

#### Municipal Storm Water 2024-25 Annual Training

SAN DIEGO COUNTY OFFICE OF EDUCATION SEPTEMBER 19, 2024





Training Sign-in sheet and Certificates: <a href="https://form.jotform.com/242605927295161">https://form.jotform.com/242605927295161</a>

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#### Agenda

#### **Current Events**

- Small MS4 Permitting
- Regulatory Focus
- Weather

#### Intro to Storm Water

#### **SWMP Implementation**

- Training and Outreach
- Good Housekeeping
- Grounds Maintenance
- Inspections and Maintenance
- Record Keeping
- Planning and Development

Structural BMP Spotlight

# Current Events

## Small MS4 Permitting

#### **Current informal draft removed Schools designation**

Public process ongoing, NGOs and other involved parties likely to comment. Final version may have more indication of future plans

 <u>https://www.waterboards.ca.gov/water\_issues/programs/stormwater/phase</u> <u>ii\_municipal.html</u>

#### 1. FACILITY INFORMATION AND SCOPE OF ORDER

This Order serves as a National Pollutant Discharge Elimination System (NPDES) permit that regulates stormwater and conditionally exemptauthorized non-stormwater discharges to waters of the United States (U.S.) from small municipal separate storm sewer systems (MS4s-).

This Order provides the criteria for designating a small MS4 and the requirements for the following subsets of small MS4s:

<u>1.</u> Traditional Permittees<sub>72</sub>

<u>2.</u>Non-Traditional Permittees, and.

K-12 School Permittees.

## Small MS4 Permitting

#### What does this mean for our group?

- Continue to be good community partners
- Work with local municipalities to resolve potential concerns
  - Illicit discharges
  - Pollutant tracking
  - Litter sources
- Continue to set goals and maintain existing investments
  - Looking into universal planning guidance document to align with new Permit requirements where applicable.

## **Regulatory Focus**

#### Some additional attention on sewer systems (overflows = bacteria in the waterway)

- Pipe-blocking substances control (kitchens)
- Sewer lateral maintenance
- Septic pumping and maintenance
- Spill Response

#### **County Septic Pumping Rebate Program**

- Still ongoing for unincorporated County areas
- \$100 per parcel toward pumping cost
- Eligible every 3 years
- Must be pre-approved BEFORE pumping
- <u>https://www.sandiegocounty.gov/content/sdc/dpw/watersheds/RebatesInce</u> <u>ntives/SRP.html</u>

#### Weather Patterns

#### La Niña is favored (71% chance) and is expected to persist through January-March 2025.

A weaker La Niña implies that it should be a bit drier than average)



#### Weather Patterns

#### Less rain management

- Ensure housekeeping BMPs stay on top of pollutant accumulation points (swales, gutters, behind backstops)
- Ensure vegetated areasparticularly slopes- are irrigated if needed for plant survival
- Utilize the potential reprieve in resource allocation to pursue long-term projects



#### https://projectcleanwater.org/watersheds/





>Watersheds are managed by all municipalities who share jurisdiction

They have worked together to develop Water Quality Improvement Plans, listing specific efforts to reach water quality goals

Individual waterbodies (e.g., stream, lake, lagoon) have specific goals based on their **beneficial uses**, detailed in the SD Basin Plan

Inland Surface Waters <sup>1,2</sup>	Hydrologic Unit Basin Number	Municipal and Domestic Supply	Agricultural Supply	Industrial Service Supply	Industrial Process Supply	Ground Water Recharge	Freshwater Replenishment	Hydropower Generation	Contact Water Recreation	Non-contact Water Recreation	Preservation of Biological Habitats of Special Significance	Warm Freshwater Habitat	Cold Freshwater Habitat	Wildlife Habitat	Rare, Threatened, or Endangered Species	Spawning, Reproduction, and/or Early Development
Moonlight Creek	4.51	X	Y						Υ	Y		Y		Y		
San Marcos Creek Watershed																
Batiquitos Lagoon <sup>4</sup>	4.51															
San Marcos Creek	4.52	X	Υ						Υ	Y		Υ		Y		
unnamed intermittent streams	4.53	X	Y						Y	Y		Y		Y		
San Marcos Creek	4.51	X	Y						Υ	Y		Y		Y		
Encinitas Creek	4.51	X	Y						Υ	Y		Y		Y		

#### **Beneficial uses include:**

- Contact/Non-contact Recreation
- Municipal, Agricultural, Industrial Supply
- Habitat (Marine, estuarine, endangered species, wildlife, etc.)
- Migration
- Spawning
- Navigation
- Hydropower
- Commercial and Sport Fishing
- Aquaculture, Shellfish Harvesting



Regulations are intended to protect the **beneficial uses** of all waters of the United States To continue using waters in the ways we want to, pollutants need to remain below a specified level



For example, to use a waterway for recreation or as a drinking water source, bacteria levels need to stay low enough not to make people sick Or to use a waterway for aquatic species habitat, dirt and heavy metal levels need to stay low enough that species can survive and thrive





Runoff to the storm drain system does not receive treatment prior to discharge ONLY clean rain water is permitted to enter the storm drain system, with few exceptions



Pollutants that have negative effects on beneficial uses (and therefore must be prevented from entering waterbodies) include:

- Bacteria (food waste, decomposing organic waste, fecal material)
- Organic wastes (leaves, grass)
- Trash (solid waste)
- Dirt
- Heavy Metals
- Oils
- Soaps



Pollutants associated with general/municipal activities (residential, commercial, municipal operations, etc.) are regulated by Municipal General Permits (Region-specific)

Pollutants associated with construction activities are regulated by the Construction General Permit (Statewide)

Pollutants associated with industrial activities are regulated by the Industrial General Permit (Statewide)

• Transportation with maintenance, fueling, or washing



# SWMP Implementation

- Training and Outreach
- Good Housekeeping
- Grounds Maintenance
- Inspections and Maintenance

- Planning and Development
- Record Keeping

### Training & Outreach

Annual (at minimum) training for custodial, maintenance, facilities, and operations staff.

Feedback collected on student education

Feedback collected on student/staff participation (clubs, cleanups, etc.)



Routine upkeep, annual audit and thorough maintenance of:

- Municipal operations yards / Storage areas
- Parking lots
- Dumpster areas
- Lunch areas, general campus
- Hotspots (agriculture programs, community gardens, pools, auto shops, arts, etc.)







Use dry methods where possible

- Vacuum-assisted sweeping is best
- Manual sweeping
- Leaf blowers have limited benefit (dust redistribution, difficult to control debris, debris often not collected, heavier sediments not removed)

Where wet cleaning is needed, contain and collect all waste water

- Mop and bucket/rags/spot cleaning rather than using hose
- Steam cleaning may redistribute oils and does not remove pollutants without recollection
- Hydrojetting, pressure washing: create collection point and recollect ALL water and waste

#### **Illicit Discharge Prevention**

Facilitate correct activities

- Ensure mop sinks are accessible
- Provide drain covers for use during outdoor cleaning
- Restrict access to hoses (keyed hose bibs)
- Plumb AC lines to sewer or landscape

#### Ensure vendors are employing appropriate BMPs

- Contract language
- Activity audits
- Look for evidence of past discharges as well as active flows

#### Leak audits

• Water meter checks



#### Spill & Leak Response

Minimize spills/leaks

 Conduct activities within indoor or contained areas

Stock spill kit materials

- Clay absorbent
- Mats
- Mops



#### Spill & Leak Response

Train spill and leak response personnel

- 1. Identify and abate flow
- 2. Protect nearby discharge points as-needed
  - Cover with mat
  - Deploy sandbags or boom
- 3. Remove spilled substance
  - Absorb
  - Vacuum
- 4. Repeat/reapply as-needed until all residue removed
- 5. Properly dispose of spent spill kit materials
  - > trace amounts of hazardous materials require special disposal
- 6. Restock spill kit as-needed





#### **Material Handling and Waste Management**

Regularly clean and maintain dumpster enclosures

Permanent cover and berms recommended

Cover and/or contain all materials and wastes that may contribute pollutants

- Hazardous materials (toxic, reactive, corrosive, ignitable)
- Treated wood
- Galvanized or rusty metal
- Automotive components

Liquids ≥1gallon in secondary containment (110% of largest container or 50% of total volume, whichever is greater)





#### Material Handling and Waste Management

Divert run-on away from wastes/materials/work areas

- Downspout extenders
- Sandbags

Observe and clean outdoor containers and equipment

- Drums, dumpsters, trash cans, etc. free of residues, rust, dirt, debris and in good condition
- Cleaning/collection equipment (shovels, brooms, drip pans, billy goats, vacuums)

### Grounds Maintenance

Routine upkeep, annual audit and thorough maintenance of:

- Erosive slopes
- Stabilize unpaved areas
- Irrigation systems (free of overspray/leaks)
- Weed/Pest Control practices (Integrated Pest Management (IPM), minimize chemical use)





### Inspections & Maintenance

#### **Storm Drain system**

Annually (at minimum) inspect/clean inlets, gutters, brow ditches Identify/eliminate discharges (active or evidence of past) Structural BMPs (vegetated swales, detention basins, inlet filters, etc.) Refer to maintenance requirements listed in development documents

### Inspections & Maintenance

#### **Construction/Maintenance Projects**

Minor: Spot check BMPs for staff/contractors during activities

- Painting (washout area)
- Drywall (dust)
- Concrete work (washouts, hosing, cutting)
- Landscaping (sprinkler placement, maintenance considerations)
- Digging up utilities
- Plumbing
- Fire sprinkler testing

Major: Inspect for adherence to SWPPP/Construction Permit

### Inspections & Maintenance

#### **Preventative Maintenance**

Identify/observe all equipment and systems used outdoors that may spill or leak pollutants

- Vehicles
- Equipment
  - Pool filtration systems
  - Hydraulic lifts
  - Hydroponic systems

Establish maintenance schedules

Train school site staff

Establish repair procedures



### Record Keeping

Training logs retained

Work Orders (for program activities) tagged as storm water-related or otherwise logged for future reporting as-needed

Inventories/maps for structural BMPs and other drainage features maintained

Complete Questionnaire for Annual Reporting in June:

• <u>SWMP Annual Reporting Form</u> <u>Link</u>



## Planning & Development

Include Storm Water language in contracts

Consider Low Impact Development concepts and include where feasible (Direct runoff to landscaping, reduce paved area, etc.)

Include cover/containment for storage and activity areas where feasible





### Planning & Development

Hotspot areas considered for improvement as an add-on or by rearranging site plans where feasible (Repurposing covered areas, relocating activities to spaces that drain to landscaping, etc.)

Coordination with planning staff to ensure a seamless transition for postconstruction maintenance (receive all drainage and structural BMP plans and record the frequency and type of maintenance needed)





### Intermission

Please enter any outstanding questions in the chat



# Structural BMPs Spotlight

### What is a Structural BMP?

Facilities that help to prevent pollutants in storm water runoff from leaving a developed property, entering our storm drains, and impacting our local waterways

All S-BMPs require regular inspection and maintenance to ensure that they are operating effectively



#### Your Structural BMP

county of san diego

#### INFORMATION GUIDE

Development projects replace natural landscapes with man-made structures like driveways, parking lots, and buildings. Unlike natural landscapes capable of absorbing rain water, new hardscapes associated with development generate increased amounts of storm water runoff.

This runoff can carry pollutants such as trash, fertilizers, pesticides, and sediment into our nearby creeks, rivers, and ocean. To reduce the negative impact storm water runoff can have on our local waterways, certain developed properties are required to maintain structural best management practices, or "structural BMPs".

To help property owners understand their responsibilities related to structural BMPs, the County of San Diego's Watershed Protection Program has created this informational guide to answer questions you may have.







Vegetated BMI

### How do you know you have S-BMPs?

Properties with S-BMPs have a SQWMP associated with the property and grading plans showing S-BMP types and locations

During annual site visits, we look for S-BMPs onsite and ask check for any maintenance deficiencies



#### Your Structural BMP

#### INFORMATION GUIDE

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Vegetated BMI

## Types of Structural BMPs

Vegetated BMPs

Infiltration BMPs

**Detention BMPs** 

Hydrodynamic separators (CDS units)

Drain inserts

Cisterns and underground vaults

**Biofiltration BMPs** 





## Vegetated BMPs

Include:

- Vegetated swales
- Biofiltration basins (w/o HMP)
- Buffer strips
- Flow-thru planters

Filter stormwater using vegetation

Remove pollutants from stormwater runoff

Slow down runoff and allow to infiltrate slowly

Prevents erosion and captures pollutants within soil

Typically graded to encourage runoff to gather at low point



### Vegetated BMPs

Maintenance requirements

- Remove any debris/litter accumulation
- Grading adjustments if not draining properly
- Trim overgrown vegetation
- Remove sediment deposits covering vegetation
- Remove any obstructions to discharge points
- Revegetation as needed
- Adequate rip rap/energy dissipation





vegetated BMPs

Stormwater Structural Best Management Practices (BMPs) are installed on certain properties across the County in order to help prevent pollutants such as trash, fertilizers, pesticides, and sediment from making their way into storm drains and ultimately to our local creeks, rivers, and ocean. Your property is one of hundreds across the County with at least one BMP.

### Vegetated BMPs Examples













### Infiltration BMPs

#### Include:

- Trenches
- Rock swales
- Gravel-filled areas
- Permeable pavement

Divert stormwater to areas where water can percolate

Remove pollutants from stormwater runoff

Slow down and direct runoff, reducing discharges to MS4

Dry except during heavy rain periods





#### infiltration BMPs

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### Infiltration BMPs

Maintenance requirements

- Remove any debris/litter accumulation
- Trim overgrown vegetation
- Replace mulch that has washed away or deteriorated
- Flush out/vacuum fine sediment settled in permeable pavement areas
  - 2x per year is the recommendation
- Repair or replace damaged segments of the BMP





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#### Infiltration BMPs Examples













#### **Detention BMPs**

Include:

- Wet ponds
- Detention basins

Protects against flooding

Holding place for stormwater runoff prior to discharge

While stationary, the pollutants in the runoff settle to the floor and remaining water is slowly discharge to storm drain system

Dry except during heavy rain periods





#### detention BMPs -

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### **Detention BMPs**

#### Maintenance:

- Remove any litter or debris
- Trim overgrown vegetation prior to the wet season
- Fill holes where water can stand for longer than 96 hours
- Repair eroded areas on basin floors and slopes
- Do not obstruct any existing curb cuts or divert flow away from the BMP

Should be dry unless there was recent rain < 96 hours





detention BMPs

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#### **Detention BMPs Examples**









# Biofiltration BMPs (w/HMP)

Biofiltration basins/areas w/low flow orifice

Combo of detention basin and vegetated BMP

Protects from flooding/allows runoff to exit site slowly

Pollutants settle to bottom and discharge via flow control (low-flow orifice)





#### Biofiltration BMPs with Hydromodification Management Plan (HMP)

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# Biofiltration BMPs (w/HMP)

#### Maintenance:

- Check for downstream erosion
- Confirm endcap/orifice plate installed
- Trim overgrown vegetation
- Replace vegetated ground cover or mulch that has washed away or deteriorated
- Fill holes where water can stand for longer than 96 hours
- Inspect riser to ensure basin does not have any standing water





#### 

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Orifice Size Being Measured



### Hydrodynamic Separators

Underground vortex system that separates unwanted pollutants/trash from water prior to discharge

Some are designed for specific pollutants (ex. oil)

Maintenance required

- Removal of trash, sediment, etc. from sump
- Removing any blockages
- Use tubing system to measure sediment
- Under manhole or cover of some sort





#### hydrodynamic separators

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#### Hydrodynamic Separators









### Vaults

Maintenance requirements

- Accessed through port/manhole
- Underground system
- Check for sediment build up
- Vaults hold runoff for long periods of time
  - Runoff infiltrates soil underground



at least one BMP.







#### How Your Underground Vault Works

Your property is one of hundreds across the County with

Underground Vaults (see figure 2) provide similar benefits, with the added benefit of capturing pollutants through infiltration. Some amount of runoff captured in an underground vault will infiltrate into the surrounding soil, reducing the amount of pollutants discharged to the nearby storm drain system.

### Drain Insert BMPs

Include:

- Curb inlet filters
- Drain filter inserts
- Filters can use baskets, mesh, filter bags, etc.

Capture trash and debris before they can enter the storm drain system

Can include different filter bags/media to capture other pollutants



### Drain Insert BMPs

#### Maintenance

- Remove any accumulated litter or debris.
- Have a properly trained contractor replace any damaged components of the BMP, including any worn filter fabric.
- If your insert uses sorbent materials, contact a properly trained contractor to replace them (when needed). Capture trash and debris before they can enter the storm drain system

Holes or > 50% accumulation = maintenance required





drain inserts

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#### Drain Insert BMPs



Drain filter insert



Curb inlet basket filters

#### Drain Insert BMPs Examples



### Modular Wetland BMPs

BioClean Modular Wetland Systems

Filtration system using vegetation, media and filters to remove pollutants from runoff





### Modular Wetland BMPs

Look for any obstructions of inflow or outflow pipes

Estimate amount of trash and sediment accumulation

Can use tape measurer or tube system to est. sediment depth







#### S-BMP Resources

County of San Diego Watershed Protection Program

- <u>https://www.sandiegocounty.gov/content/sdc/dpw/watersheds/Developmenta</u> <u>ndConstruction/S-BMPs/</u>
- S-BMP Maintenance guides/fact sheets: <u>https://www.sandiegocounty.gov/content/sdc/dpw/watersheds/Resources/#structural</u>
- California-Friendly Vegetation Fact Sheet: <u>https://www.sandiegocounty.gov/content/dam/sdc/dpw/WATERSHED\_PROTECT</u> <u>ION\_PROGRAM/watershedpdf/S-BMP/CA\_Friendly\_Vegetation.pdf</u>

Project Clean Water

S-BMP Type Fact Sheets: <u>https://projectcleanwater.org/document/bmp-maintenance-fact-sheets-20170112/</u>



#### Questions & Contacts

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