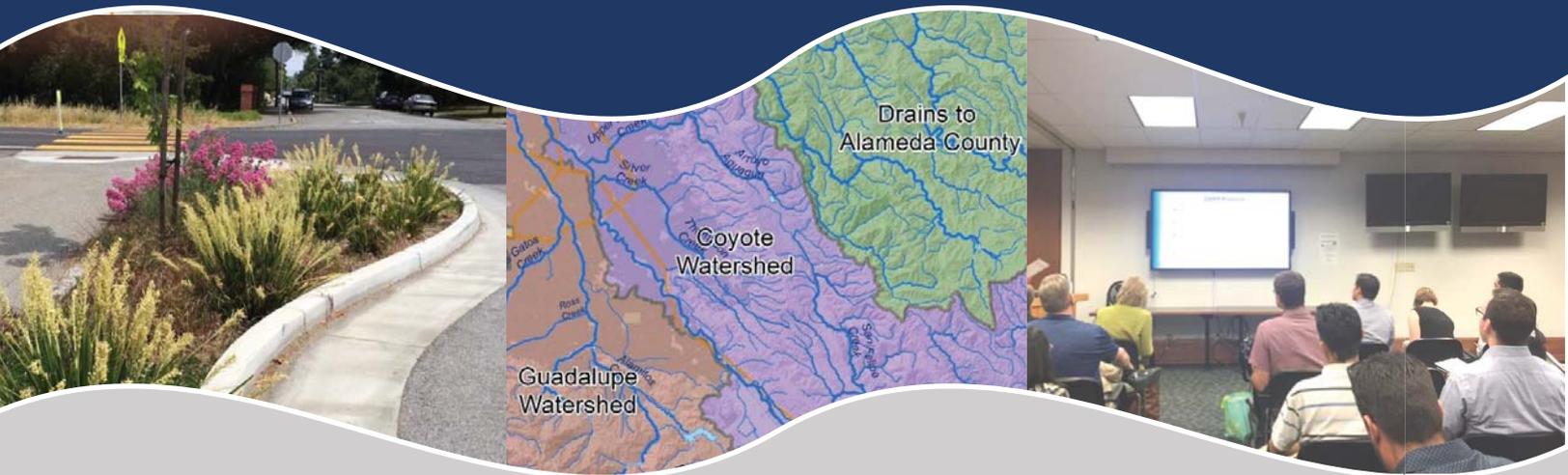


Santa Clara Basin Stormwater Resource Plan



Final

August 2019

Funding Provided by Proposition 1 Stormwater Planning Grant
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Prepared by:



engineers **Attachment 1** environment

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August 2019

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Acknowledgement

The Santa Clara Basin Stormwater Resource Plan (SWRP) was prepared for the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) under the guidance of the SCVURPPP Management Committee, Santa Clara Valley Water District (SCVWD) staff, and the SWRP Technical Advisory Committee. We appreciate the comments, suggestions, and guidance provided by the reviewers.

SCVURPPP gratefully acknowledges the State Water Resources Control Board (SWRCB) for providing funding for development of the SWRP. The SWRP was partially funded by a Proposition 1 Stormwater Grant Program planning grant from the SWRCB, with the SCVWD as the lead agency. We appreciate the leadership of SCVWD staff Vincent Gin, Project Director, and Brian Mendenhall, Project Manager.

Executive Summary

ES.1 Background

Stormwater management in California is evolving towards an approach that views stormwater as a valuable resource and values stormwater capture projects that can provide multiple benefits. The Santa Clara Basin Stormwater Resource Plan (SWRP) is the result of a two-year process to identify and prioritize opportunities for stormwater capture and use throughout the Santa Clara Basin, to assist Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) member agencies in planning Green Stormwater Infrastructure (GSI) projects. GSI projects use vegetation, soils, and natural processes to capture stormwater and dry weather runoff from impervious surfaces throughout the urban landscape. Benefits of these projects include reducing the quantity of pollutants and runoff entering the storm drain system, helping to recharge groundwater and augment potable water supply, reducing local flooding, and other ecological and community benefits.



Figure ES-1 Street runoff flowing into a landscaped area that captures and treats stormwater

SCVURPPP is an association of the thirteen cities and towns in Santa Clara Valley, the County of Santa Clara, and the Santa Clara Valley Water District (SCVWD) that are regulated under the Bay Area Municipal Regional Stormwater NPDES Permit (MRP) to discharge stormwater to South San Francisco Bay. SCVURPPP and SCVWD led the effort to develop the SWRP. The development of the SWRP was partially funded by a Proposition 1 Stormwater Grant Program planning grant from the State Water Resources Control Board (SWRCB), with the SCVWD as the lead agency. SCVURPPP and SCVWD provided matching funds through in-kind services for grant administration, outreach, and development of guidance documents and tools related to GSI planning.

The MRP requires each SCVURPPP municipal agency to develop and implement a long-term GSI Plan that describes how the agency will identify and implement local GSI projects. The SWRP supports these GSI Plans by identifying and prioritizing multi-benefit GSI project opportunities that are eligible for future State implementation grant funds.

The main products of the SWRP include:

- Maps and lists of public parcels and street segments for which GSI projects may be feasible, by watershed and by jurisdiction;
- A prioritized list of potential multi-benefit GSI project opportunities;
- Project concepts for 11 of the top priority GSI opportunities; and
- Strategies for implementation of these and other potential projects.

The SWRP is being coordinated with the SCVWD's current efforts to develop its Integrated Water Resources Master Plan ("One Water" Plan). The One Water Plan aims to identify,

prioritize and implement activities at a watershed scale to meet flood protection, water supply, water quality, and environmental stewardship goals and objectives.

ES.2 Participating Agencies

Agencies participating in the SWRP planning process include the fifteen SCVURPPP member agencies. These agencies are the Cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the Towns of Los Altos Hills and Los Gatos, the County of Santa Clara, and the SCVWD.

A Technical Advisory Committee, consisting of participants from SCVURPPP member agencies, the US Environmental Protection Agency (Region 9), the SWRCB, the San Francisco Bay Regional Water Quality Control Board, and Stanford University provided technical support for SWRP development.

A Stakeholder Group, consisting of representatives from local and state government agencies, environmental organizations, community groups, and business associations also participated in the SWRP development.

ES.3 Watersheds and Sub-Watersheds

A watershed-based approach was used to develop the SWRP. The planning area for the SWRP is the Santa Clara Basin Watershed, specifically the portion within the boundaries of Santa Clara County that drains to San Francisco Bay. The planning area encompasses all SCVURPPP municipalities and includes 11 sub-watersheds and the Baylands area.

The Santa Clara Basin Watershed generally follows the boundaries defined by the USGS HUC 8 digit “Coyote” watershed with some minor adjustments made by SCVURPPP to account for catchment areas that have changed with urbanization and modifications to the built environment.

The SWRP describes the characteristics of the Santa Clara Basin Watershed related to land use, surface water resources, groundwater resources, water supply, habitats and open space, watershed processes, and flood risks. These characteristics were used in the process to identify and prioritize project opportunities.

ES.4 Water Quality Issues

Receiving water quality in the Santa Clara Basin watershed is threatened by urbanization, stormwater runoff, and legacy pollutants. Stream channels have been altered for flood control purposes, riparian forests have been converted to urban land uses, and the impervious surfaces

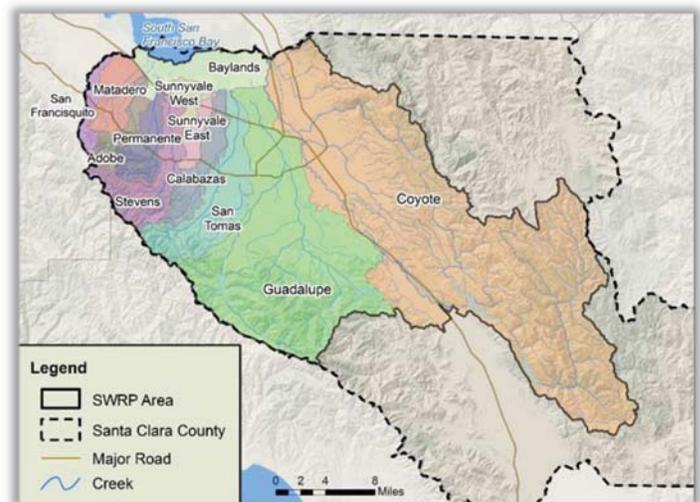


Figure ES-2 Santa Clara Basin Watershed and Subwatershed Boundaries

constructed over the years limit opportunities for stormwater infiltration and increase peak rates of runoff. Stormwater runoff may convey trash, sediments, nutrients, pesticides, and metals directly to receiving waters. Historic mining operations and air deposition have released mercury into the watershed, and polychlorinated biphenyls (PCBs) have been detected at high concentrations in old industrial and old urban areas.

Discharges of stormwater and dry weather runoff from municipal separate storm sewer systems (MS4s) in the watershed are covered under the MRP and associated waste discharge requirements. The MRP contains requirements for implementing urban runoff controls consistent with four TMDLs¹ that apply to the watershed boundaries: the San Francisco Bay and Guadalupe River Watershed Mercury TMDLs; the San Francisco Bay PCBs TMDL; and the TMDL for Diazinon and Pesticide-Related Toxicity for Urban Creeks. The MRP also contains provisions for trash load reduction and copper site-specific objectives.

There have been a variety of activities undertaken by SCVURPPP and its member agencies, and regional organizations such as the Bay Area Stormwater Management Agencies Association (BASMAA) for the purposes of improving stormwater quality. The SWRP describes these efforts in detail and discusses how the implementation of the SWRP will address water quality requirements.

ES.5 Identification and Prioritization of GSI Project Opportunities

A metrics-based analysis was conducted to identify, score, and rank GSI opportunities by their potential to support multi-benefit high-performance projects. The following steps were followed:

- 1) Identification of Public Parcels and Rights-of-Way: GIS data sets were analyzed to identify and map public parcels and rights-of-way throughout the SWRP area. Potential GSI projects submitted by SCVURPPP agencies and stakeholders were also mapped.
- 2) Categorization of Public Parcels and Rights-of-Way: The identified public parcels and rights-of-way were categorized as low impact development (LID), regional, or green streets projects. LID project opportunities are GSI opportunities identified on publicly-owned parcels that capture/ treat runoff only from that parcel. Regional project opportunities are a subset of LID project opportunities with a parcel area greater than 0.25 acres that can capture/treat runoff from off-site as well as on-site areas. Green streets are GSI opportunities in the public right-of-way along an existing street segment.
- 3) Screening of Public Parcels and Rights-of-Way: Screening criteria, such as parcel size, slope, and speed limit were applied to identified LID, regional and green street opportunities to determine their suitability for locating projects. Parcels and rights-of-way that did not meet these criteria were eliminated from the list.
- 4) Prioritization of Project Opportunities: A quantitative metrics-based benefits analysis was conducted to evaluate the potential benefit of every screened project opportunity.

¹ A Total Maximum Daily Load (TMDL) is a regulatory term used to describe a plan for restoring impaired waters that identifies the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards.

Because the site characteristics that are conducive for effective GI infrastructure vary by project type, the three project categories were evaluated independently and given a separate prioritization score. Scoring criteria included land use, hydrologic soil group, imperviousness, location in flood prone areas, and potential to augment water supply, improve water quality, restore natural hydrology, create/enhance habitat, and enhance communities.

The prioritization process resulted in 2,558 LID and 1,983 regional project opportunities. It further identified over 50,000 locations for potential green street projects. To limit the green streets project opportunities to a meaningful and manageable number in the SWRP, an additional screening was performed. Green street opportunities that scored in the 90th percentile by jurisdiction were selected to be included in the SWRP.

For qualitative comparison, the projects were grouped into three priority categories: (1) High – consisting of projects that scored in the 90th percentile countywide, (2) Medium – consisting of projects that scored between the 65th and 90th percentile countywide, and (3) Low – consisting of the projects that scored below the 65th percentile countywide.

Table ES-1 - Project Prioritization Summary by Project Type

| Priority | Number of Project Opportunities (Countywide) | | |
|--------------|--|--------------|---------------|
| | LID | Regional | Green Street |
| High | 244 | 162 | 4,445 |
| Medium | 588 | 529 | 11,524 |
| Low | 1,726 | 1,292 | 36,614 |
| TOTAL | 2,558 | 1,983 | 52,583 |

ES.6 Quantitative Analysis of Stormwater Capture Volumes and Pollutant Load Reductions

A quantitative analysis of stormwater capture volumes and pollutant load reductions was performed for a subset of 21 high priority projects, selected from the prioritized list of project opportunities with input from SCVURPPP agencies. Based on site reconnaissance and input from SCVURPPP and major stakeholders, the list of 21 high priority projects was narrowed down further to 11 project opportunities for which concepts were developed. The concepts present potential locations and designs of GSI projects. The concept packets were developed as a tool for applying for grant funding, facilitating intra-agency and interagency communication, and engaging stakeholder support for implementation. The concepts represent preliminary designs and locations for consideration by participating agencies and may not be implemented in the form or location depicted in the SWRP.