

# STORMWATER 101: AN IDDE GUIDE TO POLLUTION PREVENTION

Annual Illicit Discharge Detection and Elimination Training

St. Johns County

Environmental Division

Growth Management

Adapted From The City of Durham Stormwater & GIS Services





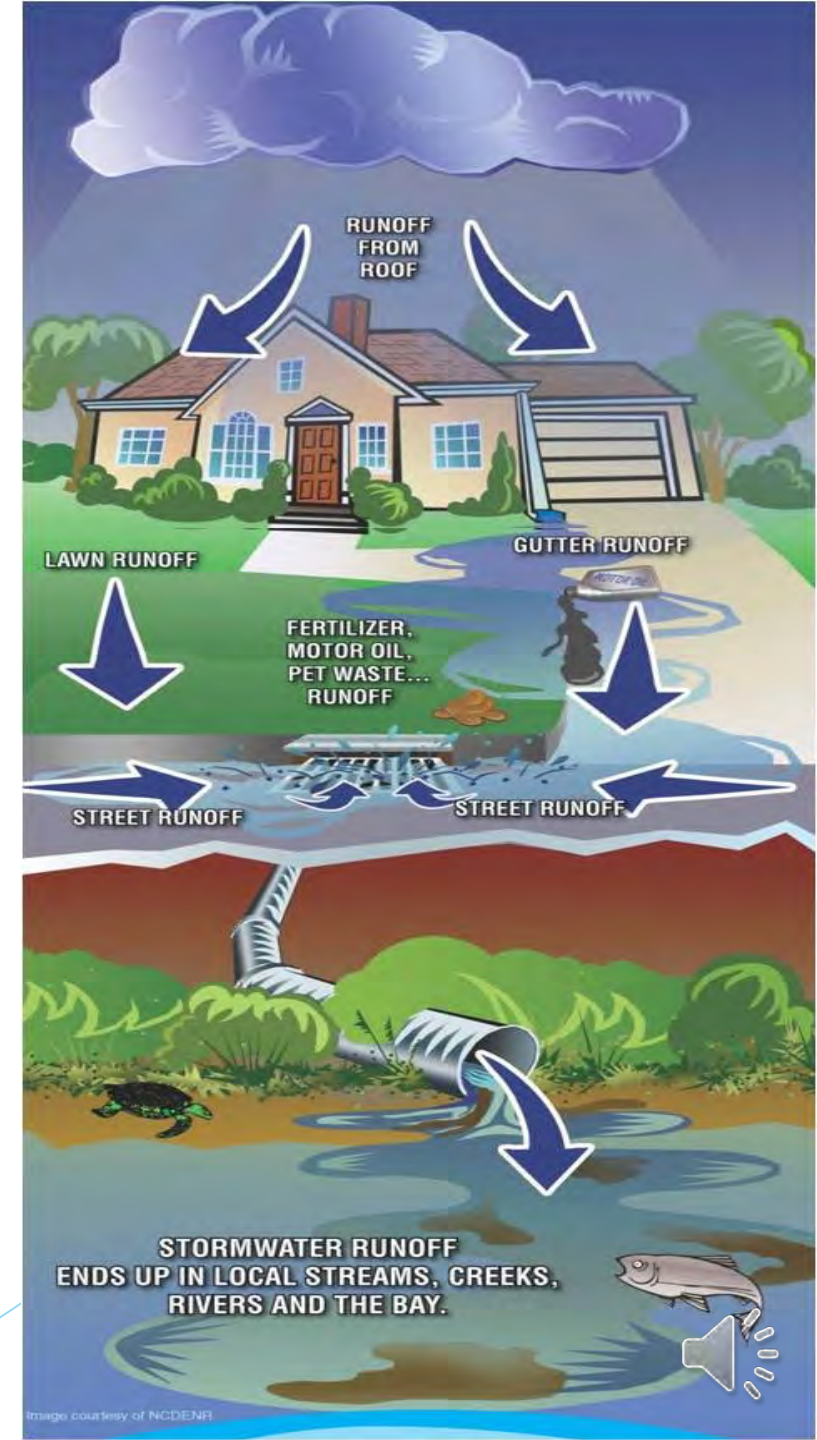
# GOALS

- Understand the terms “Stormwater” , “Illicit Discharge” and “Best Management Practice (BMPs)”
- Understand why these terms are important and why you should care
- Understand what BMPs you can use to help prevent Stormwater pollution
- Understand how to recognize and report Illicit Discharges (pollution)



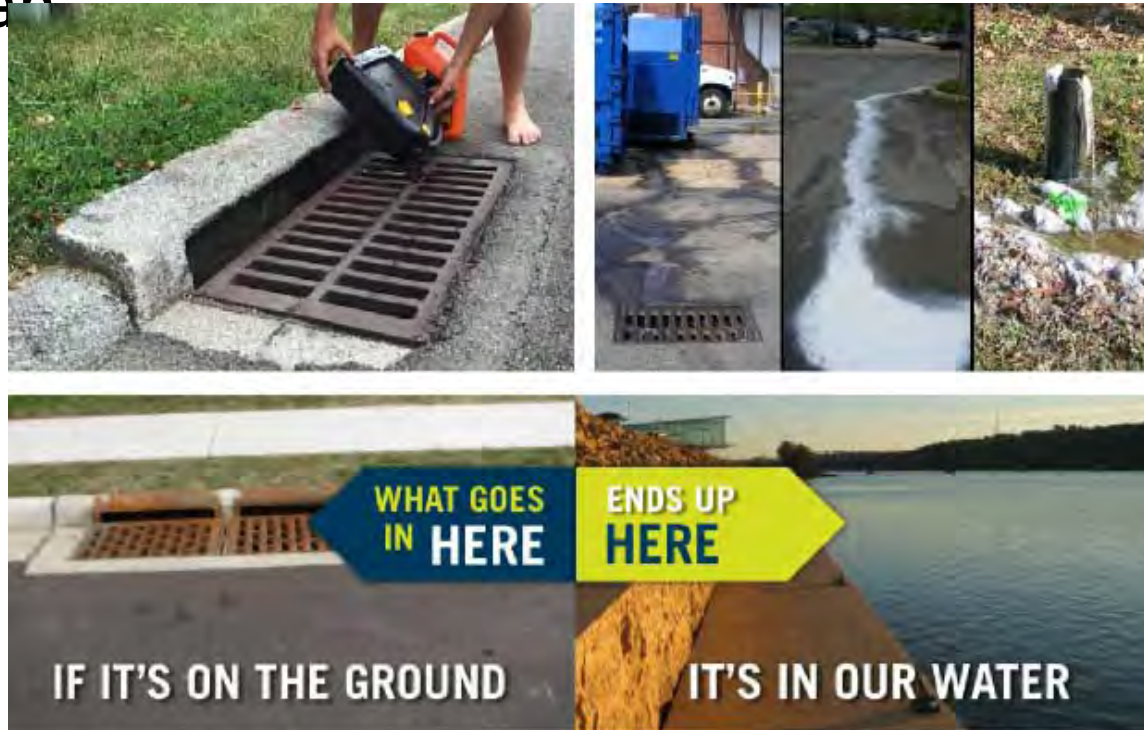
# WHAT IS STORMWATER?

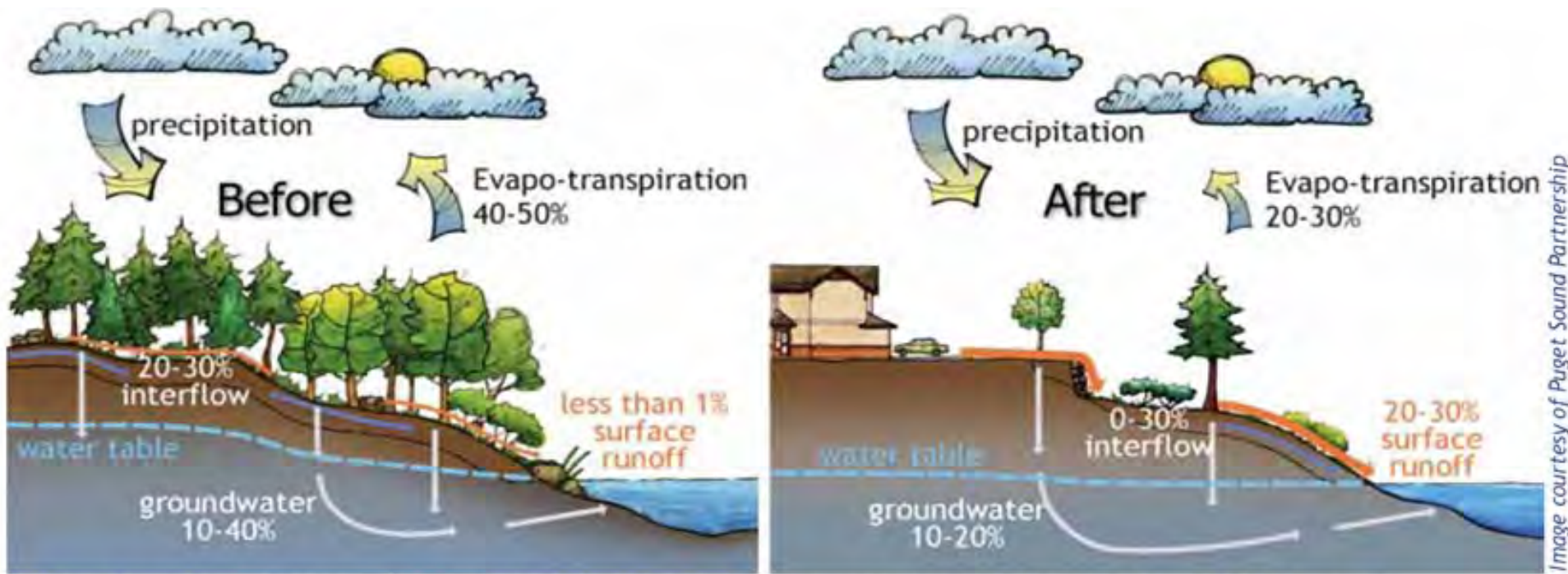
- When it rains, water that does not soak into the ground becomes runoff.
- This runoff can enter a storm drainage system which ends up in local streams, creeks, rivers, Intracoastal waterways and even the ocean.



# STORMWATER POTENTIAL IMPACT

- Stormwater runoff can pick up debris, chemicals, dirt, and other pollutants
- Stormwater runoff is **NOT** treated before it is discharged into local streams, creeks, rivers, ICCW and ocean





Before development almost all rainfall is taken up by plants, evaporates or infiltrates through the ground. After conventional development, surface runoff increases significantly while evaporation and infiltration into the ground decrease.

Before Development  After Development






# BRIEF HISTORY OF PHASE II NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM PERMIT

- In 1990, the Environmental Protection Agency (EPA) created the National Pollution Discharge Elimination System Permit, otherwise known as the NPDES Permit.
- Designation originally based of population size and was designated for large to medium municipalities.
- Prior to this, the EPA only required permits for traditional point sources of pollution discharge. Ex. Wastewater treatment plant or Industrial Process Wastes
- In 1999, the EPA created the “Phase 2” NPDES Permit for smaller municipalities.
- St. Johns is recognized under this “Phase 2” designation.
- In October 2000, EPA delegates the NPDES Permit to Florida Department of Environmental Protection (FDEP).

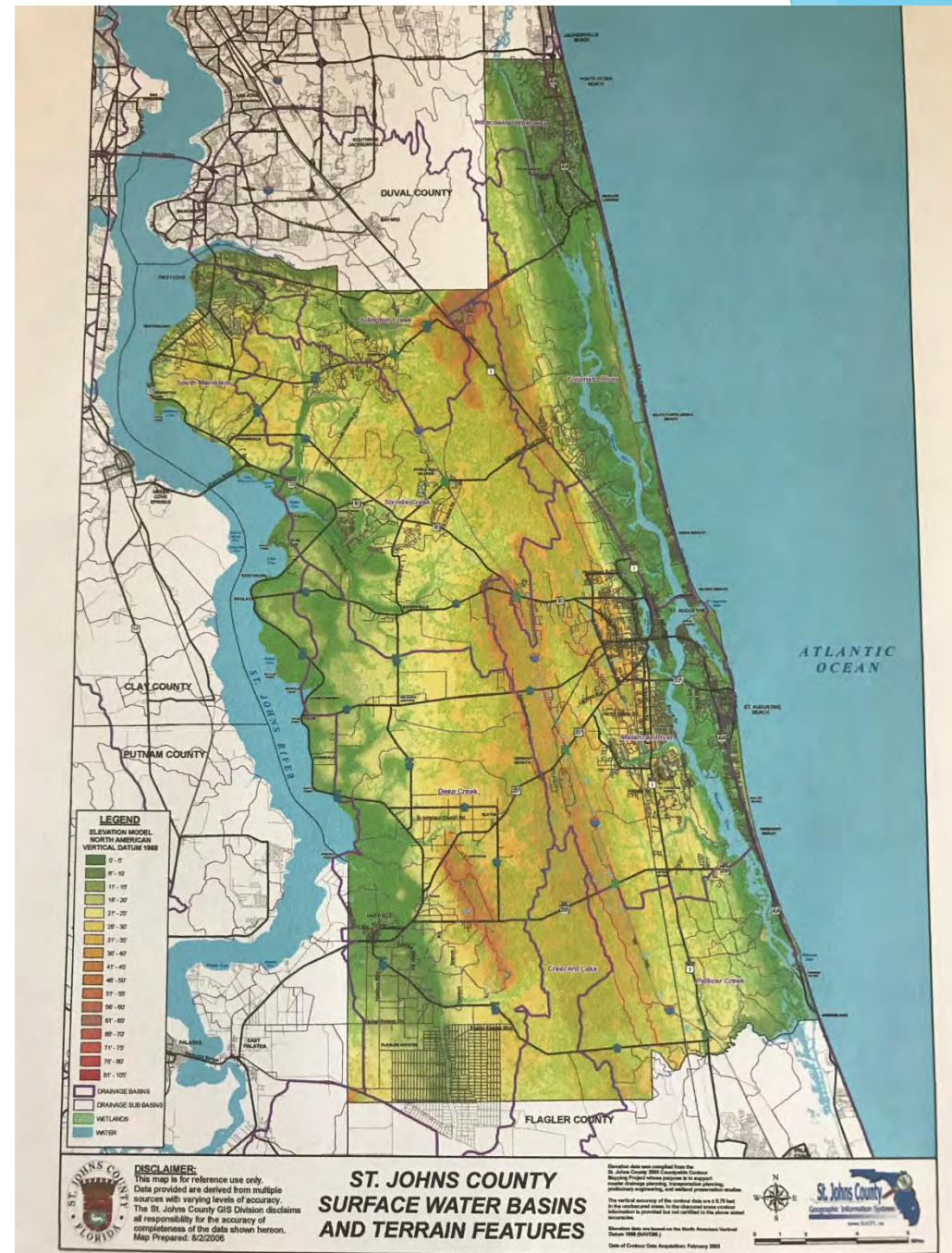


# Six Minimum Control Measures

<b>Public Education and Outreach</b>	Perform education outreach regarding the harmful impacts of Stormwater Pollution.
<b>Public Participation/Involvement</b>	Comply with State and local public notice requirements and encourage other avenues for citizen involvement.
<b>Illicit Discharge Detection and Elimination</b>	Implement a plan to detect and eliminate any non-Stormwater discharges to the Municipal Separate Storm Sewer System (MS4) and create a system map showing outfall locations.
<b>Construction Site Runoff Control</b>	Implement and enforce an erosion and sediment control program for construction activities.
<b>Post-Construction Runoff Control</b>	Implement and enforce a program to address discharges of post-construction Stormwater runoff from new development and redevelopment areas. (NOTE: This minimum control measure is met by the State's Stormwater permitting program under the Water Management Districts, as a "qualifying alternative program," thus there is no additional requirement for St. Johns County for this measure.)
<b>Pollution Prevention/Good Housekeeping</b>	Implement a program to reduce pollutant runoff from municipal operations and property and perform staff pollution prevention training 

# ST. JOHNS COUNTY'S MAJOR WATERSHEDS

- ▶ Surface Water Basins & MS4 Outfalls
- ▶ St. Johns River
- ▶ Intra-coastal Waterway
- ▶ Guana, Tolomato and Matanzas Rivers
- ▶ Atlantic Ocean







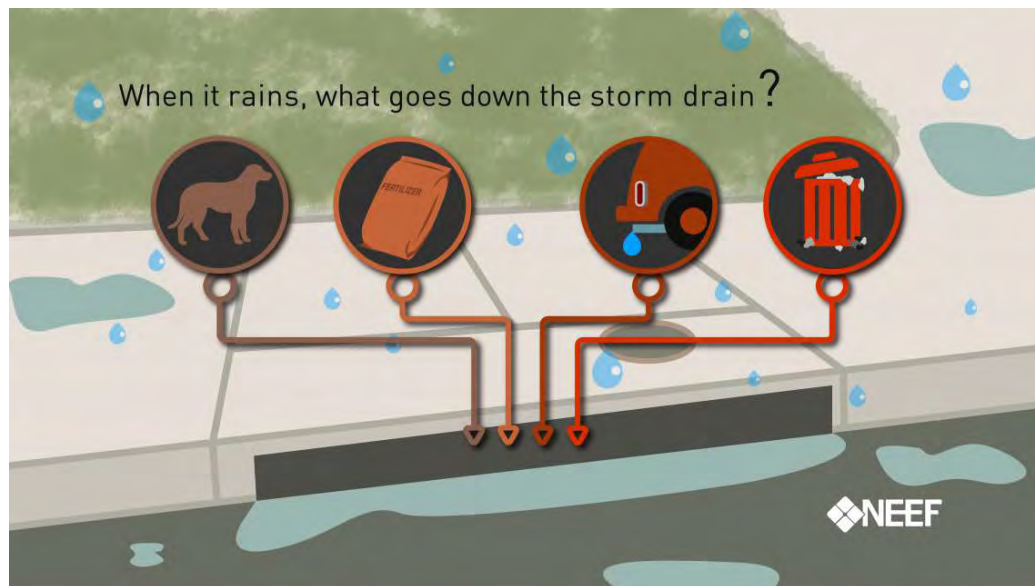
# WHAT CLASSIFIES AS AN ILLICIT DISCHARGE?

- Any direct or indirect discharge to the storm sewer system that is not made entirely of Stormwater or is authorized by the County .
- Exceptions include:
  - Water line flushing
  - Runoff or return flow from landscape irrigation
  - Discharges from potable water sources
  - Diverted stream flows
  - Rising ground waters and springs
  - Uncontaminated ground water infiltration
  - Uncontaminated pumped ground water
  - Foundation and footing drains
  - Air conditioning condensation
  - Water from crawl space pumps
  - Individual residential vehicle washing
  - Flows from wetlands and riparian habitats
  - Dechlorinated swimming pool discharges
  - Discharges or flows from fire fighting activities
  - Etc.



# ILLICIT DISCHARGE IMPACTS

- Illicit discharges often include pathogens, nutrients, toxic pollutants, etc.
- Illicit discharges = pollution
- Anything that enters a storm sewer system flows untreated to a local waterway



# WHY DO WE CARE?

- We use local waterways for swimming, fishing, boating.
- It is a requirement of the County's Phase II National Pollution Discharge Elimination System (NPDES) Stormwater Permit.



# WHAT CAN WE DO?

- Employees can help prevent Stormwater pollution by:
  - Preventing pollutants from being dumped or spilled into the storm sewer system (this includes driveways, sidewalks, streets, storm drains)
  - Reporting pollution or questionable discharges to the storm sewer system or local waterways



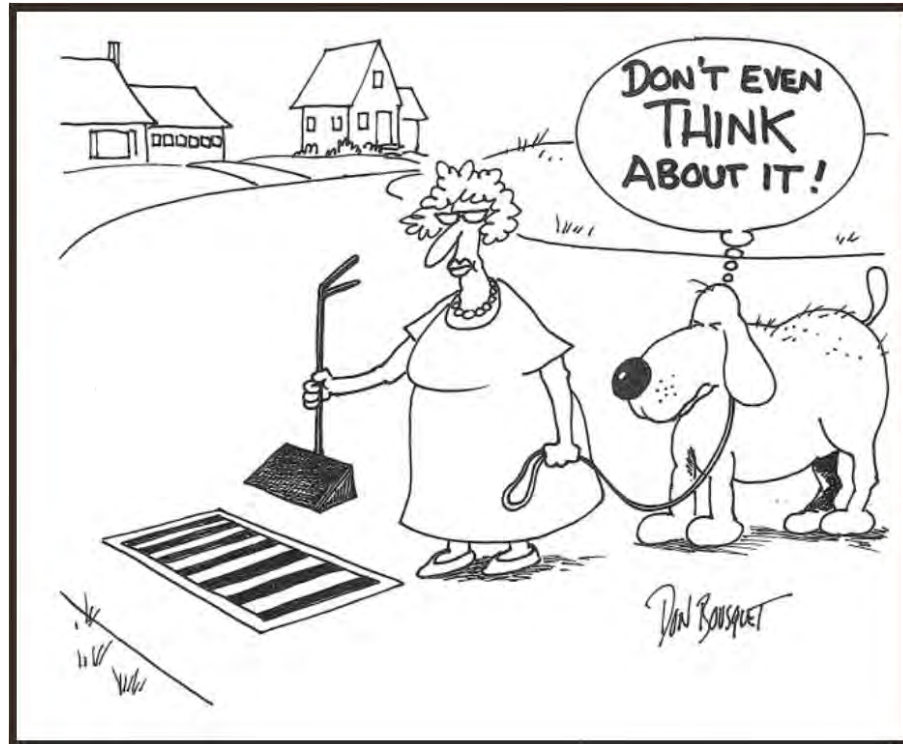
# BEST MANAGEMENT PRACTICES

- Store and handle materials safely
- Clean up spills properly using dry methods
- Never dump or wash out items down or near a storm drain



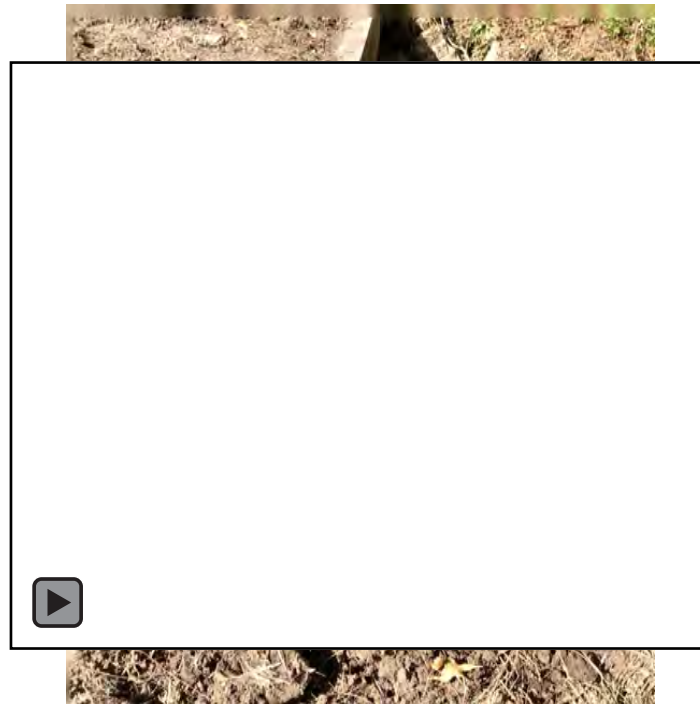
# IF YOU SEE IT, SAY IT!

- If you see discharges entering the storm drainage system or someone dumping something down the storm drain, report it



# RECOGNIZING ILLICIT DISCHARGES: WARNING SIGNS

- If you see warning signs of pollution coming out of a pipe or in a local waterway, report it
- Warning signs may include the presence of unusual:
  - Color
  - Odor
  - Turbidity
  - Floatable liquids and solids
  - Etc.



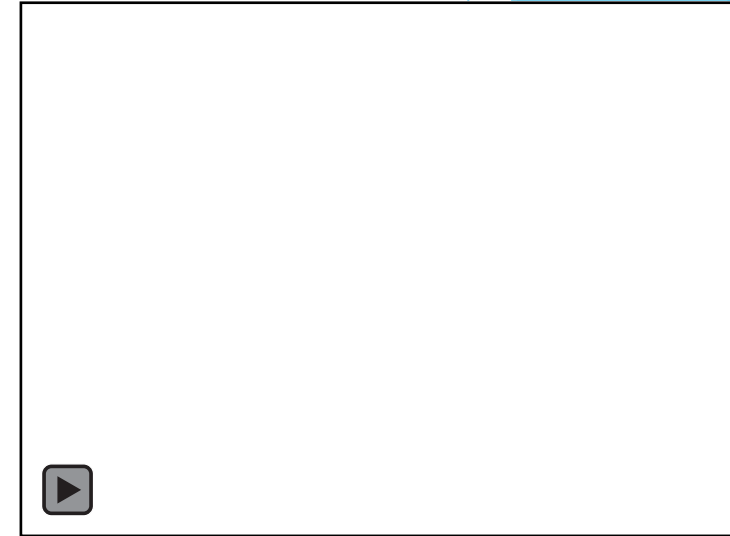
# WHAT TO KEEP AN EYE OUT FOR







# MORE OF WHAT TO KEEP AN EYE OUT FOR





# MORE OF WHAT TO KEEP AN EYE OUT FOR



# WHAT TO KEEP A NOSE OUT FOR

- Some odors are an immediate indicator of pollution
- Sewage, gasoline, and chemical odors should be reported

Odor	Causes
Rotten eggs/hydrogen sulfide	Raw sewage, decomposing organic matter, lack of oxygen
Sharp, pungent odor	Chemicals or pesticides
Gasoline, petroleum	Industrial discharge, illegal dumping of wastes, waste water



# ILLCIT DISCHARGE FIELD REPORT

## Illicit Discharge Field Report

### Evidence Observed:

### Condition of Water:

Odor:  None  Rotten Eggs  Musty  Sewage  
 Other (Describe):

### Color (Describe):

Clarity:  Clear  Cloudy  Opaque

Floatables:  Oily Sheen  Trash  Sewage  
 Other (Describe):

Deposits/Stains:  Sediments  Oily  Structures Stained  
 Other (Describe):

Vegetation:  None  Dead  Discolored  Normal  
 Other (Describe):

Biological:  Algae/Green Scum  Dead Fish  
 Other (Describe):

Flow:  Low/None  Unusually High  
 Has Recently Rained  
 Has Not Rained Recently

Physical Evidence:  Drums  Other Containers (Describe)  
 Other (Describe):

### Other Observations:

Is A Discharge Occurring Now?  Yes  No

Do You See The Source?  Yes  No

License Number And/Or Other Identifying Information:





# ILLICIT DISCHARGE FORM CONT...

For additional information and NPDES Program contacts, visit:

- ▶ <http://www.sjcfl.us/Stormwater/index.aspx>
- ▶ <http://www.sjcfl.us/Stormwater/SWProgram.aspx>

Report complaints and concerns at:

- ▶ <http://www.sjcfl.us/CodeEnforcement/PRIDE.aspx>
  - Specific location
  - Date and time
  - Description of the pollution
  - Description of the violator, e.g. license plate #, personal description (if applicable)
  - Your contact information (optional if calling in)
  - Email a picture or video if you can





## Words of Wisdom

*“We forget that the water cycle and the life cycle are one.”*

*Jacques Cousteau*

