Rochester Pure Waters District
Illicit Discharge Detection and Elimination

Andy Sansone
Monroe County Department of Environmental Services
Presentation Outline

- IDDE Program Requirements
- Measurable Goals
- GIS Mapping
- Inspection Techniques
- Data Management
- Current Progress, “Case Studies”
- Eliminating the Discharge
Illicit Discharge Detection & Elimination

Minimum Requirement as per SPDES:

• Develop, implement and enforce a program
• Develop and maintain an outfall map
• Illicit discharge prohibition…ordinance
• Inform public employees, businesses & public
• Develop measurable goals, BMP’s
Pure Waters Measurable Goals

• Construct Outfall Map

• Inspect 20% of Outfalls Annually

• Complete Inspections by 2008

• Develop Illicit Discharge Ordinance

• Small Business Pollution Prevention BMP’s and Education
City Population 220,000
City Area 37sq mi
188 miles of storm sewer
## Outfall Inspection Status

RPWD 120 Stormwater Outfalls

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outfalls Inspected</td>
<td>20</td>
<td>27</td>
<td>21</td>
<td>32</td>
<td>100</td>
</tr>
<tr>
<td>Illicit Discharges Detected*</td>
<td>0</td>
<td>11</td>
<td>14</td>
<td>12</td>
<td>37</td>
</tr>
<tr>
<td>Illicit Discharges Eliminated</td>
<td>2</td>
<td>8</td>
<td>4</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

* Estimated >20,000 gallons/day of sanitary waste discharged to local waterways
Sources of Illicit Discharges

- Sanitary wastewater
- Effluent from septic tanks
- Car wash wastewater's
- Improper oil disposal
- Radiator flushing disposal
- Laundry wastewater's
- Spills from roadway accidents
- Improper disposal of auto and household toxics
- Swimming Pools
Outfall Inspection Techniques

- Visual Inspection
- Sampling
Outfall Inspections

• Odors
• Stains
• Color
• Foam
• Oily Sheen
• Floatables
• Impacted Vegetation
• Dry Weather Flows

Follow the Water !!!
Visual inspection can be an efficient method
Sampling

Once an outfall is identified as having a high priority through visual inspection there are a few easy chemical tests that may help find the source of the problem.

- Chlorine Residual
- E. Coli
- Optical Brightener Trap
- Ammonia
- Fluoride ?
Sampling a Manhole
Bacteriology Sample Results

No Sanitary Connection Found
  E. Coli       20 - 4900 MPN/100
  Fecal Col.    100 - 6000 CFU

Sanitary Connection Found
  E. Coli       90,000 - 2,400,000 MPN/100
  Fecal Col.    200,000 - 1,200,000 CFU

Center for Watershed Protection
  E. Coli > 12,000 = Sewage
Use junction areas to quickly determine which direction the suspect flow may be coming from.
Boxing in the Source

Staining

No Stain
Televising
Smoke Testing
Better Data Management
Outfall Inspections Through March ‘07

Outfall Status
- Uninspected
- Obvious
- Potential
- Suspect
- Unlikely
Illicit Discharges Detected
Fecal Coliform Identified at Outfall

Inspected First Junction

Isolated Source of Flow

Genesee River
Plumbing Changes are the Cause
An Illicit Discharge
Example of Staining
Illicit Connection Found Using Tracking Method
Sewer Connection Records

Cleanouts with 4 inch Laterals
New Subdivision
Built in 2004

2 of 7 Homes
Cross-Connected
Discharge to Roadside Ditch

Drain

Dead Grass
Ex-filtration:
Sanitary Waste Leaking into Storm

- High Ecoli levels, no floatables/solids
- May or may not have staining, odor
- Sanitary pipe above the storm
- Broken main or lateral
- Use Optical Brightener Traps
Broken Pipe Leading to Exfiltration
Eliminating the Discharge

- Identify the source
- Notify property owner
- Investigation crew determine exact cause
- Notice of Violation
- Pursue contractor/builder if possible
- DES perform residential repair
Urban Hotspots...Source Control
Implications of an Illicit Discharge Ordinance

- Enforcement by MS4
- Specific language prohibiting illicit connections and illegal discharges
- Ensures access to private property
- BMP’s
- May require septic system inspections?
- Possible penalties for non-compliance
Illicit Discharge Task Group

• Coalition members….. meet monthly

• Target Priority Pollutants

• Develop Strategies, BMP’s

• Small Business Pollution Prevention
Illicit Discharges......
.....They’re Out There

Andy Sansone
Monroe County
Department of Environmental Services
585-753-7684
asansone@monroecounty.gov