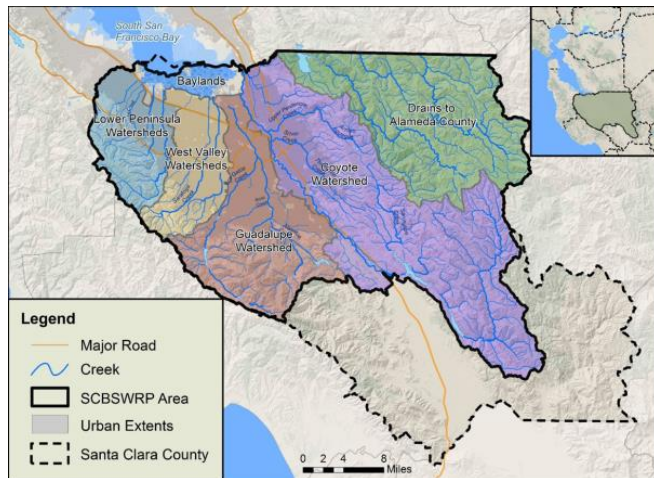




Santa Clara Basin Stormwater Resource Plan

November 29, 2018



Vishakha Atre

SCVURPPP



Presentation Overview

- Stormwater Resource Plan (SWRP) Description and Purpose
- Methodology for Identifying and Prioritizing Potential Project Opportunities
- SWRP Implementation / Next Steps

What is a Stormwater Resource Plan?

- A planning document that:
 - describes the local watershed
 - identifies water quality issues
 - identifies public lands (i.e., streets, parks, and municipal properties) that offer opportunities to locate stormwater capture projects
 - evaluates and prioritizes potential project opportunities that provide multiple benefits
- SB985 (2014) requires a SWRP as a condition of receiving funds for runoff capture projects from any bond approved by voters after January 2014

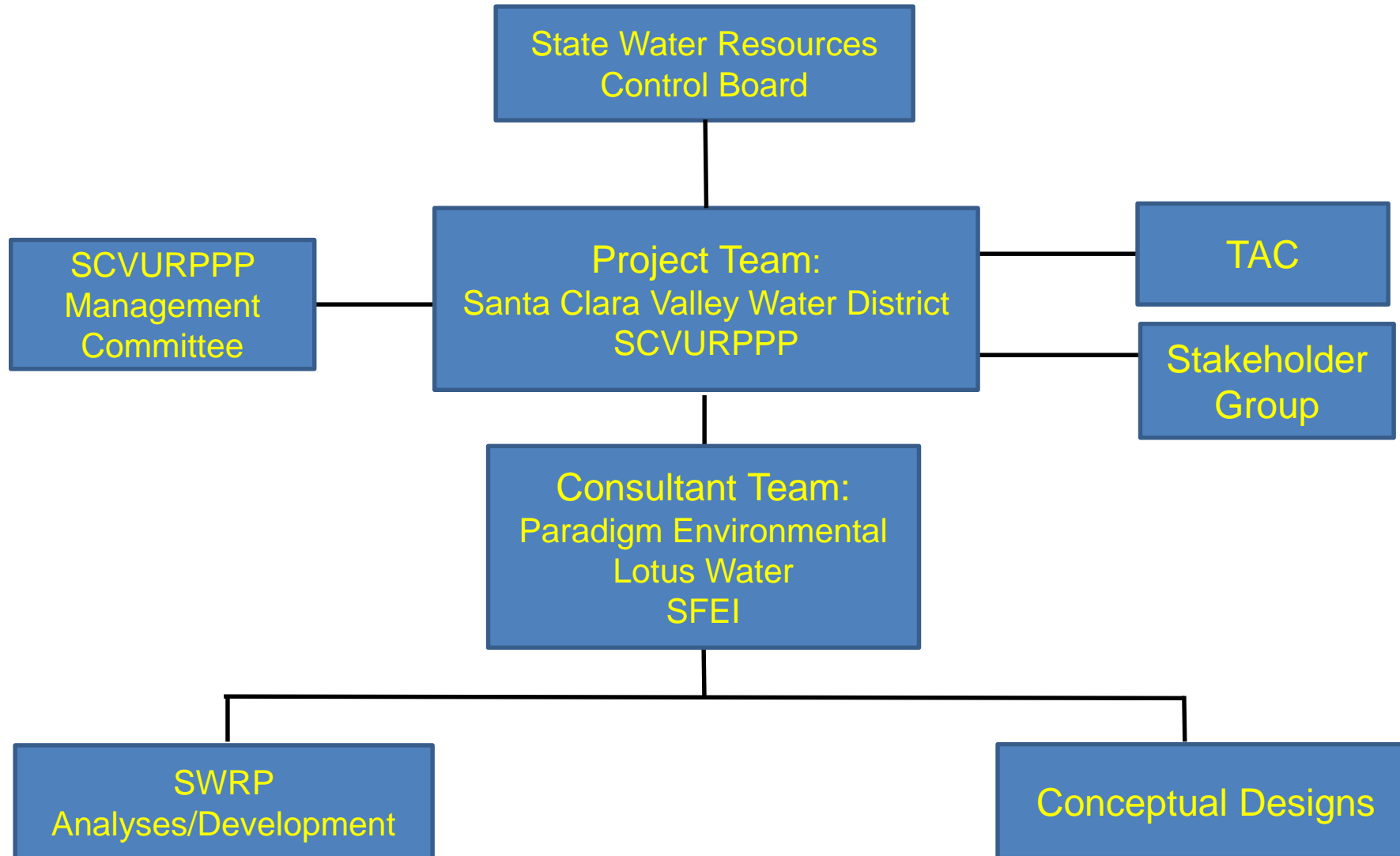
Santa Clara Basin SWRP

- Proposition 1 Stormwater Planning Grant
 - Awarded to the Santa Clara Valley Water District and SCVURPPP to prepare a SWRP for the Santa Clara Basin in Santa Clara County
 - Total Project Budget: \$940,000
 - Grant amount: ~\$470,000
 - 50% match (~\$470,000 in-kind + SCVURPPP tasks)
 - Start Date: February 2017
 - Completion Date: December 2018

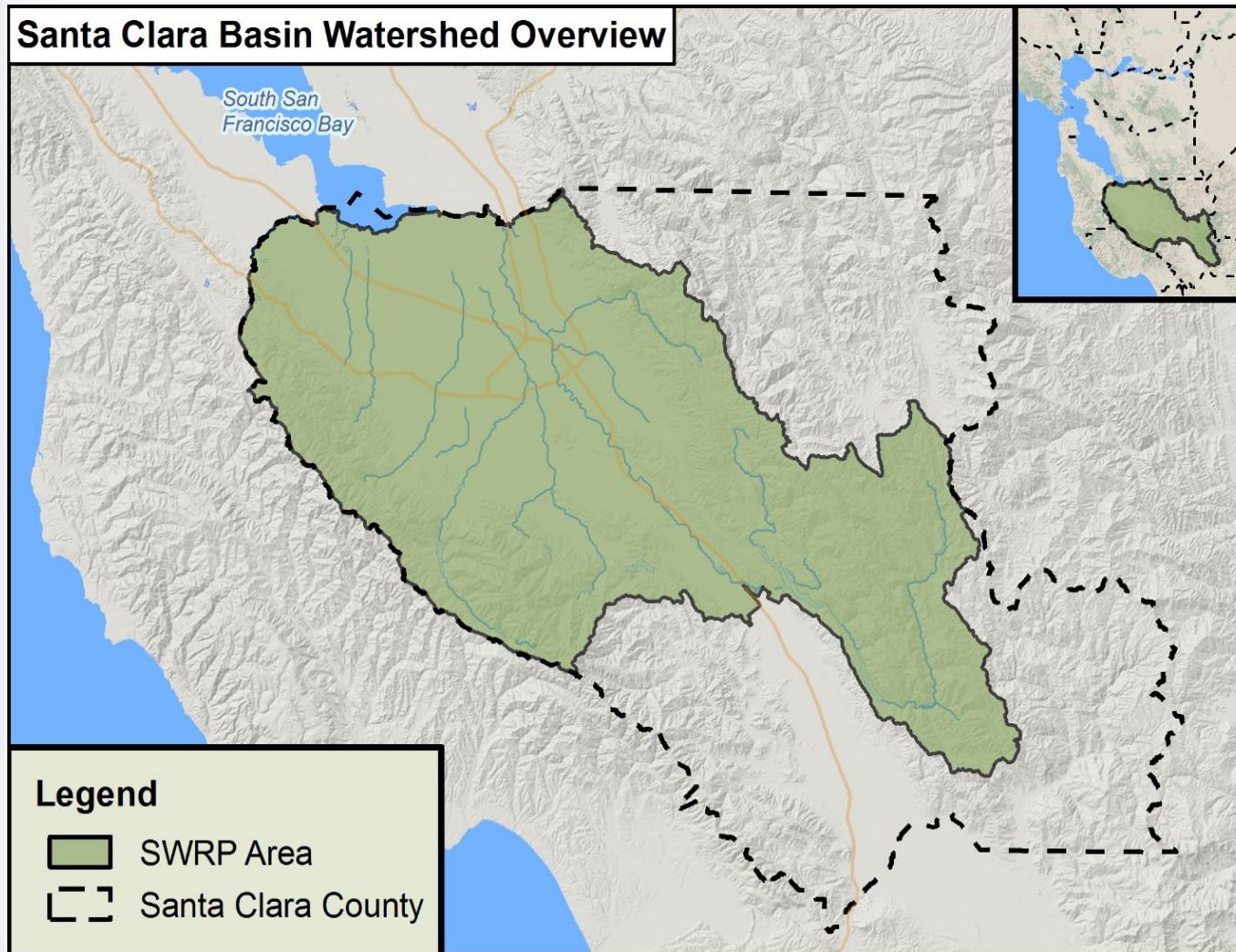
SWRP Purpose

- Identify potential GSI opportunities throughout the Santa Clara Basin
- Produce list of prioritized multi-benefit project opportunities eligible for future State grant funds
 - Water quality improvement
 - Water supply (including stormwater capture & use)
 - Flood management
 - Environmental
 - Community
- Support development and implementation of municipal GSI Plans within the Basin

SWRP Partners and Roles



SWRP Area

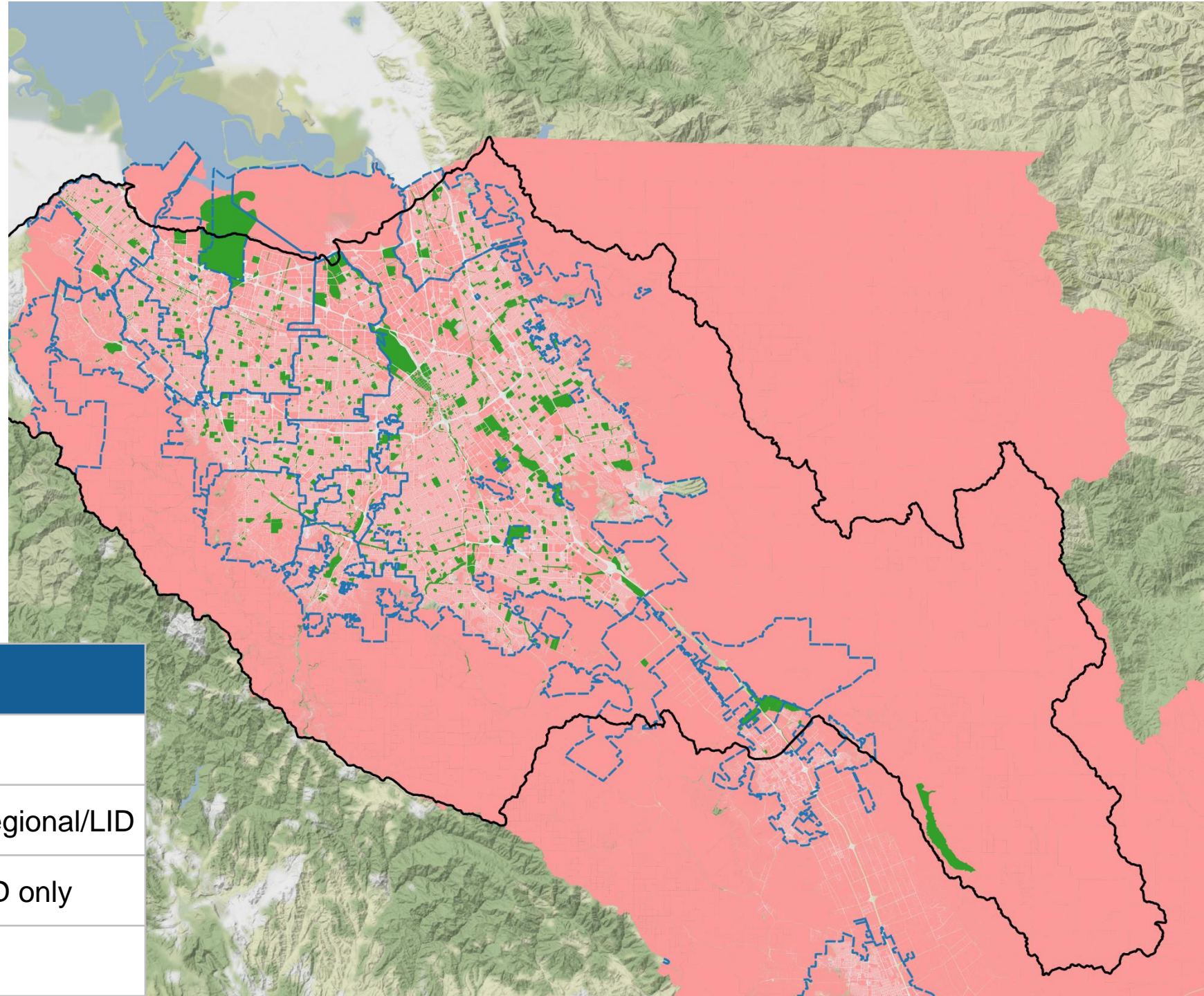


- Planning area for the SWRP is the Santa Clara Basin Watershed
- This is the portion of Santa Clara County that drains to San Francisco Bay

Identification/Prioritization of Project Opportunities

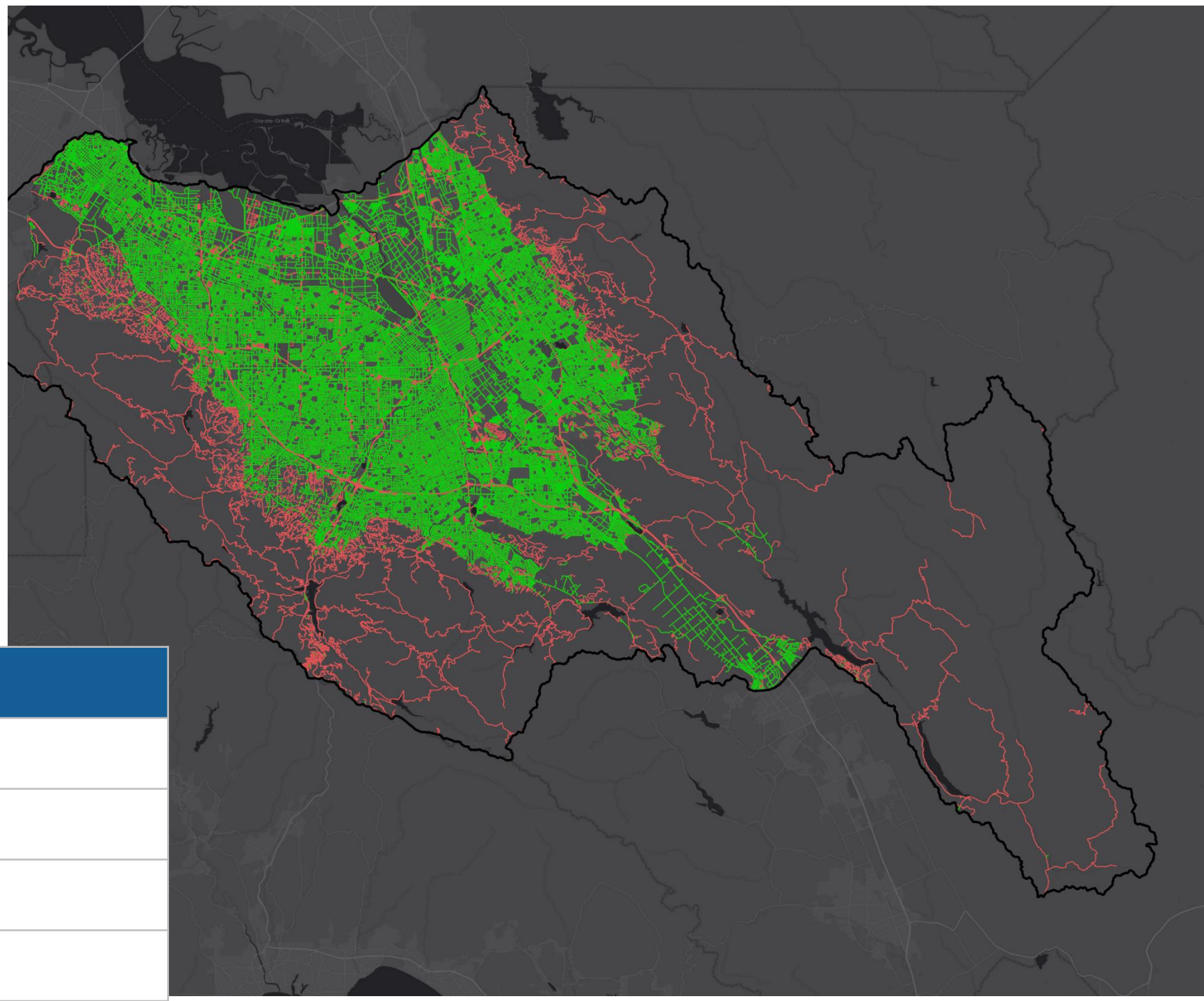
- Developed criteria for evaluating project opportunities
- Used GIS tools and datasets to identify public parcels and streets
- Screened parcels and streets to identify those suitable for locating GSI features.

Parcel Screening



Screening Factor	Criteria
Ownership	Public Parcels
Parcel Size	> 0.25 acres = Regional/LID
	< 0.25 acres = LID only
Site Slope	< 10 %

Street Screening



Screening Factor	Criteria
Ownership	Public
Surface	Paved
Slope	< 5%
Speed	≤ 45mph

Identification/Prioritization of Project Opportunities

- Classified opportunities by project scale/type
- Conducted a metrics-based analysis to evaluate the potential benefit of every screened project opportunity
- Developed list of prioritized (scored/ranked) project opportunities
- Used hydrologic models to quantify water quality benefits for 21 high priority potential projects
- Prepared conceptual designs for 11 opportunities

Identification/Prioritization of Opportunities

LID Projects on Individual Parcels
(treat only on-site runoff)



Regional Projects
(treat on-site and off-site runoff)



Green Streets
(treat runoff from street and adjacent areas)



Prioritization Metrics for LID Projects

Metric	Points						Weight Factor	
	0	1	2	3	4	5		
Parcel Land Use			Schools/Golf Courses	Park / Open Space	Public Buildings	Parking Lots	--	
Impervious Area (%)	$X < 40$	$40 \leq X < 50$	$50 \leq X < 60$	$60 \leq X < 70$	$70 \leq X < 80$	$80 \leq X < 100$	2	
Hydrologic Soil Group			C/D	B			A	--
Slope (%)			$10 > X > 5$	$5 \geq X > 3$	$3 \geq X > 2$	$2 \geq X > 1$	$1 \geq X$	--
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 reuse					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	--

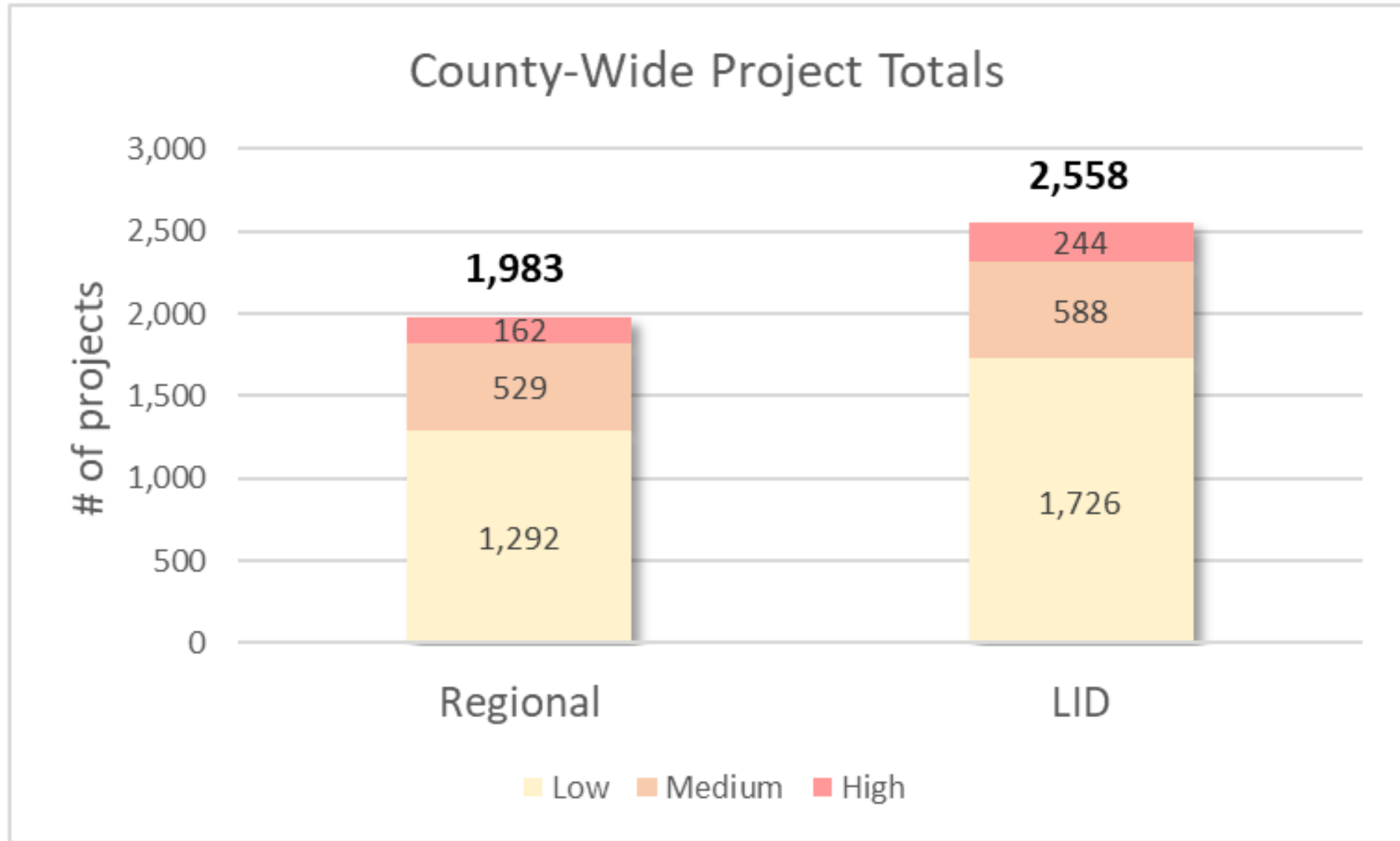
Prioritization Metrics for Regional Projects

Metric	Points						Weight Factor
	0	1	2	3	4	5	
Parcel Land Use			Schools/Golf Courses	Public Buildings	Parking Lot	Park / Open Space	--
Impervious Area (%)	$X < 40$	$40 \leq X < 50$	$50 \leq X < 60$	$60 \leq X < 70$	$70 \leq X < 80$	$80 \leq X < 100$	2
Parcel Size (acres)	$0.25 \leq X < 0.5$	$0.5 \leq X < 1$	$1 \leq X < 2$	$2 \leq X < 3$	$3 \leq X < 4$	$4 \leq X$	--
Hydrologic Soil Group		C/D		B		A	--
Slope (%)		$10 > X > 5$	$5 \geq X > 3$	$3 \geq X > 2$	$2 \geq X > 1$	$1 \geq X$	--
Proximity to Storm Drain (feet)	$X > 1,000$	$1,000 \geq X > 500$		$500 \geq X > 200$		$200 \geq X$	--
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 reuse				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	--

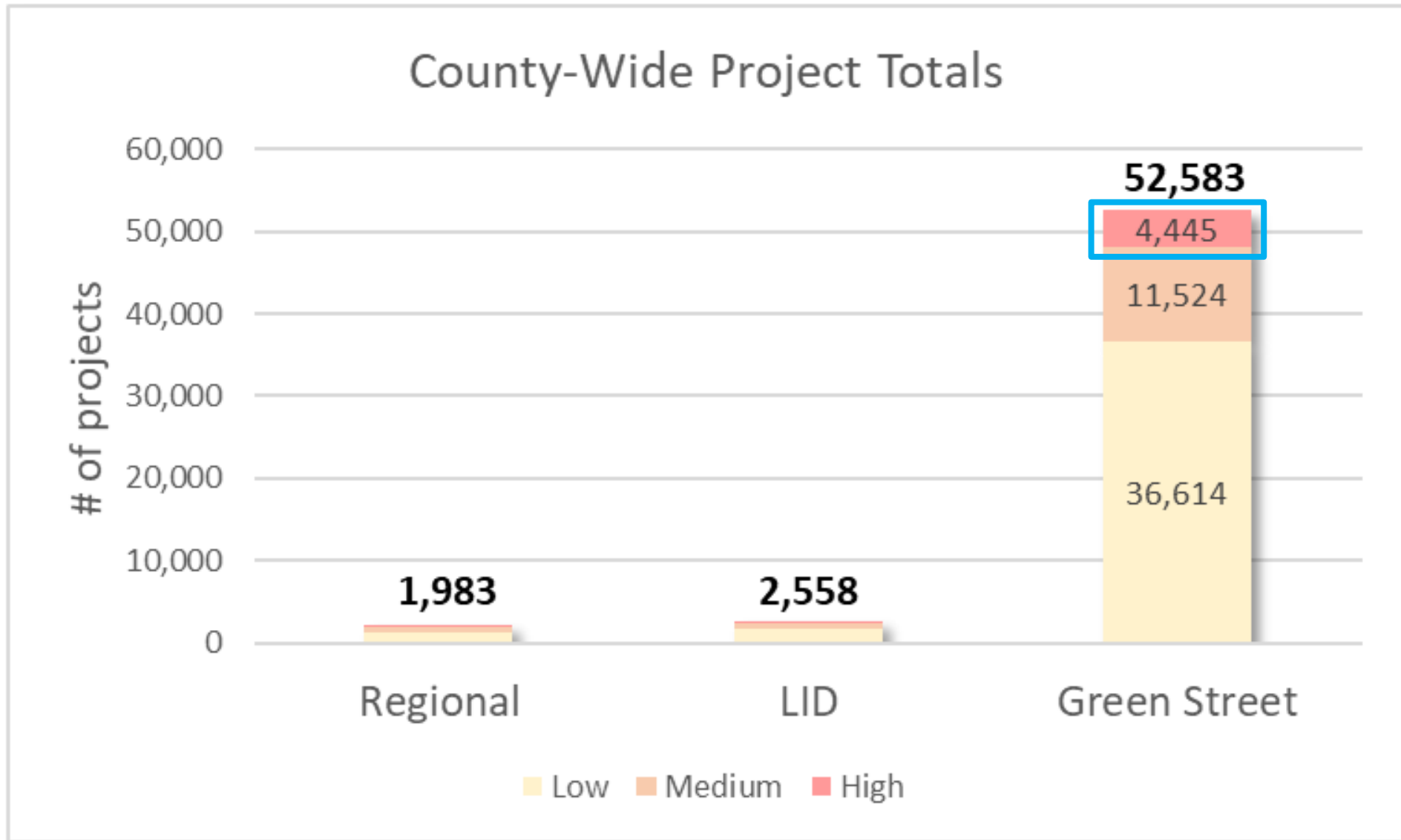
Prioritization Metrics for Green Street Projects

Metric	Points						Weight Factor	
	0	1	2	3	4	5		
Imperviousness (%)	$X < 40$	$40 \leq X < 50$	$50 \leq X < 60$	$60 \leq X < 70$	$70 \leq X < 80$	$80 \leq X < 100$	2	
Hydrologic Soil Group		C/D		B		A	--	
Slope (%)		$5 > X > 4$		$4 \geq X > 3$		$3 \geq X > 2$	$2 \geq X > 1$	$1 \geq X > 0$
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 reuse	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	--				

Overview of Prioritization Results



Overview of Prioritization Results



Top 10% of Green Street Opportunities

Jurisdiction	By Jurisdiction	
	# of Projects	%
Campbell	138	3.0%
Cupertino	152	3.3%
Los Altos	118	2.6%
Los Altos Hills	12	0.3%
Los Gatos	87	1.9%
Milpitas	154	3.4%
Monte Sereno	12	0.3%
Morgan Hill	42	0.9%
Mountain View	193	4.2%
Palo Alto	252	5.5%
San Jose	2,404	52.4%
Santa Clara	308	6.7%
Santa Clara County	171	3.7%
Saratoga	130	2.8%
Sunnyvale	413	9.0%

SWRP Web Viewer

Santa Clara Basin Storm Water Resource Plan English ▾

Info and Tools Object identification: Active Layer

Map themes

Map

Map Layers

- Santa Clara Basin Storm Water Resource Plan
- Creeks
- SCBSWRP Project Area
- City Boundaries
- Co-located Projects (general location)
- Co-located Projects (street extent)
- All Regional Project Opportunities
- All LID Opportunities
- All Green Street Opportunities
- 90th Percentile Green Streets by City
- GreenPlan-IT Site Locations
- Flood Prone Catchments
- Groundwater Recharge Areas

Background Layers

- Light Theme (CartoDB)
- Dark Theme (CartoDB)
- Open Street Map

10 km

Mode: object identification. Move the mouse over an object to identify it, click it to view its attribute data.

Coordinate: -13554537,4440224 1: 577791

© OpenStreetMap © CartoDB

SWRP Web Viewer

Santa Clara Basin Storm Water Resource Plan English

Info and Tools Object identification: Active Layer

Map themes

Map

Map Layers

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Background Layers

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- Open Street Map

City Boundaries

City:	SANTA CLARA
Area (ac):	11629.96439030000

90th Percentile Green Streets by City

Street ID:	10504264
Street Prefix:	NULL
Street Name:	LAFAYETTE
Street Type:	ST
Street Suffix:	NULL
TIGER FCC Code:	A40
Speed Limit:	35
Jurisdiction:	SANTA CLARA
Street Length (ft):	39.0
Representative Drainage Area (ac):	0.634
Street Slope (%):	0.535

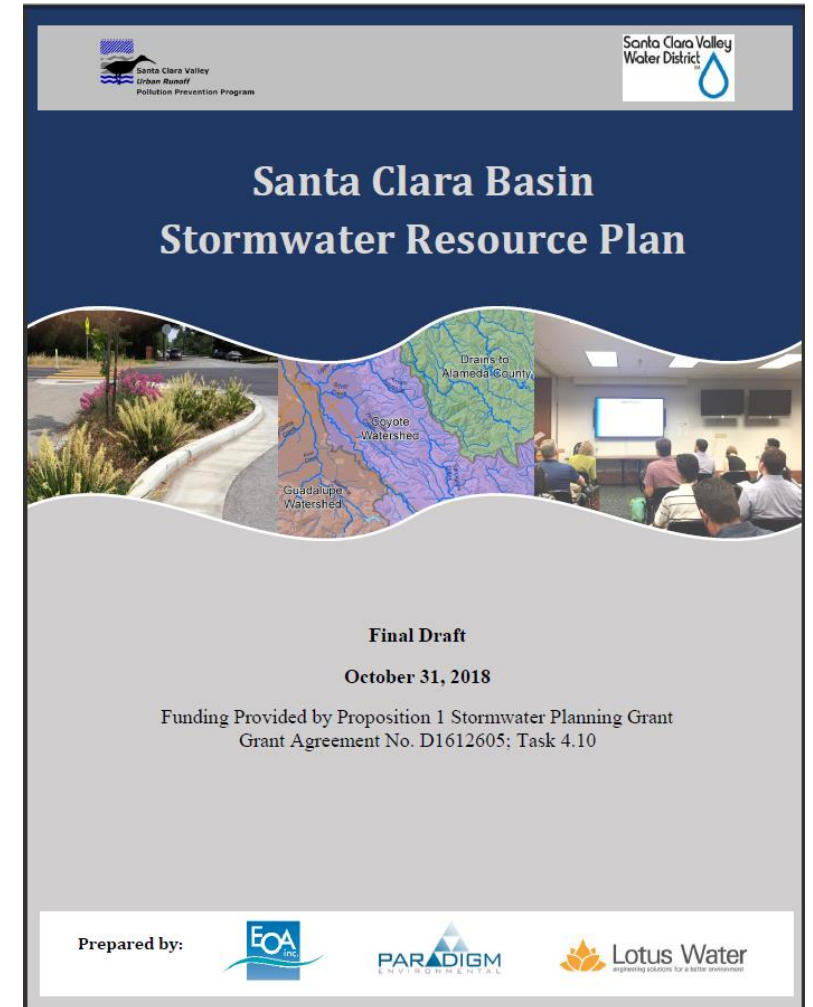
Map showing city boundaries and 90th Percentile Green Streets by City. Cities labeled include East Palo Alto, Menlo Park, Palo Alto, Mountain View, Sunnyvale, Milpitas, Los Altos Hills, and Warm Springs District. A 2 km scale bar is present.

Mode: object identification. Move the mouse over an object to identify it, click it to view its attribute data.

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SWRP Content

- Elements Required by the State Board's Storm Water Resource Plan Guidelines
 - Introduction/Background
 - Watershed Description
 - Water Quality Issues and Priorities
 - Organization, Coordination, and Collaboration
 - Identification and Prioritization of Projects
 - Implementation Strategy
 - Education, Outreach, Public Participation
- Conceptual Designs



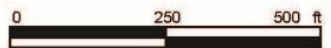
Concept Design



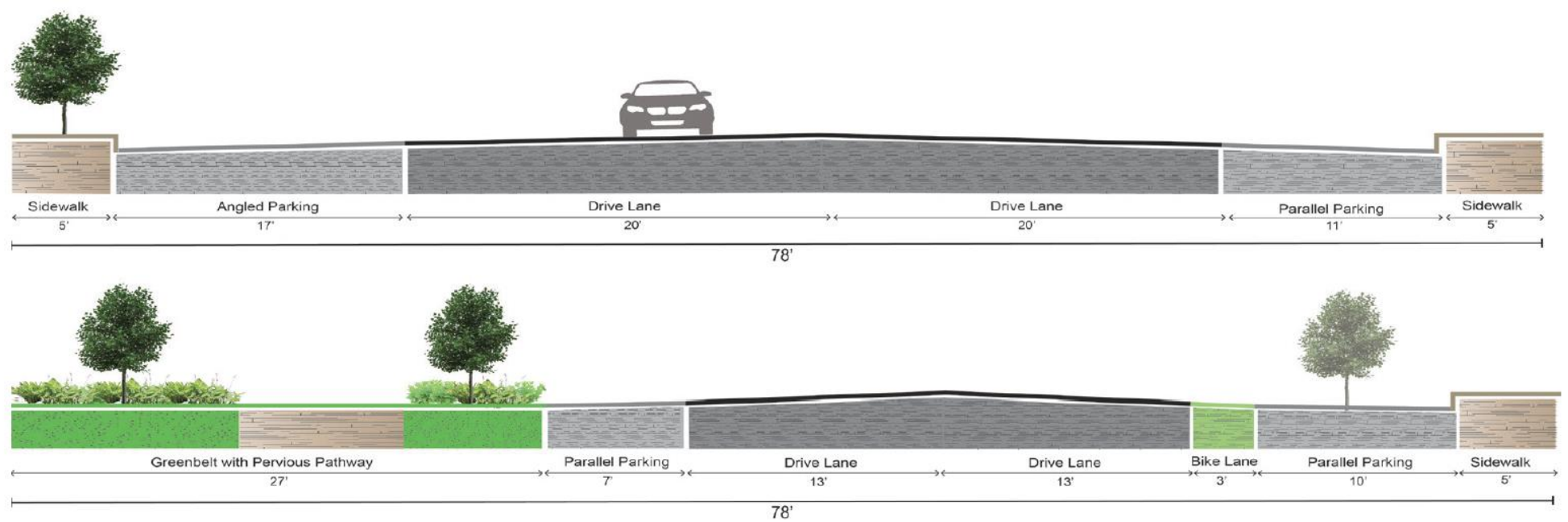
Mary Avenue

LEGEND

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



Concept Design



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



Example of Integration of Bioretention with Bike and Pedestrian Crossings



Example of Stormwater and Multi-modal Transportation Options

SWRP Implementation

- The list of identified GSI opportunities will be included in Co-permittee GSI Plans
- Implementation of identified opportunities depends on:
 - Local and regional priorities
 - Funding for design and construction
 - Funding for operation and maintenance
 - Public support

*The SWRP does not represent a commitment by participating entities to implement specific projects

Next Steps

- Final SWRP will be submitted in December 2018
- Final SWRP will be posted on the SCVURPPP website:
http://scvurppp.org/scvurppp_2018/swrp/
- SWRP will be updated approximately once every five years

Questions?

SWRP Webpage

http://scvurppp.org/scvurppp_2018/swrp/