

# Urban Watershed

In an urban watershed, rainwater cannot penetrate impervious surfaces like roads, parking lots, and buildings, so we use storm drains or catch basins to carry away stormwater runoff and prevent flooding. Unfortunately, pollutants on the ground, like motor oil, pet waste, and trash, can be picked up by stormwater runoff and drain into our waterways. This type of nonpoint source pollution is the number one water quality problem in the nation.

If you live in the Greater Lansing region, you live in the Red Cedar River, Looking Glass River, or Grand River urban watershed. You can help protect our water quality by visiting [mywatersheds.org](http://mywatersheds.org). Use the events page to participate in local events and view videos and educational tools to enact change!



# Do Your Part



We all live in a watershed. Your actions and choices can help keep our water clean!



# POLLUTION ISN'T PRETTY.



**GREATER LANSING  
REGIONAL COMMITTEE  
FOR STORMWATER MANAGEMENT**

# Do You Know Your Watershed?



For more information or to learn more about protecting our water, visit the link below or contact the Tri-County Regional Planning Commission.

[mywatersheds.org](http://mywatersheds.org)  
[mywatersheds@mitcrpc.org](mailto:mywatersheds@mitcrpc.org)



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# What Is A Watershed?



A watershed is an area of land that drains to a common point like a lake or river. In the Grand River watershed, all land drains to Lake Michigan and eventually the Atlantic Ocean! This means that our actions here at home affect the Great Lakes too. Grass clippings, leaves, litter, motor oil, pet waste, and other sources of pollution we leave on the ground can impact water quality much further "downstream."



# Our Watersheds

*Urbanized areas only*

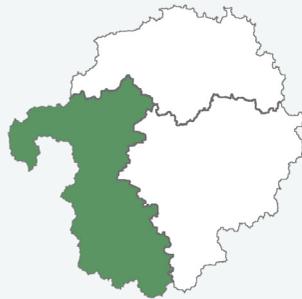
## Looking Glass River Watershed

Population: 46,097  
 Political Jurisdictions: 14  
 Land Area: 80,290 acres  
 Wetlands: 16,070 acres  
 Miles of rivers and streams: 183



## Grand River Watershed

Population: 83,212  
 Political Jurisdictions: 13  
 Land Area: 93,622 acres  
 Wetlands: 8,586 acres  
 Miles of rivers and streams: 325



## Red Cedar River Watershed

Population: 174,837  
 Political Jurisdictions: 15  
 Land Area: 105,629 acres  
 Wetlands: 13,967 acres  
 Miles of rivers and streams: 225



# Top Ten Ways to Protect Our Waters

- 01 Dispose of pet waste properly in the trash or toilet (not in on-site septic systems).
- 02 Soil test before applying lawn fertilizers – you may not need them!
- 03 Plant native trees and flowers near downspouts or in a rain garden. They will help filter stormwater pollutants and do not require fertilizers or much water.
- 04 Install a rain barrel to capture, reuse, and control stormwater runoff.
- 05 Maintain all vehicles to eliminate leaks that flow down storm drains into waterways.
- 06 Recycle and dispose of household hazardous waste (motor oil, household cleaners, paint, etc.) at a collection site.
- 07 Inspect your septic system every three years and pump every three to five years.
- 08 Wash your car on the lawn versus pavement as local ordinance allows. The soil will help filter soaps and grease that can flow from driveways into storm drains and waterways.
- 09 Support and join a watershed organization or participate in area river cleanups.
- 10 Fix leaks, run full loads in the dishwasher and washer, and water your lawn in the early morning or at night to conserve water.

# Calculate Your Roof Runoff



To estimate the amount of stormwater runoff your roof produces during a 1-inch rain event, take the square footage of your roof, multiply it by 623, and divide that number by 1,000.

Michigan's average annual precipitation is 32 inches. So, a 2,000-square-foot home produces nearly 40,000 gallons of stormwater runoff yearly! Driveways and decks add even more.

Capture and reuse some of this water using a rain barrel at your home. You can reduce your water bill during dry periods, prevent erosion from gutter downspouts, and help limit the amount of runoff that could otherwise transfer pollutants through the storm sewer system!



# Do Your Part



Use green infrastructure to reduce runoff and filter pollutants at home with rain gardens and rain barrels.



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# Green Infrastructure At Home



[mywatersheds.org](http://mywatersheds.org)

# What Is Green Infrastructure?

When rainwater falls on the ground, vegetation and soils collect and absorb much of it. When rainwater falls on impervious surfaces like parking lots and rooftops, the water flows off into storm drains and drainage ditches. Pollutants such as pet waste, fertilizers, and leaking motor oil are swept up with the runoff, which eventually discharges into our lakes, rivers, and streams without undergoing treatment.

Green infrastructure mimics natural landscapes by capturing excess runoff on site, reducing runoff volumes, and filtering out pollutants that would otherwise enter and impact our surface water resources. Green roofs, permeable pavement, bioswales, rain gardens, and rain barrels are all examples. You can help protect local water quality by using a rain barrel or planting a rain garden with native plants.



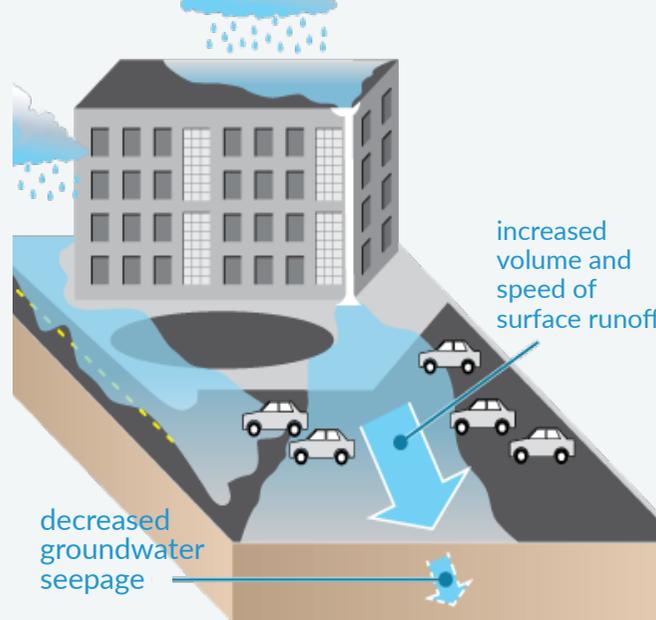
# Rain Gardens Reduce and Filter Runoff

A rain garden is a planted depression in the landscape that collects water from roof downspouts, driveway runoff, or sump pump discharges and allows it to soak into the ground rather than enter the storm sewer system. Planted with native grasses and flowering perennials, rain gardens are a cost effective, low maintenance, and beautiful way to reduce and filter runoff from your property.

Install a rain garden at your home or business to create butterfly habitat, prevent flooding, and make your lawn more attractive! Learn how at [mywatersheds.org/rain-garden-101](http://mywatersheds.org/rain-garden-101).



## Impervious Surfaces



## Pervious Surfaces



# Pet Waste Facts

# Do Your Part

01

Just one gram of dog waste can contain as many as 23 million fecal coliform bacteria, including *E. coli*.

02

If left on the ground, pet waste can wash down storm drains, discharge into surface waters, and impair water quality.

03

Over 65 million dogs in the United States produce more than 9 million TONS of dog waste each year!

04

Hookworms, ringworms, tapeworms, and salmonella can be spread by contact with infected dog waste.

05

A high-protein, highly processed diet means dog waste can contain more bacteria and pathogens by weight than cow waste.



Your actions can help keep our water clean. Thank you for picking up after your pet!



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## Pet Waste Management



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# What's the Problem with Pet Waste?

Pet waste isn't just a nuisance in yards and parks. It is full of bacteria that can make people and aquatic plants and animals sick. When left on the ground, precipitation and sprinkler runoff can wash pet waste (and the bacteria it carries) into storm drains. Since most storm sewers discharge into rivers, lakes, and streams without undergoing any treatment, runoff polluted with pet waste and other contaminants can impair our surface water resources.

# Help Keep Our Water Clean

There are many threats to the health of our watershed, but picking up after our pets is a simple and easy way to limit one common source of pollution.

- Frequently pick up pet waste from your yard or hire a pet waste removal company to clean it routinely.
- Pick up after your pets before watering your yard or cleaning patios and driveways. Never hose pet waste into the street or gutter.
- Carry a plastic or biodegradable bag when walking pets and be sure to pick up after them. Either throw the waste in the garbage, flush it, use a pet waste composter, or:
- Bury small quantities in your yard to decompose slowly. Dig a hole one foot deep, place three to four inches of waste at the bottom of the hole, and cover the waste with at least eight inches of soil. Bury the waste in several different locations in your yard. Just make sure to keep it away from vegetable gardens!



**Dogs can't do this....**



**So please do this!**



# The Importance of Clean Water

Pollution from sources like industrial factory wastes have been greatly reduced -- that's great! Today, the largest source of water pollution (over 50%) comes from these everyday things:

-  Motor vehicle fluids
-  Pet wastes
-  Soaps from residential car and power washing
-  Failing septic systems
-  Leaves and grass clippings
-  Fertilizers from farms, lawns, and gardens
-  Household hazardous wastes

All these small sources add up to a big pollution problem, but each of us can do simple things to help keep our waters clean. Having a clean environment is of primary importance for our health and economy. Clean waterways provide recreation, commercial opportunities, habitat for aquatic animals, and natural beauty.



# Do Your Part



Use pesticides and fertilizers sparingly and keep yard waste away from storm drains.



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# Lawn & Garden Care



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# What's the Problem with Fertilizer?

Fertilizer isn't a problem when used carefully, but if you use too much or apply it at the wrong time, it can easily wash off your lawn or garden and into storm drains. From there, it flows into our rivers, streams, wetlands, and lakes without undergoing treatment.

Fertilizers make aquatic plants grow, yet while fertilizer may help our lawns and gardens, excess phosphorus and nitrogen in waterways causes algae to grow faster than aquatic ecosystems can handle. Large algal blooms reduce oxygen levels, increase toxicity, and spur bacterial growth, making the water unsafe for human recreation and aquatic life. By properly applying and limiting lawn fertilizer usage, you can help protect our surface water resources from nutrient pollution.

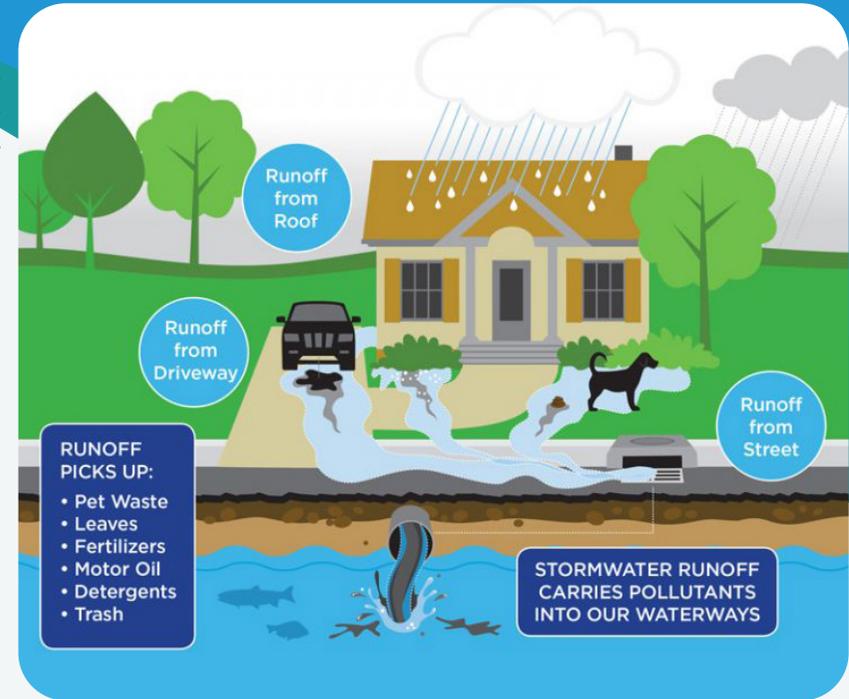


# Where Do All Those Storm Drains Lead?

Did you know that most storm drains are NOT connected to treatment plants? The purpose of storm drains is to carry rain runoff and snowmelt away from developed areas to prevent flooding. The untreated stormwater and the pollutants it carries flow directly into our creeks, rivers, and eventually the Great Lakes. Keeping pollutants off the ground helps keep them out of our waterways.

## Help Keep Our Water Clean

- Use fertilizers and pesticides sparingly. Test the soil to determine if fertilizers are necessary, and if so, use the minimum amount needed.
- Leave grass clippings on the lawn to decompose and recycle nutrients back into the soil.
- Consider using organic fertilizers and pest control methods whenever possible.
- Use compost – your plants will need less chemical fertilizer, and it puts waste to good use.
- Don't overwater your lawn and garden.
- Consider using a drip system or soaker hose instead of a sprinkler.
- Don't fertilize before a rainstorm.
- Sweep up grass clippings and fertilizer from paved surfaces and properly dispose of them.



- Mulch mow, compost, or bag leaves. Keep them away from storm drains, as they can block water from flowing and increase nutrient levels in waterways when decaying.
- Install green infrastructure like rain barrels and rain gardens. Native plants do not need as much water or fertilizer.

# Why Is Washing My Car a Problem?

There's no problem with washing your car – just how and where you do it. When you wash your car in the driveway or on the street, the soap – together with the dirt, wax, oil, grease, grime, and grit – washes from your car, flows along the curb, and into nearby storm drains.

From there, the mess flows through the storm sewer system and directly into our rivers, streams, wetlands, and lakes. Since storm drains are not connected to wastewater treatment plants, pouring wastewater from car and power washing down storm drains impacts water quality for both human and aquatic life.



# Do Your Part



Use a car wash facility or wash your car on the lawn as local ordinance allows to help filter pollutants.



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# Car & Power Washing



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# Harmful Effects of Power Washing

Power washing your car, deck, driveway, or siding can impact our watershed. Here are some of the effects from the chemicals washed off during power washing and the soaps and cleaning agents utilized:

- Phosphates in soap can cause excessive algae growth and reduce oxygen levels in our waterways. Biodegradable products also can lower dissolved oxygen levels.
- Soap surfactants damage fish gills and kill their eggs.
- Heavy metals impact the growth rates and reproduction of aquatic organisms.
- Oils can stop oxygen from reaching plants and animals.



# What's The Best Way to Wash My Car?

Simply put, the most environmentally friendly way to wash your car is by using a commercial car wash. When you wash your car on the road or in the driveway, all the soaps, greases, grime, and heavy metals from your vehicle wash off the car and flow down the street. These harmful chemicals then wash down storm drains, which flow directly into our lakes, rivers, and streams.

## Help Keep Our Water Clean

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- Avoid washing your car in the driveway, alley, or street.
- Wash your car on the lawn as permitted by local ordinance so the ground can filter wastewater naturally.
- Pour your bucket of soapy water down the sink when you're done, not into the street. Don't let soapy water from car or power washing flow down storm drains.
- Avoid using engine cleaners or degreasers.
- Use a hose nozzle with a trigger to save water when you don't need it.
- Use *Safer Choice* certified cleaning products for car and power washing.
- Try using plain water first for power washing, you may find a cleaner is not needed.



## The Benefits of Using a Car Wash

- The average homeowner uses 116 gallons of water to wash a car! Most commercial car washes use 60% less water for the entire process than a homeowner uses to rinse their vehicle.
- Car washes filter and reuse wash water several times before sending it to the sanitary sewer to properly dispose of and treat wastewater.

