City Manager, Public Works Director, Assistant City Manager, Assist PW Dir, Assist Comm Dev Director and City Engineer	Sept – Dec 2018

Review/consider draft GI Plan * The final SCVURPPP Santa Clara Basin SWRP (after public input) will be completed by December 2018.	Council Study Session/ Public Input	Jan-Mar 2019
Incorporate Study Session comments	Public Works/City Manager	Mar-Apr 2019
Approve final GI Plan	City Council	May-Aug 2019

3.0 GREEN INFRASTRUCTURE PLAN DEVELOPMENT SCHEDULE

This section describes the time frames for completion of the tasks presented in Section 2 to develop and adopt the City of Cupertino's GI Plan.

Table 5. Green Infrastructure Plan Development Schedule

Task No.	Green Infrastructure Plan Development Task	Responsible Organization(s)/ Department(s)	Estimated Completion Date
2.1	Required Elements: All required elements of the Plan will be completed by September 2019.	Public Works Environmental Programs	Sept 2019
2.2	Approach to Completion of Required Elements	Public Works Environmental Programs	
2.2.1	Outreach and Education; As development of the GI Plan evolves identify opportunities for public input. Provide draft plan to Sustainability Commission, Bike and Pedestrian Commission and Planning Commission.	Public Works, Environmental, and Sustainability	Aug 2019
2.2.2	Project Identification and Prioritization: Working with SCVURPPP, identify projects using outputs from prioritization tools, the City's planned CIP list, the Storm Drainage Master Plan and the Santa Clara Basin SWRP. Map and prioritize projects on a drainage-area-specific basis for implementation by 2020, 2030, and 2040 with targets for the amount of impervious surface to be retrofitted for those years. Identify projects that may be candidates for grant funding under Round 2 of the Prop 1 Stormwater Grant Program.	Public Works, Environmental, Engineering and Traffic, with support from GIS for mapping	Apr 2018
2.2.3	Prioritized Project Locations and Timeframes; Add list of prioritized projects identified from the findings in step 2.2.2. to GI Plan.	Public Works and Community Development	Mar 2019
2.2.4	Completed Project Tracking System: The City will work with SCVURPPP to develop a consistent countywide approach to tracking and mapping completed public and private projects and estimating expected PCB and mercury load reductions resulting from these projects. (integrate w/ inspections)	Public Works Environmental and Engineering	Sept 2019

2.2.5	The Guidelines and Specifications: Will be developed collaboratively at the Countywide level through participation in SCVURPPP and fine tuned by City staff to align with City policies	Public Works Environmental Programs & Engineering	April 2018
2.2.6	Integration with Other Municipal Plans: The City's General Plan, Vision 2040 and its Climate Action Plan already support the expansion of green infrastructure. The City's 2016 Bicycle Transportation Plan, 2017 Pedestrian Transportation Plan, and 2018 Storm Drainage Master Plan. There are potential opportunities for integrating green infrastructure into new bike lanes, pedestrian routes and stormdrain repairs or upgrades. Staff will review these plans to verify compatibility with the City's 2019 Green Infrastructure Plan.	Public Works; Community Development; Recreations & Community Services	July 2018
2.2.7	Evaluation of Funding Options: Resources to develop the Green Infrastructure Plan will include additional staff time for meetings to discuss feasibility and prioritization of projects within the Plan. Plan development may require a municipal GI Plan work group. If additional funding is needed for Plan development it will be requested for the FY 18-19 budget. Costs to implement the City's GI Plan (2020 – 2040) cannot be estimated prior to identifying locations and scopes of potential green infrastructure projects. SCVURPPP will prepare guidance for completing the analysis of funding options during FY 16-17. The City will pursue recommended funding options for GI projects and complete its initial funding analysis prior to the City's FY 19-20 budget approval process, and for each budget process thereafter through FY 2039-2040.	Public Works and City Manager's Office	First evaluation by February 2019
2.2.8	Adoption of Policies or Ordinances, and Other Legal Mechanisms: The Watershed Protection Ordinance (Ch. 9.18) and PW Engineering/Environmental COAs support GI practices. Fine tuning might be needed after the final Plan has been adopted and the City begins to implement the Plan.	Public Works	By Sept 2019

2.2.9	Completion and Adoption of the GI Plan: Put on City Council agenda for approval by August 2019.	City Council/ presentation by Public Works	By Aug 2019
-------	---	--	----------------