BLOOMINGTON UTILITIES

STORM DRAIN MARKING HANDBOOK

(With appendix on what *you can do* to help water quality in your neighborhood!)

Storm Drain Marking Program

Welcome to the City of Bloomington Utilities' Storm Drain Marking Program. The primary goal of this activity is to educate Bloomingtonians on the proper use of storm drains. In order to achieve this goal, your group will have the opportunity to communicate your concerns about the negative impacts of urban stormwater runoff (rainwater that carries pollutants) on water quality to your community. Storm drains are often misused for the disposal of paint, motor oil, antifreeze, pesticides, and other wastes.

One is not born into the world to do everything but to do something.

~ Henry David Thoreau

Improper disposal can seriously damage your community's water quality, our environment, and fish and wildlife habitat. In addition, each time it rains, stormwater runoff may carry street litter, yard debris, pet wastes, and other pollutants into storm drains. This "nonpoint source pollution" can be a significant source of contamination of Indiana's urban streams.

Unfortunately, storm drains do not purify and remove pollutants. In many communities, stormwater runoff is discharged directly into nearby streams, rivers, lakes, and even sinkholes and caves, which are conduits to groundwater. In other communities, storm drains may empty directly into a wastewater treatment plant where pollutants adversely affect the quality of the discharged water and sludge, which may eventually be used as fertilizer. The following steps will help you to successfully complete your marking project…

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Children marking storm drains in Sherwood Oaks subdivision

Prior to the Event

Step 1. Choose an area to mark

Identify a community, subdivision, or cluster of streets where you'd like to mark the storm drains. Make sure there are storm drains located there.

Step 2. Obtain permission

Obtain permission to mark storm drains from the Storm Drain Marking Program Coordinator. They will provide you with a "Letter of Permission" to mark the storm drains in the area you choose (if applicable), as well as set you up with training, materials, and so on. The letter will verify that you have received permission so that concerned residents will know that the project has been approved. The training will help you learn how to safely mark the storm drains. Once you have completed the training, you will be given a Storm Drain Marking Program supply kit. You will also be asked to sign a liability waiver.

Step 3. Gather supply kits

To mark storm drains, your group will need supplies. They are available from your Storm Drain Marking Program Coordinator and include:

Paperwork:

- SDMP Letter of approval (if applicable)
- SDMP Quick Reference Guide/Supply List
- SDMP Map of area
- SDMP Brochures
- SDMP Waivers

Equipment:

- Backpack
- The above paperwork in a folder
- Pens or pencils
- Curb markers and glue
- Gloves
- Orange safety vests
- Orange traffic flag
- Whisk broom
- Wire brush
- Rag
- Trash bags
- Hand cleaner
- Paper towels
- First Aid Kit

Other items you may want to include: Sunscreen, cell phone, camera, water to drink, and baby wipes to spot clean here and there.

When Ready to Mark

Step 1. Check weather conditions

To ensure that the glue will dry, it must be at least 50 degrees F when you do your marking. The marking surface must be dry.

Step 2. Follow safety precautions

Describe all steps for marking storm drains to participants. When youth groups are involved, provide close adult supervision. Each participant should wear a safety vest when working on the project. Watch out for cars and other moving vehicles, including bicycles. One person should hold a traffic flag and alert oncoming cars (if there are not enough vests to go around, at least the person alerting traffic should wear one). Use the same caution that you would use while walking along the road right-of-way. Stay out of and away from driving lanes and face oncoming traffic. Review these rules orally prior to marking with all your participants. Remember that drivers may not always see you. If the storm drain is inaccessible (for example, blocked by a parked car), skip that one and return to it later. Never mark alone. *If in doubt, think and act safely first!*

Step 3. Marking and handing out brochures/posters

While some of your group is marking storm drains, the others can pass out brochures and/or posters to homes and businesses near the storm drains. People will be curious. It's always a good idea to be kind, courteous, and helpful to everyone you meet. Remember, you are representing the City of Bloomington Utilities Department. Flyers should be placed so that they stick out of doors (they should NEVER be placed in mail boxes, it is illegal). Youth teams should have at least one supervising adult per group.

At the Storm Drain Site

Outfit your team members with their safety equipment—safety vests, orange traffic flag for those doing traffic control, and gloves. Wearing the protective gloves, place any nearby trash in garbage bags. Use caution when handling sharp objects. A volunteer should be responsible for proper disposal of the garbage bags.

Using the whisk broom, brush off the area to be marked so it is clear of debris and scrub it with the wire brush. Dust off any residue.

Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has.

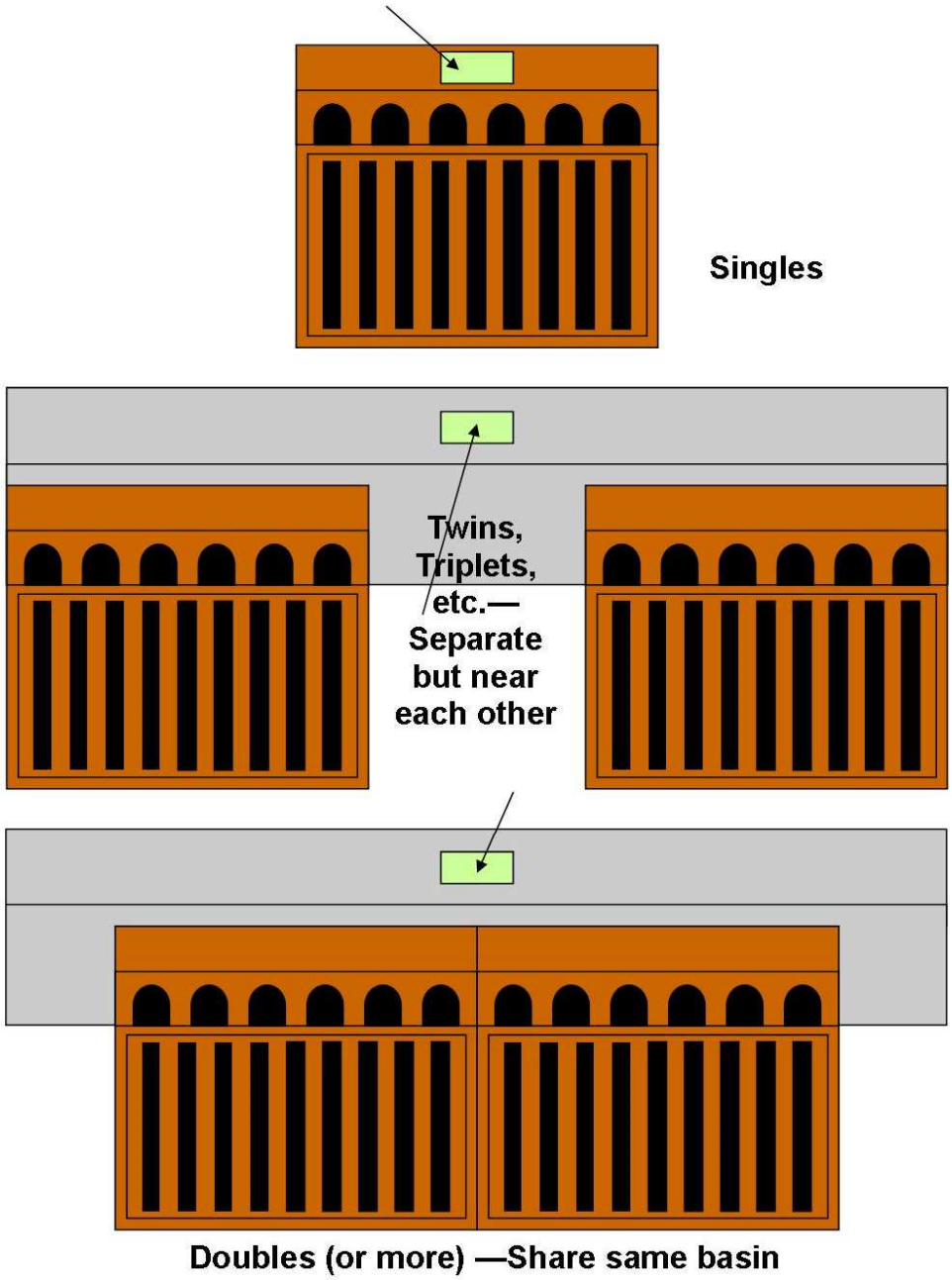
~Margaret Mead

Step 1. Mark the storm drain

Mark as you learned in your training—applying the glue as depicted on the back of the marker and place it either on top of the storm drain near the curb or nearby on the curb or sidewalk, whichever works best. We prefer them to be placed on top of the storm drain but if that's not possible due to location and/or shape of drain (for example if it's curved) place it nearby on the curb or sidewalk, as close as possible to the drain. Also, they should be placed to be read when facing the drain.

Diagram →

Where to mark storm drains...



Step 2. Post your posters

Place posters in designated areas.

For example: Public displays, management offices, stores, and more where you have obtained permission.

After the Marking Event

Step 1. Gather all people and supplies

Make sure you can account for everything and everyone! There is a list with your supply box which will make the job easier.

Step 2. Congratulate yourselves!

You have done a good job for your community. You should be proud. Take a moment to congratulate yourselves!

Step 3. Dispose of trash

Please make sure to dispose of any trash properly. If you have any questions, contact Monroe County Solid Waste Management District

Step 4. Return the materials and report forms

Please return all materials and the report form to the Storm Drain Marking Program Coordinator.

Step 5. Collect your certificates of completion!

Your individualized certificates of completion will be on hand with the Storm Drain Marking Program Coordinator.

Appendix A. Point and Nonpoint Source Pollution

Point source pollution can be traced back to specific sources. Some examples include discharge pipes from sewage treatment plans, industries, and combined sewer systems. Because the source is obvious, it is possible for regulations to limit point source pollution.

Nonpoint source pollution enters our waters from many nonspecific sources. It is caused by stormwater runoff (rainwater carrying pollutants) from land surfaces such as farmland not using soil conservation methods, forests that have been improperly logged, construction sites, and urban areas. Each time it rains, runoff from streets picks up litter, motor oil, pet wastes, gasoline, car washwater, excess fertilizers and pesticides, leaves, and grass clippings. This runoff reaches our waters via storm drains. Because nonpoint source pollution comes from many sources, it is difficult to control and regulate.

Although water quality improvement has resulted from the regulation of point source pollution, Indiana's water resources are still at risk. These resources are threatened by improperly disposing of motor oil, not cleaning up after pets, leaving yard wastes on the streets, and applying fertilizers and pesticides before rains. All of these activities, and others, contribute to the pollution of our waterways.

Nonpoint source pollution is a major cause of our nation's water quality problems. Household wastes are a source of nonpoint source pollution especially in urban areas. They often enter our waterways via storm drains, negatively impacting water quality by depleting oxygen reserves and contaminating the water. Aquatic plants and animals need sufficient oxygen and clean water to survives. Storm drains should never be used to dispose of household waste.

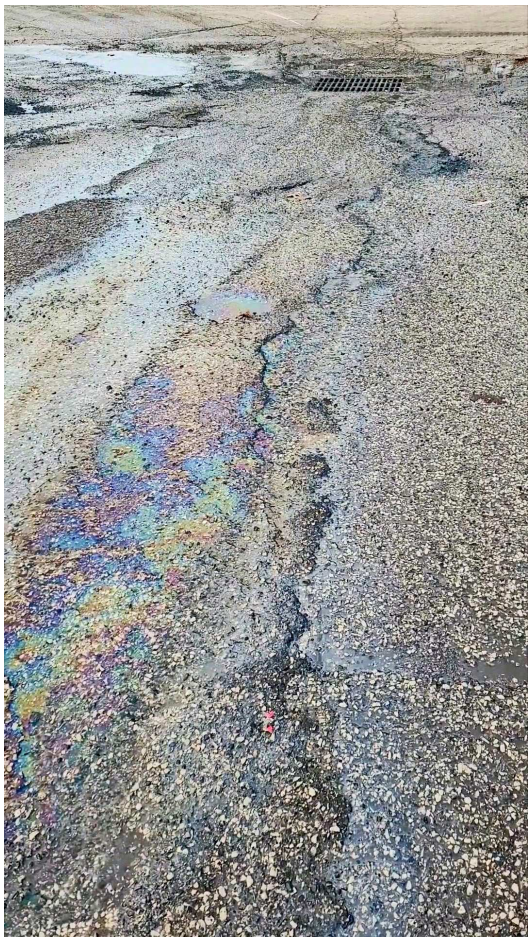
Appendix B. What you can do

The following information addresses specific types of wastes. This information will help you learn what you can do to prevent pollution from entering our waterways.

Motor Oil. Motor oil can damage or kill underwater vegetation and aquatic life. Each year in the United States, do-it-yourself motor oil changers improperly dispose of 192 million gallons of used motor oil. One gallon of used motor oil can contaminate one million gallons of water. When used motor oil is applied to roads, over 90% of it leaves the road surface on dust particles or in surface runoff.

Solutions:

- Repair any leaks in your vehicle.
- Put used motor oil into a sealed container (a plastic milk jug with a screw-on cap works well) and take it to a used motor oil collection site. Do not mix used motor oil with any other substance.
- Do not apply motor oil as a dust suppressant on roads, parking lots, driveways, or other similar surfaces. There are soy-based liquids on the market now.
- If recycling is not available, used motor oil must be saved for a household hazardous waste collection, such as via the Monroe County Solid Waste Management District



Antifreeze. Antifreeze is primarily composed of ethylene glycol, a sweet and poisonous compound which can kill or injure pets, birds, fish, and other wildlife when disposed of carelessly. It can also contain heavy metal contaminants picked up from vehicle engines during use.

Solutions:

- Repair any leaks in your vehicle's radiator system.
- Take used antifreeze to the Monroe County Solid Waste Management District.
- Never pour antifreeze into a septic system or lagoon, either.

Fertilizers. Fertilizers contain large amounts of phosphorus and nitrogen which can cause algal blooms in aquatic areas. These blooms can deplete oxygen levels in the water, resulting in fish kills.

Solutions:

- Sweep and collect any fertilizer from driveways and walkways. Do not wash these materials into storm drains.
- Avoid overusing fertilizers. Determine the mineral needs of your soil and apply the necessary amounts.
- Never apply fertilizer before it rains.
- Donate unwanted fertilizer to a friend, local garden club, or other organization that can use it up.
- Save unusable fertilizer for the Monroe County Solid Waste Management District.

Paint. Paint, even latex paint, can contain a variety of hazardous ingredients including lead, mercury, and organic solvents, all of which can impact the environment when disposed of improperly. Paint rinsewater can also be a problem.

Solutions:

- Never rinse painting equipment where the rinsewater can run into a storm drain.
- If it is usable and less than 10 years old, donate the paint to a friend or a community group, such as a local school or theater, that can use it up.
- If the paint is unusable or older than 10 years, save it for the Monroe County Solid Waste Management District**.**

Pesticides. Pesticides contain toxic materials, some of which are harmful to humans, animals, aquatic organisms, and plants. When it rains, these toxic materials can enter storm drains and waterways.

Solutions:

- Minimize the use of pesticides by using Integrated Pest Management practices. Contact University Extensions for more information.
- Always determine what the pest is and if the pesticide is specific for that pest.
- If you must use a pesticide, follow the label directions very carefully.
- Never apply a pesticide before rain unless instructed to do so on the label.
- Never rinse pesticide application equipment where the rinsewater can run into a storm drain.
- Consult with lawn care companies about the products they use on your property. Request that they use environmentally safe practices and ask to see material safety data sheets on their products.

- If a pesticide is usable, is not canceled or restricted, and you no longer have a use for it, donate it to a friend, neighbor, or community group who will use it safely. Contact University Extension to determine if the pesticide is canceled or restricted.
- Save unusable, unwanted, or leftover pesticides for the Monroe County Solid Waste Management District.

Other Household Hazardous Wastes. Many other household products such as paint thinners, automotive waxes, cleaners, and swimming pool chemicals contain hazardous ingredients that can be a problem when disposed of improperly.

Solutions:

- Purchase products which are less hazardous.
- Give unwanted but usable products to someone who can use them safely.
- Save any unwanted or unusable portions of these products for a household hazardous waste collection.

The miracle is this—the more we share, the more we have.

Pet Wastes. Pet waste is raw sewage. Allowing it to enter our waterways releases both potentially harmful bacteria and oxygen-consuming materials.

Solutions:

- Dispose of pet wastes by flushing them down the toilet or by burying them away from any food-growing locations.

Street Litter and Plastics. Street litter such as plastic bags, cups, candy wrappers, and cigarette butts are washed from the street by storm water and end up floating in area streams and lakes. Many animals mistake plastic for food and, as a result, become ill or die. Plastic can take hundreds of years to degrade and so presents a long-term problem when it is disposed of improperly.

Solutions:

- Never throw garbage into the street or down storm drains.
- Dispose of all garbage, including cigarette butts and fast food contains, in garbage cans.
- Periodically collect garbage from your street that might be washed into a storm drain. Ask your family friends, and neighbors to do the same.

Other Water Protecting Activities.

If you wash your car at home, wash it in a grassy area, using minimal amounts of no-phosphate soap. Be careful not to drive over your septic system! Another option is to take your car to a car wash that sends the wastewater to the wastewater treatment plant.

Keep your engine-driven machines (cars, motorcycles, and lawn mowers) well tuned.

Yard Wastes and Erosion. When disposed of in large quantities, leaves and grass clippings allow bacteria, oxygen-consuming materials, phosphorus, and nitrogen to be released into our waterways. Yard wastes can also clog drains, making them ineffective and causing local flooding. Soil that erodes from your yard increases the sediment load in waterways, and in sufficient quantities can block sunlight essential for aquatic plants and suffocate animals.

Solutions:

- Do not allow soil, leaves, or glass clippings to accumulate on your driveway, sidewalk, or in the street.
- Collect leaves and grass clippings and compost them.
- Check with local authorities for information on composting and the status of community composting services.
- Leave vegetation along drainages and waterways to slow and filter yard runoff. Native plants are better designed for the area—they have deeper roots help disseminate stormwater and work better with the soil so they require less fertilizers and pesticides.
- You may wish to considering a rain garden comprised of native plants. For more information, see Monroe County's storm water quality page, www.co.monroe.in.us

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Did you know Bloomington is certified as a **Backyard Wildlife Habitat** by the National Wildlife Federation? To learn how you may turn your own yard into a wildlife habitat, visit: www.nwf/backyard

For ***questions*** on the **Storm Drain Marking Program**, including ***volunteer*** opportunities, contact:

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Indigenous plants are a significant part of a region's geographic context—in fact, they help define it. They have proven themselves capable of surviving the landscape for millennia.

~Michael Homoya
State Bontanist, IDNR

For more information on waste disposal, contact:

Monroe County Solid Waste Management District
(812) 349-2020
mcswmd.org