Calm Before the Storm: San Mateo Countywide Sustainable Streets Master Plan Pre-Proposal Meeting

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City/County Association of Governments of San Mateo County

Caltrans

C/CAG City/County Association of Governments of San Mateo County

SAN MATEO COUNTYWIDE Water Pollution Prevention Program
Clean Water. Healthy Community.

Caltrans Adaptation Planning Grant
September 13, 2018

SB 1 Grant – San Mateo Countywide Sustainable Streets Master Plan

- Grant: $986,300 with $145,185 in local match (cash or in-kind staff time)
- Sustainable Streets Master Plan
  - Climate change precipitation and hydrology
  - Street-scale sustainable streets opportunities
  - Prioritization overlay with community priorities and climate risk criteria
- Green Infrastructure Plans and tracking tool
- Grant timeline: Oct 2018 – Feb 2021

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Adaptation Planning Grant Goals

- *"…support planning actions at local and regional levels that advance climate change adaptation efforts on the transportation system, especially efforts that serve the communities most vulnerable to climate change impacts."*
- Collaboration and partnerships
- Co-benefits of adaptation
- Project focus: roadways and precipitation-based climate change impacts
- Sustainable Streets = Complete Streets + Green Streets

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Overall Project Goals

- High resolution drainage mapping – street-level detail
- Countywide Master Plan with prioritized street segments for adding GI
- Project concepts for pursuing implementation
- Tracking tool for progress over time
- Model Sustainable Streets policy
- Community engagement

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Building On Existing Efforts

- Leveraging County's Adaptation Planning Grant
  - Downscaled precipitation modeling
  - Vulnerable communities identification
- Stormwater Resource Plan and GI Plan Support
- Countywide hydrology and sediment model
- Reasonable Assurance Analysis for GI scenarios
- Sustainable Streets and Parking Lots Design Guide

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San Mateo County Project Prioritization

English

Info and Tools

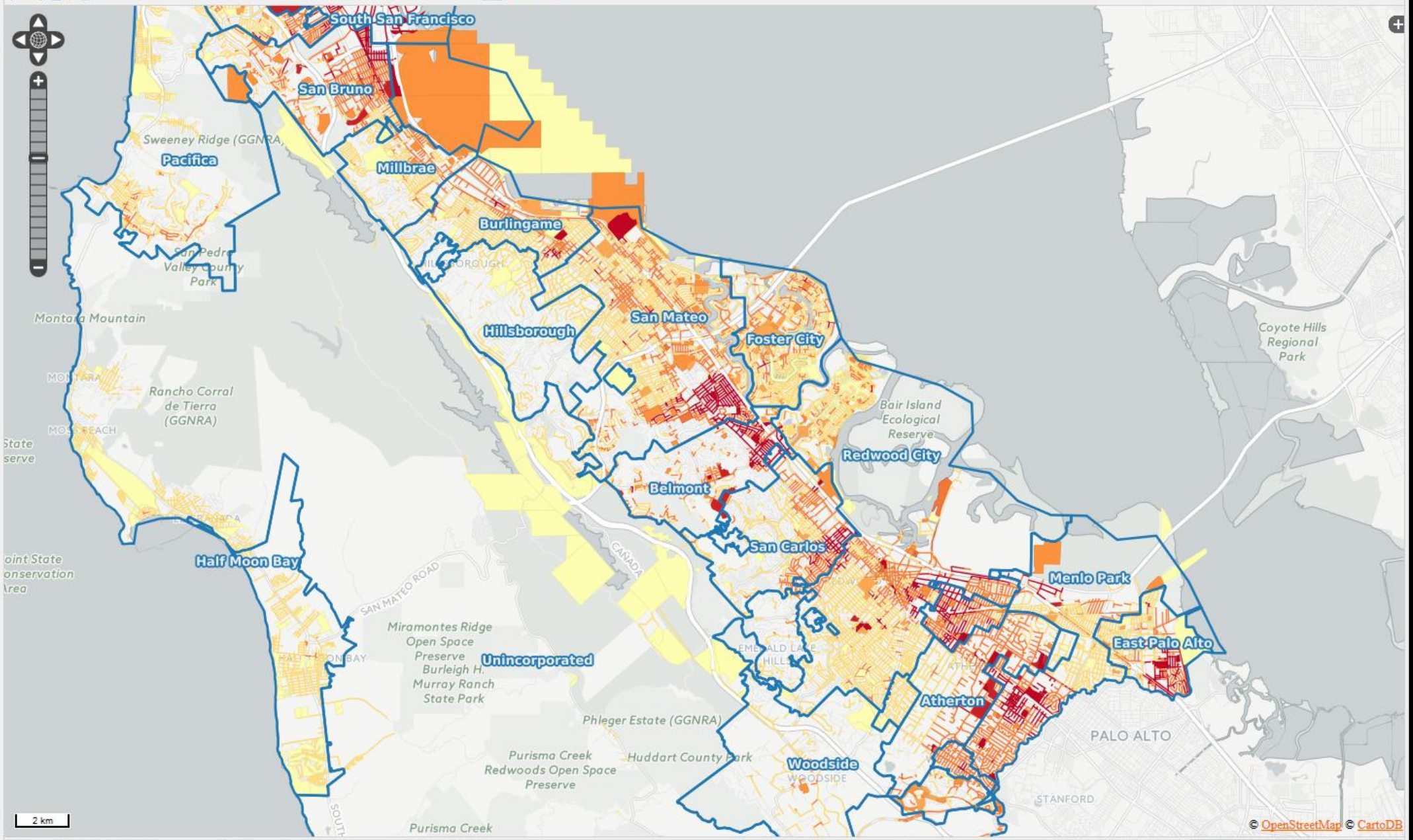
Map

Map Layers

- San Mateo County Project Prioritizati
  - Jurisdiction
  - Regional Projects prioritized
  - LID Projects prioritized
  - Green Streets prioritized
- Background Layers
  - Light Theme (CartoDB)
  - Dark Theme (CartoDB)
  - Open Street Map
  - Google Satellite
  - Google Map

Layer order

Object identification: Active Layer



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Modeling and Reasonable Assurance Analysis

HSPF

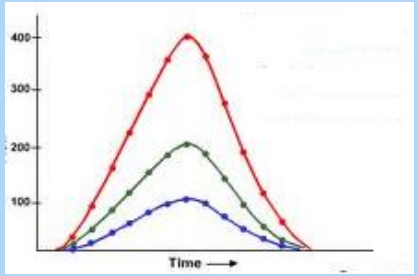
Data

- Rainfall
- HRUs/Land Use
- Impervious
- Elevation
- Slopes
- Evaporation
- Infiltration

Watershed Model

Results

Hourly runoff and sediment/pollutant loads



SUSTAIN

Stormwater Capture Model

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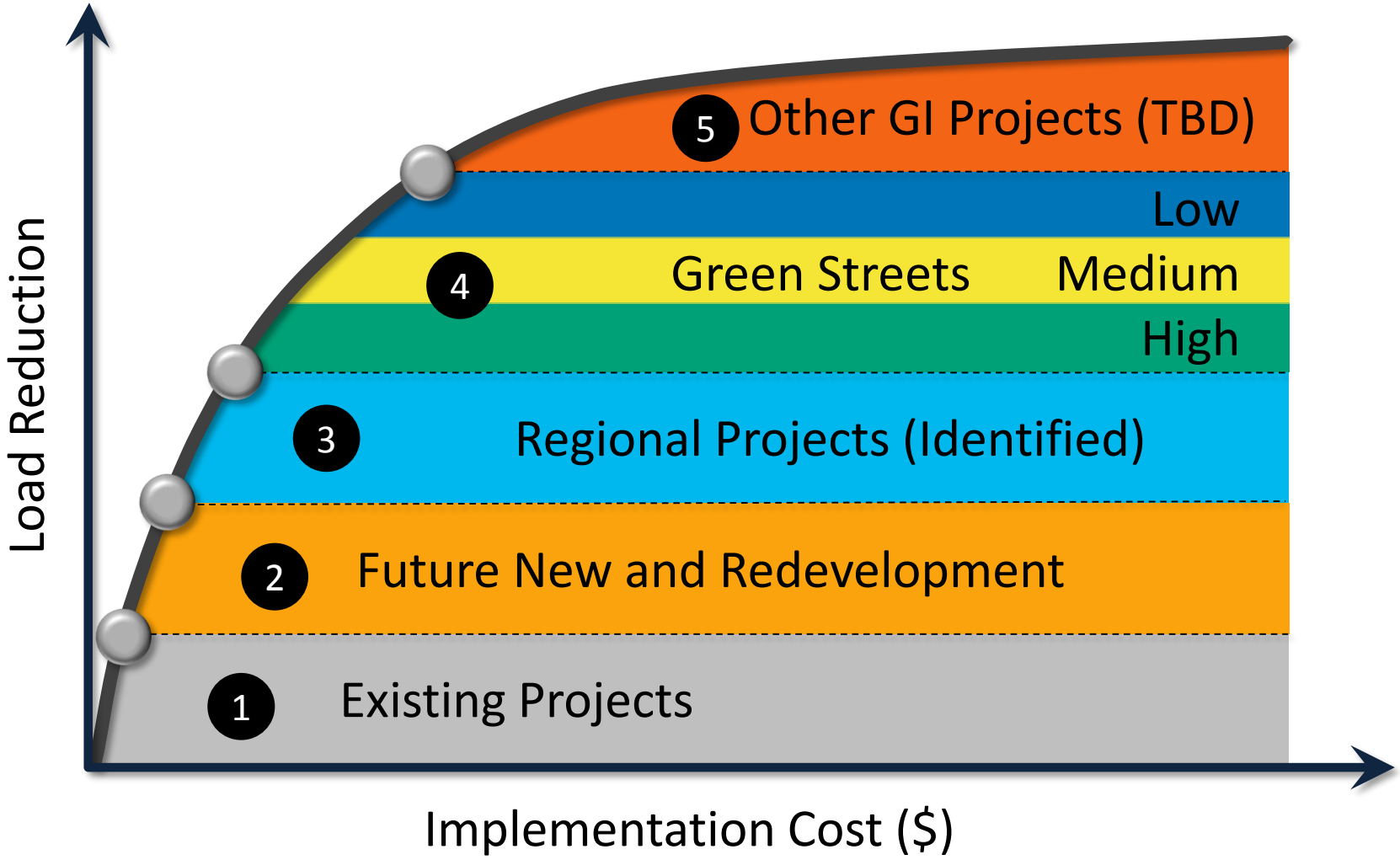
GI Opportunity & Sequence



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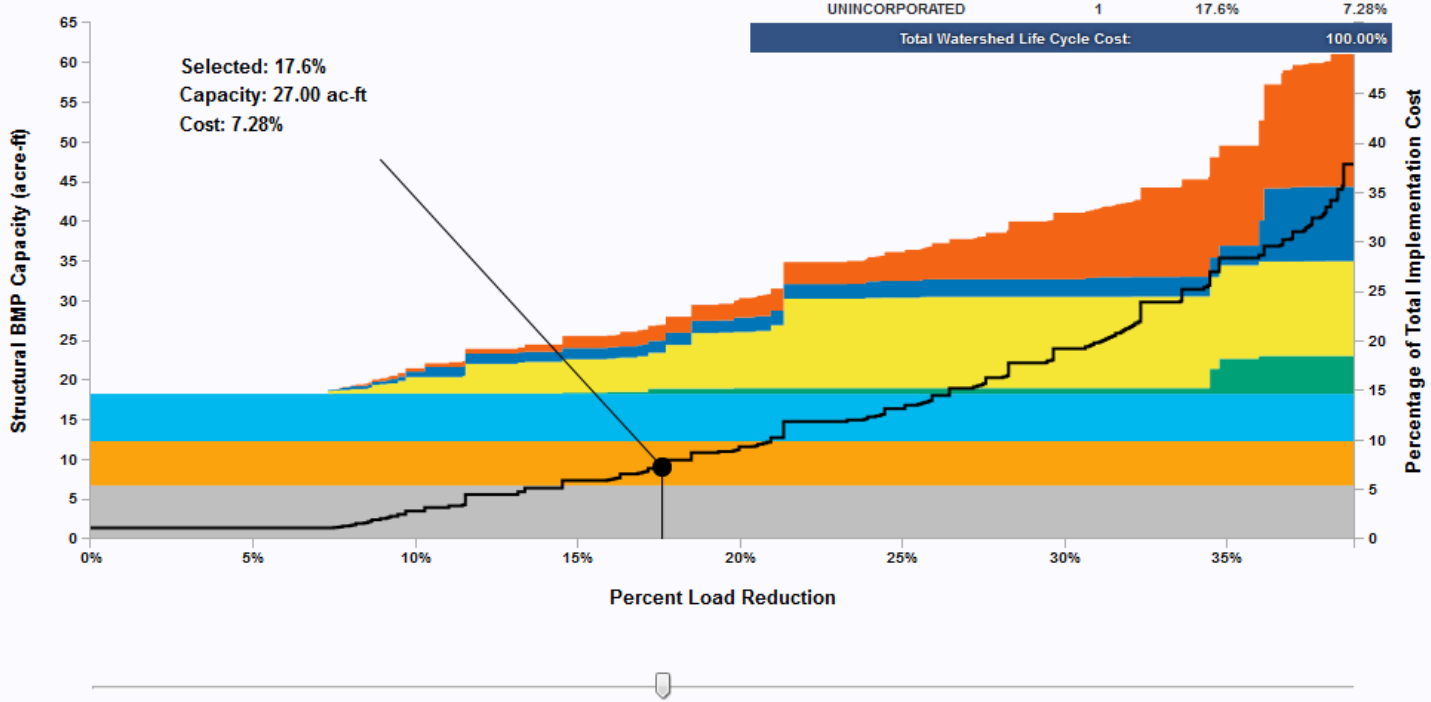
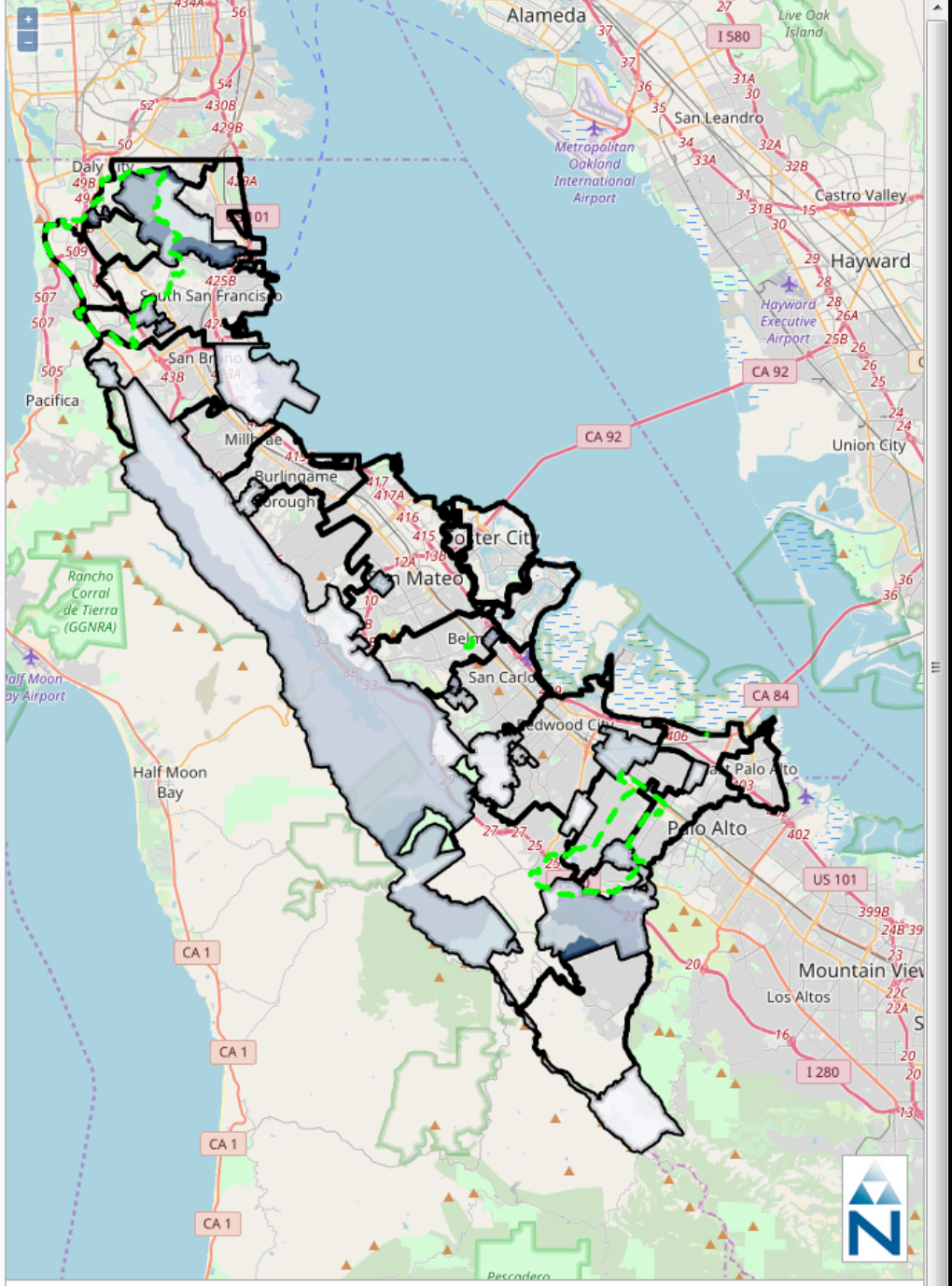
Selected Assessment Area: UNINCORPORATED Scenario: Scenario 1 (Sed.): By Jurisdiction Save

Optimization Result:	All Catchments Target	Selected
Total Reduction:	17.6%	17.6%
Total Life Cycle Cost	7.28%	$7.28%
Other GI Projects (TBD)	1.99	1.99
Green Streets (Low)	1.54	1.54
Green Streets (Medium)	4.50	4.50
Green Streets (High)	0.69	0.69
Regional Projects (Identified)	5.95	5.95
Future New & Redevelopment	5.59	5.59
Existing Projects	6.74	6.74

View Associated Reductions for other Constituents

Total Watershed Life Cycle Cost for Selected Solutions			
Location	Scenario	Reduction	Cost (%)
ATHERTON	1	34.2%	1.97%
BELMONT	1	23.2%	7.81%
BRISBANE	1	17.8%	2.63%
BURLINGAME	1	18.6%	4.86%
COLMA	1	18.4%	0.78%
DALY CITY	1	18.7%	5.76%
EAST PALO ALTO	1	22.7%	2.28%
FOSTER CITY	1	17.8%	2.84%
HILLSBOROUGH	1	18.2%	2.97%
MENLO PARK	1	18.3%	0.77%
MILLBRAE	1	19.0%	3.56%
PACIFICA	1	18.3%	0.03%
PORTOLA VALLEY	1	17.7%	4.14%
REDWOOD CITY	1	18.0%	8.07%
SAN BRUNO	1	17.9%	6.26%
SAN CARLOS	1	19.2%	7.33%
SAN MATEO	1	18.2%	10.77%
SOUTH SAN FRANCISCO	1	17.8%	8.88%
WOODSIDE	1	18.0%	11.00%
UNINCORPORATED	1	17.6%	7.28%
Total Watershed Life Cycle Cost:			100.00%

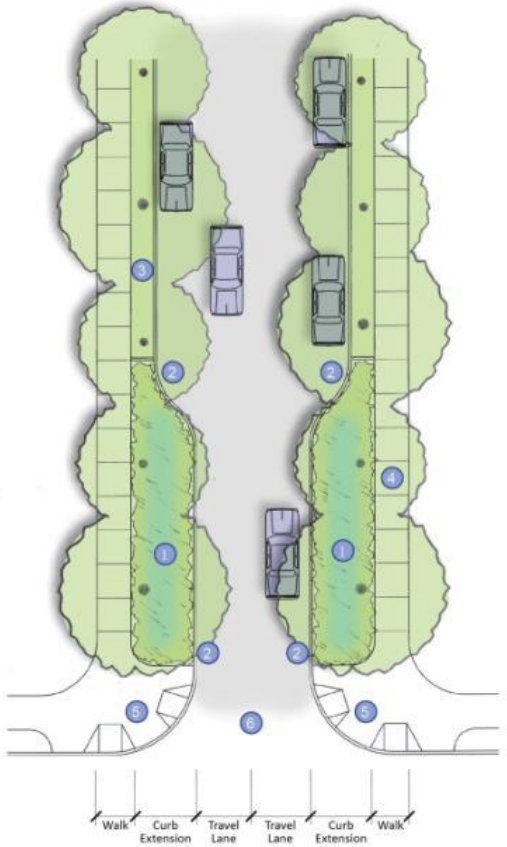




BMP Capacity (ac-ft) Utilization (%) 0: 72

4.1 Low-Density Residential Streets

Stormwater Curb Extensions at Intersections



Key Design Elements

1. Stormwater curb extensions can incorporate the street's planter strip or can be narrower by leaving the existing curb intact.
2. Curb cuts allow runoff to enter/exit the stormwater facility.
3. Conventional landscape strip with street trees.
4. Sidewalk zone.
5. Accessible ADA ramps at street intersection.
6. Curb extensions narrow the pedestrian crossing distance, but allow two-way vehicular travel.

▲ *EXAMPLE: A pair of stormwater curb extensions used in a residential street's parking zone. Notice that there is still plenty of on-street parking available.*

Grant Tasks

- Task 1 – Project Initiation
  - Staff and consultant coordination meetings
    - —Monthly
  - Stakeholder Advisory Committee meetings
    - —Frequency not specified
  - Consultant project management
    - —Managing team, work summaries, invoicing, etc.

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Grant Tasks

- Task 2 – Community Engagement
  - Develop Community Engagement Strategy
    - —How to engage cities/county, public, other stakeholders
  - Conduct community engagement
    - —Online, social media
    - —Minimum of four, one in vulnerable community
  - Focus on vulnerable communities – contact County Office of Sustainability (Jasneet Sharma, jsharma@smcgov.org) for details on efforts to identify and engage)

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Grant Tasks

- Task 3 – Climate Adaptation Risk Analysis on Local Transportation Network
  - Quantify how runoff characteristics change in regard to the roadway network under downscaled climate change scenarios
    - —Build on County's Adaptation Planning Grant (Jasneet Sharma, Office of Sustainability)
  - Quantify benefit of planned GI for water quality, is more needed?

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Grant Tasks

- Task 4 - Hi-Resolution Data Analysis and Fine-Scale Drainage Delineation
  - Data Collection
    - —County LiDAR data, local agency priorities
    - —What is needed to delineate and prioritize
  - High-res drainage system delineation
    - —Get down to catch-basin level drainage mapping
  - Identify Sustainable Streets opportunities
    - —Use data, priorities, existing info to ID

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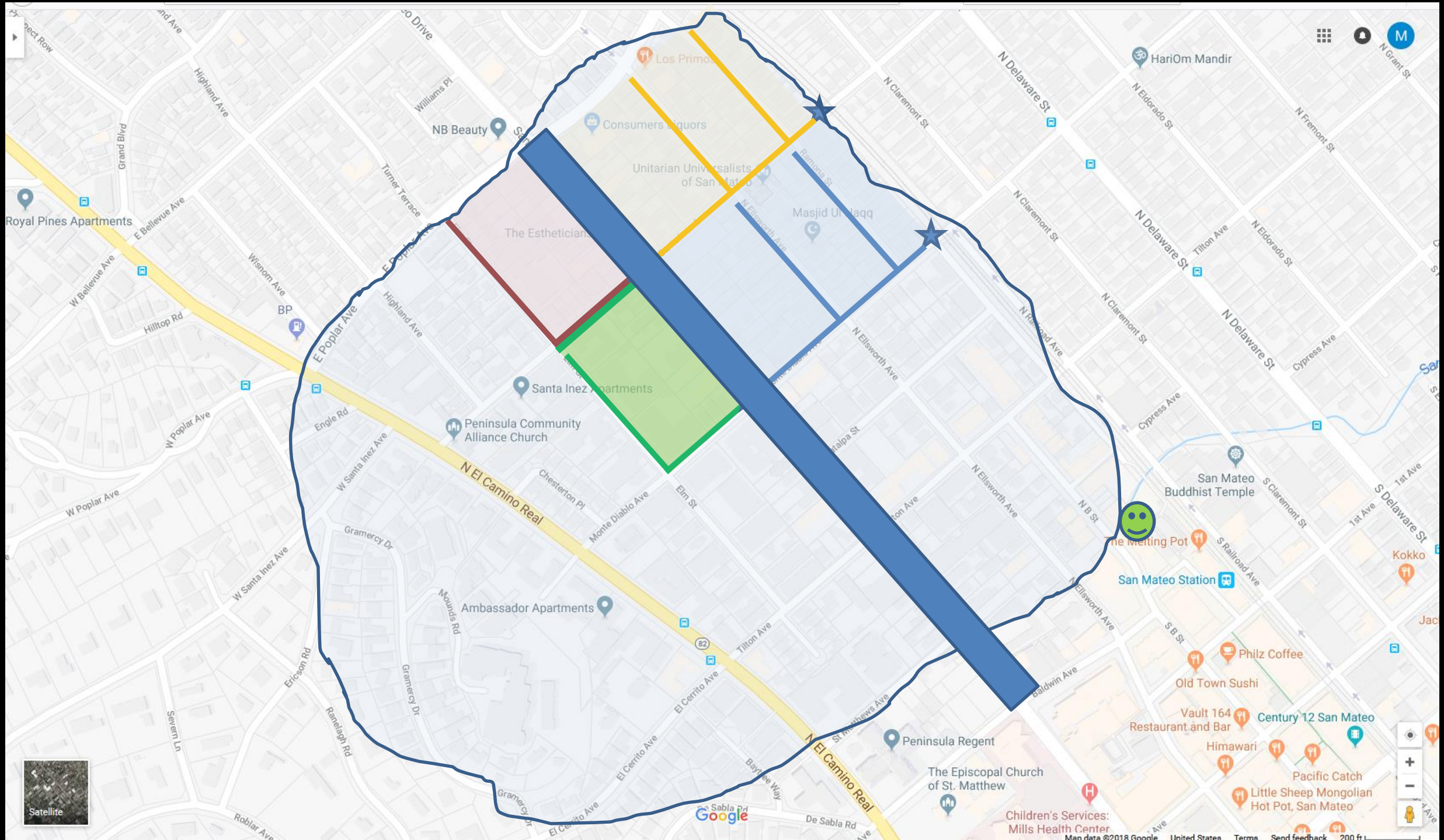
Los Primos
Consumers Liquors
Unitarian Universalists of San Mateo
The Esthetician
Masjid Ul-Haqq
NB Beauty
HariOm Mandir
Royal Pines Apartments
BP
Santa Inez Apartments
Peninsula Community Alliance Church
Ambassador Apartments
San Mateo Buddhist Temple
The Melting Pot
San Mateo Station
Kokko
Philz Coffee
Old Town Sushi
Vault 164 Restaurant and Bar
Century 12 San Mateo
Himawari
Pacific Catch
Little Sheep Mongolian Hot Pot, San Mateo
Peninsula Regent
The Episcopal Church of St. Matthew
Children's Services: Mills Health Center
N El Camino Real
E Poplar Ave
W Poplar Ave
E Bellevue Ave
W Bellevue Ave
Hillsdale Blvd
Highland Ave
Grand Blvd
Turner Terrace
Williams Pl
Wisnom Ave
Hilltop Rd
Engle Rd
W Santa Inez Ave
Chesterton Pl
Monte Diablo Ave
Elm St
Gramercy Dr
Mounds Rd
Ericson Rd
Ranelagh Rd
Severn Ln
Roblar Ave
El Cerrito Ave
Tilton Ave
Baldwin Ave
Bayview Way
De Sabla Rd
St Matthews Ave
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N Claremont St
N Eldorado St
N Fremont St
N Grant St
N Ellsworth Ave
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82
Satellite
Google
Map data ©2018 Google
United States
Terms
Send feedback
200 ft

San Mateo County Project Prioritization

English

Info and Tools

Map

Map Layers

- San Mateo County Project Prioritizati
  - County Boundary
  - City Boundaries
  - Implemented GI Projects
  - Flood Resiliency Plan Projects
  - Flood Prone Streams
  - Storm Drains
  - LID Projects Prioritized
  - Green Streets prioritized
  - Regional Projects Prioritized
  - Erosion Hazard (Yr 2100)
  - Regional Project Drainage Areas
  - Sea Level Rise 100
  - Sea Level Rise 200
  - FEMA 100-yr Flood Plain
  - Storm Drain Catchments
  - Groundwater Basins
  - Watersheds of Flood Prone Strea
- Background Layers
  - Light Theme (CartoDB)
  - Dark Theme (CartoDB)
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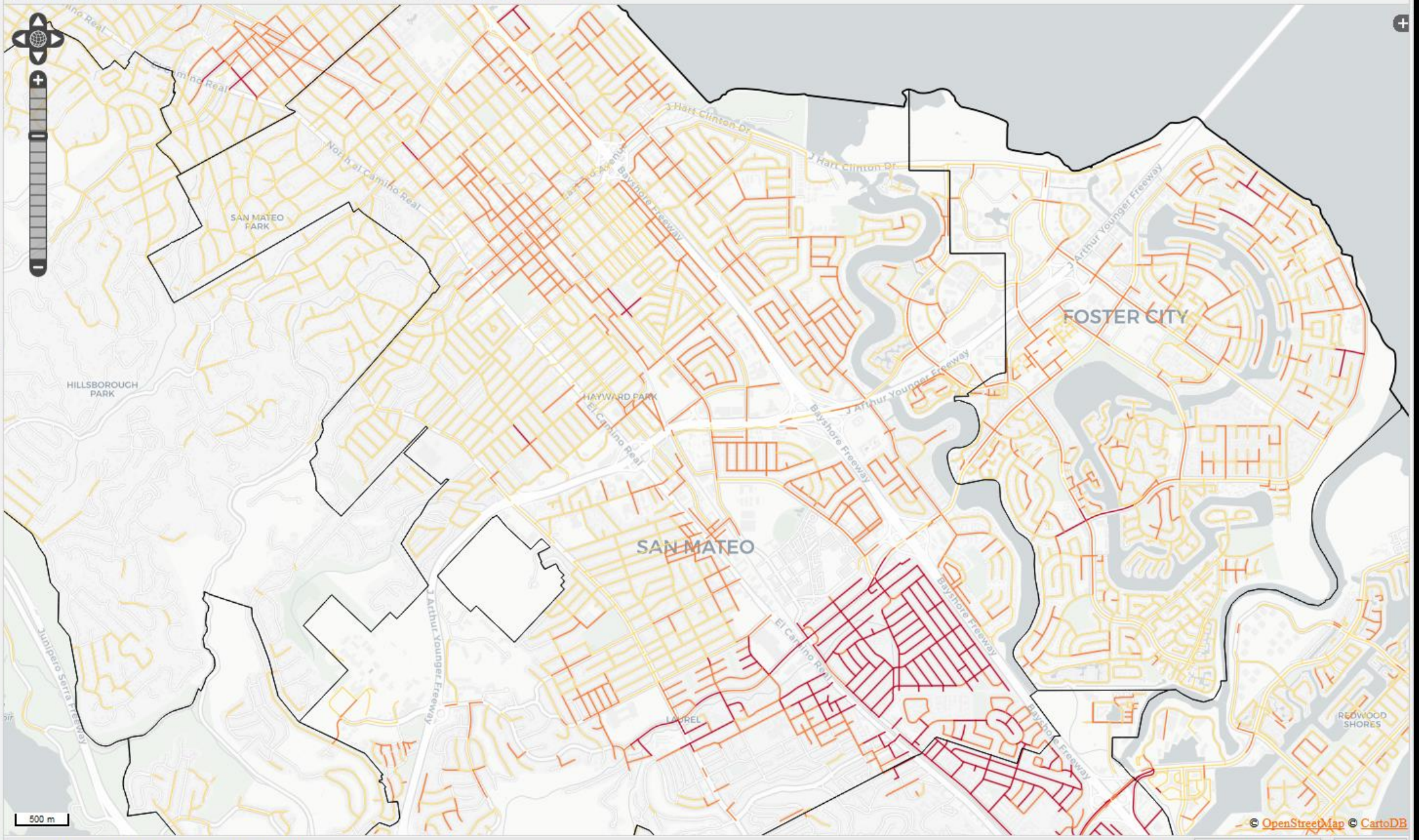

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Grant Tasks

- Task 5 – Prioritization of Sustainable Streets Opportunities and Develop Master Plan
  - Develop Prioritization Criteria
    - —Using Task 4 data, Task 2 input (coordinate between all three tasks)
    - —Build on SRP prioritization
  - Develop Master Plan
    - —Five-, 10-, and 20-year timeframes by jurisdiction
    - —Tie priority segments to funding opportunities
    - —Include info from other C/CAG guidance docs
    - —Model Sustainable Streets policy, project concepts

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Green Streets Prioritization Matrix

	Points						Weight Factor
	0	1	2	3	4	5	
Street Type	Highway	--	Arterial	Collector	Alley	Local	--
Imperviousness (%)	X < 40	40 ≤ X < 50	50 ≤ X < 60	60 ≤ X < 70	60 ≤ X < 80	80 ≤ X < 100	--
Hydrologic Soil Group	--	D	Unknown	C	B	A	--
Slope (%)	--	4 < X ≤ 5	3 < X ≤ 4	2 < X ≤ 3	1 < X ≤ 2	0 < X ≤ 1	--
Proximity to Flood-prone Channels (miles)	Not in sub-basin	3 < X	--	1 < X ≤ 3	--	X ≤ 1	2
Contains PCB Risk Areas	None	Potential High Interest	--	High Interest	--	--	--
Currently planned by City or co-located with other City project	No					Yes	2
“Safe Routes to School” program	No					Yes	2
Drains to TMDL waters	No					Yes	--
Above groundwater aquifer	No		Yes				--
Augments water supply	No	Yes					--
Water quality source control	No	Yes					--
Reestablishes natural hydrology	No	Yes					--
Creates or enhances habitat	No	Yes					--
Community enhancement	No	Yes					--

Grant Tasks

- Task 6 – Project Concepts
  - Develop up to 10 planning-level pilot project concepts
  - Multi-benefit, integrated with bike/ped, showing benefits for climate change adaptation and water quality improvement
  - Detail volumes managed, greenhouse gas reduction, water quality benefits, costs, etc.

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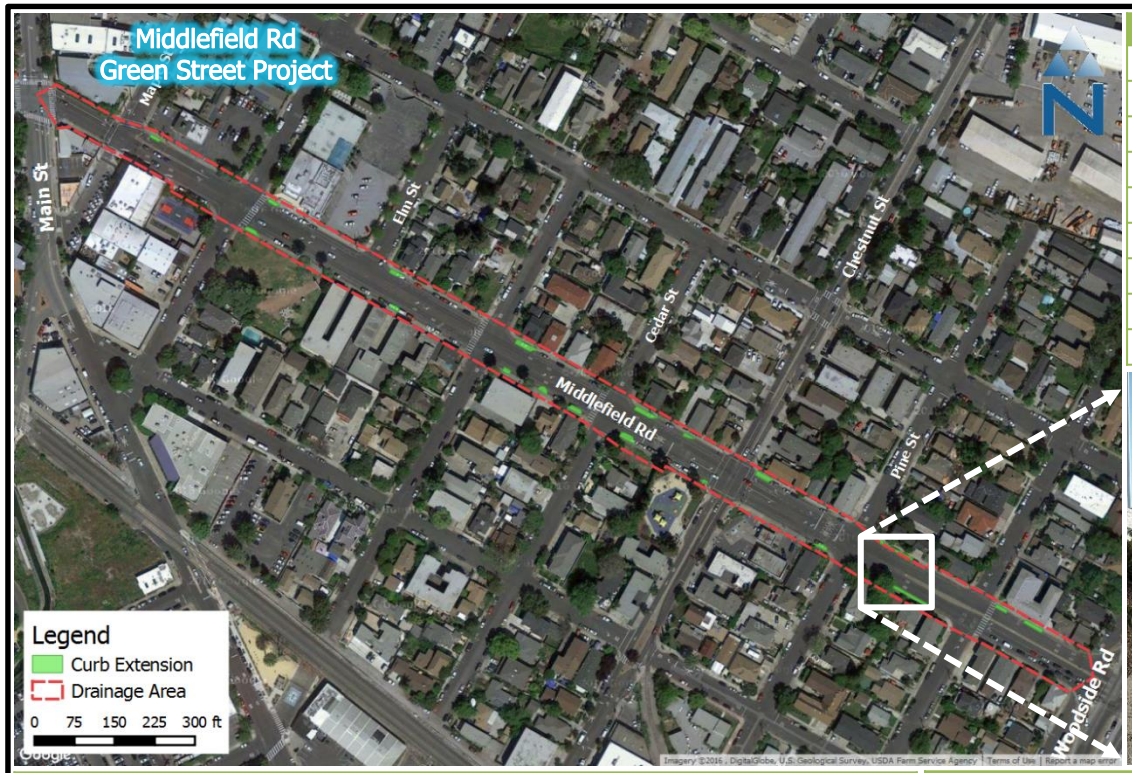

Site Information

Jurisdiction	City of Redwood City
Street Name	Middlefield Rd
Bounding Streets	Main St / Woodside Rd
Street Typology	Arterial
Co-Located Project	Middlefield Streetscape Project
Capture Area (acres)	4.16
Impervious Area (%)	90
85th Percentile Rainfall (in)	0.85
Generated Runoff (ac-ft)	0.27


Curb Extension on an Arterial Street

Site Description:

The proposed project consists of green street improvements along Middlefield Road between Main Street and Woodside Road. The street segment is approximately 2,250 feet long. Middlefield Road is an arterial street that is relatively narrow. Limited space is divided between bike lanes, multiple lanes each direction, turn lanes, and parking lanes. This presents a challenge with siting green infrastructure without sacrificing some usage of the roadway. Curb extensions are recommended as the primary treatment type. Segments of the street that feature two lanes may be reduced to single lanes to allow adequate area for improvements. Center medians can be removed to provide additional area. Curb extensions can also be placed at crosswalks to improve pedestrian safety while increasing stormwater capture capacity. Where lanes cannot be reduced, some parking may need to be removed.

The proposed improvements would capture 100% of the 85th percentile runoff volume (0.27 ac-ft) while providing flood risk mitigation, community enhancement, increased property values, safer pedestrian routes, and other multiple benefits.

green infrastructure shown in the map are preliminary and subject to further site assessment and design. Percent imperviousness is based on best professional judgement. All design assumptions/parameters and cost estimates must be re-evaluated during the detailed design process.

Design Summary

Green Infrastructure Type	Design Width (ft)	Design Length (ft)	Capture Volume (ac-ft)
Bioretention (Curb Extension)	8	780	0.270

Cost Estimate

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Excavation/Hauling	1,160	CY	$50.00	$58,000
Bioretention	6,240	SF	$25.00	$156,000
Curbs and Gutters	780	LF	$17.25	$14,000
			CONSTRUCTION SUBTOTAL	$228,000
Planning (20%), Mobilization (10%), Design (30%), Contingency (25%)				$194,000
			TOTAL COST	**$422,000**

Concept for a Green Street Retrofit for Stormwater Capture

Site: Middlefield Road (City of Redwood City)

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PARADIGM ENVIRONMENTAL

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Grant Tasks

- Task 7 –Web-based Sustainable Streets Project Implementation Mapping and Tracking Tool
  - Develop mapping and tracking tool that can become publicly available
  - Dashboards showing progress over time
  - Show project locations, benefits

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Key Contracting Provisions

- Consultant sub-agreements to C/CAG
- All products owned by Caltrans, licensed to C/CAG and member agencies
- Financial management and accounting systems
- No indirect costs allowed
- Travel and per diem at State rates
- Non-discrimination clauses
- Records retention/audits
- Cost principles

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Schedule and Selection Process

Description	Tentative Dates
Issue RFP	August 30
Pre-Proposal Meeting	September 13
Response to RFP due	September 25
Selection panel reviews and ranks proposals	Sep 25 – Oct 5
Interviews, as needed	Week of Oct 8
Initiate fee and scope of work negotiations	Week of Oct 15
C/CAG Board considers funding agreement(s)	November 11
Notice to Proceed	November 12

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Criteria	Points
Overall approach and understanding of the work to be done.	25
Experience with similar kinds of work.	20
Cost effectiveness of proposal and project timeline.	15
Staff qualifications.	10
Capability of developing innovative or advanced techniques.	10
Familiarity with Caltrans/state procedures	5
References and work samples	5
Total	100



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