

# Storm Water Runoff

Catch contaminants before it's too late



**BPW**

Through conscious and responsible storm water management we can help minimize contaminants and runoff, keeping our drinking water safe.

## What is Storm Water Runoff?

Storm water runoff occurs when precipitation flows over the ground before reaching a storm sewer or waterway. The moving water picks up particles of whatever it runs over, including soil, debris, chemicals, fertilizers, animal waste, and fluids from vehicles. These contaminants are then carried with the flow of the water and move through our storm water drains, rivers and streams. The untreated runoff finally flows into the lakes we use for swimming, fishing and drinking. Some runoff is natural, but poor land management techniques and impervious, paved surfaces increase the amount of redirected water. The contaminants in runoff can compromise drinking water supplies. They have already led to elevated levels of bacteria and phosphorus in Lake Macatawa and nearby rivers and streams. If we are conscious about storm water issues and act responsibly, we can minimize runoff and keep our water safe.

## What Can Residents Do?

### Wastewater Systems

- If you have a septic system, inspect it at least every three years and pump your tank as necessary (three to five years) to ensure proper function.
- Don't dispose of household hazardous waste in sinks or toilets. See [miottawa.org](http://miottawa.org) or [cms.allegancounty.org](http://cms.allegancounty.org) to learn how to recycle hazardous waste in your county.
- Don't put fats, oils, grease or "flushable" wipes down the drain. These can cause backups in pipes which can cause overflows into the environment.

### Lawn Care

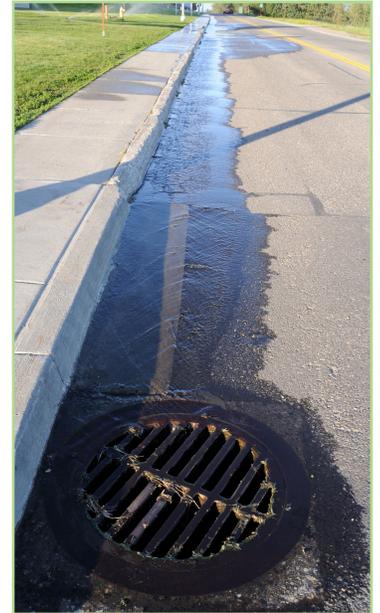
- Don't over water your lawn or cut grass too short. This leads to water running off your lawn and taking fertilizers and soil with it.
- Use organic mulch and natural pesticides instead of harsh chemicals or processed, dyed mulch.
- Plant a rain garden with native plants or a grassy swale. These areas can provide natural places for rainwater to collect and soak into the ground. Divert water from downspouts and paved areas to these areas as well.

### Pet Waste

- Pet waste can be a major source of bacteria. Always remember to pick up after your pet on walks.
- Place the pet waste in the garbage, flush it down a toilet, or purchase a pet waste digester, available from large pet supply stores.

### Auto Care

- Washing your car at home can send detergents and other contaminants through the storm water system. Use a commercial car wash that recycles or treats its wastewater or wash your car on lawn so that the grass filters the contaminants.
- Repair leaks and dispose of used auto fluids and batteries at designated recycling locations.



Storm water runoff contaminants include soil, debris, chemicals, animal waste and fluid from vehicles. These contaminants end up untreated in swimming waters, fishing ponds and drinking water and can be very harmful without proper mitigation and management.



Consider washing your car at a commercial car wash, or on your lawn to help filter contaminants.



## What Can Businesses Do?

Dirt, oil, and debris that collect in parking lots and paved areas are usually washed off by rain and eventually enter the water system. Installing permeable pavement, bioswales, or other green infrastructure can help this issue.

- Installing permeable pavement allows water to travel through the pavement and into the soil. Thus, rainwater does not carry oil and contaminants into storm drains to the same extent. Instead contaminants are naturally filtered through the earth.
- Bioswales are areas of native plants that collect rainwater and filter them naturally. These can be planted in areas where parking lot or roof runoff is diverted to clean the water before it enters the water table.
- Retention ponds can be constructed to collect rainwater from large areas of roof or parking lot. This non-potable water can then be reused for landscaping or other outdoor purposes.
- Prevent soil erosion by minimizing disturbed areas during construction projects and seed and mulch bare areas as soon as possible.
- Properly maintain fleet vehicles to prevent oil, gas, and other fluids from being washed into local storm drains.
- Keep dumpster covers closed and property picked up to reduce trash from getting blown around. These items frequently end up in storm water runoff and then into lakes and streams.



## PROJECTclarity

### Get involved with Project Clarity!

Project Clarity is an initiative that welcomes the involvement of everyone in our community. Project Clarity's goal is to remediate the water quality issues of Lake Macatawa and the Macatawa Watershed. Together, we can make this happen. Whether it's changing the way we care for our lawn, washing our car or picking up after our pets, the results, a thriving ecosystem, will bring benefit today and for many generations to come.

To find out how you can be involved in Project Clarity contact Dan Callam at 616.393.9453 or [danc@outdoordiscovery.org](mailto:danc@outdoordiscovery.org).

### Resources for Additional Information

[City of Holland Storm Sewer Information](http://www.cityofholland.com/streets/storm-sewers)  
[www.cityofholland.com/streets/storm-sewers](http://www.cityofholland.com/streets/storm-sewers)

[Environmental Protection Agency, Storm Water Information](http://www.epa.gov/npdes/stormwater)  
[www.epa.gov/npdes/stormwater](http://www.epa.gov/npdes/stormwater)

[Holland Water Treatment](http://www.hollandbpw.com/about-us/water)  
[www.hollandbpw.com/about-us/water](http://www.hollandbpw.com/about-us/water)

[Outdoor Discovery Center Macatawa Greenway](http://www.outdoordiscovery.org)  
[www.outdoordiscovery.org](http://www.outdoordiscovery.org)

[Macatawa Area Coordinating Council: Macatawa Watershed Project](http://www.the-macc.org/watershed/overview)  
[www.the-macc.org/watershed/overview](http://www.the-macc.org/watershed/overview)

[Michigan Clean Water Action](http://www.cleanwater.org)  
[www.cleanwater.org](http://www.cleanwater.org)

[Project Clarity](http://www.macatawaclarity.org)  
[www.macatawaclarity.org](http://www.macatawaclarity.org)

[Source Water Intake Protection](http://water.epa.gov/infrastructure/drinkingwater/sourcewater/protection/)  
<http://water.epa.gov/infrastructure/drinkingwater/sourcewater/protection/>

- 1 Contaminants from storm water runoff could compromise the drinking water supply, and could continue to elevate already heightened levels of bacteria and phosphorus in Lake Macatawa,
- 2 Residents can help prevent storm water contamination by: using organic or natural pesticides; ensuring pet waste is properly discarded; washing vehicles on lawns so the contaminants filter through grass; inspecting septic systems every three years.
- 3 Businesses can help reduce storm water runoff by: installing permeable pavement; creating bioswales or retention ponds.



*Bioswale at Holland Board of Public Works' Service Center on 625 Hastings Ave. Full of native flowers, the bioswale provides beautiful scenery and helps minimize storm water runoff from its parking lot.*



*Permeable pavement allows water to travel through the pavement, minimizing runoff and helping to keep oil and contaminants out of storm drains.*