



"Talkin' Trash"

for Stormwater Inspectors

by

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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



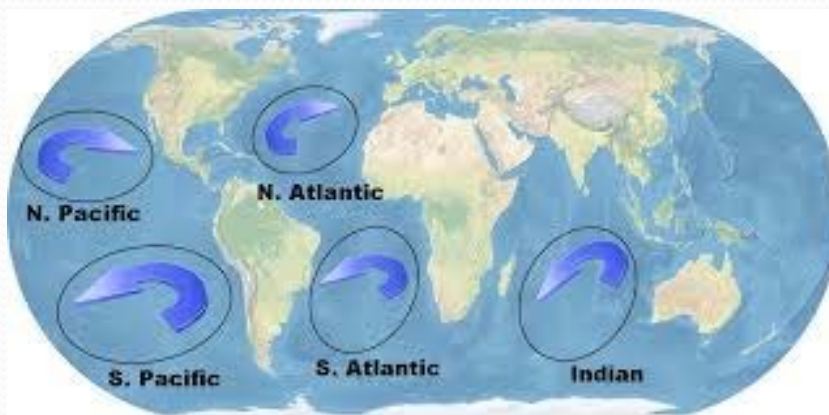
Water – Why do we care?

- 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

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

Scavenging

Near fast food
or convenience
stores

At outdoor
events

Illegal
encampments

**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?



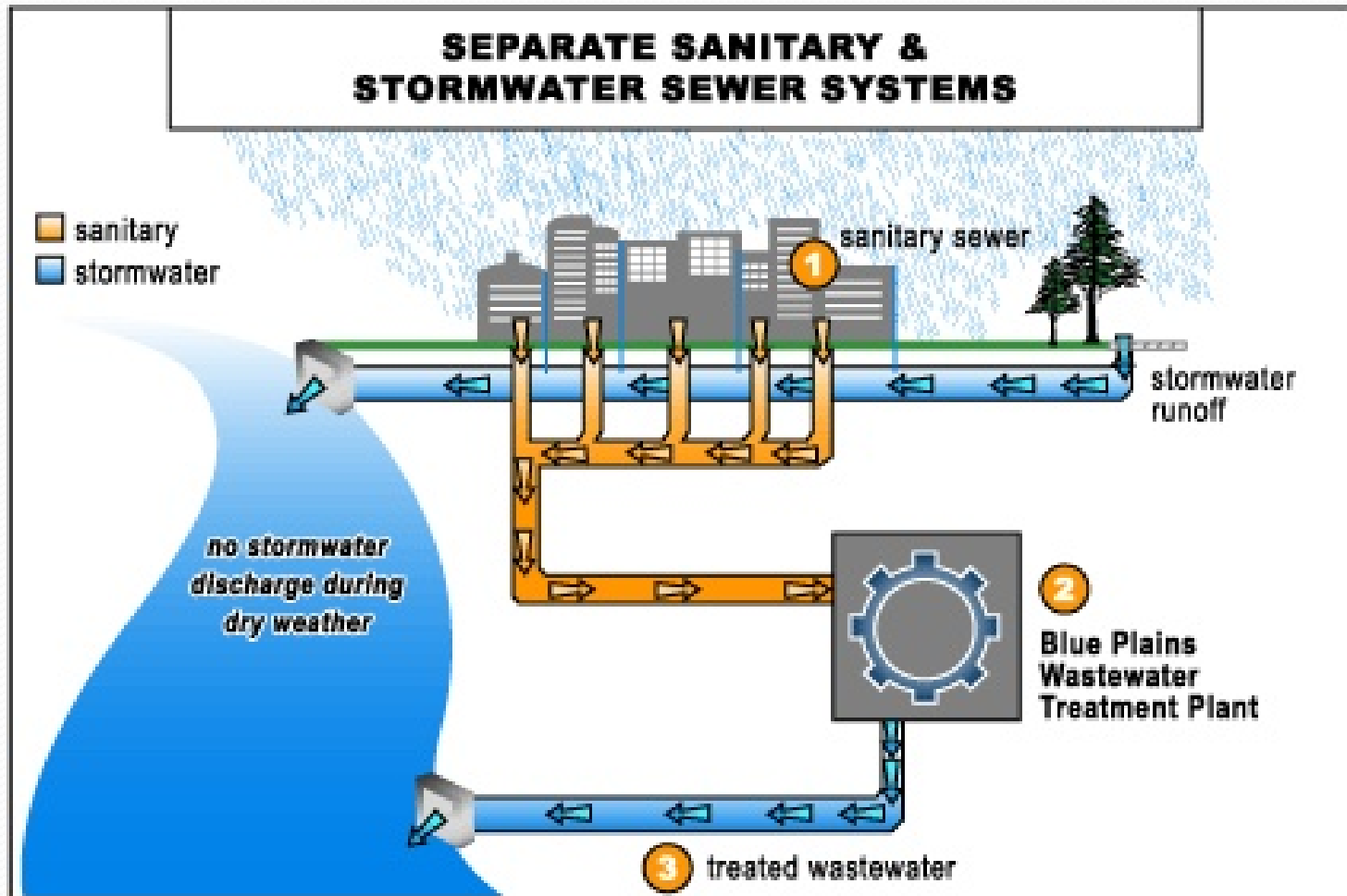
...even when there is water

💧 Rain water



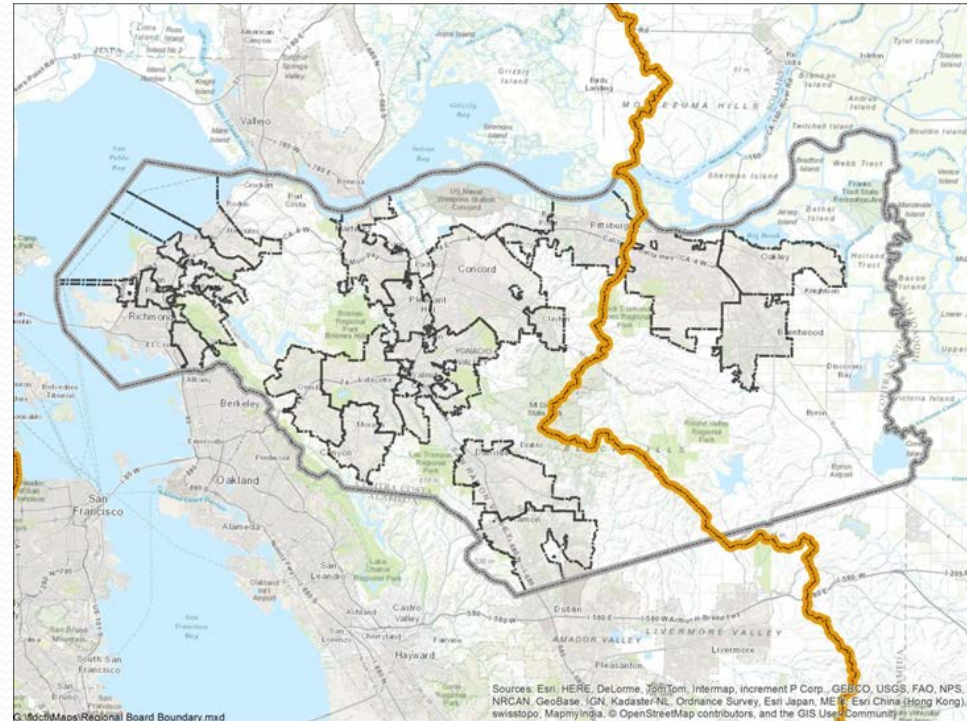
Sanitary vs. Storm “Sewer”

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

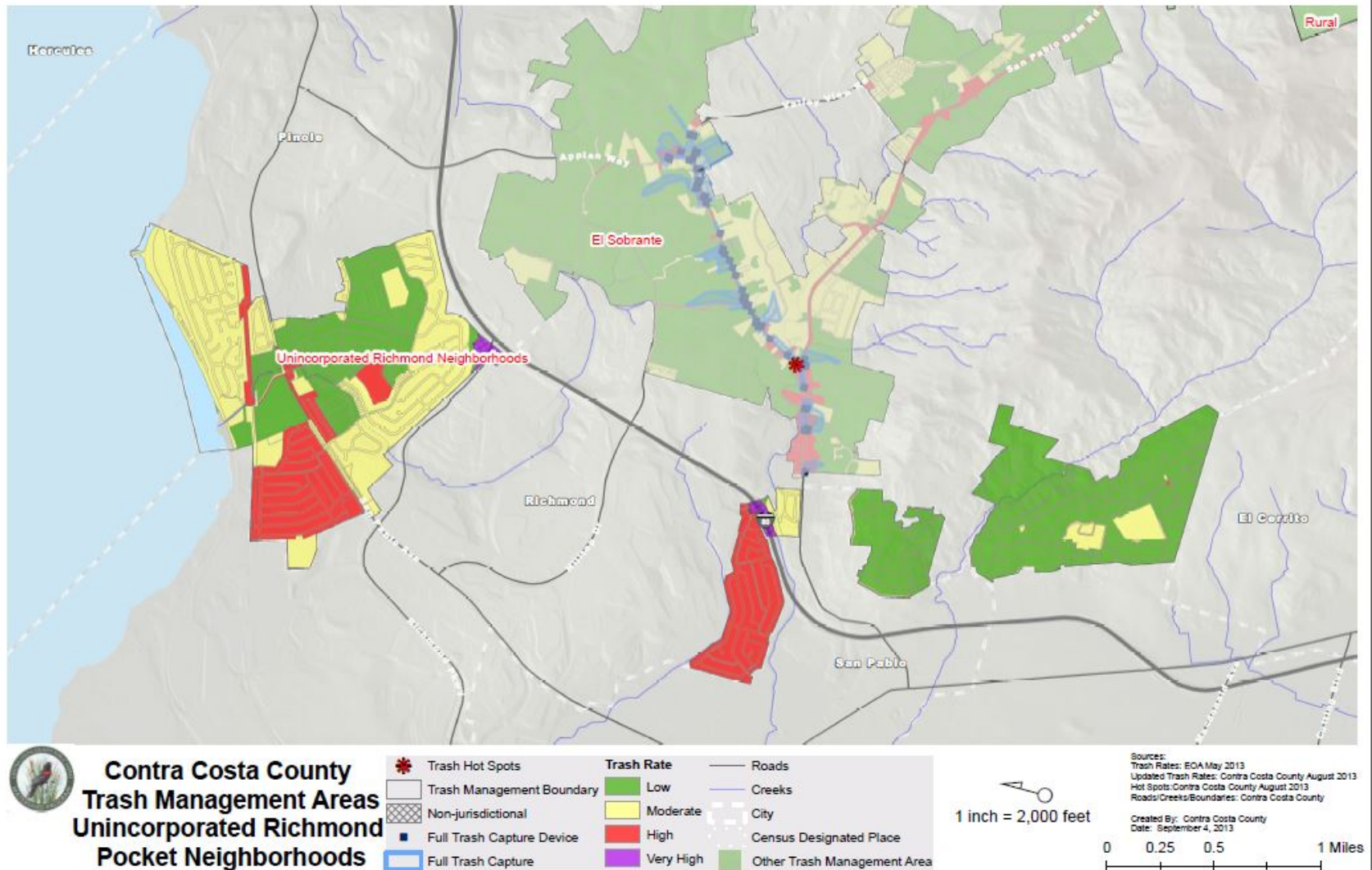
- ◆ New Permit was Effective January 1, 2016
- ◆ Stormwater Permit Provisions include:
 - ◆ Municipal Operations (C.2) (includes street sweeping)
 - ◆ Industrial and Commercial facilities inspections (C.4)
 - ◆ Illicit Discharges (C.5)
 - ◆ *Trash Reduction (C.10)*
 - ◆ Public Outreach/Education (C.7)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

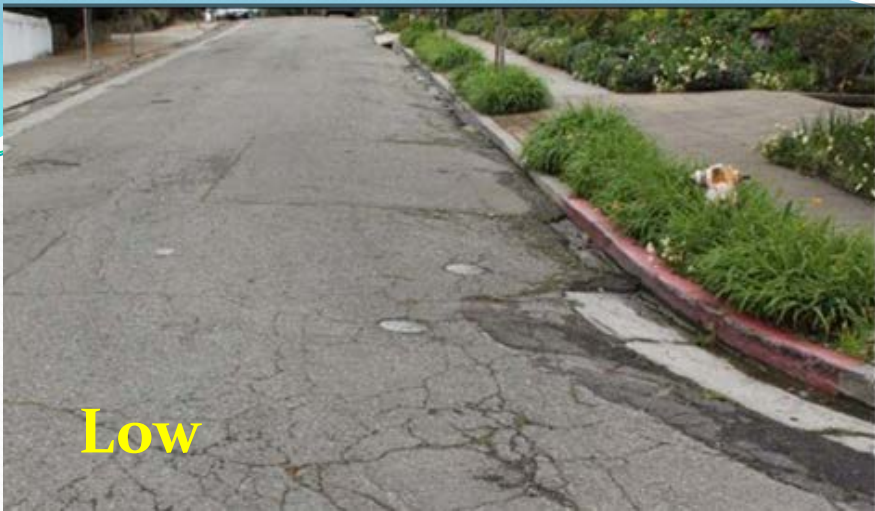
Trash/Litter

- 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

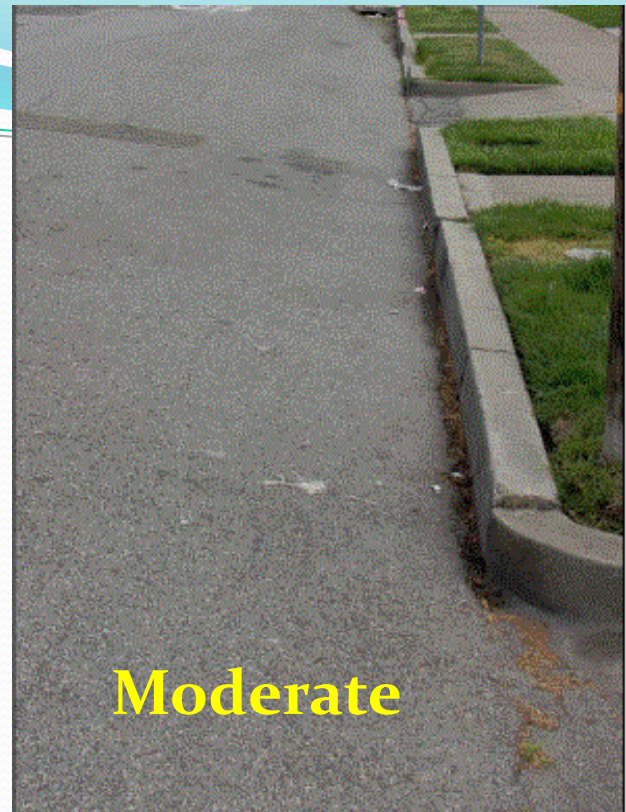
Long-Term Litter Reduction

1. Mapped the baseline trash level by community





Low



Moderate



High

Visual Trash Levels



Very High

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.)

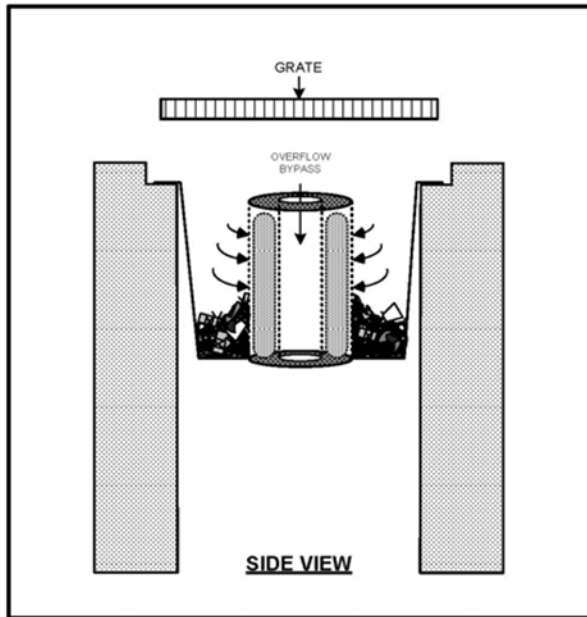
- Installation of trash capture devices in storm drains
 - where safe (no flooding)
 - feasible (engineering review of drainage, 'slope/fall' in system),
 - cost effective (initial cost and ongoing maintenance)
 - screening requirement of 5mm



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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