



"Talkin' Trash"

for Stormwater Inspectors

by

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Public Works
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Talkin' Trash Agenda



- 💧 Trash
- 💧 Changes over Time
- 💧 How Trash Relates to Stormwater
- 💧 Stormwater Permit: Trash Reduction
- 💧 Reporting/Summary

Trash/Litter

We generate trash...



We manage it...



We see litter ...



On beaches



Along Roadways



Along rivers, streams and marshes

In our communities...



Trash - Why a problem?

- 💧 Travels to water systems and...
- 💧 Kills millions of sea birds and thousands of marine mammals
- 💧 Grocery, trash bags, fishing line and debris wrap around boat propellers and clog seawater intakes



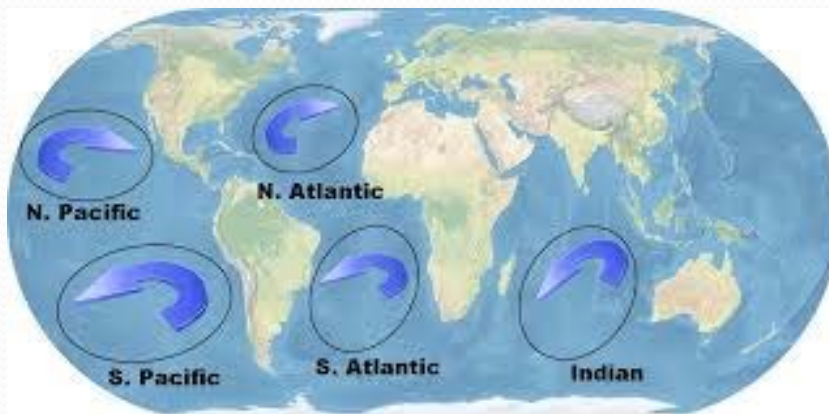
Water – Why do we care?

- 💧 We all use water for:
 - drinking, swimming, boating
 - fishing, eating fish, and
 - enjoying!



Trash - Why a problem?

- 10% of the plastic we use ends up in the ocean
- 5 trash gyres
- 80% of plastic in ocean is from land (as opposed to boat debris)
- Plastics accumulate within the water column and disintegrate



Where does the trash come from?

It starts with us...



How Trash Gets Into Creeks



Santa Clara Valley
Urban Runoff
Pollution Prevention Program

Freeway
on/off
ramps

**LITTER FROM
CARS &
TRUCKS**

Garbage trucks and
uncovered truck beds

Spills on
collection day

**LITTER FROM
GARBAGE AND
RECYCLING BINS**

Overflowing or
uncovered bins

**ILLEGAL
DUMPING**

*In-creek
dumping*

Dumping on-land
or in the creek

Illegal
encampments

Scavenging

Near fast food
or convenience
stores

At outdoor
events

**PEDESTRIAN
LITTER**

Near public
transit stops and
stations

Wind

*Storm
drains*

What has changed?



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Ahhh Trash...



And More Trash...

*Time for plastic to degrade?
450 to 1000 years*



What Do We Do About This Trash?

- ❖ Started Regulating Trash from Ships '73/'78
- ❖ 1st Coastal Cleanup Day: 1986 (U.S. - TX 122 miles, 124 tons trash)
1989 (International - Canada and Mexico)

❖ 2015 Coastal Cleanup Results

	<u>Volunteers</u>	<u>Trash Picked up (gal)</u>
Contra Costa	3,716	35,000
California	68,353	1,142,197



Can we control what enters our Storm Drain Systems?



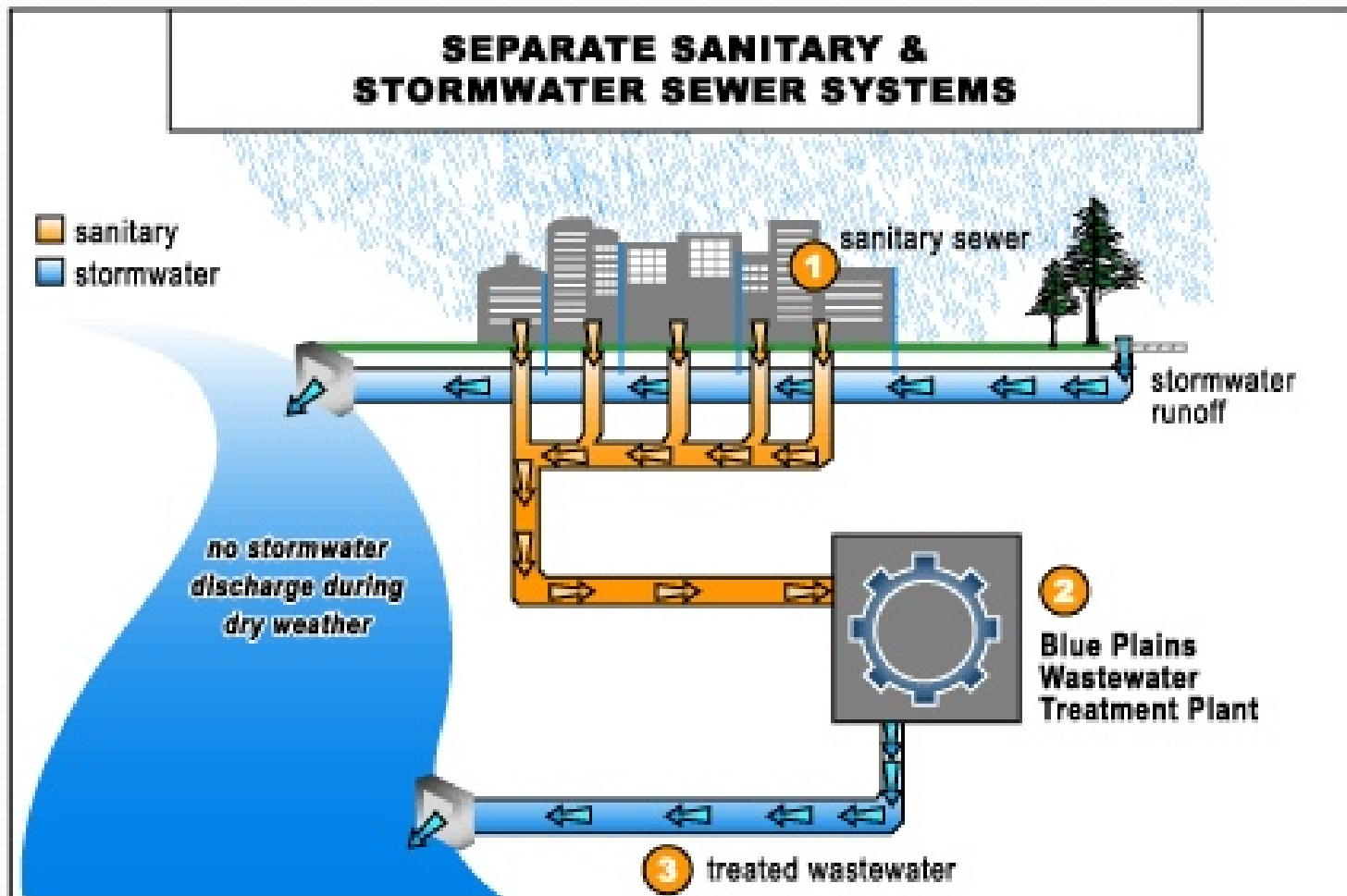
...even when there is water

💧 Rain water



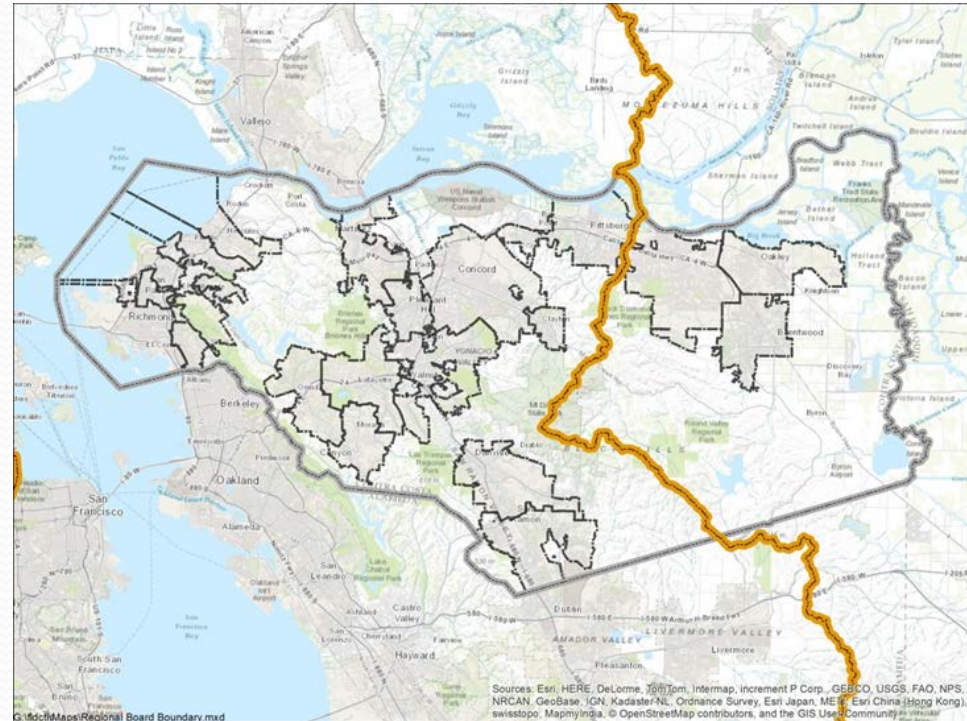
Sanitary vs. Storm “Sewer”

What is the difference?



Contra Costa Stormwater Permits/Ordinance

- 💧 Municipal Regional Stormwater Permits
 - 💧 San Francisco Bay Municipal Regional Permit
 - 💧 East County Municipal Permit
-
- 💧 Municipalities have Stormwater Ordinances
 - 💧 County Stormwater Ordinance
 - 💧 Division 1014, Stormwater Management and Discharge Control



Permitting Authority

- ◆ The State Water Resources Control Board
 - ◆ Authority to issue permits under “The Clean Water Act” for point sources discharging to waters of the U.S. (1972)
- ◆ These permits are NPDES (National Pollutant Discharge Elimination System) permits
- ◆ Stormwater permits are required for:
 - ◆ Construction sites,
 - ◆ Industrial sites and
 - ◆ Municipalities in urban areas



San Francisco Bay Municipal Regional Stormwater Permit (MRP 2.0) Provisions

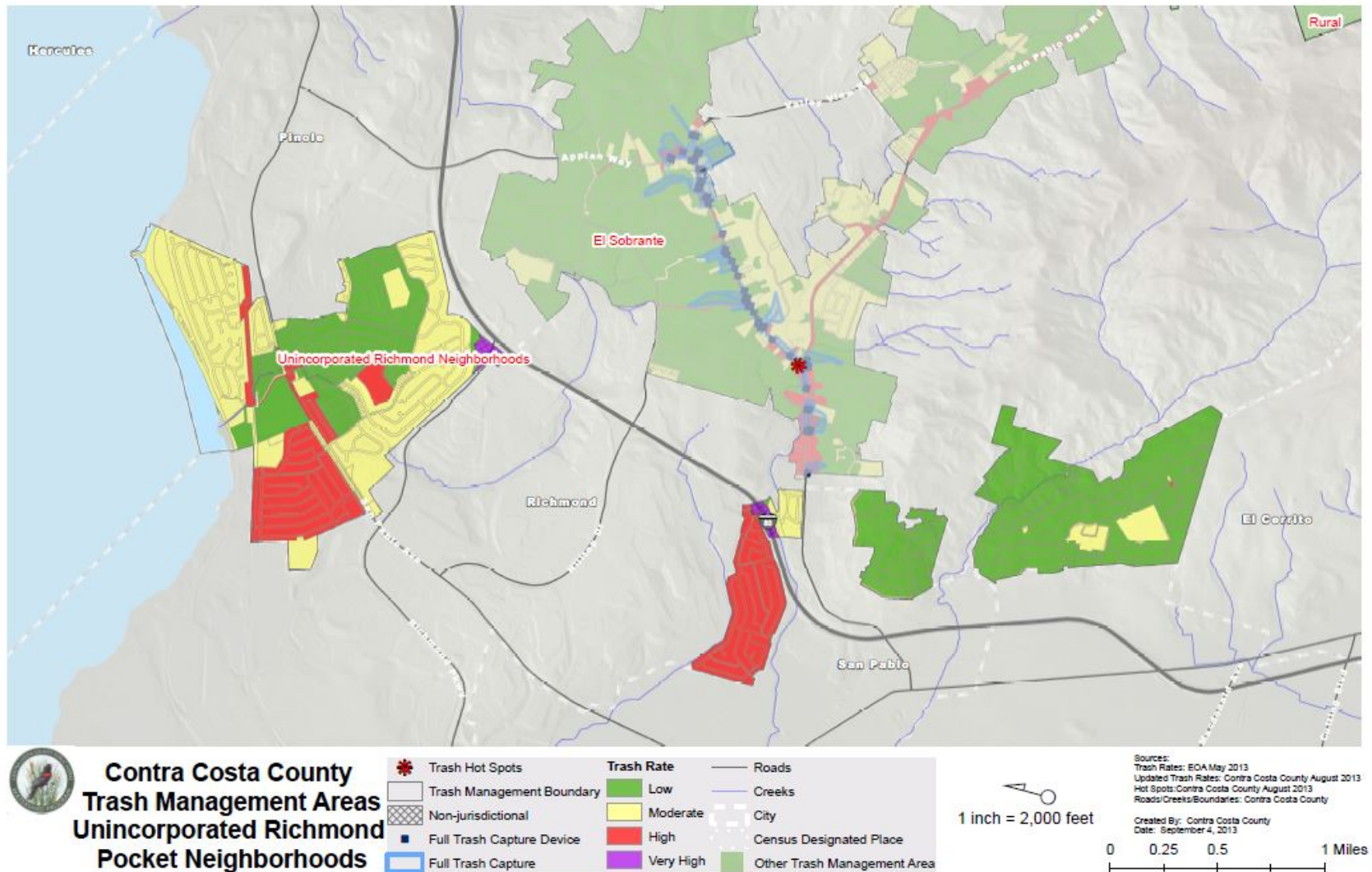
- ◆ New Permit was Effective January 1, 2016
- ◆ Stormwater Permit Provisions include:
 - ◆ Municipal Operations (C.2) (includes street sweeping)
 - ◆ Industrial and Commercial facilities inspections (C.4)
 - ◆ Illicit Discharges (C.5)
 - ◆ *Trash Reduction (C.10)*
 - ◆ Public Outreach/Education (C.7)
 - ◆ Copper (C.13), Mercury (C.11), PCBs (C.12)... and others

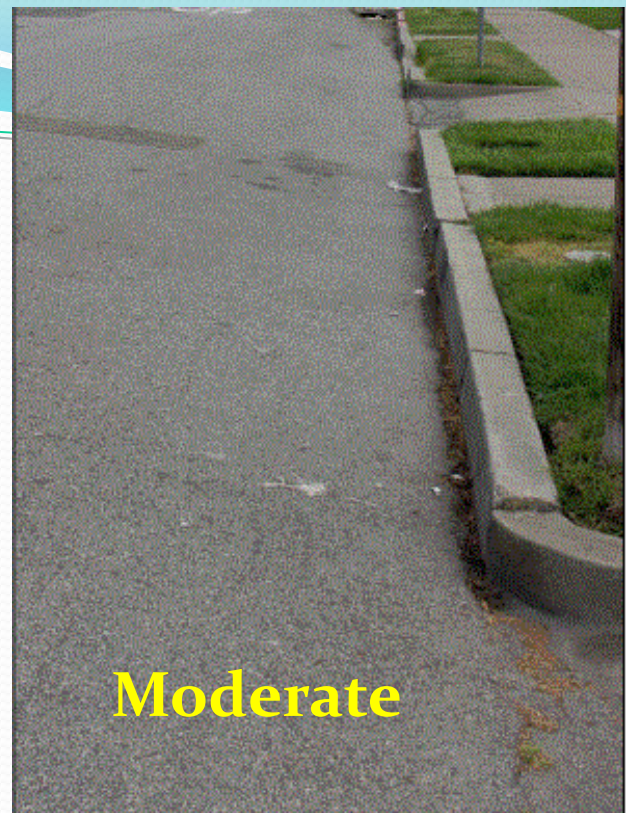
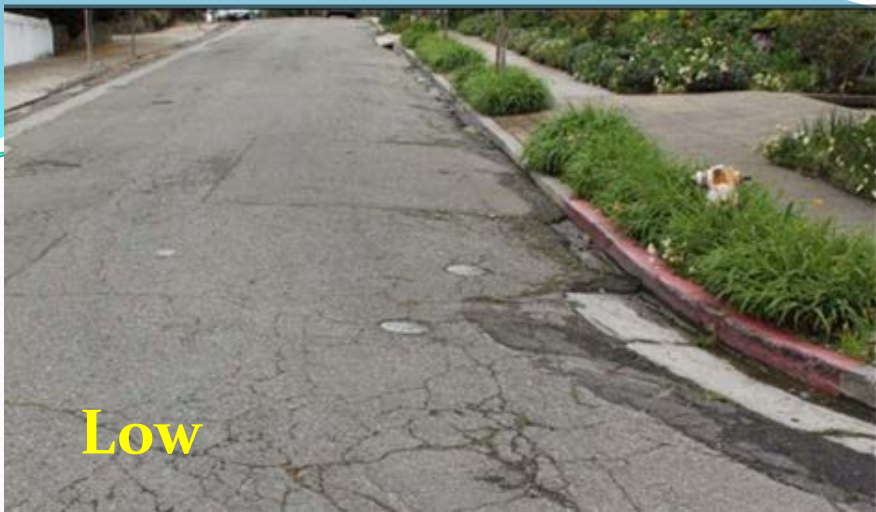
Trash/Litter

- 💧 Trash is a pollutant under the Municipal Regional Stormwater Permit, County/Cities are required to Reduce Litter by:
 - 60% by July 2016
 - 70% by July 2017
 - 100% by 2022
- 💧 Where are the problems?
 - 💧 Mapped Trash Generation Rates by Area and Visually Verified Trash Rates

Long-Term Litter Reduction

1. Mapped the baseline trash level by community





Visual Trash Levels



Long-Term Litter Reduction (cont.)

2. Control measures to reduce trash:

- Street sweeping
- Picking up trash on-land
- Creek/Area Volunteers Cleanups



Long-Term Litter Reduction (cont.)

- 💧 Trash Bin Management –
 - 💧 Improve management of trash bins/containers
 - 💧 Does address have trash service?
 - 💧 Do they have an appropriate bin size?
 - 💧 Do they have trash service frequently enough?
 - 💧 Would Recycling/Composting help reduce amount of trash?
 - 💧 Adopt-a Road Program?



Trash Capture Devices

How do you catch trash?

- Mechanical devices to catch trash
 - As it flows to the storm drain system
 - Or within the piping system
 - Or at the end of the pipe



Trash Capture Devices

How do we do this?

- 💧 What are municipal requirements?
- 💧 Install full trash capture to treat a % of the area covered by retail property
- 💧 If municipalities can't meet **70%** reduction
 - **Then more full trash capture devices will be required**
- 💧 Regular Maintenance and Documentation of Maintenance is required

Trash Capture Devices (cont.)

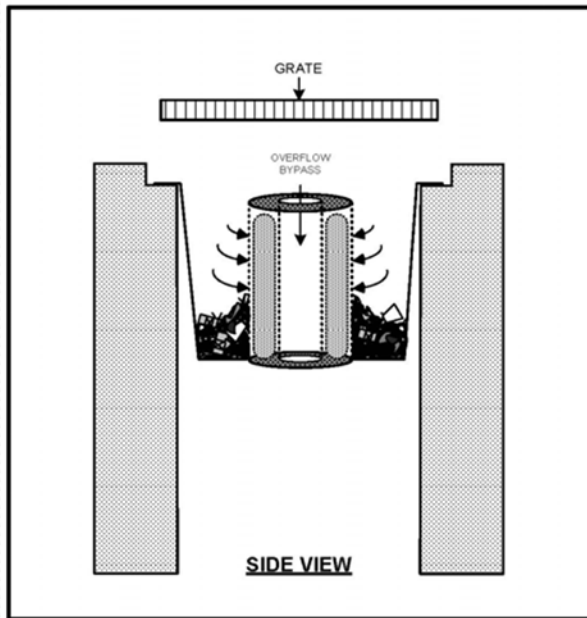
- Installation of trash capture devices in storm drains
 - where safe (no flooding)
 - feasible (engineering review of drainage, 'slope/fall' in system),
 - cost effective (initial cost and ongoing maintenance)
 - screening requirement of 5mm



Hydrodynamic Separator

Trash Capture (cont.)

Top Hats/Drop Inlets



Trash Capture (cont.)

Connector Pipe Screen



Trash Capture (cont.)

Trash Nets



Trash Capture (cont.)

Trash Boom



Partial (not full) Trash Capture

Automatic Retractable Screen

- 💧 Blocks trash from entering
- 💧 Street sweeper collects trash
- 💧 Can reduce amount of trash that continues to trash capture system below



Other Trash Requirements (c.10) in MRP 2.0

Municipalities need to :

- Complete mapping of stormdrain systems, if not already completed
- Locate private properties >10,000 ft² that drain to MS₄
- Private properties with moderate, high or very high trash will need to install full trash capture

Other Trash Requirements (c.10) in MRP 2.0

- Some companies have systems installed
 - Be aware of these systems
 - Let stormwater programs know where they are installed in the MS4
 - Understand their purpose and use

Other Stormwater Trash Discharges

- 💧 Illegal dumping to creeks
- 💧 Homeless encampments
- 💧 Municipalities can receive credit for cleaning under some circumstances



Stormwater Inspections

- 💧 Trash is a pollutant
- 💧 Trash needs to be picked up regularly and managed appropriately
- 💧 Thank you for helping to educate people!
- 💧 Record information so problem areas can be identified and followed up on



Enforcement Levels

Levels of Enforcement

General: If a potential or actual stormwater discharge, correct within 10 days or the next rain event.

💧 Potential Discharge – **Level 1**

- 💧 Notice to Comply, correct problems

💧 Actual Violation – **Level 2**

- 💧 Notice of Violation – immediately abate

Enforcement Levels (cont.)

Levels of Enforcement (cont.)

- 💧 Significant Discharge - History of Discharge or Violation, - Cost Recovery **Level 3**
- 💧 Significant Discharge with threat to Human Health - History of Discharge or Violation, State Agency or District Attorney involved- **Level 4**

Municipal Stormwater Documentation for Annual Report

- Inspection Results at Industrial/Commercial facilities (C.4)
- Regular Maintenance of Stormdrain Systems and Trash Capture Devices (catch basin, ditch cleanouts, trash rack cleaning) (C.2, C.10)
- Direct trash discharges (dumping, homeless) (C.10)

All this trash...

What can we do as individuals?

Use Less!

- Buy items made from recycled materials
- Buy items with less packaging (particularly plastic and styrofoam)
- Reduce use of disposable items (bring your own cup, bag, container)
- Recycle and compost



Goals

- 💧 Awareness

- 💧 Prevention of pollutants to waterways

- 💧 Clean water for all to enjoy!



Contact Information

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