

WHAT IS A WATERSHED?

A watershed is the area of land that drains to a body of water; be it a river, a stream, the ocean, an estuary, a bay, etc. Basically, a watershed is a “**drain pool**” or the drain area where rainwater drains into a body of water. Wherever you live, when it rains, it drains to some water body. So, everyone lives in a watershed!

The Effects of Water Pollution

According to the **Environmental Protection Agency (EPA)**, in this modern industrial age, our water sources are becoming more contaminated with each passing year. The biggest water quality problem we have in the nation today is polluted runoff.

All water east of the Continental Divide drains to the Atlantic Ocean, while water west of the Divide flows to the Pacific Ocean; and one drop of rain can cross many different watersheds along the way. As runoff flows into rivers, streams, and storm drains, the water picks up trash, dirt, bacteria, toxic chemicals and fertilizers, creating a super pollutant that is extremely hazardous to the environment. And the consequences of polluted runoff exists worldwide.

To address the complex threats facing U.S. water resources, the EPA recommends adopting a “**watershed approach**.” It’s a method that looks at each watershed for its own unique set of environmental challenges and solutions.

“The UN estimates that there is about a billion people on the planet right now that don’t have access to fresh water.”
– David Braun, The Nature Conservancy



“In many cases, people mistakenly identify large discharge pipes in the water as the problem. But that may not be the problem. It may be coming from agricultural runoff; it may be coming from stormwater runoff over parking lots and impervious surfaces. Every watershed is different and you need to look at each watershed in its own terms; and then think systematically how you remediate how you clean up that watershed.”

– G. Tracy Mehan, III, Assistant Administrator, US EPA 2001-2003

Polluted stormwater runoff can have many adverse effects on plants, fish, animals and people.

- Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms cannot exist in water with low dissolved oxygen levels.
- Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.
- Debris—plastic bags, six-pack rings, bottles and cigarette butts – washed into waterbodies can choke, suffocate or disable aquatic life such as ducks, fish, turtles and birds.
- Household hazardous wastes, such as insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.
- Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.



What is Stormwater runoff?

Stormwater runoff occurs when precipitation from rain or snow/ice melt flows over the ground. Collectively, this draining water is called stormwater runoff. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.

Why is Stormwater runoff a problem?

Stormwater can pick up debris, chemicals, dirt, and other contaminants, and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. The water that seeps into the ground and/or drains into storm sewers can potentially carry pollutants that could be a concern to our residential, commercial, and industrial communities. Anything that enters a storm sewer system can travel for miles, and eventually discharge untreated into the waterbodies we use for swimming, boating, fishing, and providing drinking water. The result can be the closing of beaches and damage to aquatic life.

STORMWATER MANAGEMENT RESOURCES

Pittsfield Charter Township

Utilities and Municipal Services Department
(734) 822-3105 ~ www.pittsfield-mi.gov

Community Partners for Clean Streams

Washtenaw County Water Resources Commissioner’s Office
(734) 222-6860 (WCWRCO) ~ (734) 222-6833 (Clean Streams)
www.ewashtenaw.org/government/drain_commissioner

Huron River Watershed Council

(734) 769-5123 ~ www.hrwc.org/

River Raisin Watershed Council

(517) 265-5599 ~ <http://riverraisin.org/>

SEMCOG (Southeast Michigan Council of Governments)

(800) 961-3334 ~ www.semco.org/

Michigan Department of Natural Resources (MDNR)

(248) 359-9040 Southfield Operations Center
(800) 292-7800 Hotline & After Hours ~ www.michigan.gov/dnr/

Michigan Water Environment Association

(517) 641-7377 ~ www.mi-wea.org/

Environmental Protection Agency

(202) 272-0167 ~ www.epa.gov/npdes/stormwater/



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RESIDENTIAL

Recycle or properly dispose of household or commercial products that contain chemicals, such as insecticides, pesticides, paints, solvents, used motor oil and other auto fluids. Do not pour these toxic contaminants into the ground or into storm drains.

Lawn Care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

- Do not over water your lawn. Established laws generally require one-inch of water per week. Consider using a soaker hose instead of a sprinkler.
- Use pesticides and fertilizers sparingly. When they are necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- Compost or mulch yard waste. Do not leave it in the street or sweep it into storm drains or streams.
- Cover piles of dirt or mulch being used in landscaping projects.

WATER FACTS

97% of all water on earth is salty, ocean water. Of the remaining three percent that is fresh water, over two-thirds of it is frozen in glaciers and polar ice. That leaves less than one percent of all the planet's water for our use.



Residential Landscaping Suggestions



Stormwater Pollution Solutions

Septic Systems

Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.

- Inspect your septic system every three years and your pump tank as necessary (every 3 to 5 years).
- Do not dispose of household hazardous waste in sinks or toilets.

Septic systems should be installed properly and inspected regularly to ensure they are well-contained.

Pet Care

Pet waste can be a major source of bacteria and excess nutrients in local waters. When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases risks by allowing harmful bacteria, such as E. coli, and nutrients to wash into the storm drain and eventually into local waterbodies.



Auto Care

Washing vehicles and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as pouring the materials directly into a waterbody.

- Use a commercial car wash that treats or recycles its wastewater.
- Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations

Car washing at home, especially on your driveway, will add contaminants to our stormwater systems.

What YOU Can Do!

First, become more aware of what may be causing stormwater pollution in your area. Second, help your community by doing the following...

- If you witness someone in the act of dumping inappropriate materials into stormwater drains, such as oil, antifreeze, gasoline, etc., call 911 for emergency response; or contact Pittsfield Township's Department of Public Safety at (734) 822-4911 (non-emergency number); or call the Washtenaw County Environmental Reporting Line at (734) 222-3880.

- Use good housekeeping practices with your own lawn care chemicals, oil, gasoline, pet wastes, etc.
- Start or participate in programs to recycle and safely/properly dispose of used oil and household wastes and containers.
- Share this brochure and tell others about pollution from stormwater runoff and what they can do to help.

COMMERCIAL

Businesses

Dirt, oil, and debris collected in parking lots, and paved areas can be washed into the storm sewers and eventually into a waterbody. Likewise, fats, oils and grease (FOG) generated by food service providers that is not properly disposed of can end up in wastewater treatment plants and stormwater systems.

- Sweep up litter and debris from sidewalks and parking lots, especially around storm drains.
- Cover grease storage dumpsters and keep them clean to avoid leaks.
- Report any chemical spill to your local hazardous waste clean-up facility. (**Washtenaw County Emergency Management: (734) 973-4911 or (734) 973-4900 ~ www.ewashtenaw.org/**)
- Avoid FOG spills; clean them up as soon as they occur. Use a FOG recycling/rendering service that provides watertight outdoor receptacles or adequate size and schedule regular pick-ups. Do not hose FOG waste down storm drains.

- Fueling Stations should install and maintain oil/water separators, and provide covers over fueling areas; they should design facilities for spill containment. Spills should be cleaned up immediately and disposed of properly.

Construction

Construction vehicles can leak fuel, oil and other harmful fluids that can end up in our waterbodies. Erosion controls that are not maintained can produce excessive sediment and debris in the stormwater system.

- Divert stormwater away from disturbed or exposed areas of the construction site.
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rain storms.
- Prevent soil erosion by minimizing disturbed areas during construction projects and seed and mulch bare areas as soon as possible.



Rain Barrels: Collect rainwater from rooftops in mosquito-proof containers. The water can be used later on your grass and gardens or flowers.

Rain Gardens & Grassy Swales: Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain from rooftops or paved areas can be diverted into these natural gardens rather than into storm drains.

Vegetated Filter Strips: Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants that stormwater picks up as it flows across driveways and streets.

Permeable Pavement: Traditional concrete and asphalt does not allow water to soak into the ground. Instead, these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through decreasing stormwater runoff.