

Introduction: What We Can Do

Lakes, rivers, and streams in North Central Texas are perhaps our most treasured natural resources. The many lakes in the area are tremendously popular for fishing, swimming, and boating. While rivers and streams offer a quiet retreat from the sometimes hectic pace of our daily activities. These surface waters are also the source of drinking water for most of the residents in the region; and all of these activities depend on clean water for our continued use and enjoyment. This video will look at ways that we as city, county, and state employees can help to maintain and improve water quality.

When we imagine sources of water pollution, we tend to think of toxic discharges from factories or from waste water treatment plants. However, many of our water quality problems result from pollution in storm water run-off. When it rains, storm water run-off picks up sediment, oil and grease, chemicals, and other potential pollutants as it flows over various surfaces such as lawns, streets and parking lots on its way to the storm drain. And whatever enters the storm drain system ends up being discharged directly into streams or lakes since storm water does not go to a water treatment plant.

Many operations and maintenance activities performed by cities, counties, and state agencies have the potential to pollute surface water. Some of these activities and the associated pollutants include grounds and landscape maintenance, fleet maintenance, vehicle washing, material storage, street system operations and maintenance, construction or other land disturbances, and solid waste operations. Wastes from these and other activities can have a serious impact on water quality. One quart of oil flowing into a storm drain can contaminate 250,000 gallons of water. Fertilizer that washes off landscape areas can cause excess algae growth in streams and reservoirs. This excess algae can lower dissolved oxygen and cause fish kills. Sediment carried off of disturbed construction areas can harm fish, aquatic insects, and plants. Overall, storm water pollution has been determined to be a major source of water quality problems in the state.

Government entities have a special responsibility in the effort to reduce pollution in storm water run-off. In order to set a good example for citizens, businesses, and industries in regard to storm water pollution prevention we must conduct our operations in an environmentally friendly manner. For this reason, as city, county, and state employees we all need to do what we can to help keep pollutants out of the storm drain system. Keeping our water clean is not only the right thing to do, its required by the US Environmental Protection Agency and the Texas Commission on Environmental Quality. As a condition on our permit to discharge storm water from collection systems into state waters. The permit requires us to take steps to prevent pollution from storm water that could result from our daily operations. These steps include preparing procedures for how we conduct activities that have the potential to cause pollution and training employees in storm water pollution prevention. Violations of our permit could result in enforcement actions and fines by the EPA and TCEQ. Best Management Practices (or BMP's) are the procedures and techniques we use for preventing or reducing storm water pollution. The pollution prevention BMP's discussed in this video are also sometimes called "Good Housekeeping" Practices. Basically, these BMP's are simple, common sense things we can do during our operation and maintenance activities to keep from being a part of the problem when it comes to water quality.

Here are some good housekeeping BMP's that apply to city, county, and state operations.

- Dispose of waste properly, and never dispose of any waste or debris in a storm drain. Even materials that seem harmless are prohibited from being disposed of in the storm drain system.
- Keep outside work areas clean by sweeping regularly. This helps preventing accumulated dirt and trash from being washed into storm drains by run-off. Do not hose down work areas because this washes pollutants into the storm drain system and into area creeks and lakes.

- Fix vehicle and equipment leaks as soon as possible after they are discovered. Place a drip pan under the leak until the repair can be completed to prevent oil, grease, fluids, fuel, or antifreeze from entering the storm drain system.
- Clean up spills immediately to prevent safety hazards and prevent spreading. Use absorbent materials rather than hosing down the area and dispose of used absorbent material properly. Keep materials such as grease, paints, detergents, pesticides, fertilizers, and herbicides in appropriate labeled containers.
- Store the containers indoors or in covered areas where they will not come in contact with storm water and always have containers sealed when not currently in use.
- Read and follow label instructions when applying pesticides, fertilizers, or herbicides and use caution to prevent stray product from being deposited on streets or other paved surfaces or it could be washed into the storm drain system; and don't apply during windy or wet weather.
- Keep lids on trash or recycling bins to keep the trash in and the rain out.
- Don't top off fuel tanks when fueling vehicles to prevent overfilling and spills.
- Wash vehicles and equipment in designated areas where the wash water drains to the sanitary sewer or is collected to be recycled.
- And finally, promptly report suspected problems so that corrective action can be taken as soon as possible.

As you can see, these BMP's make sense. In many cases, they make the work place safer and may save money in addition to their benefits for the environment. Depending on your job, your supervisor or environmental department personnel may provide additional training on pollution prevention and good housekeeping practices. Effective storm water pollution prevention requires that all employees follow established procedures. Let's make sure that as government employees we take an active role in preventing storm water pollution. And this way, we'll be doing our part to maintain the water quality of our lakes, streams, and rivers.

Fleet Maintenance and Material Handling

Various activities associated with the maintenance of municipal vehicles and material storage may result in storm water pollution if not conducted properly. Employees who maintain and repair municipal vehicles and machinery can help reduce water pollution by following precaution in their daily activities. This video will show how to protect storm water quality by using Best Management Practices for: General Housekeeping, Material Storage, Leak and Spill Cleanup, and Vehicle Fueling and Washing.

General Housekeeping: Best Management Practices, or BMPs, are procedures that you can apply to your work to help prevent storm water pollution. Continuing training is very important; training can be done in the classroom and in the shop. Posters and other visual reminders placed around the shop can reinforce good practices. Labels are important for you safety, so make sure all containers are clearly labeled. Material Safety Data Sheets or MSDSs have detailed information about materials. Some sections include hazard identification, storage and handling, personal protection, first aid measures, and much more. MSDSs must be placed in a location that is accessible to everyone. While working in the yard and in the shop, keep an eye out for leaded oil or other fluids on the ground. If spotted, clean it up following the procedures discussed later in this video. When cleaning parts and equipment, use less harmful cleaning products like citrus-based cleaners and do not allow wash water to enter a storm drain.

Material Storage: You should store materials away from high traffic areas to prevent accidents that might cause spills. Steps should be taken to prevent stockpiles of materials such as soil, road salt, and asphalt patching materials from being washed into the storm drain. Use containment walls to separate different materials. Placing a tarp over these stockpiles will also help prevent erosion. The best way to store materials is indoors in sealed containers. Storing materials outdoors in sealed containers within a covered and paved area is also a good way to store materials. Keep materials in their original containers if possible. If not, clearly label replacement containers. Make sure containers are closed or sealed except when they are being filled or emptied. Regularly inspect containers for corrosion or signs of leaks. Keep material or waste containers in good condition and replace any containers that leak. Spill trapping devices should be maintained. For indoor storage areas use a spill containment base. Dispensing drums should have a drip pan. Outdoor storage areas should be bordered by a curb or containment wall to contain spills. Separate waste materials and store them in proper containment bins so they can be easily recycled.

Leak and Spill Cleanup: Follow cleanup instructions specified on the MSDS for that particular material. Contain the spill using a drip pan or absorbent material. Locate the source of the spill and take steps to stop it. Clean up spills immediately to minimize safety hazards and prevent spreading. If a liquid spill might enter a storm drain, use a drain mat to cover the drain. For liquid spills, immediately clean the spill using absorbents. Remove the absorbent material once it has soaked up all the liquid and follow all state, local, and federal regulations for proper disposal. For dry materials, if usable, place spilled material in its original or properly marked container. Follow proper procedures for disposal of spilled material that cannot be used. Do not hose the spill into a storm drain. Be sure to report large spills or spills of hazardous materials to your supervisor.

Vehicle Fueling and Washing: Fueling stations should be covered and kept clean. Be sure to take special care to not over fill or spill fuel. Vehicle washing should only take place in designated wash areas where the wash water will be contained and reused or disposed of in the sanitary sewer. Wash water should not be allowed to enter the storm drain system.

6Quiz

1. Material Safety Data Sheets contain information about...

- A. How materials should be handled
- B. What to do if the material was spilled
- C. Possible hazards for the material
- D. All of the above

The answer is D, all of the above. MSDSs contain valuable information about the material and should be accessible to everyone.

2. Excess materials such as road salt and soil should be stored...

- A. Near high traffic areas
- B. Within containment walls
- C. Near a storm drain
- D. On a grassy area

The answer is B, within containment walls. Steps should be taken to prevent erosion of the stockpile and to prevent it from entering storm drains.

3. If a liquid spill occurs, what is a possible step to take to prevent it from entering a storm drain?

- A. Flush the area with a water hose
- B. There is nothing you can do
- C. Use a drain mat to block the storm drain

The answer is C, use a drain mat to block the storm drain. If you do not have a drain mat, block the liquid spill with absorbent or another containment device.

4. Outdoor storage areas should be surrounded by...

- A. A curb or containment wall
- B. Storm drain inlets
- C. Grass
- D. Nothing

The answer is A, a curb or containment wall, that will contain the material if a leak or spill were to occur.

Review: Various activities associated with the maintenance of municipal vehicles and material storage may result in storm water pollution if not conducted properly. Help prevent storm water pollution by: Keeping an eye out for leaking fluids, checking storage bins regularly for leaks, properly storing hazardous materials, washing vehicles only in designated wash areas, and properly cleaning up after any spill. By using these best management practices while on the job, you will be helping keep out communities and waterways clean and healthy for future generations to enjoy.

Streets and Drainage

Various activities associated with the maintenance of streets and drainage facilities may result in storm water pollution if not conducted properly. Employees who maintain and repair out streets and drainage infrastructure can help reduce water pollution by following precautions in their daily activities. This video will show how to protect storm water quality by using Best Management Practices for: pavement repair, paint stripping, storm drain inlet cleaning, ditch maintenance, and reporting pollution and illegal dumping.

Pavement Repair: During concrete saw cutting operations, be sure to vacuum or contain slurry. Create a pool of slurry by blocking the flow along a curb using sand bags or other material. Once contained, vacuuming the slurry with a wet dry vacuum is the preferred collection method. The slurry may then be poured into an open container and disposed of in the trash after the water has evaporated. Do not allow the slurry to enter the storm drains or to remain on pavement to dry out. Require concrete trucks to wash out in a designated location where wash water will be contained and will not drain into a storm drain, drainage ditch, or creek. Place stockpiles of asphalt patching material on concrete or other paved surfaces and cover them to prevent contact with rain. Mix only the amount of patching material necessary to complete the repair. Sweep up and properly dispose of all patching material that is not compacted or is left over from the repair. Use less harmful products rather than diesel for asphalt patching and cleanup activities. Clean trucks, equipment, and tools in designated equipment wash facilities where wash water will be contained. If no wash facility is available, clean equipment over a layer of absorbent material spread on a paved surface and/or heavy plastic sheeting. Promptly sweep up the absorbent and dispose of in accordance with the state and federal regulations.

Paint Stripping: When painting, check the weather and don't apply paint when rain is likely or during high winds. Excess paint should be disposed of properly. When finished with a job, pour small quantities of unused latex paint into open barrels and allow it to dry. You may then dispose of the dry paint in the trash. When cleaning equipment used during painting, contain the wash water and dispose of it in a sanitary sewer. Do not allow wash water to drain into a storm drain. Oil based paint must be handled with extra care. Place them in proper containment bins which must be disposed of in accordance with established procedures.

Storm Drain Inlet Cleaning: Cleaning storm drain inlets regularly is an important part of preventing trash from being washed into our water ways. Trash and debris removed from inlets and catch basins may be disposed of in a sanitary landfill, unless there is evidence of contamination with oil or other pollutants. Report suspected dumping or pollution problems to supervisory personnel. To help deter dumping, apply markers with a "no dumping" message to inlets where there is evidence of dumping.

Ditch Maintenance: Not properly maintaining ditches and storm water infrastructures can result in costly and often difficult repairs. Ditch maintenance activities include vegetation removal, sediment removal, or reshaping the line and grade. Sample and analyze material that has been removed from ditches if it appears to be contaminated with oil or other pollutants. Containment sediments must be disposed of in accordance with state and federal regulations. Uncontaminated soil may be used onsite to shape ditches or stockpiled and used as fill for another location. Cover soil stockpiles to prevent erosion and/or install a silt fence to contain sediment. Apply grass seed to exposed soils. A compost/mulch mixture applied with seed will speed vegetation growth which prevents soil erosion. If the channel experiences high velocities, turf reinforcement mats or check dams should be used to protect the channel until vegetation is established.

Reporting Pollution: Look for signs of pollution at the jobsite and during travel. Some indicators to look for include: oil sheen on water surfaces, excess trash and debris, foul odor, colored or cloudy water, and dead or dying fish. Also keep an eye out for illegal dumping. And if any of these indicators are spotted, report the suspected pollution problem to the supervisory personnel, or to the local TCEQ office.

Quiz

1. During saw cutting operations, slurry should be...

- A. Allowed to dry on the pavement
- B. Vacuumed up
- C. Washed down the nearest storm drain
- D. None of the above

The answer is... B. Vacuumed up. Slurry contains many harmful contaminants and should be contained and disposed of properly.

2. Excess oil based paint should be handled in the same manner as latex paint.

- A. True
- B. False

The answer is... B. False. Oil based paint must be placed in proper containment bins, while latex paint may be allowed to dry and placed in the trash.

3. Where should stockpiles of asphalt patching material be placed?

- A. In a grass field
- B. Near a storm drain
- C. On a concrete or paved surface
- D. Any place is acceptable

The answer is... C. On a concrete or paved surface, where it can be contained and not allowed to wash into the storm drains.

4. Signs of polluted water include...

- A. Oil sheen on water surface
- B. Dead or dying fish
- C. Colored or cloudy water
- D. All of the above

The answer is... D. All of the above. If signs of pollution are spotted, notify your supervisor or contact the local TCEQ office.

Review: Various activities associated with the maintenance of streets and drainage facilities may result in storm water pollution if not conducted properly. Help prevent storm water pollution by: vacuuming and containing slurry during saw cutting operations, washing out concrete trucks only in designated areas, cleaning up properly after any spill, properly disposing excess paints., applying grass seed and mulch to exposed soils, and reporting signs of pollution to your supervisor. By using these best management practices while on the job, you will be helping keep our communities and water ways clean and healthy for future generations to enjoy.