

**Illegal Discharges/Illicit  
Connections Program  
Sewage Spill Response Training**

**Module B-10.III  
(Revised March 2004)**

**Audience: Authorized Inspectors  
and Sewage Agency Personnel  
Time: 1 ½ hours**

**OCSD Sanitary Sewer Overflow  
Demonstration Facility**

- Facility available
  - Responders
  - Public Works crews
- Contact Nick Arhontes
  - (714) 593-7210
  - narhontes@ocsd.com



**Classroom Outline**

- Introduction
- OC NPDES Stormwater Program
- OC Sewage Collection Program
- **Sewage Spill Response  
Procedures**
- Conclusions

**Training Program Goals**

Increase understanding of the stormwater and sanitation programs and the practices that should be implemented and coordinated when responding to and reporting sewage spills.

**Introduction**



**Water Resources are  
Crucial to Orange County**



Water provides recreation for Orange County residents.

It attracts tourists, boosting the local economy.



It is home to many types of wildlife.

Introduction

## Sources of Pollution

- Homes
- Businesses
- Construction sites
- Municipal facilities




**Spills/Overflows**

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Introduction

## It's Everyone's Responsibility

- Urban runoff and stormwater pollution is not just a coastal issue-it starts in all regions of the community and affects water quality from the mountains to the ocean.



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Introduction

## It's Your Responsibility

- Everyone must help to reduce urban runoff and stormwater pollution.
- This training will provide you with guidance to help you when responding to sanitary sewer overflows and help implement the Orange County Stormwater & Sewer Overflow Response Programs.

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## OC NPDES Stormwater Program

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Stormwater Program

## Clean Water Act

- **Objective**
  - "To restore and maintain the chemical, physical and biological integrity of the Nation's waters"
  - "Fishable"      "Swimmable"*
- **Permitting of Discharges**
  - The CWA established the National Pollutant Discharge Elimination System (NPDES) program to regulate discharges, including urban runoff and stormwater

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Stormwater Program

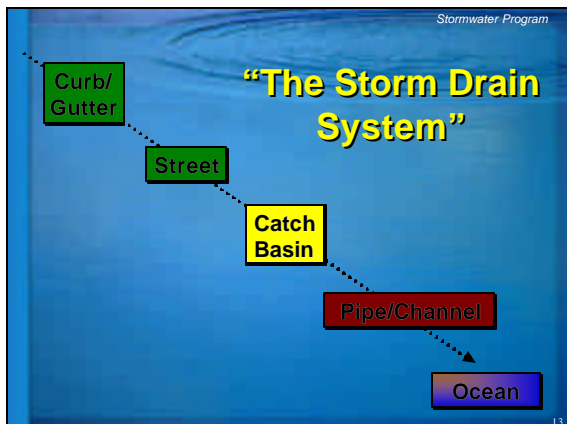
## OC NPDES Stormwater Permits

- **5 Year Permit Terms 2002-07**
  - Santa Ana Region  
Order No. R8-2002-0010  
January 18, 2002
  - San Diego Region  
Order No. R9-2002-0001  
February 13, 2002



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# SEWAGE SPILL RESPONSE TRAINING MODULE



Stormwater Program

## OC Storm Drain System

- > 370 miles "above ground" channels
- > 550 miles (>39") "below ground" pipes/channels
- >37,000 Catch Basins

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Stormwater Program

## OC NPDES Stormwater Program

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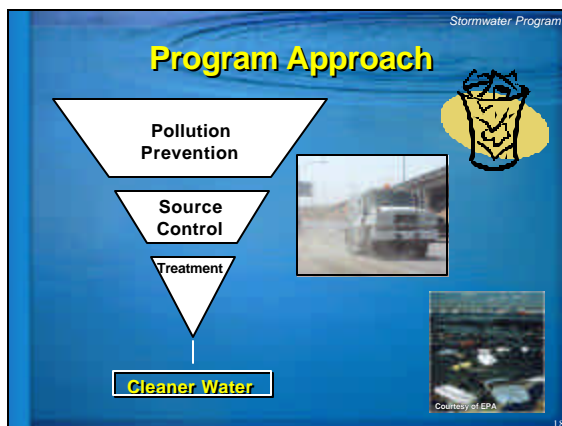
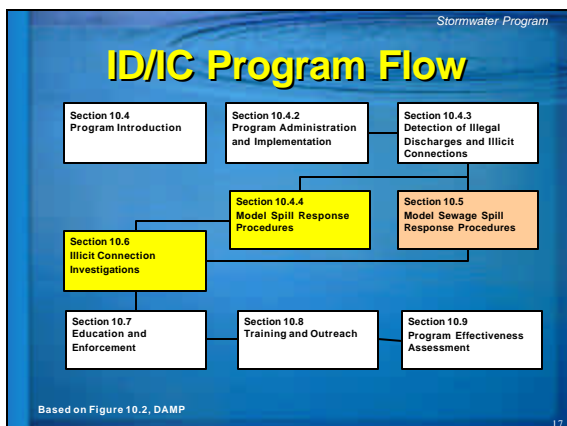
Stormwater Program

## Program Elements

DAMP - Model Programs  
Program history and model countywide programs

1. Introduction
2. Program Management
3. Plan Development
4. Legal Authority
5. Municipal Activities
6. Public Education
7. New Development
8. Construction
9. Existing Development
10. **Illegal Discharges/Illicit Connections**
11. Water Quality Monitoring - SDR/SAR
12. Watershed Chapters

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## OC Sewage Collection Agencies Program

Sewage Collection Agencies Program

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## Sanitary Sewer System

North OC	South OC
5,000 + miles of sewers and interceptors	1,700 + miles of sewers and interceptors
100+ pump stations	45+ pump stations
27 sewage collection agencies	10 sewage collection agencies

Sewage Collection Agencies Program

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Orange County Sanitation District (OCSD) Service Area

Orange County, California

Sewage Collection Agencies Program

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South Orange County Wastewater Authority Service Areas

Sewage Collection Agencies Program

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## Sanitary Sewer Collection System

“A wastewater collection system including sewers, pipes, pumps, or other conveyances that convey sewage wastewater to a sewage treatment plant”

Courtesy of OCSD

Sewage Collection Agencies Program

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## General Waste Discharge Requirements

- 5 Year Permit Term 2002-07
  - Santa Ana Region Order No. R8-2002-0014 April 26, 2002

Sewage Collection Agencies Program

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# SEWAGE SPILL RESPONSE TRAINING MODULE

Sewage Collection Agencies Program

## Sewer System Management Plan (SSMP)

- Goals
- Organization
- Legal Authority
- Measures and Activities
- Design and Performance
- Monitoring, Measurement and Modifications
- **Overflow Emergency Response Plan**
- Fats, Oils and Grease Control Program
- System Evaluation and Capacity Plan
- Audits
- Communications

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Sewage Collection Agencies Program

## Overflow Emergency Response Plan

- Identify response procedures
- Ensure proper response
- Ensure notification of other agencies
- Responder training
- Emergency operations
- Prevent discharges/contain sewage
- Identify response plan

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## Sewage Spill Response Introduction




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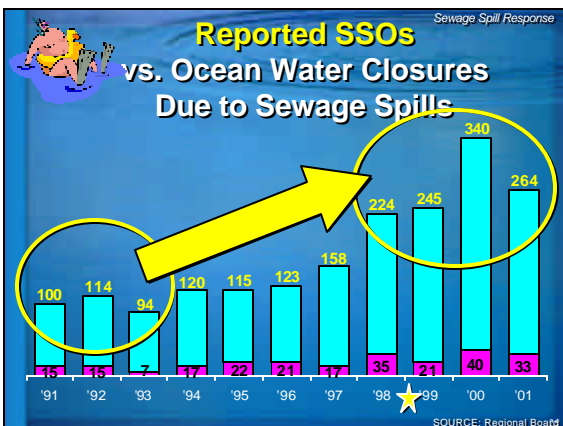
Sewage Spill Response

## Why So Much Attention?

- Impair public recreational use and aesthetic enjoyment of surface waters
- Exceedance of water quality standards
- Public health threat; bacteria and viruses
- Adverse affects on aquatic life



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Sewage Spill Response

## Good Ol' Days of SSO Response & Reporting

- Inconsistent Responses & Clean Ups
- Inconsistent Containment
- Inconsistent Calculations
- Inconsistent Reporting



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Sewage Spill Response

## Regulatory Response

Stormwater Agencies	Sewage Collection Agencies
<p>Area-wide Stormwater Permit</p> <p>“Permittees shall prohibit illicit/illegal discharges from entering into the municipal storm sewer system...”</p>	<p>General Waste Discharge Requirements (North OC)</p> <p>“The discharge of untreated sewage to any surface water stream, natural or manmade....is prohibited”</p> <p>“Discharger shall make every effort to contain sewage spilled....”</p>

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Sewage Spill Response

## Agency Responsibilities



**Sewer**



**Storm Drain**

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Sewage Spill Response

## Agency Response: Coordination

Response

Pre-Planning



Training

Other Programs

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Sewage Spill Response

## Tustin Area Spill Control Demonstration Project (TASC)

- Pre-staging materials
- Cooperative work with County of Orange
- GIS maps
- Procedures, agreements, studies






**For More Info: Duc Nguyen (714) 973-6690**

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Sewage Spill Response

## Model Sewage Spill Response Procedures




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# SEWAGE SPILL RESPONSE TRAINING MODULE

*Model Sewage Spill Response Procedures*

## Sewage Spills

- Discharge from sewer system or private property enters public right of way
- Large vs. Small (<1,000 gal)
- Sewage spill can be raw or treated wastewater
- Sewage spills constitute a prohibited discharge



Courtesy of OCSD

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*Model Sewage Spill Response Procedures*

## Types of Spills

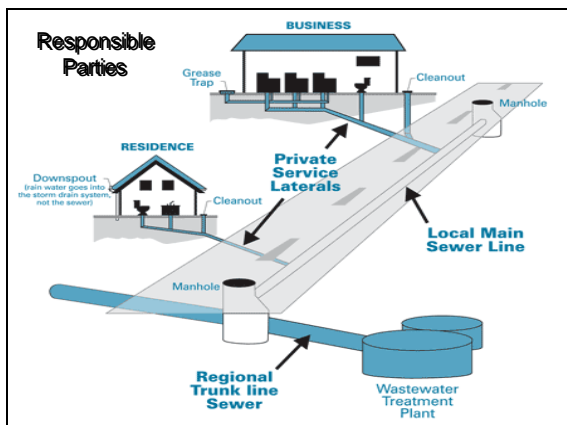


Courtesy of OCSD

6 gallons  
per minute spill

500 gallons  
per minute spill

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*Model Sewage Spill Response Procedures*

## New Focus on Response Procedures (Coordination)

```

    graph TD
      A[Record Keeping] --> B[Response Requests]
      B --> C[Response]
      C --> D[Investigations]
      D --> E[Reporting]
    
```

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*Model Sewage Spill Response Procedures*

## Response Procedures

```

    graph TD
      A[Record Keeping] --> B[Response Requests]
      B --> C[Response]
      C --> D[Investigations]
      D --> E[Reporting]
    
```

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*Model Sewage Spill Response Procedures*

## Record Keeping

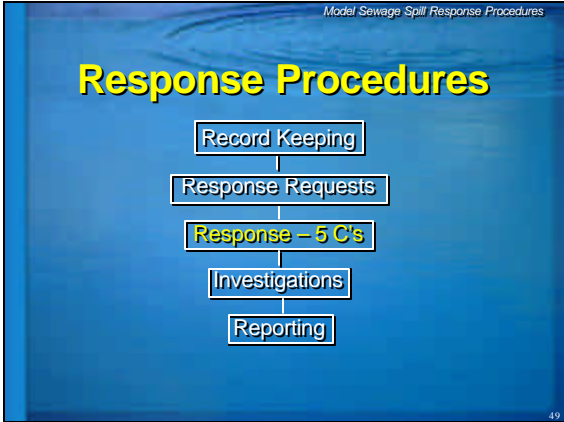
- Complete Report
  - w/photos
- Process documentation
- Update database
- Retain records 5 years



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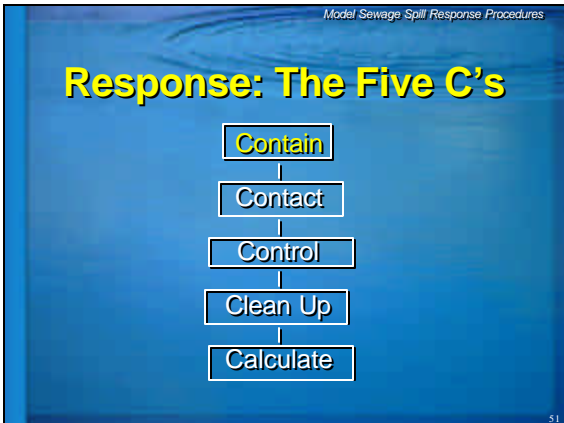
Model Sewage Spill Response Procedures

## Initial Steps

- Investigate as soon as possible
- Verify information
- Verify jurisdiction
- Determine cause
- Minimize impacts
- Avoid exposure
- Isolate area
- Deny entry
- Request assistance



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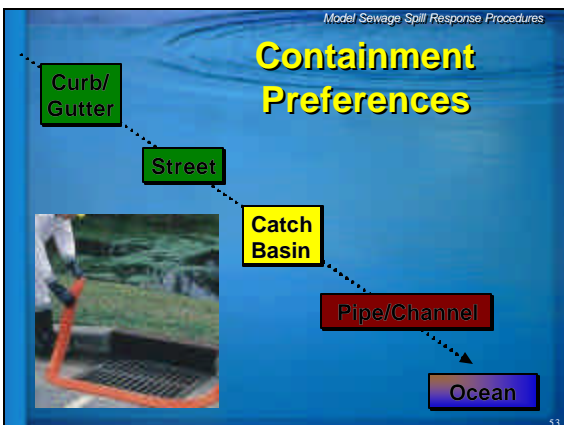


Model Sewage Spill Response Procedures

“Make every effort to prevent sewage from discharging from storm drains into flood control channels and open ditches”

Order R8-2002-0014 Section B.1


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Model Sewage Spill Response Procedures

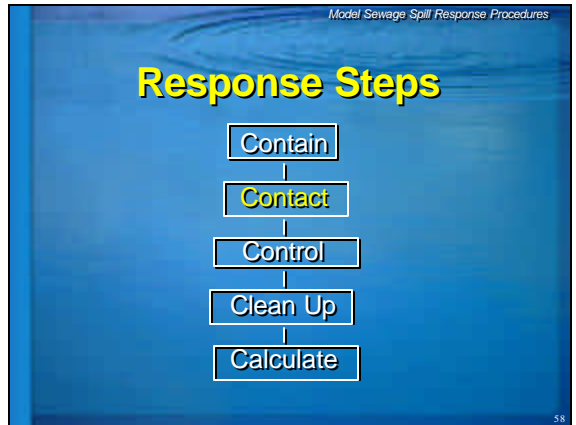
## Costs of Cleanup vs. Containment

- Release Prevention
  - Dike material (sand)
  - Absorbent booms/pads
  - Shut of water supply
- Street/Catch Basin
  - Pressure wash
  - Granular absorbent/sand
- Channels
  - Booms/pads
  - Vactor Trucks
  - Heavy Equipment
  - Containment Dam
  - Soil Removal



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# SEWAGE SPILL RESPONSE TRAINING MODULE



Model Sewage Spill Response Procedures

## Notifications

- Contact other local agencies
- Provide initial information
- Provide periodic updates

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Type of Spill	*Agency(s) to notify	Notification Timeframe	Report Timeframe
≥ 1,000 gallons (whether it does or does not enter a storm drain/flood channel)	RWQCB, OES, OCHCA	Immediate	5-day report required if responsible party (RP) also include in your 30-day monthly report
<1,000 gallons and does not enter a storm drain/flood channel	RWQCB, OCHCA	Immediate	30-day monthly report.
Any size SSO that enters a storm drain/flood control channel	RWQCB, OCHCA, **RDMD	Immediate	5-day report if you are RP Also include in 30-day monthly report
Private property caused SSO that entered a storm drain/flood channel	Governing city/county, OCHCA, **RDMD, RWQCB	Immediate	Include available information in the 30-day monthly report.
Private property caused SSO but did not enter a storm drain/flood channel	Governing city county, HCA, County of Orange Code Enforcement or **RDMD if owner is uncooperative	As soon as information is known	Not required by the permit, but should be included in monthly report.

# SEWAGE SPILL RESPONSE TRAINING MODULE

Normal Hours	After Hours
(1) OCHCA (714) 667-3600 <i>(Please call down the list in order until someone has been contacted)</i> (2) Monica Mazur (714) 667-3751, Pager (714) 834-PAGE 5210# (3) Larry Brenner (714) 667-3756 (4) Mike Fennessy (714) 667-3755 (5) Larry Honeybourne (714) 667-3750	Control 1(714) 628-7008
RWQCB - Santa Ana Region (909) 782-4130 Najah Amin (909) 320-6362	OES: (800) 852-7550
California State Office of Emergency Services (OES) (800) 852-7550	24 hours
Orange County Control 1 (714) 628-7008	24 hours
**Resources & Development Management Department (formally PFRD) (714) 567-6363 (storm drain/flood channel facility owners)	Control 1: (714) 628-7008
Caltrans (949) 724-2607	24 hours
California Highway Patrol (714) 567-6000	911

*Model Sewage Spill Response Procedures*

## Basic Notification Info

- Location
- Containment status
- Storm drain impacts
- Who is on site
- Volume estimate
- Callback information
- Who else was notified
- Start time/stop time for spill

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*Model Sewage Spill Response Procedures*

## Response Steps

Contain

↓

Contact

↓

Control

↓

Clean Up

↓


Calculate

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*Model Sewage Spill Response Procedures*

## Terminate the Discharge

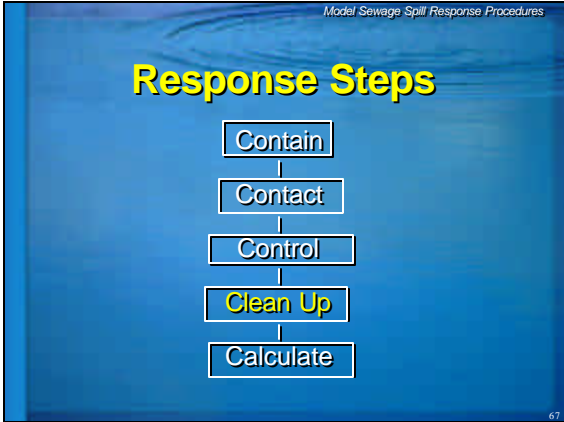
- Shutting off equipment or pumps
- Close valves
- Shut off water source
- Divert around discharge point
- Repair break
- Plug discharge point



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# SEWAGE SPILL RESPONSE TRAINING MODULE

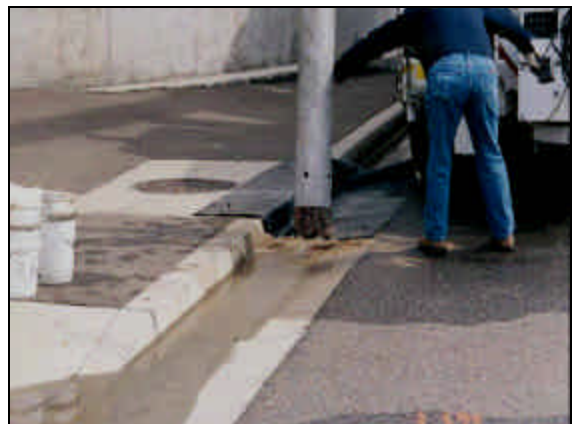


Model Sewage Spill Response Procedures

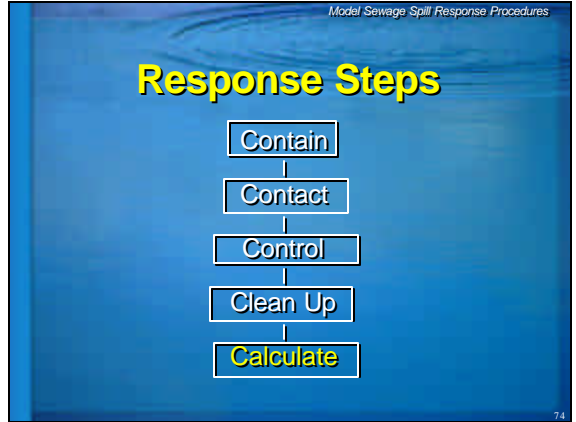
## Clean Up Procedures

- Coordinate
- Provide list of companies
  - Directions
  - Verify pollutant removal
- Document activities
- Document waste removal

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# SEWAGE SPILL RESPONSE TRAINING MODULE



Model Sewage Spill Response Procedures

## Calculate

Volumes can be based on ponded areas OR flow rates

- Orifice equations (used the most)
- Flow = Area x Volume ( $Q = A \times V$ )
- Normal pump station flow rates
- Number of households discharging to line (lateral SSOs)

Document assumptions and calculations in final report

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Model Sewage Spill Response Procedures

## Orifice Calculation Card

Vent Hole Hole Dia. inches	Water Ht inches	Q cfs	Q gpm	Q gph
0.50	1/16 th	0.0005	0.23	14
0.50	1/8 th	0.0007	0.33	20
0.50	1/4 th	0.0010	0.47	28
0.50	one half	0.0015	0.66	40
0.50	3/4 ths	0.0018	0.81	49
0.50	1 inch	0.0021	0.94	56

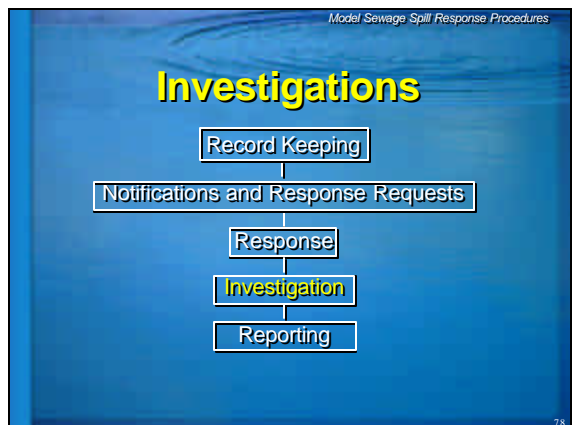
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## Estimating Flow Rates

6 gallons per minute spill

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Model Sewage Spill Response Procedures

## Sewage Spill Investigation

- Identify responsible party (public/private)
- Identify type of spill (raw/treated/septic tank)
- Estimate amount (volume/rate)
- Identify the cause of the spill
- Identify follow up activities
- Prepare enforcement response, if any

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Model Sewage Spill Response Procedures

## Site Entry

```
graph TD; A[Meet proper representative] --> B[Formal introduction]; B --> C[Request permission to enter site];
```

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Model Sewage Spill Response Procedures

## Site Entry

```
graph TD; A[1. Meet proper official] --> B[2. Formal introduction]; B --> C[3. Request permission to enter site];
```

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Model Sewage Spill Response Procedures

## Site Entry



```
graph TD; A[1. Meet proper official] --> B[2. Formal introduction]; B --> C[3. Request permission to enter site];
```

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Model Sewage Spill Response Procedures

## Present Credentials

City Photo ID (preferred)



City Business Card


Request a business card from the facility contact

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Model Sewage Spill Response Procedures

## Formal Introduction

- Name, Official title
- Agency you represent
- Reason for inspection/response
- Scope of your activities



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Model Sewage Spill Response Procedures

## Regulatory Agencies

- County Health Care Agency
- Regional Water Quality Control Boards
- Office of Emergency Services



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Model Sewage Spill Response Procedures

## Reporting

- County Health Care Agency
  - Call for any spill
- Regional Water Quality Control Boards
  - Initial report
  - Written report within 5 days
  - Monthly report
- Office of Emergency Services (>1,000 gallons)
  - Phone – fax for follow up

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Type of Spill	*Agency(s) to notify	Notification Timeframe	Report Timeframe
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Model Sewage Spill Response Procedures

## Sanitary Sewer Overflow Report Form

- Preliminary/Final Report
- Reporting Contact Information
- Spill Location and Description
- Receiving Water Information
- Notifications
- Area Postings
- Other

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**Conclusion**

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Conclusions

## Conclusions

- Countywide program has been developed to improve water quality
- SSOs are sources of pollutants
- Cities/Sanitation Districts need to work together when responding to/following up on SSOs
- Field implementation module coming this summer at a sanitation agency near you!

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Conclusions

## Remember

- Everyone benefits from clean water, and everyone has a responsibility to protect it by reducing urban runoff and stormwater pollution.



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Conclusions

## Resources

For more information:  
Visit [www.ocwatersheds.com](http://www.ocwatersheds.com)  
or  
Call the Orange County Stormwater Program at 714-567-6363.



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Conclusions

## Handouts

- Hard copy of presentation
- Reporting Form Examples
  - Pollution Notification Investigation Report
  - Field SSO Report
- Sanitary Sewer Overflow Reporting Guidelines
- SSO Outreach Brochure
- SSO Report Form

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## Definitions

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Definitions

## Illegal Discharge

- Any discharge to the municipal storm drain system not composed entirely of stormwater and not covered by an NPDES permit.



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Definitions

## Best Management Practice (BMP)

Technique, measure or structural control that is used for a given set of conditions to manage the quantity and improve the quality of the stormwater runoff in a cost effective manner

EPA - Preliminary Data Summary of Urban Stormwater Best Management Practices

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## Thank You!

Thank you for attending and learning how you can help!

ORANGE COUNTY  
WATER  
PROTECTION



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