



# *Countywide Stormwater Program Update*

Matthew Fabry, P.E.  
Program Manager

San Mateo Countywide Water  
Pollution Prevention Program



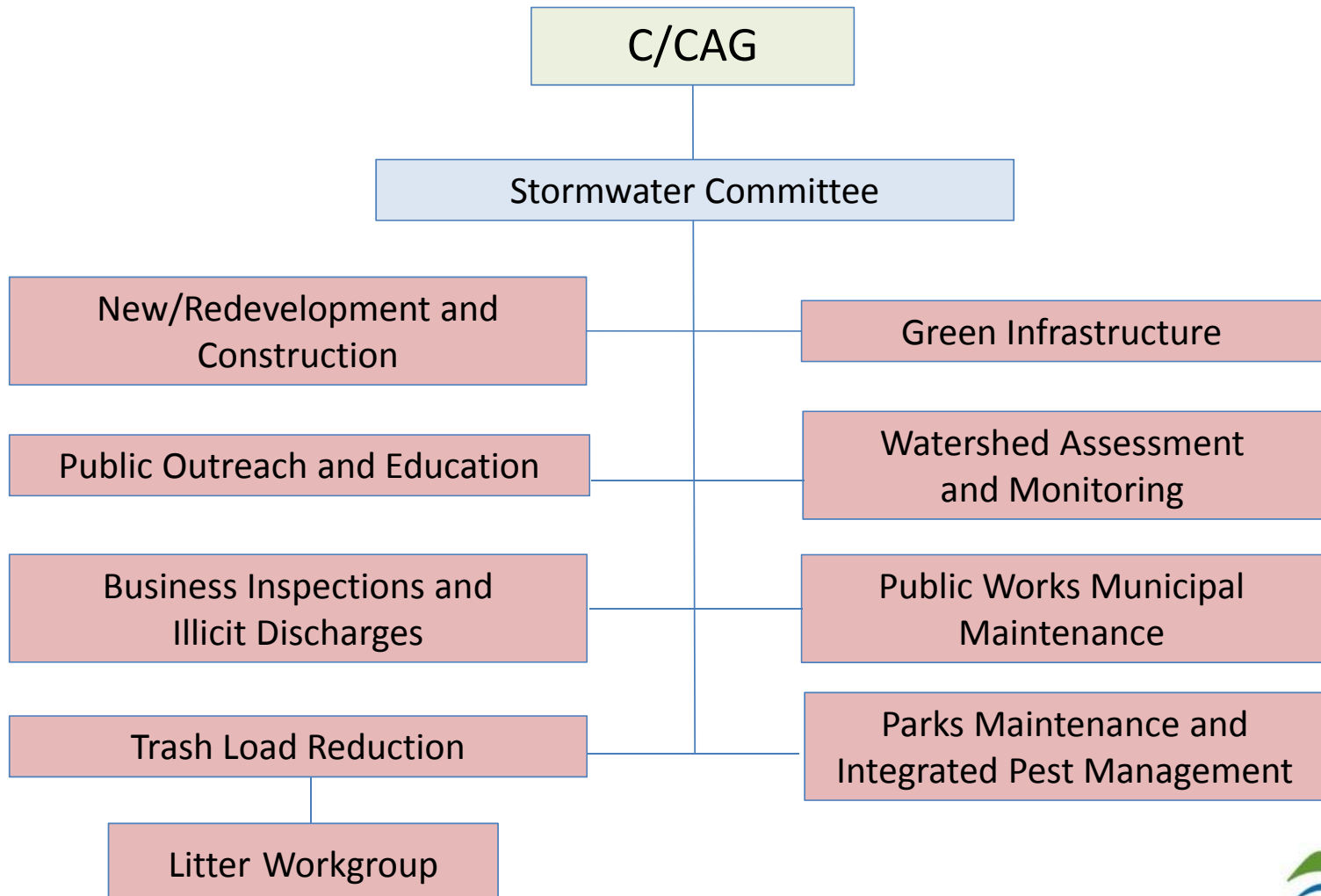
C/CAG Board of Directors  
October 11, 2018

# What is the Countywide Program?

- Support member agencies in meeting Municipal Regional Permit regulatory requirements
- Funded by:
  - Property Fee: \$1.5 million
  - Vehicle Registration Fee: \$750K
- Two full-time staff & consultants
- Primary areas of support:
  - Local program implementation
  - Do compliance directly for member agencies
  - Participate in regional efforts

# Local Program Support

- Committees/workgroups
- Training
- Technical support
- Planning
  
- Annual Cost: ~\$600-800K







## Construction Site Stormwater Inspections Training for Municipal Inspectors

Tuesday, March 20, 2018  
Coyote Point Recreation Area, Captain's House  
1701 Coyote Point Drive, San Mateo

### AGENDA

(Spot

Workin

8:45 AM	Registration	
9:00 AM	Break Into Field & Classroom Groups 1 and 2	Peter S EOA,
9:05 AM	Welcome and Introductions	
9:10 AM	Session 1	
10:25 AM	Break - Groups 1 and 2 Switch Locations	
10:40 AM	Session 2	
12:00 PM	Lunch and Evaluation Form Completion	
1:00 PM	Adjourn	

### GROUP 1 AGENDA

9:10 AM	Field Session - Break into subgroup 1A and 1B
	Field Station A: Inlet Protection
	Field Station B: Sediment and Erosion Control
	Field Groups Switch Stations
9:45 AM	Break
10:25 AM	Classroom: Construction Site Regulations and BMF
10:40 AM	

### GROUP 2 AGENDA

9:10 AM	Classroom: Construction Site Regulations and F
10:25 AM	Break
10:40 AM	Field Session - Break Into Subgroups 2A and
	Field Station A: Inlet Protection
	Field Station B: Sediment and Erosion Cont
	Field Groups Switch Stations
11:15 AM	

\*\* Attendance at this workshop is acceptable for 2.5 CESSWI and/or CPSWQ ce

Registration

Welcoming R  
Richard Holtz.

Requirement  
Control Cont  
Vishakha Atre

SMCWPPP P  
Courtney Siu,

Ins and Outs  
Tanya Driik, C

Break

Capturing Cc  
Amber Schat,

Closing Rem  
Richard Holtz.



## COMMERCIAL/INDUSTRIAL STORMWATER INSPECTOR WORKSHOP

Sponsored by the Commercial/Industrial/Illicit Discharge (CII) Subcommittee

Wednesday, February 28, 2018

San Mateo Public Library - Oak Room  
55 W. 3rd Avenue, San Mateo

op  
up)

### WORKSHOP AGENDA

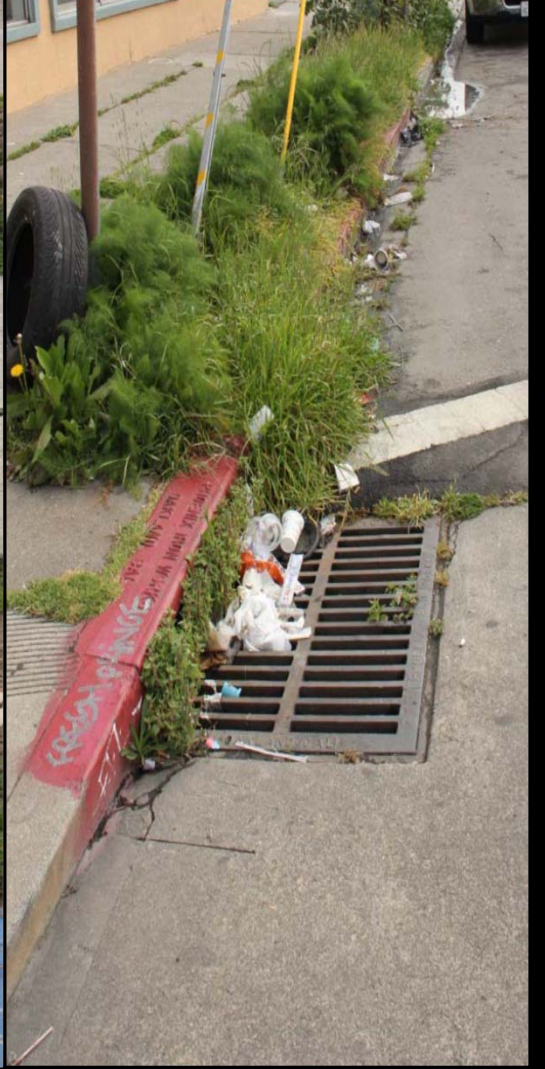
9:00 AM	Registration and Refreshments		
9:15 AM	Welcome		
9:20 AM	Facility Stormwater Inspection Basics	Kristin Kerr EOA, Inc.	1 - 11:20 am
10:20 AM	Case Study: Shared Trash Enclosure	Kristin Kerr EOA, Inc.	1 - 11:25 am
10:40 AM	Break	Sven Edlund City of San Mateo	1 - 11:35 am
10:55 AM	Case Study: Auto Repair Shop	Daniel Garza South San Francisco	1 - 12:35 pm
11:15 PM	Case Study: Large Retail Facility	Mark Swenson City of San Mateo	1 - 12:45 pm
11:35	Case Study: C.4 Inspection, C.5 Inspection or Mobile Business?	Kristin Kerr EOA, Inc.	1 - 1:45 pm
11:55 PM	Summary Remarks, Adjourn	Kristin Kerr EOA, Inc.	

\*\* Attendance at this workshop is acceptable for 2.5 Contact Hours toward maintaining CWEA certifications. \*\*

- 1:55 pm

- 2:55 pm

- 3:00 pm





# San Mateo County Data Viewer

English

## Info and Tools

Object identification: All layers

## Map themes

Map

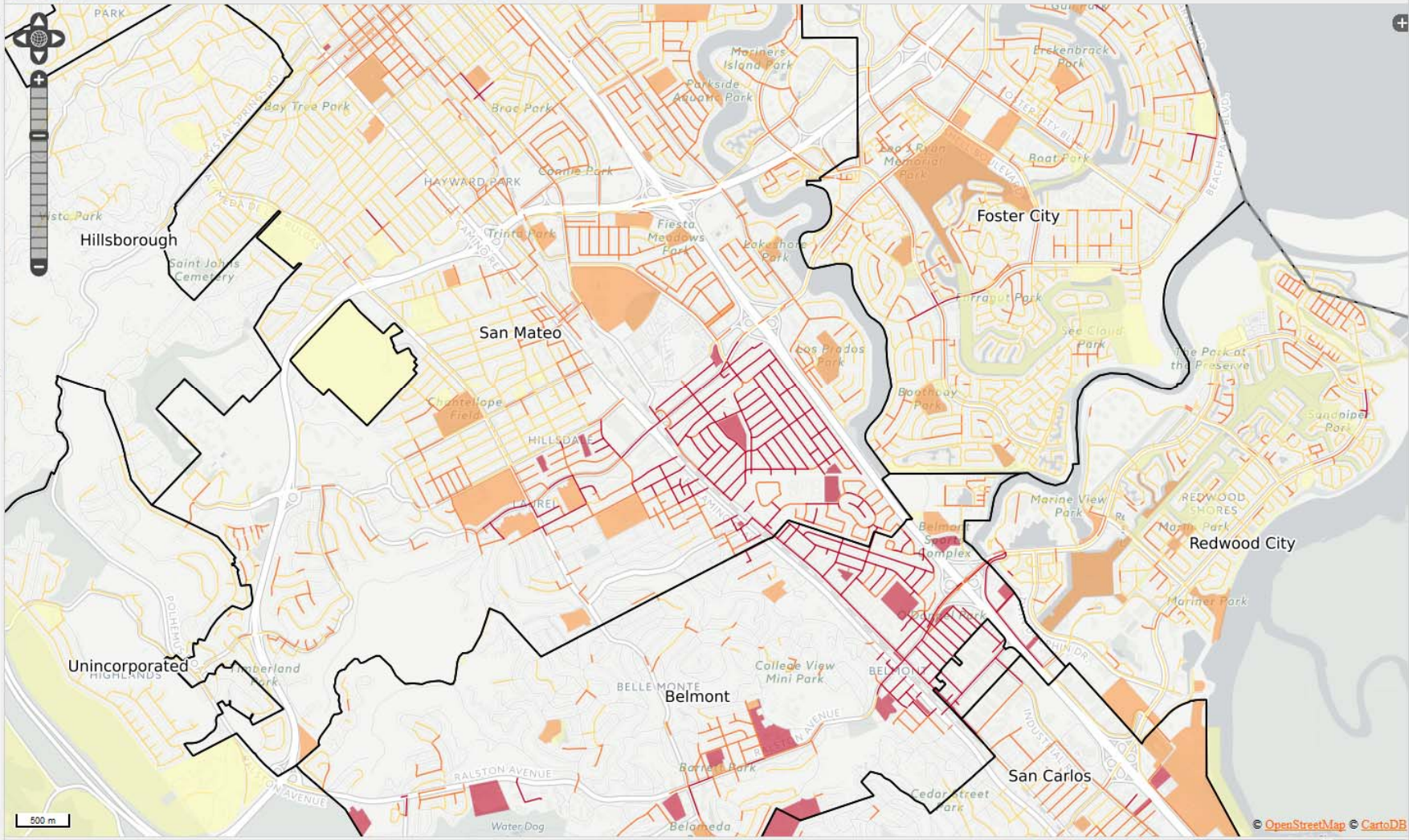
## Map Layers

### San Mateo County Data Viewer

- County Boundary
- City Boundaries
- Implemented GI Projects
- Flood Resiliency Plan Projects
- Flood Prone Streams
- Storm Drains
- Regional Projects prioritized
- LID Projects prioritized
- Green Streets prioritized
- Regional Project Drainage Areas
- Erosion Hazard (Yr 2100)
- Sea Level Rise 100
- Sea Level Rise 200
- FEMA 100-yr Flood Plain
- Storm Drain Catchments
- Groundwater Basins
- Watersheds of Flood Prone Street
- New & Redevelopment
- Subwatersheds

### Background Layers

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



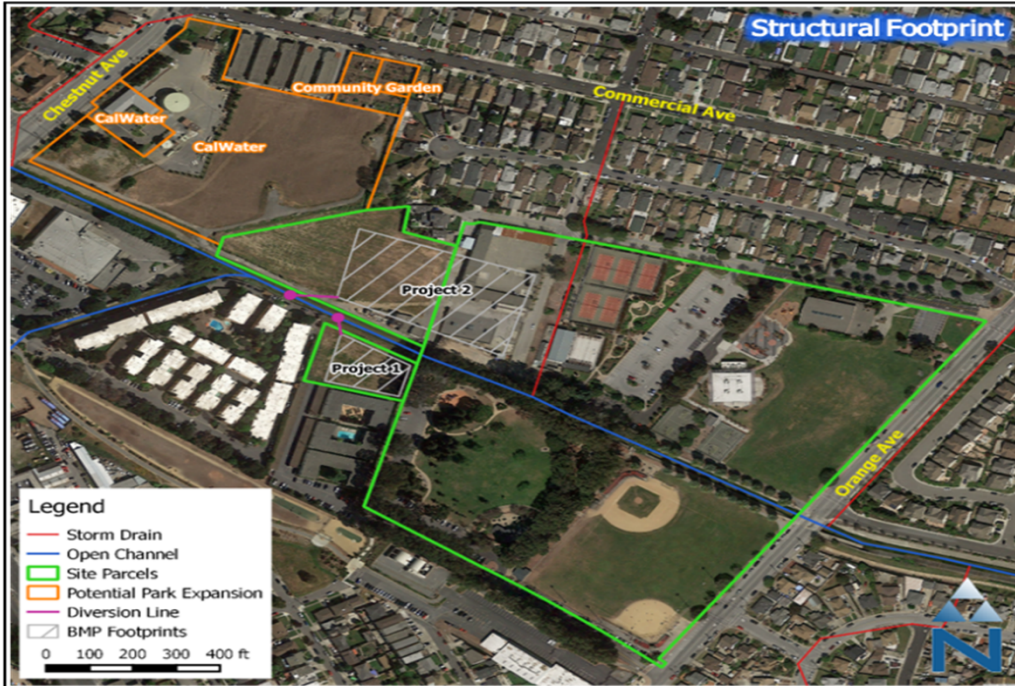
## Layer order

Mode: navigation. Shift/rectangle or mouse wheel for zooming.

Coordinate: -13614526,4518132 1: 36112

© OpenStreetMap © CartoDB





**Site Description:**

Two subsurface infiltration chambers will be considered on parcels owned by the City of South San Francisco to the west of Orange Memorial Park. Both parcels were acquired by the City of South San Francisco in 1996 and, while vacant, are included in plans for future park expansion. The first chamber (Project 1) will be located in the vacant parcel to the south of the Colma Creek channel. The second chamber (Project 2) will be located in portions of the vacant parcel to the north of the channel and the current park parcel. The Project 2 site represents the location of the future little league baseball fields according to the Master Plan. Runoff would be diverted directly from Colma Creek and details of the diversion structures will be determined during the design phase through coordination with the San Mateo County Flood Control District. A pretreatment unit (e.g. hydrodynamic separator) will be implemented to provide trash and sediment capture. Two projects are proposed to maximize the amount of available space used for the design and to provide an option for the City of South San Francisco to implement the design in two separate phases. This would allow the City to move forward with each phase separately as funding is acquired. The Master Plan also accounts for the possible purchase of the CalWater parcels along Chestnut Avenue for future park expansion, which could be used to expand Project 2 if that land becomes available. The proposed design (both chambers) would allow for the treatment of 26% of the 85<sup>th</sup> percentile, 24-hour runoff volume (36.4 of 142.4 ac-ft) for the Colma Creek watershed. As these volumes are completely removed via storage and infiltration, this provides an equivalent 26% reduction of pollutant loads for the storm event.

**DISCLAIMER:** All elements of this conceptual design are planning-level, based on desktop analysis. All assumptions and parameters must be re-evaluated during the detailed design process. Costs estimates are based on available data. Actual costs will vary.

**Design Criteria**

Precipitation, 85 <sup>th</sup> percentile, 24-hr storm (in)	0.83
Colma Creek Runoff Volume, 85 <sup>th</sup> percentile, 24-hr storm (ac-ft)	142.4
Colma Creek Peak Discharge, 85 <sup>th</sup> percentile, 24-hr storm (cfs)	309
Infiltration Rate (in/hr)	0.5

Project Characteristics	Project 1	Project 2
Stormwater Capture Process	Subsurface Infiltration Chamber	
Footprint (acres)	0.5	2.3
Design Height (ft)	12	12
Depth of Excavation (ft)	15	15
Pumping Requirements	Dependent on Geotechnical Investigation	
Design Volume (ac-ft)	6	27.6
24-hr Infiltration Volume (ac-ft)	0.5	2.3
<b>Total Treatment Volume (ac-ft)<sup>1</sup></b>	<b>6.5</b>	<b>29.9</b>
<b>Percent Treated<sup>2</sup></b>	<b>5%</b>	<b>21%</b>

1 – sum of the Design Volume and 24-hr Infiltration Volume  
 2 – percentage the 85<sup>th</sup> percentile 24-hr storm Runoff Volume that is treated

**Concept for a Multi-jurisdictional Regional Stormwater Capture Project**  
 Site: Orange Memorial Park (City of South San Francisco)



## 3.1 Low-Density Residential Yards

### *Vegetated Swales & Stormwater Planters*

#### Low-Density Residential Vegetated Swale Example

This residential home example illustrates how drought-tolerant rain gardens can be easily replace tired un-watered grass yards. Runoff from roof downspouts can simply enter these landscape areas and any overflow during strong storm events would sheet flow into the street. Many front yards in San Mateo County are considered “blank slates” with little landscaping, and no street trees. With new rain gardens and street trees in place, front yards can be more environmentally pleasing, absorb stormwater, and be more aesthetically pleasing.



DIPLOMA DESIGN

▲ **EXISTING:** A typical low-density residential home front yard in San Mateo County.



▲ **EXAMPLE:** An example residential yard rain garden captures roof runoff and features low-water plant communities.



DIPLOMA DESIGN

▲ **RETROFIT OPPORTUNITY:** The same residential yard that converts un-watered grass areas into a rain garden with drought-tolerant landscaping. Roof downspouts direct water into the rain garden and a bridge connects the spaces.

#### Low-Density Residential Stormwater Planter Example

Another possibility to direct roof downspout runoff into landscape area next to driveways or alongside residential homes is to use stormwater planters. These planters do not have to be very deep and any excess runoff that can't be managed can overflow over the low points in the landscape.



DIPLOMA DESIGN

▲ **RETROFIT OPPORTUNITY:** The same residential landscape that converts a grass areas into a stormwater planter with drought-tolerant landscaping.



DIPLOMA DESIGN

▲ **EXISTING:** A typical side landscape separating two residential properties in San Mateo County.



DIPLOMA DESIGN

▲ **EXAMPLE:** An example residential stormwater planter that captures roof runoff first into a rain barrel and an excess runoff is directed to a stormwater planter.



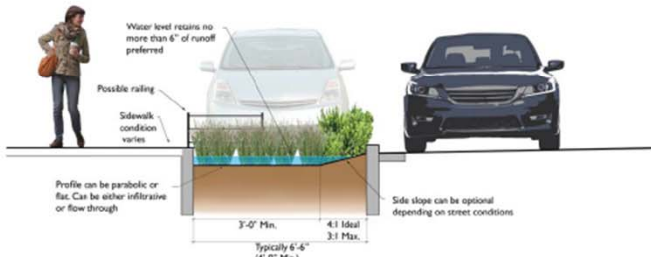
# 2.1 Green Streets Infrastructure Elements

## Stormwater Curb Extensions

### Overview

A stormwater curb extension, also referred to as a stormwater bulb out or bump out, is a green infrastructure treatment measure consisting of a bioinfiltration or bioretention planter integrated into the extension of a street curb into the roadway within the parking lane. It captures, treats, and manages stormwater while also achieving complete streets goals, described below. Curb extensions are a frequently used feature in new and retrofitted complete streets as they provide many benefits for all users of streets. They are typically added at intersections to shorten the distance for people to walk across the street. In some situations, they can be added at mid-block locations.

Stormwater curb extensions are particularly advantageous in retrofit situations, because they can be added to existing streets with minimal disturbance and can reduce costs for re-engineering existing storm drains.



▲ Figure 4-10. Stormwater curb extension typical section

### Benefits and Constraints of Using Curb Extensions

#### Green Infrastructure Benefits

- Typically detains and attenuates low flows.
- Reduces volume of stormwater entering the storm drain system, more volume reduction if a bioinfiltration planter.
- May recharge groundwater.
- Useful in constrained sites.
- Useful in retrofit conditions.
- Provides complete streets benefits.
- Can act as a "backstop" to capture stormwater flow on steep streets.
- Does not encroach into sidewalk area.
- Can be used at intersections or along a street.
- Also see, Benefits listed for bioinfiltration and bioretention areas/planters.

#### Additional Complete Streets Benefits

- Encourages people to walk across the street at crosswalks.
- Narrows the space between the curbs, which helps to calm traffic—encourages people to drive within the speed limit.
- Improves visibility between people walking across the street and those driving or cycling along the street. This is particularly a benefit at uncontrolled crossings and at mid-block locations.
- Keeps cars away from intersections when parked and when maneuvering into a parking space.
- Provides space for directional, rather than diagonal, ADA curb ramps.
- Provides more space for benches, outdoor seating, transit shelters, public art, or other streetscape improvements.

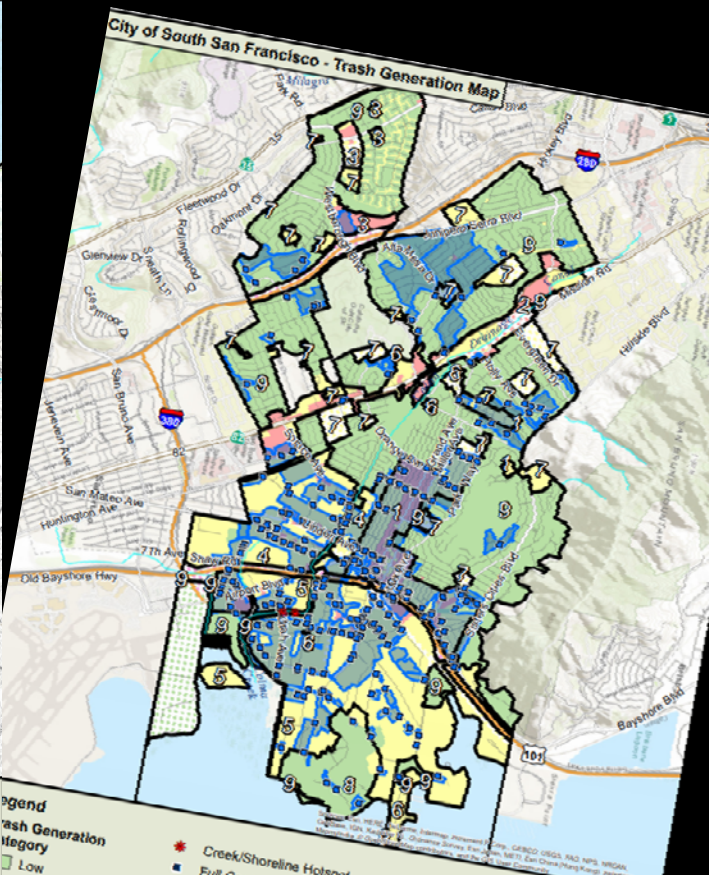
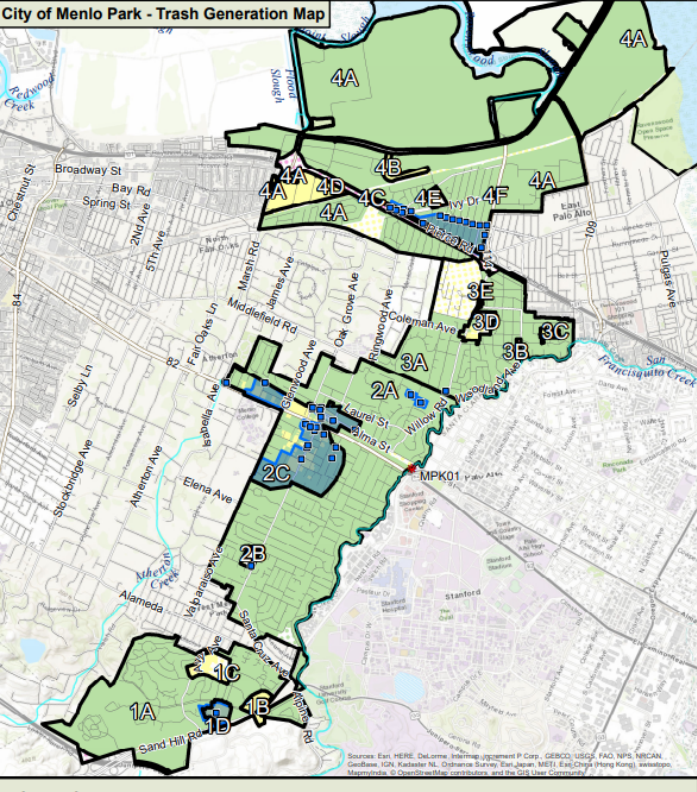
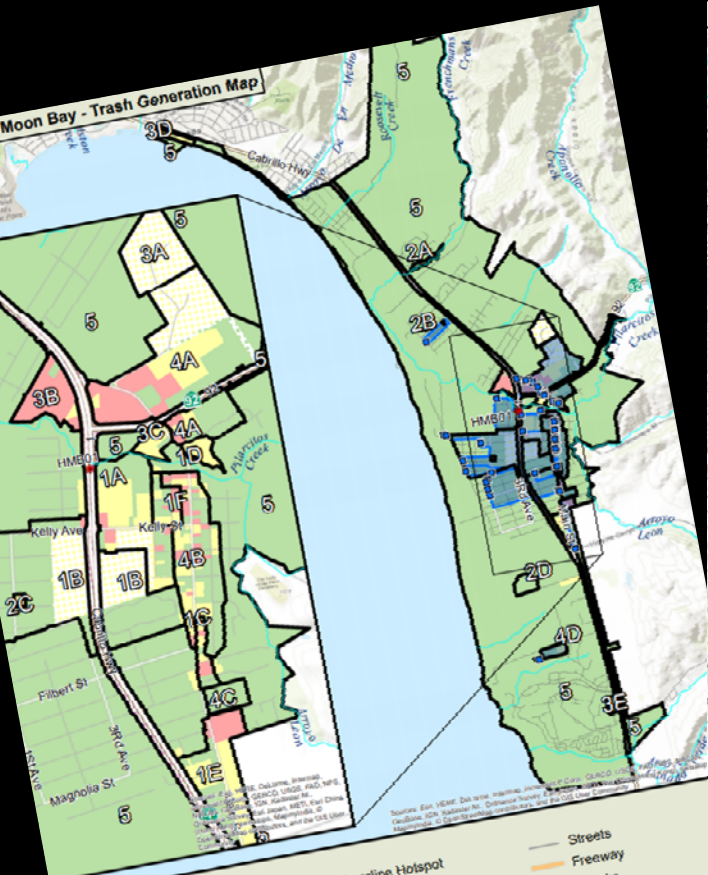


▲ Example mid-block stormwater curb extension.



▲ Stormwater curb extension frames corner bulbout.





**Legend**

**Trash Generation Category**

- Low
- Moderate
- High
- Very High

★ Creek/Shoreline Hotspot  
■ Full-Capture Location  
  Full Trash Capture  
  Trash Management Area  
  Non-Jurisdictional (Dot color = Generation Category)

— Streets  
 — Freeway  
 ~ Creeks

0 0.3 0.6 Miles

**Legend**

**Trash Generation Category**

- Low
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  Trash Management Area  
  Non-Jurisdictional (Dot color = Generation Category)

— Streets  
 — Freeway  
 ~ Creeks

0 0.25 0.5 1 Miles

**Legend**

**Trash Generation Category**

- Low
- Moderate
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★ Creek/Shoreline Hotspot  
■ Full-Capture Location  
  Full Trash Capture  
  Trash Management Area  
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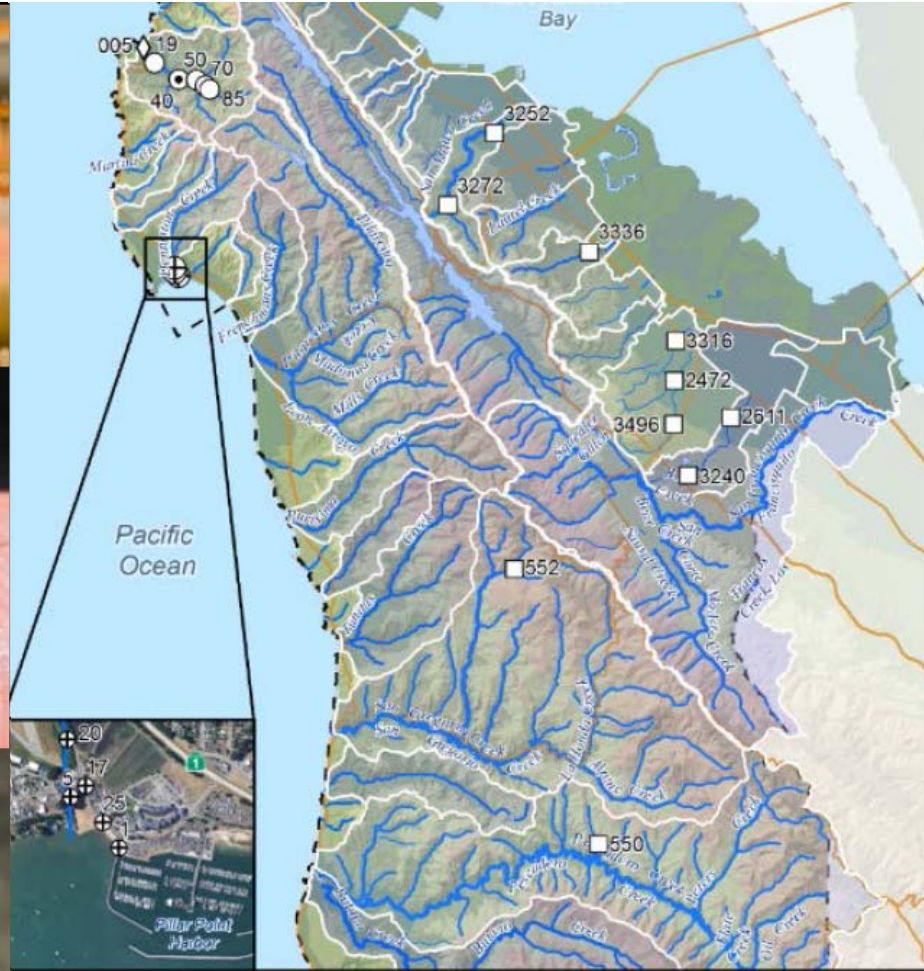
— Streets  
 — Freeway  
 ~ Creeks

0 0.25 0.6 Miles

# Direct Compliance

- Water Quality Monitoring
- Regional Monitoring Program
- Public Outreach/Education
- Annual Reporting
  
- Annual Costs: ~\$1 million





**Creek Status Monitoring (WY 2017)**

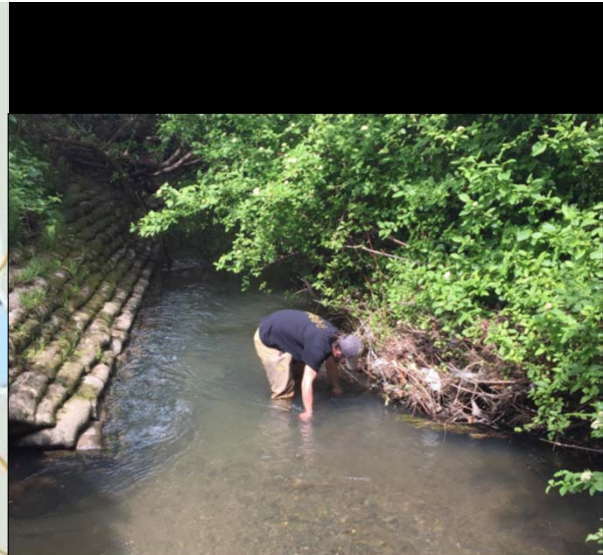
□ Bioassessment	San Mateo County Boundary
⊕ Pathogen Indicator	Major Road
○ Continuous Temperature	Watershed Boundary
⊙ Continuous Temperature Water Quality	Streams and Rivers
◇ Toxicity & Pesticides	

**Data Sources:**  
 Roads: San Mateo County  
 City Boundaries: San Mateo County  
 Creeks: San Mateo County  
 Parcels: San Mateo County  
 Background: ESRI World Topographic Map

**Map Created By:**  
 EOA, Inc.

**Date:**  
 December 18th, 2017

0 2 4 6 Miles



### C.8.e Pillar Point Harbor Bacteria SSID Work Plan



- 14 stations
- 2 wet weather sample events
- 2 dry weather sample events
- E. Coli
- Human marker
- Dog marker





**Legend**

**SMCWPPP**

- PCBs, Mercury, SSC
- Nutrients & Copper
- PCBs & Mercury in Urban Sediments

**Other Agencies**

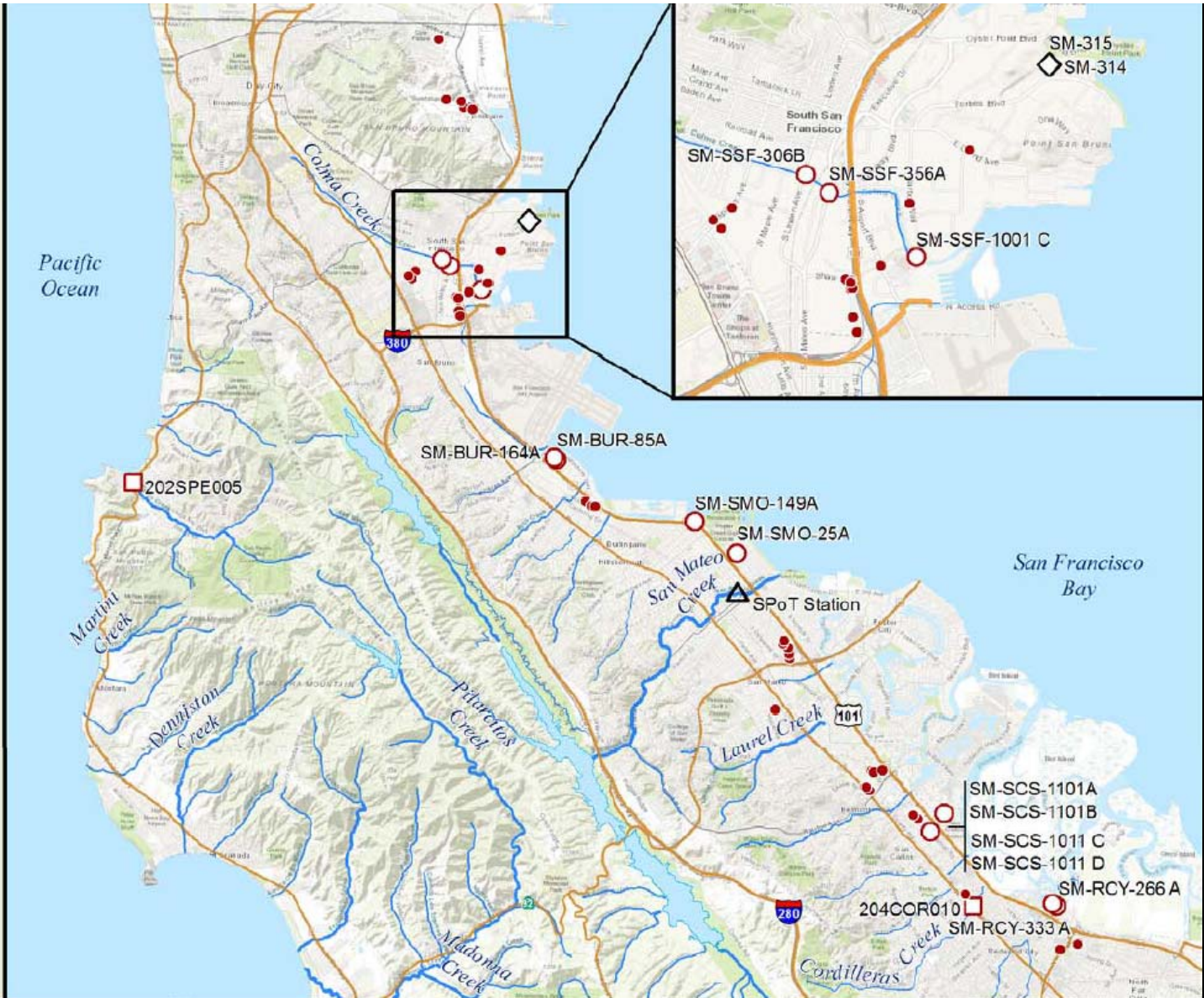
- ◇ RMP STLS: PCBs, Mercury & SSC
- △ SPoT: Mercury, Copper

- ~ Creek
- Major Road

**Data Sources:**

- Roads:** San Mateo County
- Creeks:** National Hydrology Dataset
- Background:** ESRI

**Map Created By:**  
EOA, Inc.



# Regional Monitoring Program

alkylphenol perfluorooctane sulfonate erythromycin  
 tris (1,3-dichloro-2-propyl) phosphate ranitidine  
 diuron fenpropathrin triclosan bis(4-chlorophenyl)  
 polybrominated diphenyl ether hexabromocyclododecane  
 ziram 1,2-bis (2,4,6-tribromophenoxy) ethane  
 bis (hexachlorocyclopentadieno) cyclooctane nanosilver  
 gemfibrozil tris (1,3-dichloro-2-propyl) phosphate  
 triclocarban 4-nonylphenol bisphenol a diphenyl ether  
 fipronil caffeine sulfamethoxazole n,n-diethyl-m-toluidine  
 carbamazepine bis(2-ethylhexyl) phthalate cypofloxacin  
 single-walled carbon nanotubes galaxolide  
 chlorinated paraffins dehydronifedipine ciprofloxacin  
 esfenvalerate permethrin di-n-butylphthalate oxamethicon  
 chlorothalonil perfluoroperhydrophenanthrene  
 traseolide nanosilver polybrominated dibenzofuran  
 cotinine 1,3,6,8-tetrabromopyrene indoxacarb  
 diphenhydramine ethylene bis-tetrabromophthalidimide  
 chlorophenoxyphenols valsartan phenothrin malathion



**Harbor Seal Blubber**

2,2'-dichlorobenzil

dyes, coatings, plastics (limited use)

9,10-dichloroanthracene and another similar dichloroanthracene\*

produced during combustion

**Mussels**

4-tert-butylamphetamine\*

derived from amphetamine

methyl triclosan\*

derived from triclosan antibacterial ingredient common in liquid hand and dish soap, personal care products, and other consumer goods

**Chemicals newly identified as contaminants in San Francisco Bay wildlife**

\* Identification has not yet been confirmed by comparison with a pure compound





Clean Water. Healthy Community.

# It's a team effort.

Preventing Pollution... At Home In the Garden At Work In My Community About Our Program



## Rain Barrel Rebate Get up to \$100 off!

We have partnered with the Bay Area Water Supply & Conservation Agency (BAWSCA) to help you purchase a rain barrel! Rebates of up to \$100 per rain barrel are now available to San Mateo County residents. [Click here for more details.](#)

### Test Your Pesticide Knowledge With Our Quiz



Pop quiz, hot shot! Test your knowledge of pesticides and their effects on our community. Answers and quiz...

[MORE](#)

### To Half Moon Bay and Beyond!



If you happen to live in Half Moon Bay or have passed through the historic downtown area on your way to the...

[MORE](#)

### Rain, Rain, Don't Go Away!



Have you ever been caught in a massive downpour and watched the seemingly endless flow of water flush through...

[MORE](#)

## GET INVOLVED!



### Sign Up For Our Newsletter!

[Subscribe](#)

### Participate In An Event

- Rain Barrel Workshop - Flores To Bay  
October 13, 10 am to 11 am  
[MORE INFO >](#)
- HHW Collection Event - Portola Valley  
October 13, 08 am to 12 pm  
[MORE INFO >](#)
- Linda Mar Beach Cleanup  
October 20, 09 am to 11 am  
[MORE INFO >](#)

### More Events >

### Video

When you run out of uses for using up your leftover paint, recycle the rest with PaintCare.  
Posted by [PaintCare](#) on Thursday, April 23, 2015

Give Old Paint a New Life!

### EXTENDED: Rain Barrel Rebate



### Get up to \$100 back from participating agencies

San Mateo Countywide Water Pollution Prevention Program has partnered with the Bay Area Water Supply and Conservation Agency (BAWSCA) to help residents purchase a rain barrel! Rebates of up to

\$100 per rain barrel are now available to San Mateo County residents until June 30, 2019. Get more...

[more](#)

[Report illegal dumping](#) in your area.

[Properly dispose](#) of your toxic waste.

It's a team effort.







# FY 2017-18 Annual Report



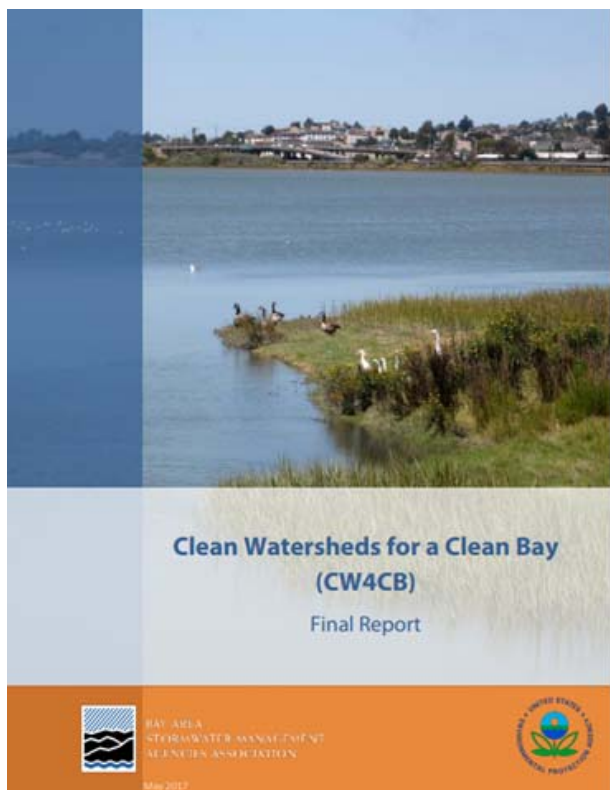
**September 30, 2018**

# Regional Collaboration

- Bay Area Stormwater Management Agencies Association (BASMAA)
- Grant-funded and collaborative projects
  - Direct Compliance
  - Technical Support
- Annual Cost: ~\$100-200K



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



### Factsheet for Municipal Staff

#### New Program to Manage PCBs during Building Demolition

**Purpose of the Program:** PCBs have been detected at elevated levels in certain sport fish in San Francisco Bay. To make the fish safer to eat and protect human health, PCBs sources to the Bay need to be identified and controlled. Urban stormwater runoff is considered a significant pathway for PCBs to enter the Bay. The Regional Water Quality Control Board has therefore required that Bay Area municipalities address potential sources to urban runoff, including certain building materials (e.g., caulks/sealants, insulation) that may contain PCBs and enter storm drains during building demolition.



**Permit Requirements:** The Municipal Regional Permit (MRP) requires Bay Area local agencies to develop a program to keep PCBs from building materials out of storm drains during building demolition. MRP requirements include:

- Developing methods to identify applicable structures and priority materials before demolition.
- Developing protocols to ensure that PCBs are not discharged to the storm drain during demolition of these structures.
- Establishing the necessary authority for the protocol via municipal ordinance or other mechanism.

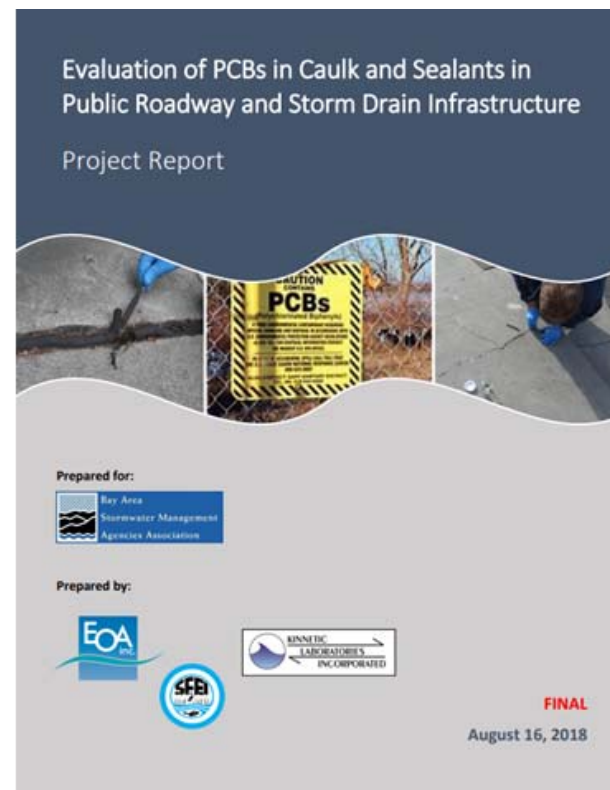
**Affected Structures:** The requirements apply to whole building demolition of commercial, multi-family residential, public, institutional, and industrial structures constructed or remodeled between 1950 and 1980 in the MRP area. Counties of Alameda, Contra Costa, San Mateo, and Santa Clara and the Cities of Fairfield-Suisun and Vallejo. Single-family homes and wood-frame structures are exempt.

**Regional Coordination:** The Bay Area Stormwater Management Agencies Association (BASMAA) is assisting Bay Area local agencies to address these stormwater permit requirements and develop local programs to manage PCBs during building demolition. BASMAA has developed guidance and tools, including a pre-demolition protocol for evaluating PCBs in priority building materials, model language for municipal adoption of the new program, and model demolition permit materials. However, municipalities will need to adopt and implement the new program themselves, using the BASMAA guidance and tools in a way that best suits their local needs and procedures.

#### Key Dates and Activities:



**How to get started:** download the model documents from [basmaa.org/announcements](http://basmaa.org/announcements) and develop a plan to adopt and implement the program and train your staff. See next page for more information.



# Looking Forward

- Program expenditures have been rising with increasing regulatory requirements
- Services scaled back in 18-19 to match resources
- Working with Stormwater Committee to develop recommendations for 19-20 and beyond
- Focus C/CAG support where it provides greatest benefit to member agencies
- Negotiate cost-efficiencies with MRP 3.0
- Watch SB 231 for potential future revenue





# Questions?

*Matthew Fabry, Program Manager*

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*650-599-1419*