

2015
Rockdale County
Good Housekeeping
Training Seminar

A Stormwater Pollution
Prevention Presentation
for County Employees



What is stormwater?



- Stormwater is rain from storms!

What is stormwater runoff?



- It is the portion of rain water that cannot soak into the ground.
- The rain “runs off” of the ground instead of being absorbed.

Why do you think rain cannot soak into the ground?



- Impervious surfaces block the rain from soaking into or infiltrating into the ground.
- Impervious surfaces are anything that do not allow rainwater to soak or absorb into the ground.

Examples of impervious surfaces



➤ Houses



➤ Rooftops

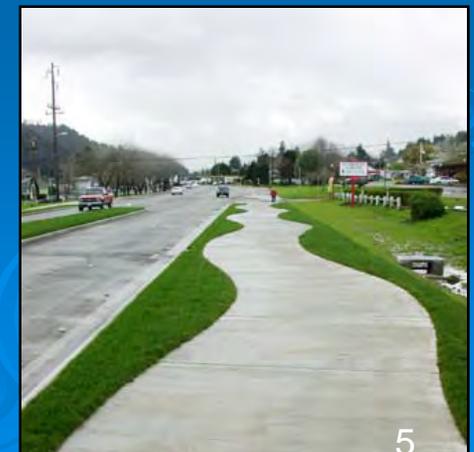


➤ Buildings



➤ Parking Lots

➤ Sidewalks



More examples of impervious surfaces



➤ Roads



➤ Driveways



➤ Gravel Roads

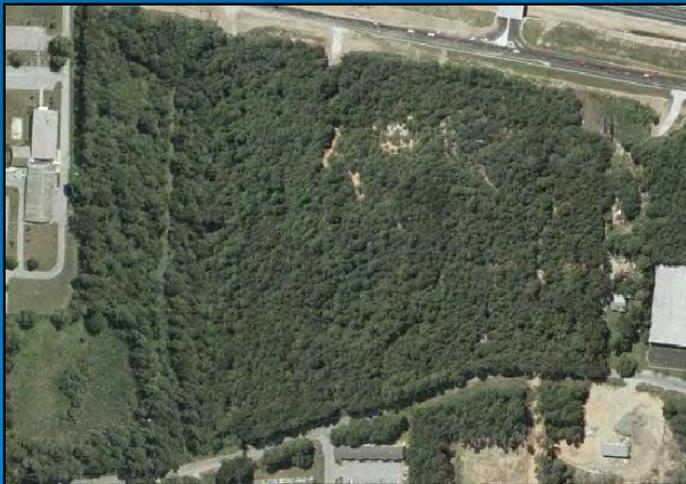


➤ Compacted Dirt Area and Roads



Why are impervious surfaces bad?

- Land development increases the need for effective stormwater management (i.e., Rockdale County Stormwater Utility).
- Development changes the natural vegetation/ground cover and flow of stormwater, which results in increased stormwater runoff.



➤ Natural



➤ Altered Land

Increased stormwater runoff can cause.....

- Erosion and stream bank erosion



Increased stormwater runoff can cause.....

- Flooding, which can lead to road closures and infrastructure failure



Increased stormwater runoff can cause.....

- Pollutants to enter bodies of water





Why is stormwater runoff a problem?

- Every time it rains, stormwater picks up litter, trash, leaves, grass clippings, pet waste, sediment (dirt), pesticides, fertilizers, oil, grease, chemicals and other contaminants as it runs off of developed land, creating polluted runoff.

Non-Point Source Pollution

- This polluted stormwater runoff is considered “non-point source pollution” because the pollution comes from many different sources.
- The opposite of non-point is point source pollution, like a spill from a sewage treatment plant or a chemical plant.



Why is stormwater runoff bad?

- Stormwater runoff eventually flows into our stormwater drainage systems, or ditches, and releases into nearby **lakes, streams, creeks, rivers, reservoirs, or wetlands** UNTREATED for the pollutants it is carrying.
- All bodies of water are potentially used for swimming, fishing and drinking.



- It is against local, State, and Federal law to allow polluted stormwater to reach local waterways.

What do storm structures look like?



➤ Grated Inlets



➤ Hooded-Grate Inlets



What do storm structures look like?



➤ Catch Basins



➤ Flumes



What do storm structures look like?

- Pedestal Inlets



- Junction Boxes
- (They do NOT collect surface water)

What do storm structures look like?



➤ Headwalls



➤ End of Pipe



➤ Safety-End Section



➤ Flared-End Section

What do storm structures look like?



- Drainage Ditches and Grassed Swales

Stormwater runoff impacts our water quality with:



Microbial Pollution



Sedimentation



Hydrocarbons



Trash & Debris

Stormwater runoff impacts our water quality with:



Oil and Grease



Septic/Sanitary Sewer Infiltration



Bacteria

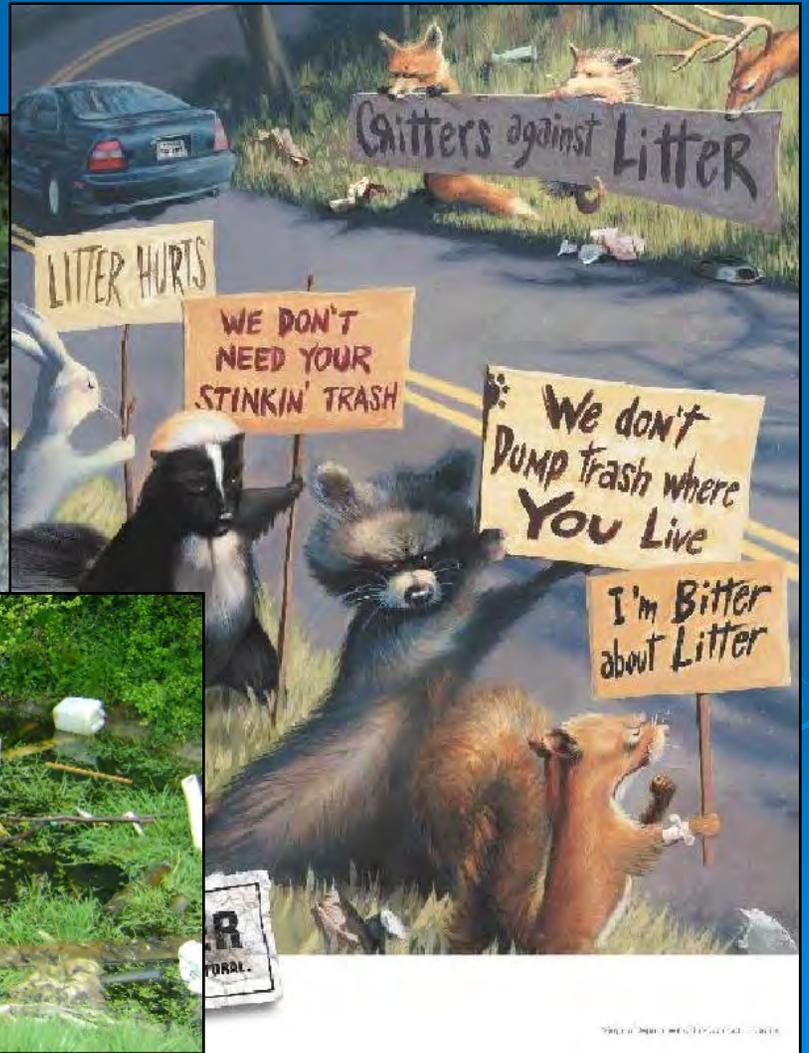


Impaired Waterway

Types of stormwater pollutants

Table 1.1.1-1 Summary of Urban Stormwater Pollutants	
Constituents	Effects
Sediments —Suspended Solids, Dissolved Solids, Turbidity	Stream turbidity Habitat changes Recreation/aesthetic loss Contaminant transport Filling of lakes and reservoirs
Nutrients —Nitrate, Nitrite, Ammonia, Organic Nitrogen, Phosphate, Total Phosphorus	Algae blooms Eutrophication Ammonia and nitrate toxicity Recreation/aesthetic loss
Microbes —Total and Fecal Coliforms, Fecal Streptococci, Viruses, E.Coli, Enterocci	Ear/Intestinal infections Shellfish bed closure Recreation/aesthetic loss
Organic Matter —Vegetation, Sewage, Other Oxygen Demanding Materials	Dissolved oxygen depletion Odors Fish kills
Toxic Pollutants —Heavy Metals (cadmium, copper, lead, zinc), Organics, Hydrocarbons, Pesticides/Herbicides	Human & aquatic toxicity Bioaccumulation in the food chain
Thermal Pollution	Dissolved oxygen depletion Habitat changes
Trash and debris	Recreation/aesthetic loss

Stormwater pollution affects humans, pets, plants and wildlife!



Stormwater runoff affects everyone!



So how do we prevent stormwater pollution?

- Identify common activities that cause stormwater pollution
- Educate employees and the general public on good housekeeping techniques, procedures, and habits to prevent pollution
- Provide training and outreach
- Spread the information and awareness to others
- Change bad habits and create positive results/actions to prevent future pollution

Employee Activities That Can Contribute To Stormwater Pollution

- Improper Tobacco Product Disposal/Littering
- Vehicle & Equipment Maintenance, Cleaning and Fueling
- Delivery and Storage of Materials
- Improper Spill Prevention and Control
- Improper Waste Disposal and Management
- Landscape Maintenance
- Construction, Paving and Painting Activities
- Illegal Dumping/Illegal Landfills

Tobacco Product Disposal



- Cigarette butts are the #1 littered item, and contributes to stormwater pollution!
- Each cigarette butt can contain up to 60 known human carcinogens including arsenic, formaldehyde, chromium and lead.
- Cigarette butts can harm aquatic life and contaminate local water supply.
- Please properly dispose of your cigarette butts!

Vehicle & Equipment Maintenance

Maintenance Area



- Equipment and vehicle maintenance should take place in a covered area or inside of a building.
- If maintenance is completed outside, the area should be paved and surrounded by a berm, to prevent stormwater runoff from leaving the area.
- Emergency spill kits should be readily available to control leaks or spills immediately and employees should know how to use the kits properly.
- Storm drains near maintenance areas should be protected to prevent contaminants from entering the drains. Examples would be installation of an oil/grit separator on any storm drain or the use of absorbent booms around drains.



Vehicle & Equipment Maintenance

Good Housekeeping Practices

- Inspect vehicles/equipment for leaks routinely and repair immediately if leaks are found.
- Keep equipment clean.
- Keep drip pans under vehicles/equipment that might drip fluids.
- Keep oil absorbing materials & emergency spill kits nearby in case of spills or leaks (i.e., kitty litter, oil dry, absorbent pads).
- Store vehicles and equipment inside or under a canopy.
- All fluids should be drained and properly disposed of from vehicles/equipment that are no longer in use.





Vehicle & Equipment Maintenance

Material Generation, Disposal & Recycling

- Do not change motor oil or other automotive fluids near storm drains.
- Under no circumstances should hazardous waste materials, oil or other automotive fluids be dumped on the ground or discharged into a sanitary sewer system, storm drain, ditch, stream, dry well or septic system.
- Properly dispose of or recycle automotive fluids as directed.
- Used oil, antifreeze, power steering, transmission and brake fluids can be recycled, check for local vendors.



Vehicle & Equipment Maintenance

Material Disposal & Recycling

- Used automotive fluids must be collected in separate containers for recycling. Motor oil should be in a designated collection container for used oil only (i.e. Recycle Center has a used motor oil tank).
- Do not mix used oil and solvents. If oil becomes contaminated with other engine fluids it cannot be recycled and the container of mixed fluids must be taken to a local Household Hazardous Waste collection site for disposal.
- Tires must be recycled or disposed of properly by a commercial operation. Never improperly dispose of used tires (dumping etc.).



Used Motor Oil Collection Tank (With secondary containment which prevents spills in case the primary tank fails)



Vehicle & Equipment Maintenance

Cleaning



- Attempt to use commercial washing facilities that recycle their water.
- Use a designated wash area with appropriate stormwater controls (berms, swales, mats, etc.) to prevent wash water from leaving the site or going into a storm drain.
- Wash water should be directed to the sanitary sewer system, **not the storm drain** system.
- Steam cleaning and pressure washing should only be conducted when wash water can be collected and disposed of properly.
- Apply water sparingly whenever possible to prevent the generation of polluted wash water.

Fueling



- Maintain fueling equipment in good condition.
- Properly clean up small spills with absorbent material and dispose of the waste material properly. Do not hose/wash spills into storm drains, ditches, sanitary sewer systems, or streams.
- Do not “top-off” vehicle tanks.
- Vehicle operator should remain with the vehicle at all times while fueling.
- The fuel delivery truck operator must remain with the truck during fuel transfer at all times.
- There should be secondary containment around all potential spill locations (e.g. hose connections & fuel points).
- Temporarily cover or otherwise block storm drains during fueling transfer, in case of a spill.



Fueling Station With Awning and Emergency Spill Kit

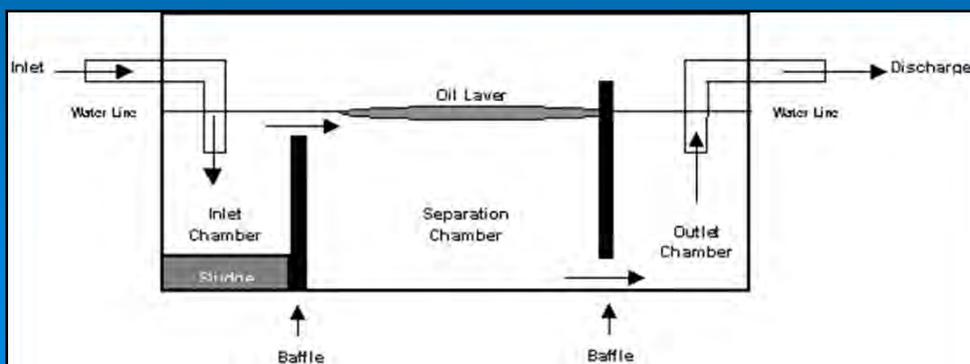




Fueling Area



- Fueling areas should be covered (e.g. awning).
- Above ground storage tanks should have secondary containment and be inspected frequently.
- Fueling areas should not drain in the direction of or into the stormwater drainage system.
- All storm drains near fueling areas should have an oil water separator. Inspect it monthly and maintain as needed.
- Keep an ample supply of absorbent materials nearby.

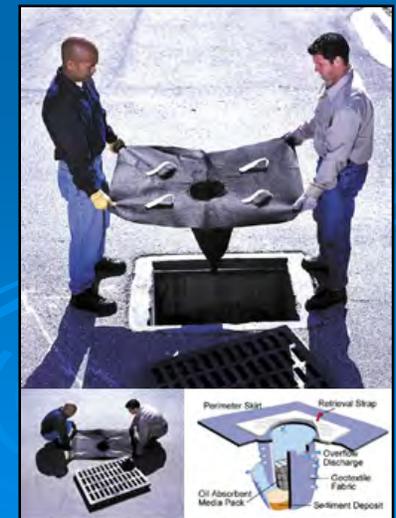


Delivery & Storage of Materials

Storage & Delivery Site



- Items to be aware of can include: soil, gravel, sand, concrete, pesticides, herbicides, fertilizers, detergents, plaster, petroleum products, and chemicals.
- Designate areas of your site for delivery and storage of materials. Delivery and storage areas should be covered or located inside. Areas should be surrounded with a berm to contain any spills.
- Keep emergency sealing devices for storm drains easily accessible onsite.
- Stockpile soil or deicing material in a covered location or protect with tarps. Nearby storm drains should be protected with appropriate controls.
- Regularly inspect delivery areas and storage facility for leaks and spills.





Storage of Materials



- Do not store chemicals, drums or bagged materials directly on the ground. Containers should be kept in drum stands or on pallets.
- Keep chemicals in original containers, sealed and stored in appropriate locations.
- Keep up to date inventory of materials. Include copies of MSDS.
- Follow manufacturers instructions for use, safety, mixing, etc.
- Clean up spills immediately using absorbent materials. Properly dispose of used absorbent material. Do not hose/wash spills into storm drains, ditches, sanitary sewer systems, or streams.



Spill Prevention & Control Response



- Designate a spill prevention team that will be responsible for coordinating spill prevention and response procedures.
- Clean up spills immediately using proper procedures.
- Never wash/hose spills into storm drains, ditches, sanitary sewer systems, or streams, and never bury dry material from spills.
- When spills occur on paved surfaces, clean up spills using absorbent material or rags, use as little water as possible. Absorbent materials or rags must then be disposed of properly.
- Keep absorbent materials in easily accessible and obvious locations onsite. Notify all staff of stored locations.
- When spills occur on unpaved surfaces, contain the spill appropriately, remove the contaminated material, and dispose of properly (e.g. at a legal landfill). The County must have proof (i.e. dump tickets) of proper disposal procedures.

Spill Prevention & Control *Response*



- Always comply with all applicable regulations. Be familiar with your facility's Spill Prevention and Countermeasures Control (SPCC) plan.
- If a significant spill occurs, safely contain the spill using an earthen dike or absorbent booms, and notify the site manager immediately.
- If the spill enters the storm drain system and/or State Waters (i.e. stream or creek), you must notify the Fire Department, Stormwater Utility, and/or EPD immediately.
- Create a list of appropriate spill response and notification procedures and post them where all employees can access and utilize them.



Waste Management

Hazardous Waste Management

- Do not mix hazardous and non-hazardous waste, they must be kept in separate containers.
- Store hazardous waste materials in sealed containers with secondary containment.
- Monitor secondary containment to ensure it does not overtop or spill. If a spill occurs, safely and promptly clean the area.
- Use all of the product before disposing of the container. Allow the container to dry completely before disposing of it.
- Do not mix hazardous materials or waste.
- Regularly inspect waste disposal area for leaks and spills.
- ***A licensed hazardous waste hauler must be used to dispose of hazardous waste that cannot be recycled or reused.***





Waste Management

Solid Waste Management

- Solid waste storage areas should not be near storm drain inlets or waterways.
- Provide waste containers for employee use.
- Dumpsters should be watertight and remain covered. Drain valves should be kept closed.
- Do not hose/clean the dumpster out onsite. Let the waste hauling company clean the containers.
- Arrange for waste collection before the containers overflow; do not allow them to overflow.
- Recycle material whenever possible.



Waste Management

Good Housekeeping



- Never pour grease (even from cooking) in the toilet, sink, sanitary sewer system, or storm drain system
 - Pour the grease into a container and let it solidify and then throw away in the trash can
 - Grease traps should be utilized for larger volumes of grease
- Put trash in trash receptacles
- Never litter
- Pick trash off of the ground
- Always try to recycle or reuse products if possible

Custodial Staff

Good Housekeeping



- Store cleaning chemicals and detergents inside. Keep lids tight and secure.
- Dispose of garbage bags directly in dumpsters and keep dumpster lids closed.
- Never drag garbage bags on the ground.
- Never overfill a dumpster.
- **Never dispose of mop water in a storm drain, ditch, or stream.**
- Whenever possible, pour mop water into the sanitary sewer system (i.e. toilet, sink or shower).
- Alternatively, pour the mop water on a flat grassy area that receives a lot of sunlight. Make sure there are no streams, storm drains or ditches nearby.
- **Mop water entering a storm drain or water body is considered an illicit discharge and subject to penalties.**



Landscape Management

Maintenance

- Use drought resistant plants in landscape areas whenever possible.
- Only water plants and grass in the early evening or morning. Evaporation from midday heat can burn up to 30% of irrigation water applied.
- Mulch planting beds to hold water.
- Adjust sprinklers so that streets, parking lots and other impervious surfaces are not watered. Watering streets wastes water and increases runoff.



Landscape Management *Maintenance*

- Never rake, blow or sweep leaves, yard debris or grass clippings into the road, storm drains, ditches, or local waterways.
- Blow or sweep loose yard debris back on to the lawn.
- Bag and dispose of yard debris at a landfill, recycling center, or for garbage pickup.
- Reuse yard debris as compost or mulch.



Landscape Management

Landscape Chemicals



- Avoid applying fertilizers, pesticides, or herbicides before a forecasted rain event or during windy conditions.
- Remove unwanted vegetation manually when possible.
- Till fertilizer into the soil to prevent it from washing into a nearby waterway or storm drain.
- *Never apply landscape chemicals over impervious surfaces (i.e. roads, driveways, sidewalks), and use spot applications when appropriate.*

Landscape Management

Landscape Chemicals

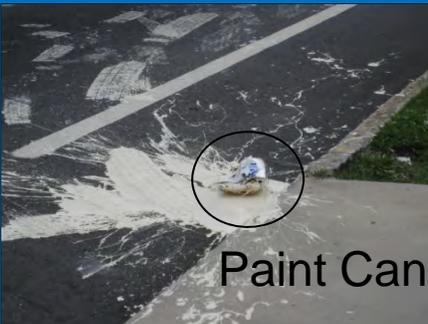
- Only mix and use the chemicals that you need for a single application.
- Minimize the use of all landscape chemicals.
- Never dispose of chemicals in the trash, storm drains, creeks, or on the ground.
- Use the least toxic chemical that will achieve the goal. Chemicals that degrade rapidly, have low water solubility, and are granular are the better choice.



Fertilizer in pond
caused algae bloom

Construction, Paving & Painting

Painting

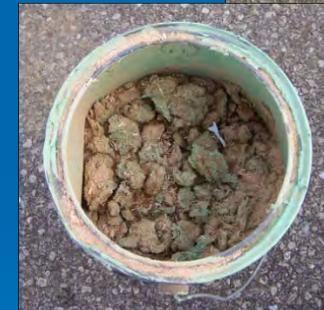


- *Never rinse paintbrushes or paint containers on the ground, into the street, storm drains, ditches, or waterways.*
- Use painting equipment that minimizes excessive application, waste, and drift.
- Use a drop cloth to collect shavings from sandblasting or scraping.
- Mix paint indoors or in a containment area.
- Oil-based paint and associated materials must be disposed of as hazardous waste.
- *Always make sure paint cans are secure in vehicle prior to traveling or transporting cans to avoid spills outside.*
- Recycle paint cans if possible.

Construction, Paving & Painting

Drying Paint For Disposal

- Latex paint and material can be disposed of in the trash **WHEN IT IS COMPLETELY DRY.**
- To Dry Large Amounts of Paint:
 - Remove Lid
 - Stir in sawdust, cat litter or other drying agent into the paint
 - Place can in well ventilated area and allow paint to completely dry, or until it is hard (Keep can away from children and pets)
 - Place the can, with the dried hard paint, in the trash can with the lid off



Improper Storage of Paint Outside



Proper Storage of Paint inside storm resistant Shed

Construction, Paving & Painting

Concrete Waste Management

- Store materials and equipment under a covered area.
- Conduct concrete operations during dry weather only.
- Only mix the amount to be used for the project.
- Do not wash concrete truck wash water, concrete waste, or sweepings into storm drains, ditches or waterways, or allow it to reach these areas.
- Follow proper procedures for onsite washout.



Construction, Paving & Painting

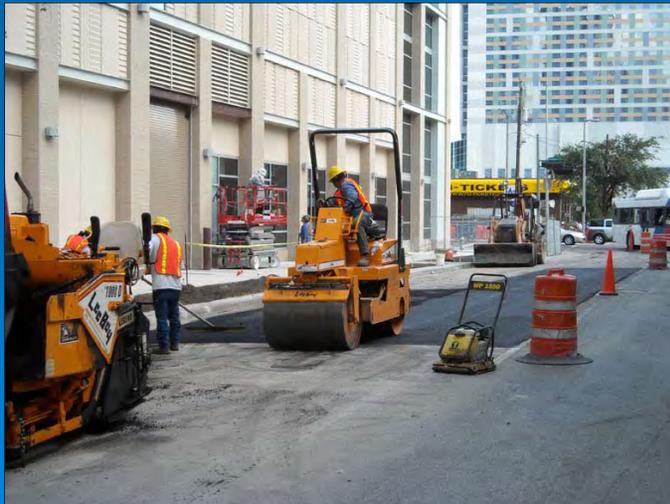
Paving & Pavement Maintenance

- Paving and sealing operations should NOT be conducted during rain events or wet weather conditions.
- Use properly installed E&SC BMPs, especially for stormwater inlets, to prevent paving runoff (including debris, aggregate and dirt) from entering the storm drain system during paving operations.
- **Anything entering a storm drain that is not rain is an illicit discharge and subject to penalties!**



Construction, Paving & Painting

Paving & Pavement Maintenance



- Sweep pavement to remove sediment, debris and leaves after paving.
- Sweep in a pattern that directs material away from storm drain inlets and openings.
- Street sweepings contain a wide array of pollutants, so dispose of street sweepings properly.
- Never dispose of street sweepings in or near a waterway, storm drain or ditch.

Illegal Dumping & Landfills



- Construction debris, demolition and waste material must be properly disposed of at a legal landfill.
- Material, such as asphalt, concrete or mulch can only be disposed of at legal solid waste landfills or legal inert landfills (cheaper).
- **Stockpiling inert materials , demolition or construction debris can create an illegal landfill!**
- Make sure you check with the County to verify where legal landfills are located locally. Even though EPD may have a list, the local authority may not have approved that landfill.
- **Track your waste material from your projects; the County must verify and prove that all waste materials are properly disposed of! Always obtain dump tickets for all waste materials!**

Illegal Dumping, Connections, & Discharges



- Remove any pipes or connections to storm drains, ditches, or streams that discharges anything other than stormwater.
- Examples include pool overflows, sanitary sewer or septic system releases, washing machine or sink discharges, inside building floor drains releasing outside, etc.
- Determine where all exterior and interior drains connected to the storm drain system are located and make sure they are protected from accidental spills and illegal dumping. Interior drains connected to storm should be removed!

Practice good stormwater pollution prevention techniques!

- NPDES Industrial Stormwater Permits are regulated by the GA EPD.
- Certain County facilities are required to obtain an NPDES Industrial SW Permit.
- If applicable, please refer to your facility's industrial stormwater permit and Stormwater Pollution Prevention Plan (SWP3) for guidance & implementation requirements.
 - Pollution Prevention Team
 - Good Housekeeping
 - Structural and Non-Structural Controls
 - General Pollution Prevention Measures

What is the most important thing?

- Never dump or pour any motor oil, chemicals, pet waste, trash, dirty or soapy water, leaves, grass clippings, fertilizers, pesticides, or anything else into a storm drain, drainage ditch, or stream!



- **EVERYTHING** that enters a storm drain or ditch eventually leads to a lake, stream or body of water, **without being treated** for the pollutants!

Environmental Concerns?

- If you have witnessed any illegal dumping or improper disposal, please contact the Stormwater Utility immediately:

Rockdale County Stormwater Utility
TaSheena Spearman, Stormwater Engineer I
Administration & Services Building
P.O. Box 1495, 958 Milstead Avenue
Conyers, GA 30012

770-278-7145 (24-Hour Hotline)

770-278-7155 (Stormwater Office)

www.rockdalecounty.org

Special Thanks



- Thank you for your continuing individual efforts to keep Rockdale County beautiful!
- You can be the solution to stormwater pollution.
- Thank you for your participation in the good housekeeping program.

Questions?

- If you have any questions or comments about this presentation, please contact the Stormwater Utility:

Rockdale County Stormwater Utility

TaSheena Spearman, Stormwater Engineer I

Administration & Services Building

P.O. Box 1495, 958 Milstead Avenue

Conyers, GA 30012

770-278-7122

TaSheena.Spearman@rockdalecounty.org

Training Completion

After viewing the presentation, please fill out the sign-in sheet and have your supervisor sign it to verify that you have received and comprehend the good housekeeping training.

Supervisors: Please send all completed sign-in sheets to TaSheena Spearman BEFORE April 30th for all 2015

Participants:

TaSheena Spearman
Rockdale County Stormwater Utility
P.O. Box 1495
Conyers, GA 30012

Or e-mail: TaSheena.Spearman@[rockdalecounty.org](mailto:TaSheena.Spearman@rockdalecounty.org)

Or Fax: 770-278-8920

Remember all employees must view the presentation at least once during 2013-2017