


Best Management Practices for Storm Drain System Operation and Maintenance




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Discussion Topics

- I. Background
- II. Routine Inspection and Cleaning
- III. Solid Waste Management Practices
- IV. Emergency Operations
- V. Record Keeping and Evaluation
- VI. Staff/Contractor Training and Coordination





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Background

What is Non-point Source Pollution?

- Storm water runoff from streets, parking lots, parks, building roofs and other impermeable surfaces
- Storm water (or anything else) in drain systems
- Agricultural runoff
- Sediment deposited in creeks, streams and other water bodies




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Background

Pollutants in Urban Runoff


- Pesticides and herbicides
- Sediment
- Nutrients
- Bacteria and viruses
- Oxygen-demanding substances
- Petroleum-based products
- Heavy metals
- Other toxic materials


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Background

Stormwater Regulations and Agencies

- Federal – Environmental Protection Agency
- California – State and Regional Water Quality Control Boards
- Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP)
- Local Program





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Background

Why Care About Runoff?

- Storm water discharges are untreated
- Storm drains discharge to local creeks and the Bay
- Pollutants are harmful to vegetation and aquatic life



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Background

Methods to Reduce Urban Runoff

- Best Management Practices
 - Source Control
 - Pollution Prevention
- Standard Operating Procedures
- Control Measures

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Routine Inspection and Cleaning

- Inspect and clean (as necessary) storm drainage facilities.
- Storm drain facilities include, but are not limited to:
 - Inlets/Catch Basins
 - Storm drain lines
 - Sumps and debris racks at pump stations
 - Detention basins
 - Drainage ditches
 - Debris basins

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Routine Inspection and Cleaning

General Considerations

- Remove the maximum amount of debris, silt, trash and sediment at the nearest access point.
- Routine activities may occur on a year-round basis.



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Routine Inspection and Cleaning

General Considerations (cont'd)

- Clean known problem areas prior to the wet season.
- Report illicit connections and illegal discharges.
- Inspect and clean (as necessary) all storm drain facilities affected by emergency response activities.

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Routine Inspection and Cleaning

Co-permittees should implement Tier 1 or Tier 2.



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Routine Inspection and Cleaning – Tier 1

Inspect and Clean (as necessary):

- Inlets/Catch Basins
 - At least once every other year (50% of entire system each year).
 - Known problem areas at least once a year.




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Routine Inspection and Cleaning – Tier 1

Inspect and Clean (as necessary):

- Storm Drain Lines
 - Known problem areas at least once a year.





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Routine Inspection and Cleaning – Tier 1

Inspect and Clean (as necessary):

- Sump and Debris Racks located at:
 - Pump stations, detention basins, drainage basins and debris basins
 - Conduct throughout the year





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Routine Inspection and Cleaning – Tier 2

Inspect and Clean (as necessary):

- Inlets/Catch Basins
 - At least once a year.
 - Known problem areas more than once a year.





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Routine Inspection and Cleaning – Tier 2

Inspect and Clean (as necessary):

- Storm Drain Lines
 - Known problem areas more than once a year.





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Routine Inspection and Cleaning – Tier 2

Inspect and Clean (as necessary):

- Sump and Debris Racks located at:
 - Pump stations, detention basins, drainage basins and debris basins.
 - Conduct throughout the year.



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Solid Waste Management Practices




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Solid Waste Management Practices


- Remove the maximum amount of debris, silt, trash and sediment.
- Prevent debris from washing into streams or channels.



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Solid Waste Management Practices


- Provide proper containment for the temporary storage of removed debris.
- Store debris on concrete, asphalt or other type of impermeable surface.
- Dewater debris (as necessary) prior to disposal.
- Dewatering areas should not drain into storm drains or creeks.

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Emergency Operations


- Follow **Illicit Connection/Illegal Discharge Elimination Response Plan** during the following situations:
 - Plugged lines during storms
 - Sewage overflow and clean-up
 - Illegal dumping
 - Accidental spill control




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Record Keeping and Evaluation


- Maintain a storm drainage facility inspection and maintenance plan.
- Maintain records documenting all cleaning activities.
 - Record facility inspection type and cleaning dates.
 - Report the quantity or weight of material removed.
 - Document and track spill and illegal dumping incidents and responses.



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Record Keeping and Evaluation


- Document unusual flows observed during inspections (particularly dry weather flows) and follow-up actions/referrals.
- Identify and document known problem areas ("Hot Spots").
 - Describe remedies taken to address these areas.

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Record Keeping and Evaluation

- Annually review records to determine program effectiveness.
- Effectiveness is evaluated by:
 - Successfully completing storm drain facility inspection and maintenance plan (including documentation)
 - Identifying and correcting problems
 - Amount of sediment and debris removed
- Modify storm drain O&M activities in annual work plan.



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Staff/Contractor Training and Coordination

- Conduct storm drain O&M in accordance with Performance Standard.
- Ensure contractors employ appropriate BMPs.
- Follow-up emergency response investigations and enforcement.
- Attend annual training emphasizing the control of storm water pollution through storm drain O&M.

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Conclusion

- Maintain all storm drainage facilities based on pre-approved plans.
- Conduct regular inspections and clean as needed.
- Properly dispose of collected debris.
- Record all maintenance, cleaning, hot spots and illegal dumping incidents.
- Follow IC/ID response plan when illegal dumping is observed.



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