DATE: May 13, 2019

AGENDA ITEM #1

TO: Environmental Commission

FROM: Aida Fairman, Interim Engineering Services Director

SUBJECT: Green Stormwater Infrastructure Plan

RECOMMENDATION:

Review the Los Altos Green Stormwater Infrastructure Plan, which will go to Council for approval next month

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BACKGROUND

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. The GSI Plan serves as an implementation guide for the City of Los Altos (City) to incorporate GSI into storm drain infrastructure on public and private lands where feasible over the next several decades.

The City's Municipal Regional Stormwater Permit (MRP) requires the City to complete and implement a Green Stormwater Infrastructure Plan (GSI Plan), which must be submitted in September to the Regional Water Quality Control Board with the City's FY 2018-2019 Annual Report. The City previously created a Green Infrastructure Plan Framework[1] in 2017, in accordance with MRP[2] requirements, which initiated the City's efforts to evaluate opportunities to more comprehensively manage stormwater and provide multiple benefits for the environment and community. The 2019 GSI Plan expands on the goals and elements proposed in the 2017 Framework. The GSI Plan identifies and prioritizes GSI opportunities throughout the City, establishes targets for the extent of City area to be addressed by GSI over certain timeframes, and aligns the City's goals, policies and implementation strategies for GSI with the General Plan and other related planning documents.

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[1] Although the permit and earlier reports refer to "Green Infrastructure" agencies have regionally agreed to revise the term to "Green Stormwater Infrastructure" to distinguish the primary focus on stormwater, as opposed to other types of environmentally beneficial infrastructure

[2] Order No. R2-2015-0049

Green Stormwater Infrastructure is defined by the MRP as infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments. Examples of Green Stormwater Infrastructure include: Landscape-based areas that use soil and plants to treat stormwater (e.g., bioretention or green roofs); pervious paving systems (e.g., interlocking concrete pavers, porous asphalt, and pervious concrete) that allow water to soak into the ground; rainwater harvesting systems (e.g., cisterns and rain barrels) that capture stormwater for non-potable uses such as landscape irrigation, etc.

DISCUSSION

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 address legal and funding mechanisms to implement prioritized projects; and
- Establish a process for tracking, mapping, and reporting completed projects

Impervious area targets and prioritization process were developed by the City of Los Altos in coordination with other Bay Area municipalities through the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) to jointly address pollutant load reduction goals and requirements set forth in the MRP.

The Green Stormwater Infrastructure Plan contains the following components:

- Chapter 1 describes the City of Los Altos as it relates to the purpose and goals of the GSI Plan, and describes the regulatory context for GSI and the GSI Plan development process.
- 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 the methodology and results for identifying and prioritizing areas for potential GSI projects and for estimating targets for the amounts of impervious surface to be "retrofitted" as part of public and private projects by 2020, 2030, and 2040.
- Chapter 6 outlines the City's strategy for implementing prioritized potential GSI projects within the next ten years and through 2040.

- Chapter 7 discusses the variety of mechanisms to be employed by the City in order to implement the GSI Plan, including future planning, tracking, and funding.

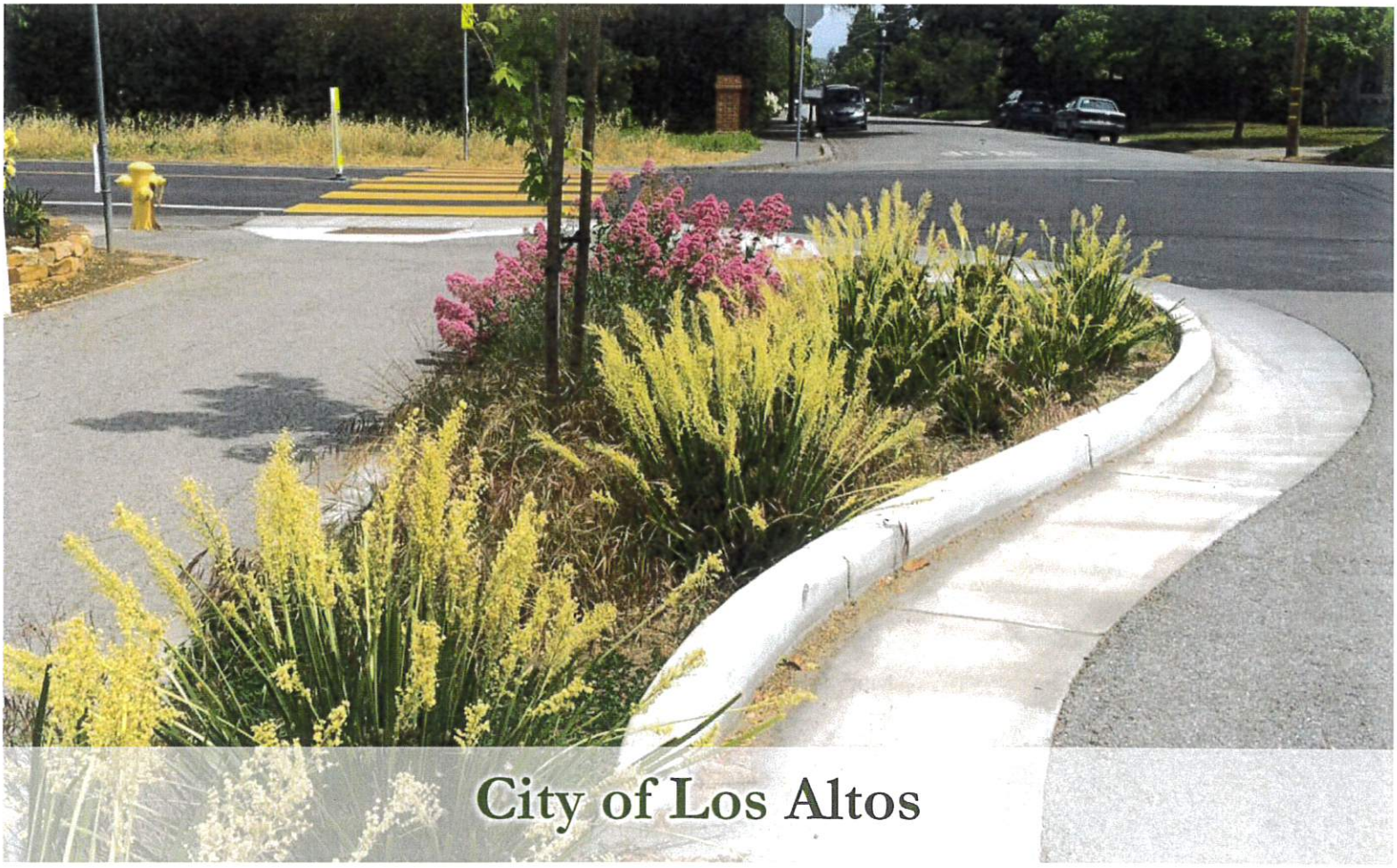
Engineering Services Department staff plan to take the GSI Plan to City Council for approval on July 9, 2019.

Attachments:

A. Green Stormwater Infrastructure Plan

ATTACHMENT A

DRAFT (as of 5-8-2019)



GREEN STORMWATER INFRASTRUCTURE PLAN

Prepared by: Aida Fairman, Interim Engineering Services Director,
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Approved on:

Submitted by:
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One North San Antonio Road
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In compliance with Provision C.3.j.i.(2) of Order R2-2015-0049

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The City would like to thank and acknowledge the City of Palo Alto and the City of San Jose for sharing text from their Green Stormwater Infrastructure Plans.

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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 Los Altos (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 stormwater, bicycle and pedestrian transportation, traffic, specific plans, and the Parks Plan, 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 1952, the City of Los Altos is located in Santa Clara County, and has a jurisdictional area of approximately 6.5 square miles. According to the 2010 Census, it has a population of 28,976[1], with a population density of 4,466.8 people per square mile and average household size of 2.61.

1.2.1 Community Characteristics

Los Altos is a predominantly single-family residential community, located immediately adjacent to the regional transportation facilities of Interstate 280 and SR 85 and served by two subregional facilities: Foothill Expressway and El Camino Real (State Route 82). The City has limited commercial, park, and public land areas. Los Altos maintains its semi-rural character by confining businesses and retail operations to seven business districts located in downtown and along Foothill Expressway and El Camino Real. Outside these business districts are large residential areas with centrally located neighborhood schools.

[1] The California Department of Finance estimates the City's population to be 31,361 as of January 1, 2018.

Pedestrian and bicycle facilities are concentrated on the major streets with some off-street paths to provide intra-City travel. The City contains approximately 107 miles of public streets. Only the streets designated as arterial, collector, local collector, and local streets are under the jurisdiction of the City. Caltrans maintains and has jurisdiction over all freeways and state routes, while the Santa Clara County Roads and Airports Department controls all intersections along Foothill Expressway. Most local streets do not include sidewalks.

Approximately 37% (37 miles) of the streets in Los Altos do not have curbs and gutters along the edge of the street. These "unimproved" streets vary considerably in width and generally are dirt shoulders. Over the years, residents have modified the shoulder area (area between the edge of the paved roadway and the property line) in a variety of ways including paving the entire area with asphalt concrete (AC).[2]

The City's open space resources, which are designated as "Parks" or "Other Open Space" on the City's General Plan Land Use Map, include public parks, publicly-owned open space, conservation easements along portions of creeks, off-road bicycle paths/trails, and privately-owned open space and recreation facilities. These lands total approximately 127 acres.

As a developed community with a well-established land use pattern, Los Altos is unlikely to change in any significant way. Los Altos has little opportunity for additional growth or major land use changes. Future growth will occur with the development of the few remaining vacant parcels and the redevelopment of currently developed parcels.

1.2.2 Natural Environment

Located in the south-central part of the San Francisco Peninsula, Los Altos enjoys a mild year-round climate with rainy winters. Topography in the area is relatively flat with low rolling hills west of Foothill Expressway. The surface soils within the City's boundaries consist of mostly of Group C soils[3], which are soils with a moderately high runoff potential when thoroughly wet and consist of loam, silt loam, sandy clay loam, clay loam, and silty clay loam textures.

1.2.3 Stormwater Drainage System

The City has an estimated 55 linear miles of storm drain pipes (12 inches in diameter and larger). Runoff captured by the storm drain networks is discharged into four creeks: Hale, Stevens, Adobe, and Permanente. To create a rural aesthetic, many streets in Los Altos do not have traditional suburban curb and gutter, and instead have unpaved areas along the street shoulder. This layout allows some runoff to soak into the ground before it reaches a catch basin and enters a conventional storm drain system.

1.2.4 Water Supply

All domestic and commercial water in Los Altos is supplied by the California Water Service Company, and financially supported by user fees. Currently, 28 percent of the City's water comes from well water and 72 percent comes from Valley Water (formerly called the Santa Clara Valley Water District) sources,

[2] Staff report for the September 25, 2018 Study Session, included as attachment to the November 27, 2018 Agenda Report Summary, subject: Approval of Street Shoulder Improvement Policy.

[3] The NRCS has classified soils into four hydrologic soil groups (A, B, C, and D) according to their infiltration rates. Group A soils have low runoff potential when thoroughly wet and typically consist of sand or gravel type soils. Group B soils are moderately well draining when thoroughly wet and consist of loamy sand or sandy loam textures. Group C soils have moderately high runoff potential when thoroughly wet and consist of loam, silt loam, sandy clay loam, clay loam, and silty clay loam textures. Group D soils have high runoff potential when thoroughly wet and consist of clayey textures.

which include underground aquifers, reservoirs, and the San Joaquin-Sacramento River Delta. The City does not anticipate a significant increase in water demand in future years.

1.2.5 Special Planning Areas

The City's land use patterns are well established, and will generally remain unchanged, particularly with regard to the City's predominantly single-family residential neighborhoods. In 2002, when the City updated the General Plan, the Land Use Element identified four Special Planning Areas that could achieve land use changes to accomplish specified economic development and housing goals:

- Downtown
- El Camino Real Corridor
- Foothill Plaza (Foothill Crossing Shopping Center on Homestead Road)
- El Retiro

Within each of these Special Planning Areas, the General Plan introduced concepts and opportunities for increasing land use density and intensity to better achieve specific objectives for these areas. For example, the El Camino Real corridor was identified as an area where affordable housing can be created as properties redevelop. Incentives to build housing along El Camino Real, such as allowing additional building stories and increasing allowable floor area, are included in the Land Use Element (2002). Disincentives to build commercial-only projects are also included. Similar mixed-use development incentives are also being considered for other business districts in Los Altos. However, the business districts that are actively considered special planning areas going forward are Downtown and El Camino Real Corridor. As the other areas are developed, they may offer opportunities to implement GSI measures.

1.2.6 Specific Plans

The City has adopted Specific Plans for the following neighborhoods:

- Sherwood Gateway
- Loyola Corners

The intent of these Specific Plans is to provide comprehensive planning policies and development guidelines to guide the continuing development and revitalization of these neighborhoods. Incorporation of GSI will be explored as the Specific Plans are updated.

The City also has a Vision Plan for the Downtown area that was adopted as a guiding document by the City Council on August 28, 2018. This is not a specific plan but is an adopted policy document that will be used to inform and guide future development and policy decisions related to Downtown.

1.2.7 Growth Projections

The City of Los Altos developed growth/development forecasts as part of its Housing Element that was certified in 2015. The growth projection scenarios for population and/or additional square footage of residential and non-residential buildings in the Housing Element are as follows:

- Per the California Department of Finance, the City's population is projected to grow to 32,800 in 2040.
- According to the Regional Housing Needs Allocation (RHNA), the City of Los Altos has a total housing construction need of 477 units and an annual need of about 68 units. As of 2017,

there was a total of 43.10 acres of vacant or underutilized land in Los Altos with the capacity to yield 739 units of new housing across all income categories.

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[4] 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) to demonstrate the City's commitment to completing the GSI Plan by September 30, 2019. The City completed the Framework and City Manager approved it on June 27, 2017. The GI Framework was listed as an information item only on the City Council agenda on July 11, 2017.

The City established a GSI Work Group, consisting of staff from the City's Engineering Services and Planning Departments. The GSI Work Group worked with a consultant team to develop the GSI Plan. The Plan was presented at the Public Library in fall 2018, to the Environmental Commission on May 13, 2019, and to City Council at a public meeting on June 25, 2019.

The City's Municipal Code Chapter 10.20, Stormwater Pollution Prevention Measures, references the NPDES Permit (MRP) and implicitly provides authority to implement GSI in public projects and to support regional collaboration and public education on GSI. The City's policies and legal authority are further discussed in Chapter 3, Chapter 5, and Section 7.3 of this GSI Plan.

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

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 Valley Water (formerly called the Santa Clara Valley Water District) 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

To get support and commitment to the Plan and this new approach to urban infrastructure, educating department staff, managers, and elected officials about the purposes and goals of green stormwater infrastructure, the required elements of the GSI Plan, and steps needed to develop and implement the GSI Plan was an important step in the development of the GSI Plan. The City of Los Altos began this process in fiscal year 2015-2016 and to date has completed the following tasks:

- Engineering Services staff attended the SCVURPPP GSI workshop on developing and implementing municipal GSI Plans, review of public projects for identifying GSI opportunities, and a group exercise to review an example CIP project list for GSI opportunities.
- Engineering Services staff attended the SCVURPPP annual C.3 workshop covering basic C.3 training, new requirements in the MRP, and presentations on GSI materials and design, construction and maintenance considerations for pervious paving.
- Engineering Services staff attended the SCVURPPP GSI workshop covering GSI design guidelines; implementing GSI projects, the SCVURPPP GSI Handbook; and GSI landscape and maintenance considerations.
- In-house training was provided May 3, 2016 to Planning and Engineering Services Department staff on GSI requirements, strategies, and opportunities.
- Interdepartmental meetings with affected department staff and management have been held to discuss GSI requirements and assigned tasks.
- The MRP requirements to analyze proposed capital projects for opportunities to incorporate GSI were discussed with Planning Department staff.

Public and stakeholder support is also essential for the successful implementation of the GSI Plan and future GSI projects. The City has coordinated with SCVURPPP on a countywide outreach and education program about GSI for the general public[5], which includes a GSI website, public presentations, and radio and online advertising to promote GSI features.

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

The City of Los Altos will continue to conduct education and outreach about GSI as the GSI Plan is implemented.

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 the methodology and results for identifying and prioritizing areas for potential GSI projects and estimated targets for the amounts of impervious surface to be "retrofitted" by 2020, 2030, and 2040.

Chapter 6 outlines the City's strategy for implementing prioritized potential GSI projects within the next ten years and through 2040.

Chapter 7 discusses the variety of mechanisms to be employed by the City in order to implement the GSI Plan, including future planning, tracking, and funding.

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 1.1 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)	Prioritization Output	Section 5.3 and Appendix B
C.3.j.i.(2)(c)	Impervious Surface Targets	Section 5.4
C.3.j.i.(2)(d)	Completed Project Tracking System	Section 7.5
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)(j)	Workplan to Complete Prioritized Projects	Chapter 7.1
C.3.j.i.(2)(k)	Evaluation of Funding Options	Section 7.4
C.3.j.i.(3)	Legal and Implementation Mechanisms	Section 7.3

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 developed 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, 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.[6]

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.

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.

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

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.

Bioretention systems in the streetscape have specific names: stormwater planters, stormwater curb extensions, and stormwater tree well filters (described in the next section). 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, they can also have sloped sides depending on the amount of space that is available. An example is shown in Figure 2-1.

A stormwater curb extension (or bulb-out) is a bioretention system that extends into the roadway and involves modification of the curb line and gutter (Figure 2-2). Stormwater curb extensions may be

Figure 2-1 Stormwater sidewalk planters along San Pablo Avenue (Source: EOA)

Figure 2-2 Stormwater curb extension, Rosita Park, Los Altos (Source: City of Los Altos)

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. Parking lots can accommodate bioretention areas of any shape in medians, corners, and pockets of space unavailable for parking.

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 City 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 Plaza with permeable pavers, Rosita Park (Source: City of Los Altos)

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 (Figure 2-4) 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. 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 is shown in Figure 2-5.

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

Subsurface infiltration systems (Figure 2-6) 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. 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: Contech)

2.3.5 Green Roofs

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.

Figure 2-7 Green Roof, David and Lucille Packard Foundation Headquarters (Source: City of Los Altos)

2.3.6 Rainwater Harvesting and Use

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). An example of a subsurface vault is shown in 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 2-8 Rainwater Harvesting cistern, Environmental Innovation Center, San José (Source: City of San Jose)

Figure 2-9 Subsurface vault under construction (Source: Contech)

2.4 Existing GSI in Los Altos

The City of Los Altos has implemented a number of green stormwater infrastructure projects to date. A brief description of various projects is provided below. Projects such as these, completed prior to or during the current permit term, are also referred to in the permit as "Early Implementation" projects (see Section 5.1.1 of this GSI Plan).

2.4.1 Rosita Park

Rosita Park is 5.3 acres in size and is bounded by single-family residential uses and an elementary school. Prior to renovation, the site consisted of traditional paved areas including tennis courts, a gymnasium, parking lot and area sidewalks and stormwater from these surfaces was directed to traditional storm drain systems. The project included the demolition of the existing tennis courts, gymnasium, parking lot, and area paving and the installation of new parking lot, tennis courts, a playground, plaza and new pedestrian/bicycle pathway and landscaping along the north side of Rosita Avenue and around the existing play field. The renovated site was designed to prevent normal flows of stormwater from entering directly into the storm drainage system without prior treatment. The project uses landscaping and at-grade bioretention areas for treatment of stormwater runoff from impermeable surfaces within the site. For example, most of the stormwater from the new tennis courts, plaza area, building, new parking lot and most of Rosita Avenue runoff flows into various bioretention areas and is treated prior to discharge from the site into the storm drain system. Permeable pavers were used in the plaza area.

Figure 2-10 Infiltration planter to treat the entire surface of three new tennis courts, Rosita Park (Source: City of Los Altos)

2.4.2 San Antonio Road Streetscape

This project widening the sidewalk on the west side of San Antonio Road to make it ADA-compliant, construct a living green wall to obscure the parking lot from the view of street traffic, improving ADA ramps at various intersections and improving landscaping in the median islands. Parking plaza runoff drains to living green wall and landscaping improvements behind the sidewalk on San Antonio Road. Construction was completed in January 2014.

2.4.3 Fremont Avenue Bridge

This project removed the existing bridge and replaced it with a new concrete bridge with two 12-ft traffic lanes and two 5-ft bike lanes. A concrete pedestrian sidewalk with an overlook area was installed on the south side of the new bridge. Roadway runoff drains to a bioretention area on the west side of the bridge. Construction was completed in June 2016.

2.4.4 Homestead Road Improvements

This project included the installation of street, drainage, and landscaping improvements in the roadway medians and on the north side of Homestead Road from El Sereno Avenue to Stevens Creek. Bioretention areas on the north side of Homestead Road from El Sereno to Stevens Creek capture and treat roadway runoff.

2.4.5 David and Lucile Packard Foundation Headquarters

The David and Lucile Packard Foundation Green Street is located on Second Street, between Lyell Street and Whitney Street. The green street features were constructed in 2012 as part of the Packard Foundation's development of its new office building at 343 Second Street. The green street portion of the project incorporates curbside flow-through rain gardens and corner bulb-outs to capture, treat and infiltrate runoff from adjacent impervious surfaces. The runoff from the building and associated hardscape and parking lots is captured and treated by other stormwater treatment measures.

Figure 2-11 David and Lucile Packard Foundation curbside flow-through rain garden (Source: EOA, Inc.)

2.4.6 Woodland Branch Library Rain Garden

The bioretention area at the Woodland Branch library was installed in May of 2017 through a collaboration initiated by Girl Scouts and supported by volunteers, sponsors, and the City of Los Altos. The demonstration garden is designed to be drought-tolerant, to infiltrate rainwater from roof downspouts, and to educate the public on the benefits of such systems. Inside the library, patrons can find information about the design of the rain garden as well as public fact sheets about GSI designed by SCVURPPP.

Figure 2-12 Woodland Branch Library bioretention area and rain garden (Source: City of Los Altos)

2.5 GSI Operation and Maintenance

Once installed, GSI measures need to be inspected and maintained in order to ensure that they continue to function as designed. The City has trained staff on inspection and maintenance needs specific to GSI measures, which may differ from standard landscape maintenance practices. City Municipal Services Department staff monitor and maintain City-owned infrastructure including GSI measures, while City Engineering Services Division staff execute the inspections of both Public and Private GSI sites, concurrent with annual inspections of projects regulated under Provision C.3 of the MRP (See Section 1.3.2).

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 principal policy document listed first, followed by remaining documents in order of most recently adopted:

- General Plan (Selected Elements), November 2002
- Downtown Vision Plan, August 2018
- Loyola Corners Specific Plan, November 1990, (Amended October 2017)
- Stormwater Master Plan, April 2016
- Pedestrian Master Plan, August 2015
- Climate Action Plan, December 2013
- Los Altos Parks Plan, May 2012
- Bicycle Transportation Plan, April 2012
- Collector Traffic Calming Plan, June 2011
- Sherwood Gateway Specific Plan, March 1999, (Amended February 2008)

The following sections provide a brief description of each plan and the text that supports GSI implementation. A prioritized workplan for the integration of GSI language into existing and future City planning documents is provided in Section 3.1.12.

3.1.1 General Plan

The following three Elements of the General Plan were considered to be the most relevant to GSI implementation in the City of Los Altos and were included in the planning document review:

- Infrastructure and Waste Disposal Element
- Community Design and Historic Resources Element
- Natural Environment and Hazards Element

The purpose of the Infrastructure & Waste Disposal (IWD) Element of the City's General Plan is to ensure sufficient quality and levels of service for water, sewer, utilities, and solid waste. The purpose of the Community Design & Historic Resources Element is to define the urban form and character of the community, and to preserve and enhance its desirable visual qualities. The purpose of the Natural Environment & Hazards Element is to identify and address those features or characteristics in or near the City's planning area, which represent a potential hazard to the people, property, and/or infrastructure in Los Altos. Goals and policies in the element are intended to protect the community from injury, loss of life, property damage, and deteriorating quality of life resulting from natural hazards and hazards relating to human activity.

All three elements were adopted in 2002 and do not include language specific to GSI. However, the IWD Element includes language requiring compliance with requirements in the stormwater permit and the Community Design & Historic Resources Implementation Program includes the following language that supports the concepts of GSI:

Encouraging the installation of planting medians along major arterial roadways as appropriate.

3.1.2 Downtown Vision Plan

The City of Los Altos initiated the preparation of a Downtown Vision Plan (Vision Plan) to help shape the future of Downtown Los Altos. The purpose of the Vision Plan is to provide the Los Altos community with a vision for the future of the Downtown triangle to guide growth and development over the next 20 years. This Vision Plan acts as the guiding document for future development of the Downtown, maintaining the community's history, values, and desired intensity of development, while also allowing for incremental change intended to facilitate a unique, vibrant village that exemplifies the exceptional character and qualities of Los Altos. The Plan's vision for public spaces (Trees and Landscaping, Page 48) includes the following language that supports the concepts of GSI:

Plazas should include a balance of green space and paved plaza space.

In instances where new trees and landscaping are to be incorporated, their selection should focus on native, low-water using, and low-maintenance plantings that aid in accentuating the sense of place within Downtown and that of each of the plazas.

3.1.3 Collector Traffic Calming Plan

The Collector Traffic Calming Plan (CTCP) is a framework for implementation of traffic calming devices on collector roadways in the City of Los Altos. This Plan identifies specific devices and approximate spacing of devices necessary to achieve the desired speed ranges along the collector roadways. The CTCP recommends vegetated bulb-outs, roundabouts, and mini roundabouts as traffic calming devices for collector streets, and includes language recognizing the impact on stormwater. It was written in 2011 and includes the following language (Introduction, Page 7) that supports the concepts of GSI:

…Landscaping improvements can be integrated with traffic calming devices to improve perception and acceptance. Removal of unnecessary asphalt concrete (AC) surfaces, where possible, adds landscape opportunities and promotes stormwater infiltration.

1. Removal of impermeable AC surfaces

- *Better water quality – infiltration / bio-filter area*
- *Better tree growth and preservation of existing oaks and other trees*
- *More landscape area – results in more visual interest, color and native plantings*

… Many of the traffic calming measures will increase the permeable surfaces on the streets where the landscaping can be incorporated.

3.1.4 Stormwater Master Plan

The Stormwater Master Plan is a guide to establish a prioritized Capital Improvement Program to control stormwater runoff and reduce flood risks in Los Altos. Chapter 2– Regulatory Requirements describes the City's requirements for developing a Green Infrastructure Plan under the Municipal Regional Permit. However, LID elements are not explicitly incorporated into the recommended capital improvement

projects in this plan. As these projects become part of the City's annual CIP, City staff is reviewing and will continue to review them for GSI opportunities per the process described in Chapter 7.

3.1.5 Pedestrian Master Plan

The City of Los Altos recognizes the value of walking and therefore developed a Citywide Pedestrian Master Plan to improve the pedestrian environment and to establish itself as a more walkable, livable, and healthy city. The plan outlines a broad vision, strategies, and actions for improving the pedestrian environment in Los Altos for people of all ages. The plan includes the following language to support GSI:

> *Section 5.1.4 Green Infrastructure and Low Impact Development*
>
> *Designs that collect, slow down, and recharge storm water back into the ground, or filter before entering the drainage pipe system, are known as 'green' infrastructure or Low Impact Development (LID). Integrating LID and Suggested Routes to School improvement priorities can create multi-faceted, sustainable projects that can attract community attention and offer teaching/volunteer maintenance opportunities for students.*
>
> *Recommendations*
>
> - *Incorporate green infrastructure and LID treatments on alternative walkways in Los Altos.*
> - *Consider integrating LID treatments on routes where children access school grounds.*

3.1.6 Bicycle Transportation Plan

The Los Altos Bicycle Transportation Plan (BTP) presents strategies to improve bicycling conditions and increase bicycling rates in Los Altos. The plan was completed in 2012 and does not include references to GSI. As projects influenced by the BTP become part of the City's annual CIP, City staff is reviewing and will continue to review them for GSI opportunities per the process described in Chapter 7.

3.1.7 Climate Action Plan

The City's Climate Action Plan (CAP) charts a comprehensive strategy to reduce emissions in a manner consistent with state guidelines and regulations, and to offer cost-effective opportunities to existing and future residents, businesses, and development projects to contribute to a more sustainable community. At the same time, the CAP provides a framework for environmental leadership and an educational resource to the community. The CAP includes the following language to support GSI:

> *Measure 4.1 Sustain a Green Infrastructure System and Sequester Carbon (Page 39)*
>
> *Trees and other green infrastructure are critical resources that increase and maintain quality of life in Los Altos. Green infrastructure reduces the urban heat island effect and sequesters carbon. This measure directs the City to continue to increase green infrastructure, encourage tree planting, and properly maintain existing trees through outreach, education, and existing events.*
>
> *Actions to support Measure 4.1:*
>
> *A. Continue to manage stormwater runoff with green infrastructure such as bioswales and other Low -Impact Development strategies.*

B. Adopt a policy that increases the number of shade trees planted in the community on private and public property

3.1.8 Loyola Corners Specific Plan

The Loyola Corners Specific Plan was developed in 1990 and updated in 2016. It is a document that identifies potential growth, vehicle circulation and parking, building design standards and an implementation schedule for area enhancements. The intent of the update was to simplify the plan and clarify the policies and standard, clarify implementation of the plan and remove outdated and unnecessary requirements. The updates were adopted by the City Council on October 10, 2017. The plan does not include references to GSI.

3.1.9 Sherwood Gateway Specific Plan

The Sherwood Gateway Specific Plan is designed to help accomplish two goals: economic revitalization of the City's Sherwood Gateway; and preservation of the surrounding neighborhood's residential character. The plan was developed in 1999 and updated in 2008 and does not include references to GSI.

3.1.10 Los Altos Parks Plan

The purpose of the Los Altos Parks Plan is to create a clear set of goals, policies and objectives that will provide direction to the City Council and City staff for the development, improvement and enhancement of the City's park system for the next twenty to thirty years. It was written in 2012 and does not include language specific to GSI.

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

A number of the City's planning documents already include language to support GSI. When preparing new planning documents or comprehensive plan updates, 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* document (2016).

3.2 Regional Plans

The City of Los Altos participates in the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), an association of 13 cities, the County of Santa Clara, and Valley Water (formerly called the Santa Clara Valley Water District) that are permittees under the MRP. This partnership allows sharing of resources toward permit compliance and collaboration on projects of mutual benefit.

The City is collaborating with SCVURPPP, the 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 Los Altos. 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 Valley Water'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[7], 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 five major watersheds, including the Lower Peninsula Watershed in which the City of Los Altos is location. The City's GSI Plan aligns with the goals of the One Water Plan and may be able to coordinate with specific projects yet to be identified in the Lower Peninsula 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.

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

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) 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 for details 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 (Section 4.2) describes 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 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 developed and

Council approved in November 2018 a new City Standard Detail for street shoulder improvements to include green stormwater infrastructure on applicable private, residential projects. The City will also reference details and build on its experience from design and construction of completed GSI projects such as Rosita Park and the Homestead Road Improvements (Section 2.1.4).

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. These three project types are the focus of the prioritization process described in Section 5.2, but all five types are considered as part of the citywide GSI strategy presented in Chapter 6.

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, which expires December 31, 2020. The City has already implemented two GSI projects, as discussed in Section 2.4. The City identified additional Early Implementation projects 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.

5.1.3 Public Parcel-based 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 Los Altos 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.

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 that can support GSI. Project opportunities were split into the three categories described above (Public parcel-based 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. Figures 5-1 through 5-3 present the results of the various steps.

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, SCVWD, State, Open Space Agencies	Identify all public parcels for regional stormwater capture projects or onsite LID retrofits
	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

LID and Regional Stormwater Capture Projects

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, whether they were in a priority development area, 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 (Figure 5-1) of potential project

locations based on the above criteria. This list was reviewed and updated by the City as part of Step 2 City-Specific Prioritization (Section 5.2.2).

Green Street Projects

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, 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. The public parcels and top 10 percent street segments in, and owned by, the City of Los Altos with potential for GSI are shown in Figure 5-1. This subset of projects from the SWRP was carried over into Step 2 City-Specific Prioritization (Section 5.2.2).

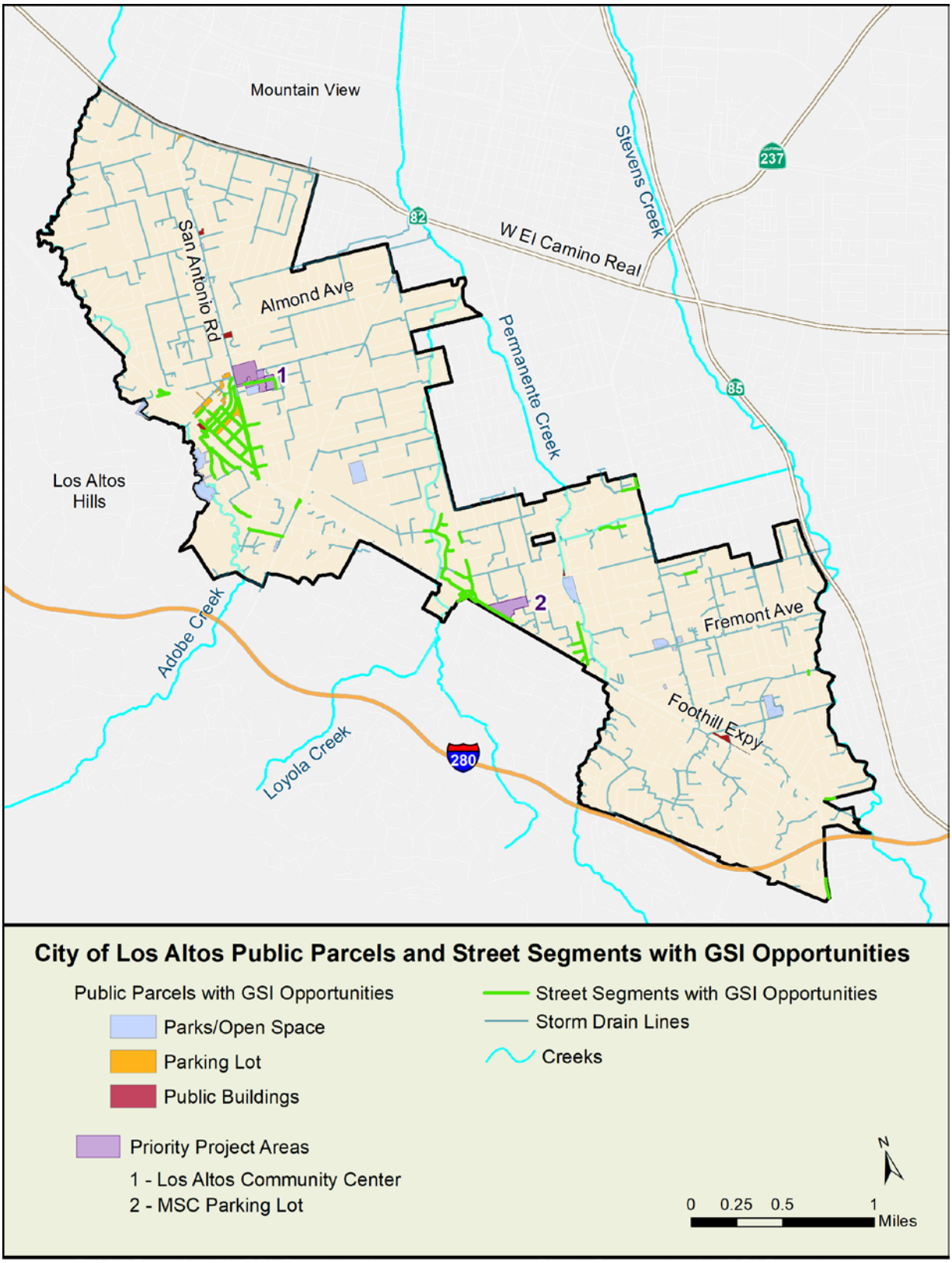


Figure 5-1. City of Los Altos Public Parcels and Street Segments with GSI Opportunities.

5.2.2 Step 2: City-Specific Prioritization

The City's local priorities for project implementation include: 1) opportunities to implement GSI projects in conjunction with anticipated areas of private development and 2) upcoming capital improvement projects that could be combined with GSI projects.

Specific Plans and Special Planning Areas

The City's Specific Plans and Special Planning Areas were mapped along with the results of the SWRP to show how the various potential redevelopment projects overlap with infrastructure and planning priorities (Figure 5-2). The Specific Plans identify factors such as potential growth, vehicle circulation, parking, building design standards, and implementation schedules for area enhancements in order to provide comprehensive development guidelines for an area. El Camino Real and Downtown are the two Special Planning Areas identified in the Land Use Element of the City's General Plan. In these areas, "public and private investment will be applied to Special Planning Areas to achieve land use changes and associated economic development and housing goals. Within each of these Special Planning Areas, the City is introducing the concepts and opportunities for increasing land use density and intensity to better achieve specific objectives for these areas." Investment in these areas provides opportunities for leveraging private development to fund GSI projects along property frontages and incorporate GSI into planned public infrastructure improvements.

Upcoming Capital Improvement Projects with Potential for GSI

Provision C.3.ii 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, and infrastructure projects that have potential for GSI measures. To satisfy this requirement, the City reviewed its Capital Improvement Program (CIP) project list to identify planned projects with opportunities for GSI. These projects are listed here and presented on Figure 5-3 to show their proximity to public parcel or green street project opportunities:

- Annual Storm Drain Improvements - Milverton Rd (CD-01012)
- First Street Streetscape Design – Phase II (CD-01017)
- Los Altos Community Center (CF-01002)
- MSC Parking Lot Resurfacing (CF-01018)

In addition to the projects with specific locations that were selected, there are projects in the City's CIP that do not yet have a location but have potential for GSI. These include annual CIP line items that include groups of undefined projects. These projects are:

- Transportation Enhancements
- TS-01052 Annual Bicycle / Pedestrian Access Improvements

5.3 Prioritized Projects

A compilation of the factors involved in prioritizing the City's opportunities for GSI projects is presented in Figure 5.3. The City-owned parcel based and top 10 percent of green street project opportunities from the SWRP are overlaid with the City's storm drain system, special planning areas, specific areas and projects from the CIP that may have potential to include GSI. The figure shows how the SWRP project opportunities line up with potential development and identified CIP projects. As shown in Figure 5-3,

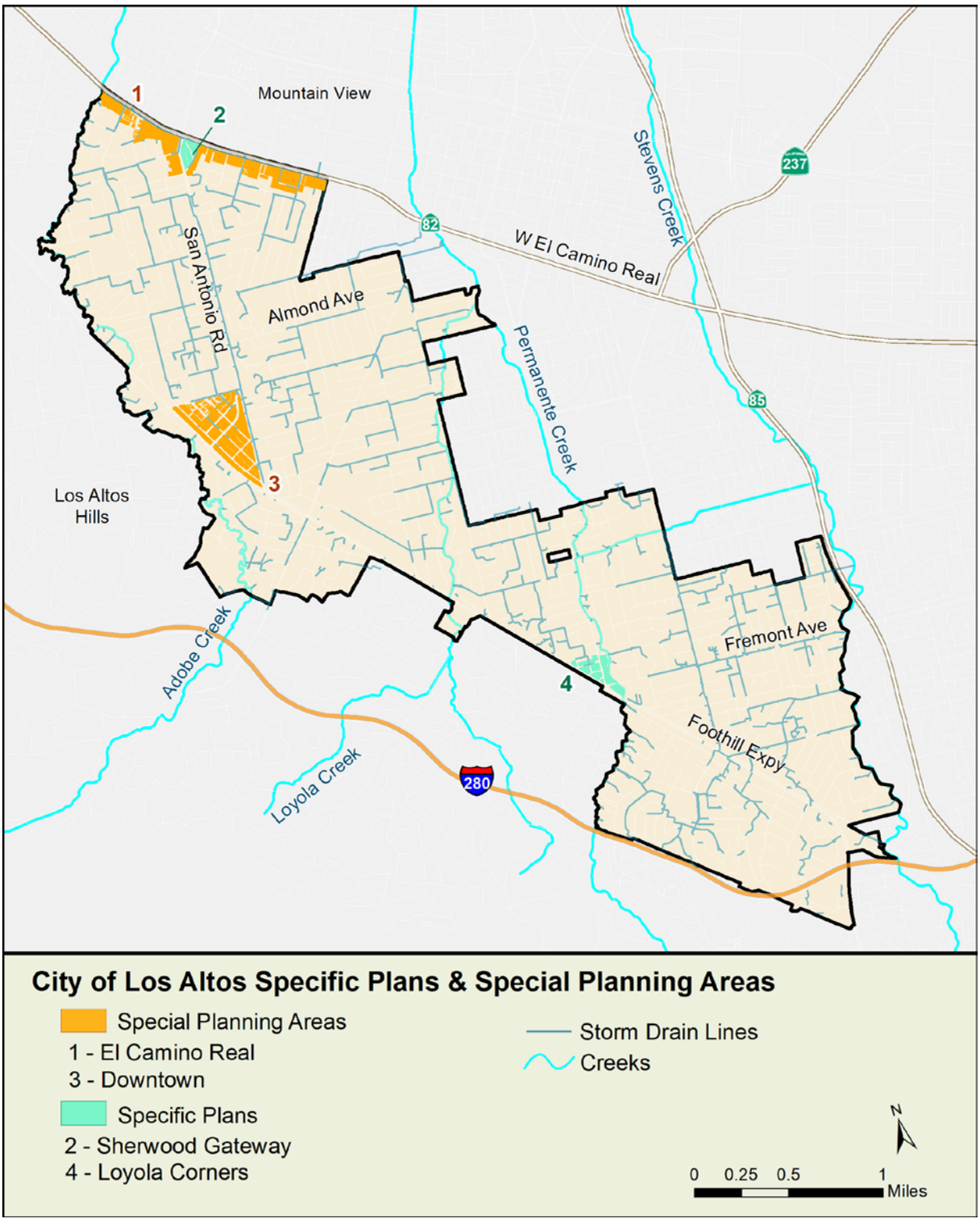


Figure 5-2. City of Los Altos Specific Plans and Special Planning Areas

Figure 5-3. City of Los Altos Project Prioritization Overview

the highest priority project opportunities in Los Altos are generally found in the special planning or specific plan areas.

Additional information for the parcel-based and green street opportunities identified in the SWRP for the City of Los Altos is provided in tabular format in Appendix B. The additional information includes general information such as APN, land owner 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, Special Planning Area, or Specific Plan).

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) because they are associated with a prioritized parcel in the SWRP. Opportunities for projects with GSI measures that arise in areas that are not adjacent to a prioritized project opportunity area identified in the SWRP may be considered on a case by case basis for feasibility, cost effectiveness, and availability of funding (See Chapter 7).

5.4 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, other provisions of the MRP (C.11 and C.12) establish 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 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 5.4.1 and 5.4.2 below.

5.4.1 Methodology

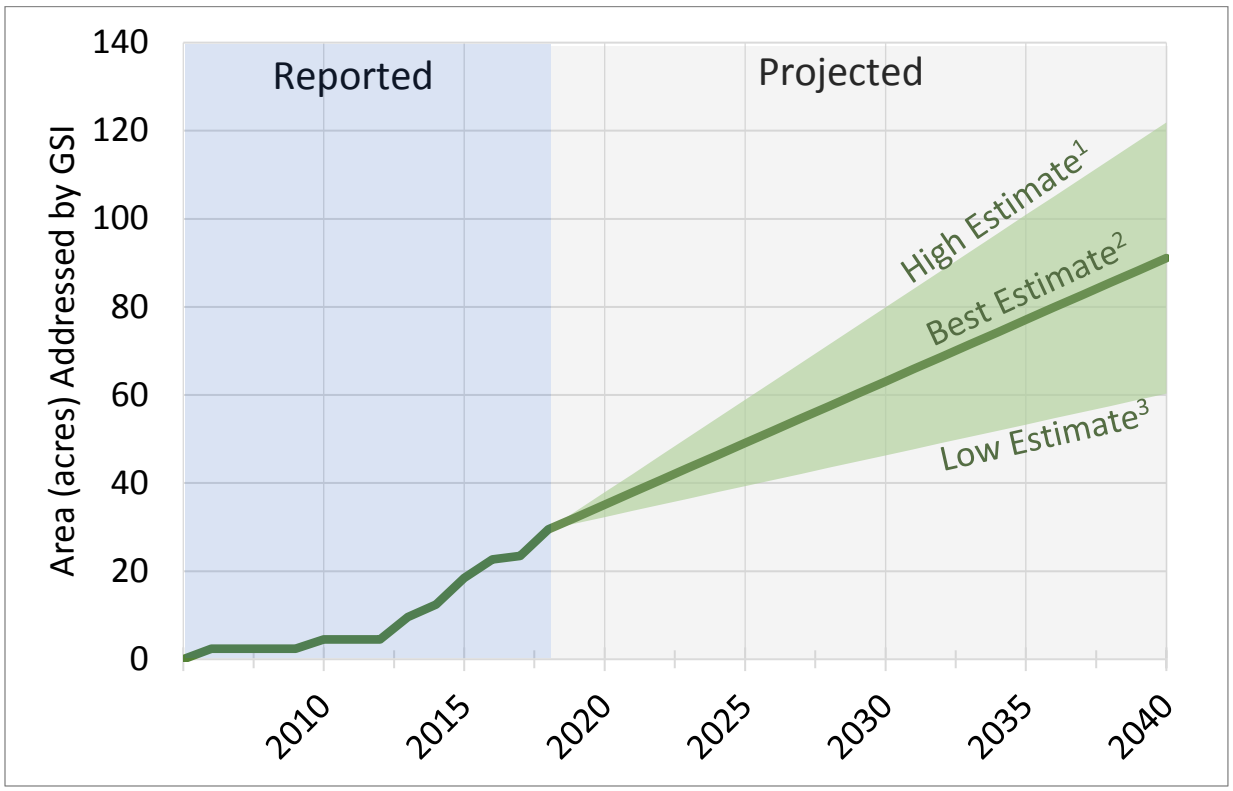
The first step in the process used historic development trends to estimate the acres of redevelopment that will occur in the City by 2020, 2030, and 2040 from redevelopment of privately- and publicly-owned parcels that that would trigger C.3 requirements under the current MRP (i.e. C.3 regulated projects). 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 were likely to redevelop, resulted in preliminary estimates of the land area that is predicted to be addressed by GSI facilities in the City of Los Altos 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 to overall impervious surface treated by GSI expected to be minor relative to the acreage treated by C.3 projects.

5.4.2 Results

Using the methodology described above, a predicted redevelopment rate of 2.8 acres per year was calculated for the City of Los Altos. "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 5-4 and Table 5-3 present the outputs of the analysis and represent the total acreage known to be addressed by GSI in Los Altos through 2018, and the best estimate of the cumulative land area that will be addressed in 2020 (35 acres), 2030 (63 acres), and 2040 (91 acres) by GSI on private and public parcels in the City of Los Altos.



[1]High estimate – projected from 150% of "Best Estimate; [2]Best estimate – rate of redevelopment based on 10-year average (2009-2018); and [3]Low estimate – projected from 50% of "Best Estimate"

Figure 5-4. Existing and projected cumulative land area (acres) anticipated to be addressed via Green Stormwater Infrastructure (GSI) facilities installed on private and public parcels in the City of Los Altos by 2020, 2030, and 2040.

Table 5-2 Projected cumulative land area (acres) anticipated to be addressed via Green Stormwater Infrastructure (GSI) facilities installed on private and public parcels in the City of Los Altos by 2020, 2030, and 2040.

Year	Low[1]	Best[2]	High[3]
Existing GSI[4]	-	29	-
2020	32	35	38
2030	46	63	80
2040	60	91	122

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

Table 5-3 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: 25 acres by 2020, 54 acres by 2030 and 77 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 that the rate for Los Altos 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 5-3.

Table 5-3 Actual (2002-2017) and predicted (2018-2040) extent of impervious surface retrofits via GSI implementation on privately- and publicly-owned parcels in the City of Los Altos by 2020, 2030, and 2040.

Land Use Prior To Redevelopment	% 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)	Impervious Area (acres)	Total Area (acres)	Impervious Area (acres)	Total Area (acres)	Impervious Area (acres)	Total Area (acres)	Impervious Area (acres)
Commercial	83%	10	8	0	0	22	19	24	20	56	46
Industrial	91%	0	0	0	0	0	0	0	0	0	0
K-12 Private Schools	67%	5	3	0	0	0	0	0	0	5	3
Residential - High Density	82%	5	4	0	0	0	0	0	0	5	4
Residential - Low Density	47%	1	0	0	0	0	0	0	0	1	0
Residential - Rural	10%	1	0	0	0	0	0	0	0	1	0
Retail	96%	9	8	0	0	10	10	4	4	23	22
Urban Parks	20%	2	0	0	0	0	0	0	0	2	0
Open Space[b]	1%	1	0	0	0	0	0	0	0	1	0
Totals		33	25	0	0	33	29	28	24	94	77
Cumulative[d]		33	25	33	25	66	54	94	77		

[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 1.

[d] Totals in this table differ slightly from predictions presented in Table 5-2 due to the inclusion of entire parcels in this table, as opposed to more generic "land areas" projections presented in Table 5-2.

6. CITY-WIDE GSI STRATEGY

The City of Los Altos' approach to GSI planning will be consistent with the City's General Plan and more recently adopted plans, which focus on preserving and enhancing the unique character of the City and maintaining a small-town village atmosphere while stimulating new economic growth, revitalizing older areas, assuring public safety and enhancing the City's amenities and environmental resources. The City's approach will also be guided by various existing plans that support the implementation of green infrastructure.

The City's approach to identifying opportunities for GSI will be based on the following priorities:

- Implementation of existing plans and policies – As development occurs, the City will ensure that opportunities for implementing GSI are explored and identified, consistent with the various existing city planning documents that currently contain goals and policies supporting green infrastructure (See also Section 3.1):
    - Los Altos Climate Action Plan – Measure 4.1 in the City's Climate Action Plan recommends that the City "continue to manage stormwater runoff with green infrastructure such as bioswales and other Low-Impact Development strategies".
    - Los Altos Pedestrian Master Plan – Section 5.1.4 of the Pedestrian Master Plan focuses on Green Infrastructure and Low Impact Development and recommends incorporating GI and LID features on alternative walkways, and on routes where children access school grounds.
    - Los Altos Collector Traffic Calming Plan – The Traffic Calming Plan recommends vegetated bulb-outs, roundabouts, and mini roundabouts as traffic calming devices for collector streets. The Plan also recognizes that these features will help reduce stormwater pollution.
    - Shoulder Paving Policy – City Council approved a Street Shoulder Improvement Policy in November 2018 which specifies permeable materials for use in parking areas along unimproved shoulders and requires the installation of a GSI feature, such as a rain garden or bioswale, in the landscape area.
- 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 7.1).
- Coordination with Private Development – The City may require new and typically larger development projects, that are already being required to construct new sidewalk, landscaping, curb, gutter, pavement and/or other improvements on the frontages of their properties in the public right of way, to construct GSI systems in those areas to control runoff from the impervious surfaces within and adjacent to the project boundary.
- Community Outreach and Engagement – The City will work with its Environmental Commission and local community groups to gather support for GSI features incorporated into street and traffic calming improvements and other GSI projects. These groups may also help encourage single-family home owners to include GI features (e.g., rain barrels or rain gardens) in their yards and landscapes.
- 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 7.1.

- C3 Regulated Projects - The City will continue to implement requirements for regulated projects under Provision C.3 and track completed projects as described in Section 7.3.

7. GSI IMPLEMENTATION PLAN

This chapter provides an overview of the process for implementing the strategy outlined in Chapter 6. The implementation plan has the following components: (1) a workplan to complete Early Implementation Projects, (2) a workplan for identifying additional, future GSI opportunities, (3) the legal and funding mechanisms that enable implementation, and (4) the technical tools that ensure the tracking of implemented projects.

7.1 Workplan for 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 (, and infrastructure projects that have potential for GSI measures. The list is reviewed and submitted with each Annual Report to the Regional Water Board. Projects with GSI that are scheduled and funded for implementation during the permit term (i.e., through December 2020) are considered "Early Implementation Projects".

As discussed in Section 2.4, the City has already completed six different GSI projects. Additional CIP projects identified by the City as having potential for GSI and expected to be implemented during the permit term are presented in Table 7-1 below. The table also includes information on the status of each project, and the timeframe for construction.

Table 7-1 GSI projects planned for implementation during the permit term.

Project Name	Status (Planned/Design/Etc.)	Timeframe for Construction
Annual Storm Drain Improvements - Milverton Rd (CD-01012)	Design	Starting 2020-2021
Los Altos Community Center (CF-0100)	Design	Starting FY2019-FY2020
MSC Parking Lot Resurfacing (CF-01018)	Design	Starting 2020

The City will continue to review its CIP list annually, using the SWRP prioritization, as well as the guidance developed by BASMAA[8] (Appendix C) for identifying opportunities to incorporate GSI into CIP projects.

7.2 Process for Identifying Additional GSI Projects

As stated in the City's strategy (Chapter 6), the City has various city planning documents that currently contain goals and policies supporting green infrastructure, a Street Shoulder Improvement Policy that requires the use of permeable materials and the installation of a GSI feature in the landscape area, and is looking for opportunities to coordinate with private development on the construction of GSI systems in the public right-of-way.

As mentioned in Section 5.2.2, the City will continue to review its CIP list annually to identify projects with potential for GSI, using the SWRP prioritization and the guidance developed by BASMAA

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

(Attachment C) for identifying opportunities to incorporate GSI into CIP projects. In the future, additional GSI project opportunities may also be identified by municipal staff or community members.

The City will map potential GSI projects, identified through the CIP review or otherwise, to determine their proximity to green street or parcel-based project opportunities identified in the SWRP (Section 5.2.1), evaluate each project for inclusion in the CIP (if not already in the CIP), and update the SWRP project list when applicable. The green street and parcel-based project opportunities identified and mapped in the SWRP provide a way to compare planned and potential projects identified by the City with opportunity areas for green infrastructure implementation.

The CIP plan is updated every 5 years and the next CIP update will occur in 2022. If not already in the CIP, 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.

Projects with GSI measures may be submitted to the SWRP during the update process. This will allow those projects to be eligible for 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

7.3 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 Los Altos 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 10.16.030 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 in order to identify documents that need to be updated or modified to provide sufficient legal authority to implement the GSI Plan.

The City has taken the following actions to ensure that the City will have sufficient authority to implement its GSI Plan and associated requirements and processes:

- The City has updated its Municipal Code Chapter 10.20, Stormwater Pollution Prevention Measures, to be consistent with its current NPDES permit requirements.
- The City has updated its Shoulder Paving Policy which requires GSI in landscaped areas adjacent to the shoulder paving area or driveway.
- The City reviewed 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 GSI Plan, and the timing for those actions.

The City's Municipal Code Chapter 10.20 provides legal authority to implement GSI projects. In its 2019 Annual Report, the City will describe any updates to ordinances, policies, plans or programs that were made to implement the GI Plan and associated programs.

7.4 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.

7.4.1 Current Funding Sources for GSI Program Elements

The City of Los Altos currently uses allocation from the City's general fund to fund construction of projects in its CIP and other projects. General funds 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.).

7.4.2 Potential Future Funding Options

As required by the MRP, the City of Los Altos has analyzed possible funding options to raise additional revenue for potential funding options for design, construction, and long-term operation and maintenance (O&M) of GSI projects. The City started evaluating new potential funding options for stormwater management in 2016. The City evaluated community interest in a dedicated stormwater funding source through a City-wide survey conducted in 2018. As of May 2019, the City is in the balloting process for the proposed Proposition 218 Clean Water and Sustainable Storm Drainage Funding Initiative (Storm Drainage Fee). This funding initiative is proposed as a dedicated and sustainable funding source for CIP projects, as identified in the City's adopted 2016 Stormwater Master Plan. In addition to infrastructure improvements, the fund would also support O&M and future planning efforts for the City's stormwater systems, including green stormwater infrastructure.

7.5 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

7.5.1 City Project Tracking System (Regulated and GSI)

The City currently tracks and manages 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 City will continue to reevaluate tracking system needs as the quantity of GSI sites grows and management needs become more complex.

7.5.2 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 Los Altos Street Segments and Parcels with Opportunities for GSI

Potential LID Project Opportunities

Project Characteristics							Project Scoring													
JURISDICTION	APN	Land Owner	Land Use	Prioritized Project Name	Special Planning Area	Specific Plan	Land Use Score	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
LOS ALTOS	16740039	City of Los Altos	Parking Lot	CD-01017 First Street Streetscape Design – Phase II	Downtown		5	8	1	4	0	0	5	5	10	1	1	0	1	**41**
LOS ALTOS	16740072	City of Los Altos	Parking Lot		Downtown		5	6	1	4	0	0	5	0	10	1	1	0	1	**34**
LOS ALTOS	16738002	City of Los Altos	Parking Lot		Downtown		5	6	1	4	0	0	5	0	10	1	1	0	1	**34**
LOS ALTOS	16739146	City of Los Altos	Public Buildings	CD-01017 First Street Streetscape Design – Phase II	Downtown		4	6	1	3	0	0	0	5	10	1	1	0	1	**32**
LOS ALTOS	16739057	City of Los Altos	Parking Lot		Downtown		5	10	1	3	0	0	0	0	10	1	1	0	1	**32**
LOS ALTOS	16739069	City of Los Altos	Parking Lot		Downtown		5	8	1	4	0	0	0	0	10	1	1	0	1	**31**
LOS ALTOS	16739032	City of Los Altos	Parking Lot		Downtown		5	8	1	4	0	0	0	0	10	1	1	0	1	**31**
LOS ALTOS	16738049	City of Los Altos	Parking Lot		Downtown		5	8	1	4	0	0	0	0	10	1	1	0	1	**31**
LOS ALTOS	16741063	City of Los Altos	Easement	TS-01009 City Alley Resurfacing			0	2	1	4	0	0	5	5	10	1	1	0	1	**30**
LOS ALTOS	16738051	City of Los Altos	Parking Lot		Downtown		5	8	1	3	0	0	0	0	10	1	1	0	1	**30**
LOS ALTOS	18916033	City of Los Altos	Public Buildings	CF-01018 MSC Parking Lot Resurfacing			4	2	1	4	0	0	0	5	10	1	1	0	1	**29**
LOS ALTOS	16739007	City of Los Altos	Parking Lot		Downtown		5	6	1	4	0	0	0	0	10	1	1	0	1	**29**
LOS ALTOS	16738028	City of Los Altos	Parking Lot		Downtown		5	6	1	3	0	0	0	0	10	1	1	0	1	**28**
LOS ALTOS	17042029	City of Los Altos	Park/Open Space	CF-01002 Hillview Community Center Redevelopment			3	2	1	4	0	0	0	5	10	1	1	0	1	**28**
LOS ALTOS	16738029	City of Los Altos	Parking Lot		Downtown		5	4	1	4	0	0	0	0	10	1	1	0	1	**27**
LOS ALTOS	31813001	City of Los Altos	Public Buildings				4	4	1	4	0	0	0	0	10	1	1	0	1	**26**
LOS ALTOS	16737038	City of Los Altos	Parking Lot				5	4	1	3	0	0	0	0	10	1	1	0	1	**26**
LOS ALTOS	17043005	City of Los Altos	Public Buildings				4	4	1	4	0	0	0	0	10	1	1	0	1	**26**
LOS ALTOS	31802049	City of Los Altos	Park/Open Space				3	4	1	4	0	0	0	0	10	1	1	0	1	**25**
LOS ALTOS	19717003	City of Los Altos	Park/Open Space				3	4	1	4	0	0	0	0	10	1	1	0	1	**25**
LOS ALTOS	17519024	City of Los Altos	Park/Open Space				3	4	1	4	0	0	0	0	10	1	1	0	1	**25**
LOS ALTOS	17001095	City of Los Altos	Parking Lot		El Camino Real	Sherwood Gateway	5	10	1	4	0	0	0	0	2	1	1	0	1	**25**
LOS ALTOS	17513045	City of Los Altos	Park/Open Space				3	0	1	2	5	0	0	0	10	1	1	0	1	**24**
LOS ALTOS	19341002	City of Los Altos	Park/Open Space	TS-01033 Miramonte Avenue Path (project cancelled)			3	0	1	1	0	0	0	5	10	1	1	0	1	**23**
LOS ALTOS	17519037	City of Los Altos	Park/Open Space				3	4	1	2	0	0	0	0	10	1	1	0	1	**23**
LOS ALTOS	17513038	City of Los Altos	Park/Open Space				3	0	1	1	5	0	0	0	10	1	1	0	1	**23**
LOS ALTOS	19345020	City of Los Altos	Easement	TS-01033 Miramonte Avenue Path (project cancelled)			0	2	1	1	0	0	0	5	10	1	1	0	1	**22**
LOS ALTOS	31817055	City of Los Altos	Park/Open Space				3	0	1	4	0	0	0	0	10	1	1	0	1	**21**
LOS ALTOS	19336004	City of Los Altos	Park/Open Space				3	0	1	4	0	0	0	0	10	1	1	0	1	**21**
LOS ALTOS	18950033	City of Los Altos	Park/Open Space				3	0	1	4	0	0	0	0	10	1	1	0	1	**21**
LOS ALTOS	18934009	City of Los Altos	Park/Open Space	TS-01030 El Monte/Springer Intersection Improvements (project cancelled)			3	2	1	4	0	0	0	5	2	1	1	0	1	**20**
LOS ALTOS	17014029	City of Los Altos	Public Buildings				4	6	1	4	0	0	0	0	2	1	1	0	1	**20**
LOS ALTOS	31827019	City of Los Altos	Easement				0	0	5	1	0	0	0	0	10	1	1	0	1	**19**
LOS ALTOS	31803049	City of Los Altos	Park/Open Space				3	0	1	2	0	0	0	0	10	1	1	0	1	**19**
LOS ALTOS	16715002	City of Los Altos	Park/Open Space				3	0	1	4	0	0	0	0	2	1	1	0	1	**13**
LOS ALTOS	17015038	City of Los Altos	Park/Open Space				3	0	1	3	0	0	0	0	2	1	1	0	1	**12**

Project Characteristics							Project Scoring												
JURISDICTION	PROJECT ID	Street Name	Prioritized Project Name	Prioritized Project Name	Special Planning Area	Specific Plan	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
LOS ALTOS	70501842	1ST ST	CD-01017 First Street Streetscape Design – Phase II		Downtown		10	1	4	0	0	5	5	10	1	1	1	1	**39**
LOS ALTOS	70501264	MAIN ST	CD-01017 First Street Streetscape Design – Phase II		Downtown		10	1	4	0	0	5	5	10	1	1	1	1	**39**
LOS ALTOS	70500861	PLAZA CENTRAL	CD-01017 First Street Streetscape Design – Phase II		Downtown		10	1	3	0	0	5	5	10	1	1	1	1	**38**
LOS ALTOS	70500864	PLAZA SOUTH	CD-01017 First Street Streetscape Design – Phase II		Downtown		8	1	4	0	0	5	5	10	1	1	1	1	**37**
LOS ALTOS	70502291	S SAN ANTONIO RD	TS-01009 City Alley Resurfacing	CD-01017 First Street Streetscape Design – Phase II			8	1	4	0	0	5	5	10	1	1	1	1	**37**
LOS ALTOS	70501839	1ST ST	TS-01009 City Alley Resurfacing	CD-01017 First Street Streetscape Design – Phase II	Downtown		8	1	4	0	0	5	5	10	1	1	1	1	**37**
LOS ALTOS	70500480	LYELL ST	TS-01009 City Alley Resurfacing	CD-01017 First Street Streetscape Design – Phase II	Downtown		8	1	4	0	0	5	5	10	1	1	1	1	**37**
LOS ALTOS	70502237	1ST ST	TS-01009 City Alley Resurfacing	CD-01017 First Street Streetscape Design – Phase II	Downtown		8	1	4	0	0	5	5	10	1	1	1	1	**37**
LOS ALTOS	70502293	S SAN ANTONIO RD	TS-01009 City Alley Resurfacing	CD-01017 First Street Streetscape Design – Phase II	Downtown		8	1	4	0	0	5	5	10	1	1	1	1	**37**
LOS ALTOS	70501546	WHITNEY ST	CD-01017 First Street Streetscape Design – Phase II		Downtown		8	1	4	0	0	5	5	10	1	1	1	1	**37**

Project Characteristics							Project Scoring											
JURISDICTION	PROJECT ID	Street Name	Prioritized Project Name	Prioritized Project Name	Special Planning Area	Specific Plan	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
LOS ALTOS	70501263	MAIN ST	CD-01017 First Street Streetscape Design – Phase II		Downtown		8	1	3	0	0	5	5	10	1	1	1	1	**36**
LOS ALTOS	70501841	1ST ST	CD-01017 First Street Streetscape Design – Phase II		Downtown		8	1	3	0	0	5	5	10	1	1	1	1	**36**
LOS ALTOS	70500479	LYELL ST			Downtown		10	1	5	0	0	5	0	10	1	1	1	1	**35**
LOS ALTOS	70501262	MAIN ST	CD-01017 First Street Streetscape Design – Phase II		Downtown		8	1	2	0	0	5	5	10	1	1	1	1	**35**
LOS ALTOS	70501840	1ST ST	CD-01017 First Street Streetscape Design – Phase II		Downtown		6	1	4	0	0	5	5	10	1	1	1	1	**35**
LOS ALTOS	70501265	MAIN ST			Downtown		10	1	5	0	0	5	0	10	1	1	1	1	**35**
LOS ALTOS	70500264	BERRY AVE	TS-01046 Springer Road / Fremont Ave Pedestrian Improvements (School Route Project) (Project cancelled)				4	1	5	5	0	0	5	10	1	1	1	1	**34**
LOS ALTOS	70501023	S SPRINGER RD	TS-01046 Springer Road / Fremont Ave Pedestrian Improvements (School Route Project) (Project cancelled)				4	1	5	5	0	0	5	10	1	1	1	1	**34**
LOS ALTOS	70501246	2ND ST			Downtown		10	1	4	0	0	5	0	10	1	1	1	1	**34**
LOS ALTOS	70502077	LYELL ST					10	1	4	0	0	5	0	10	1	1	1	1	**34**
LOS ALTOS	70501261	MAIN ST	CD-01017 First Street Streetscape Design – Phase II		Downtown		4	1	4	0	0	5	5	10	1	1	1	1	**33**

Project Characteristics							Project Scoring											
JURISDICTION	PROJECT ID	Street Name	Prioritized Project Name	Prioritized Project Name	Special Planning Area	Specific Plan	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
LOS ALTOS	70500838	B ST	TS-01033 Miramonte Avenue Path (project cancelled)			Loyola Corners	8	1	5	0	0	0	5	10	1	1	1	1	**33**
LOS ALTOS	70500263	EB BERRY TO SB SPRINGER RAMP	TS-01046 Springer Road / Fremont Ave Pedestrian Improvements (School Route Project) (Project cancelled)				4	1	4	5	0	0	5	10	1	1	1	1	**33**
LOS ALTOS	70500481	PEPPER DR					8	1	5	0	0	5	0	10	1	1	1	1	**33**
LOS ALTOS	70502069	HAWTHORNE AVE					8	1	5	0	0	5	0	10	1	1	1	1	**33**
LOS ALTOS	70500485	S SAN ANTONIO RD			Downtown		8	1	4	0	0	5	0	10	1	1	1	1	**32**
LOS ALTOS	70500826	S SPRINGER RD	TS-01046 Springer Road / Fremont Ave Pedestrian Improvements (School Route Project) (Project cancelled)				8	1	4	0	0	0	5	10	1	1	1	1	**32**
LOS ALTOS	70501247	2ND ST			Downtown		8	1	4	0	0	5	0	10	1	1	1	1	**32**
LOS ALTOS	70501862	WB MAIN ST TO NB FOOTHILL XPY RAMP	CD-01017 First Street Streetscape Design – Phase II		Downtown		4	1	3	0	0	5	5	10	1	1	1	1	**32**
LOS ALTOS	70501547	2ND ST			Downtown		8	1	4	0	0	5	0	10	1	1	1	1	**32**
LOS ALTOS	70502287	S SAN ANTONIO RD			Downtown		8	1	4	0	0	5	0	10	1	1	1	1	**32**
LOS ALTOS	70502301	2ND ST			Downtown		8	1	4	0	0	5	0	10	1	1	1	1	**32**
LOS ALTOS	70501347	BERRY AVE	TS-01046 Springer Road / Fremont Ave Pedestrian Improvements (School Route Project) (Project cancelled)				2	1	5	5	0	0	5	10	1	1	1	1	**32**
LOS ALTOS	70501251	3RD ST			Downtown		8	1	4	0	0	5	0	10	1	1	1	1	**32**

Project Characteristics							Project Scoring												
JURISDICTION	PROJECT ID	Street Name	Prioritized Project Name	Prioritized Project Name	Special Planning Area	Specific Plan	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
LOS ALTOS	70501548	2ND ST			Downtown		8	1	4	0	0	5	0	10	1	1	1	1	**32**
LOS ALTOS	70500100	MAIN ST			Downtown		8	1	4	0	0	5	0	10	1	1	1	1	**32**
LOS ALTOS	70500082	NB FOOTHILL XPY TO EB MAIN ST RAMP	CD-01017 First Street Streetscape Design – Phase II		Downtown		4	1	3	0	0	5	5	10	1	1	1	1	**32**
LOS ALTOS	70502290	S SAN ANTONIO RD					8	1	4	0	0	5	0	10	1	1	1	1	**32**
LOS ALTOS	20501991	MIRAMONTE AVE	TS-01033 Miramonte Avenue Path (project cancelled)			Loyola Corners	8	1	4	0	0	0	5	10	1	1	1	1	**32**
LOS ALTOS	70500070	S SPRINGER RD	TS-01046 Springer Road / Fremont Ave Pedestrian Improvements (School Route Project) (Project cancelled)				8	1	4	0	0	0	5	10	1	1	1	1	**32**
LOS ALTOS	70500046	FREMONT AVE	TS-01046 Springer Road / Fremont Ave Pedestrian Improvements (School Route Project) (Project cancelled)				8	1	4	0	0	0	5	10	1	1	1	1	**32**
LOS ALTOS	70500650	PLAZA CENTRAL			Downtown		8	1	4	0	0	5	0	10	1	1	1	1	**32**
LOS ALTOS	70501843	1ST ST	CD-01017 First Street Streetscape Design – Phase II		Downtown		10	1	2	0	0	0	5	10	1	1	1	1	**32**
LOS ALTOS	70500994	3RD ST			Downtown		8	1	4	0	0	5	0	10	1	1	1	1	**32**
LOS ALTOS	70502288	S SAN ANTONIO RD			Downtown		8	1	4	0	0	5	0	10	1	1	1	1	**32**
LOS ALTOS	70501250	3RD ST			Downtown		8	1	4	0	0	5	0	10	1	1	1	1	**32**
LOS ALTOS	20501989	MIRAMONTE AVE	TS-01033 Miramonte Avenue Path (project cancelled)			Loyola Corners	8	1	4	0	0	0	5	10	1	1	1	1	**32**
LOS ALTOS	70502286	S SAN ANTONIO RD					8	1	4	0	0	5	0	10	1	1	1	1	**32**

Project Characteristics							Project Scoring											
JURISDICTION	PROJECT ID	Street Name	Prioritized Project Name	Prioritized Project Name	Special Planning Area	Specific Plan	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
LOS ALTOS	70500649	PLAZA SOUTH			Downtown		8	1	4	0	0	5	0	10	1	1	1	1	**32**
LOS ALTOS	70501020	S SPRINGER RD	TS-01045 Covington Rd at Riverside Ave Pedestrian Improvements (School Route Project)(project cancelled)				2	1	5	5	0	0	5	10	1	1	1	1	**32**
LOS ALTOS	70501851	LINCOLN AVE					2	1	4	5	0	5	0	10	1	1	1	1	**31**
LOS ALTOS	70500255	S SPRINGER RD	TS-01046 Springer Road / Fremont Ave Pedestrian Improvements (School Route Project) (Project cancelled)				8	1	3	0	0	0	5	10	1	1	1	1	**31**
LOS ALTOS	70502302	WHITNEY ST			Downtown		6	1	5	0	0	5	0	10	1	1	1	1	**31**
LOS ALTOS	70502190	A ST	TS-01033 Miramonte Avenue Path (project cancelled)			Loyola Corners	8	1	3	0	0	0	5	10	1	1	1	1	**31**
LOS ALTOS	70501853	EB BURKE TO SB FOOTHILL XPY RAMP					2	1	4	5	0	5	0	10	1	1	1	1	**31**
LOS ALTOS	70500823	MAGDALENA AVE	TS-01046 Springer Road / Fremont Ave Pedestrian Improvements (School Route Project) (Project cancelled)				6	1	5	0	0	0	5	10	1	1	1	1	**31**
LOS ALTOS	60502456	GROVELAND DR					2	1	4	0	10	0	0	10	1	1	1	1	**31**
LOS ALTOS	70501801	ORANGE AVE	TS-01009 City Alley Resurfacing				2	1	4	0	0	5	5	10	1	1	1	1	**31**
LOS ALTOS	70502285	S SAN ANTONIO RD					6	1	5	0	0	5	0	10	1	1	1	1	**31**

Project Characteristics							Project Scoring												
JURISDICTION	PROJECT ID	Street Name	Prioritized Project Name	Prioritized Project Name	Special Planning Area	Specific Plan	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
LOS ALTOS	70500898	CUESTA DR	TS-01009 City Alley Resurfacing	CD-01017 First Street Streetscape Design – Phase II			6	1	5	0	0	0	5	10	1	1	1	1	**31**
LOS ALTOS	70500901	LYELL ST					6	1	5	0	0	5	0	10	1	1	1	1	**31**
LOS ALTOS	70500516	LINCOLN AVE	TS-01009 City Alley Resurfacing				2	1	4	0	0	5	5	10	1	1	1	1	**31**
LOS ALTOS	70501386	OAKWOOD CT	TS-01045 Covington Rd at Riverside Ave Pedestrian Improvements (School Route Project)(project cancelled)				0	1	5	5	0	0	5	10	1	1	1	1	**30**
LOS ALTOS	70502292	S SAN ANTONIO RD	TS-01009 City Alley Resurfacing	CD-01017 First Street Streetscape Design – Phase II			6	1	4	0	0	0	5	10	1	1	1	1	**30**
LOS ALTOS	20502531	COVINGTON RD					6	5	5	0	0	0	0	10	1	1	1	1	**30**
LOS ALTOS	60502789	HOMESTEAD RD					10	1	5	0	0	0	0	10	1	1	1	1	**30**
LOS ALTOS	70500102	WHITNEY ST			Downtown		6	1	4	0	0	5	0	10	1	1	1	1	**30**
LOS ALTOS	20501988	MIRAMONTE AVE	TS-01033 Miramonte Avenue Path (project cancelled)			Loyola Corners	6	1	4	0	0	0	5	10	1	1	1	1	**30**
LOS ALTOS	70500092	RIVERSIDE DR					6	1	4	5	0	0	0	10	1	1	1	1	**30**
LOS ALTOS	70500068	NB FOOTHILL TO EB SPRINGER RAMP	TS-01046 Springer Road / Fremont Ave Pedestrian Improvements (School Route Project) (Project cancelled)				6	1	4	0	0	0	5	10	1	1	1	1	**30**
LOS ALTOS	70500813	S EL MONTE AVE					10	1	5	0	0	0	0	10	1	1	1	1	**30**
LOS ALTOS	70502294	S SAN ANTONIO RD	TS-01009 City Alley Resurfacing	CD-01017 First Street Streetscape Design – Phase II	Downtown		6	1	4	0	0	0	5	10	1	1	1	1	**30**

Project Characteristics							Project Scoring											
JURISDICTION	PROJECT ID	Street Name	Prioritized Project Name	Prioritized Project Name	Special Planning Area	Specific Plan	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
LOS ALTOS	70501847	W EDITH AVE					6	1	4	5	0	0	0	10	1	1	1	1	**30**
LOS ALTOS	70500860	WB SPRINGER TO NB FOOTHILL RAMP	TS-01046 Springer Road / Fremont Ave Pedestrian Improvements (School Route Project) (Project cancelled)				8	1	2	0	0	0	5	10	1	1	1	1	**30**
LOS ALTOS	70501088	S SPRINGER RD	TS-01046 Springer Road / Fremont Ave Pedestrian Improvements (School Route Project) (Project cancelled)				6	1	4	0	0	0	5	10	1	1	1	1	**30**
LOS ALTOS	70501089	DOLORES AVE	TS-01033 Miramonte Avenue Path (project cancelled)			Loyola Corners	6	1	4	0	0	0	5	10	1	1	1	1	**30**
LOS ALTOS	70500824	MAGDALENA AVE	TS-01046 Springer Road / Fremont Ave Pedestrian Improvements (School Route Project) (Project cancelled)				6	1	4	0	0	0	5	10	1	1	1	1	**30**
LOS ALTOS	70501849	WB EDITH TO NB FOOTHILL XPY RAMP					6	1	4	5	0	0	0	10	1	1	1	1	**30**
LOS ALTOS	70500038	RIVERSIDE DR	TS-01045 Covington Rd at Riverside Ave Pedestrian Improvements (School Route Project)(project cancelled)				0	1	5	5	0	0	5	10	1	1	1	1	**30**

Project Characteristics							Project Scoring											
JURISDICTION	PROJECT ID	Street Name	Prioritized Project Name	Prioritized Project Name	Special Planning Area	Specific Plan	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
LOS ALTOS	70500039	RIVERSIDE DR	TS-01045 Covington Rd at Riverside Ave Pedestrian Improvements (School Route Project)(project cancelled)				0	1	5	5	0	0	5	10	1	1	1	1	**30**
LOS ALTOS	70500839	FREMONT AVE	CF-01018 MSC Parking Lot Resurfacing				6	1	4	0	0	0	5	10	1	1	1	1	**30**
LOS ALTOS	70500865	PLAZA SOUTH			Downtown		6	1	4	0	0	5	0	10	1	1	1	1	**30**
LOS ALTOS	70501127	RIVERSIDE DR	TS-01045 Covington Rd at Riverside Ave Pedestrian Improvements (School Route Project)(project cancelled)				0	1	5	5	0	0	5	10	1	1	1	1	**30**
LOS ALTOS	70500090	RIVERSIDE DR	TS-01045 Covington Rd at Riverside Ave Pedestrian Improvements (School Route Project)(project cancelled)				0	1	4	5	0	0	5	10	1	1	1	1	**29**
LOS ALTOS	70500047	RIXFORD LN	TS-01045 Covington Rd at Riverside Ave Pedestrian Improvements (School Route Project)(project cancelled)				0	1	4	5	0	0	5	10	1	1	1	1	**29**

Project Characteristics							Project Scoring											
JURISDICTION	PROJECT ID	Street Name	Prioritized Project Name	Prioritized Project Name	Special Planning Area	Specific Plan	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
LOS ALTOS	70501382	COVINGTON RD	TS-01045 Covington Rd at Riverside Ave Pedestrian Improvements (School Route Project)(project cancelled)				0	1	4	5	0	0	5	10	1	1	1	1	**29**
LOS ALTOS	70502300	PEPPER DR					4	1	5	0	0	5	0	10	1	1	1	1	**29**
LOS ALTOS	70500233	UNIVERSITY AVE					0	1	4	5	0	5	0	10	1	1	1	1	**29**
LOS ALTOS	70500843	PLAZA			Downtown		10	1	4	0	0	0	0	10	1	1	1	1	**29**
LOS ALTOS	70501383	COVINGTON RD	TS-01045 Covington Rd at Riverside Ave Pedestrian Improvements (School Route Project)(project cancelled)				0	1	4	5	0	0	5	10	1	1	1	1	**29**
LOS ALTOS	70501125	ARROWOOD CT	TS-01045 Covington Rd at Riverside Ave Pedestrian Improvements (School Route Project)(project cancelled)				0	1	4	5	0	0	5	10	1	1	1	1	**29**
LOS ALTOS	70502295	S SAN ANTONIO RD	TS-01009 City Alley Resurfacing	CD-01017 First Street Streetscape Design – Phase II	Downtown		6	1	3	0	0	0	5	10	1	1	1	1	**29**
LOS ALTOS	70500822	S EL MONTE AVE					10	1	4	0	0	0	0	10	1	1	1	1	**29**
LOS ALTOS	70500581	UNIVERSITY AVE					0	1	4	5	0	5	0	10	1	1	1	1	**29**
LOS ALTOS	20502863	GRANT RD					6	5	4	0	0	0	0	10	1	1	1	1	**29**
LOS ALTOS	70501848	W EDITH AVE					6	1	3	5	0	0	0	10	1	1	1	1	**29**
LOS ALTOS	20501990	MIRAMONTE AVE	TS-01033 Miramonte Avenue Path (project cancelled)			Loyola Corners	8	1	1	0	0	0	5	10	1	1	1	1	**29**
LOS ALTOS	70501257	MAIN ST			Downtown		8	1	5	0	0	0	0	10	1	1	1	1	**28**

Project Characteristics							Project Scoring											
JURISDICTION	PROJECT ID	Street Name	Prioritized Project Name	Prioritized Project Name	Special Planning Area	Specific Plan	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
LOS ALTOS	70500069	SB FOOTHILL TO WB MAGDALENA RAMP	TS-01046 Springer Road / Fremont Ave Pedestrian Improvements (School Route Project) (Project cancelled)				4	1	4	0	0	0	5	10	1	1	1	1	**28**
LOS ALTOS	70500840	FREMONT AVE	CF-01018 MSC Parking Lot Resurfacing				4	1	4	0	0	0	5	10	1	1	1	1	**28**
LOS ALTOS	70502062	HILLVIEW AVE			Downtown		8	1	5	0	0	0	0	10	1	1	1	1	**28**
LOS ALTOS	70500812	S EL MONTE AVE					8	1	5	0	0	0	0	10	1	1	1	1	**28**
LOS ALTOS	20502530	COVINGTON RD					4	5	5	0	0	0	0	10	1	1	1	1	**28**
LOS ALTOS	20502655	PRITCHETT CT					4	5	5	0	0	0	0	10	1	1	1	1	**28**
LOS ALTOS	70500484	S SAN ANTONIO RD	TS-01009 City Alley Resurfacing				4	1	4	0	0	0	5	10	1	1	1	1	**28**
LOS ALTOS	70500081	SB SAN ANTONIO TO NB FOOTHILL RAMP	TS-01009 City Alley Resurfacing	CD-01017 First Street Streetscape Design – Phase II	Downtown		6	1	2	0	0	0	5	10	1	1	1	1	**28**
LOS ALTOS	20501992	MIRAMONTE AVE	TS-01033 Miramonte Avenue Path (project cancelled)				4	1	4	0	0	0	5	10	1	1	1	1	**28**
LOS ALTOS	70501907	FALLEN LEAF LN					4	5	5	0	0	0	0	10	1	1	1	1	**28**
LOS ALTOS	70501545	STATE ST			Downtown		8	1	5	0	0	0	0	10	1	1	1	1	**28**
LOS ALTOS	70500651	UNNAMED STREET	CF-01002 Hillview Community Center Redevelopment				4	1	4	0	0	0	5	10	1	1	1	1	**28**
LOS ALTOS	20501940	ALTAMEAD DR					4	5	5	0	0	0	0	10	1	1	1	1	**28**
LOS ALTOS	70501807	LINCOLN AVE	TS-01009 City Alley Resurfacing		Downtown		4	1	4	0	0	0	5	10	1	1	1	1	**28**
LOS ALTOS	70500562	MILVERTON RD	CD-01012 Annual Storm Drain Improvements Milverton Rd.				0	1	3	5	0	0	5	10	1	1	1	1	**28**

Project Characteristics							Project Scoring											
JURISDICTION	PROJECT ID	Street Name	Prioritized Project Name	Prioritized Project Name	Special Planning Area	Specific Plan	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
LOS ALTOS	70500519	SB FOOTHILL XPY TO WB EDITH RAMP					4	1	4	5	0	0	0	10	1	1	1	1	**28**
LOS ALTOS	70500568	UNIVERSITY AVE	CD-01012 Annual Storm Drain Improvements Milverton Rd.				0	1	3	5	0	0	5	10	1	1	1	1	**28**
LOS ALTOS	70500993	MAIN ST			Downtown		8	1	5	0	0	0	0	10	1	1	1	1	**28**
LOS ALTOS	70501846	W EDITH AVE					4	1	4	5	0	0	0	10	1	1	1	1	**28**
LOS ALTOS	60500462	N FOOTHILL BLVD	S Foothill Blvd and N Foothill Blvd Green Street				4	1	4	0	0	0	5	10	1	1	1	1	**28**

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.