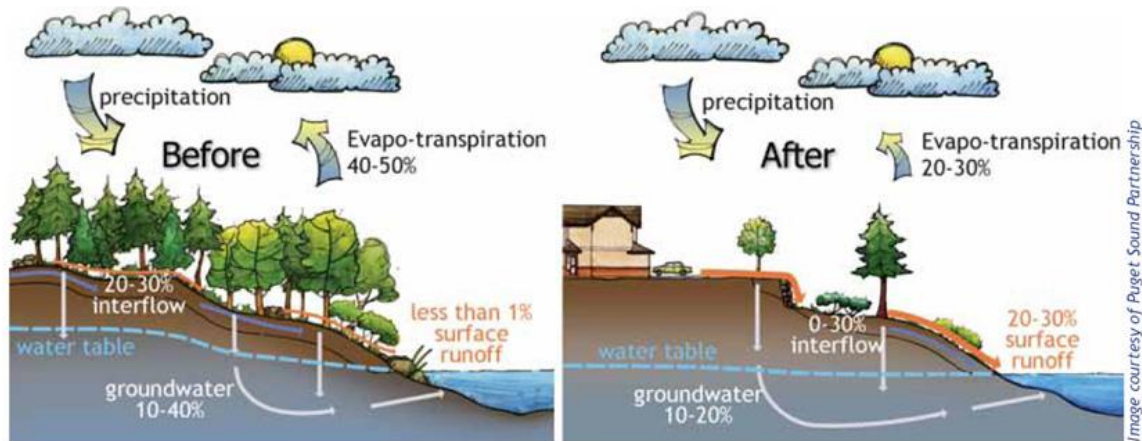


## What is Stormwater runoff?

Stormwater runoff is defined as the water that washes over a developed area (rooftops, roadways, parking lots, etc.) after a precipitation event. This water picks up pollutants such as oils, fertilizers, pesticides, sediment, trash, bacteria, and animal waste among many others harmful substances. As Madison County grows so does the amount of stormwater runoff. Some of the water flows into streams and creeks before traveling into the Pearl River and Ross Barnett Reservoir.



Before development almost all rainfall is taken up by plants, evaporates or infiltrates through the ground. After conventional development, surface runoff increases significantly while evaporation and infiltration into the ground decrease.

[http://www.ecy.wa.gov/washington\\_waters/images/WaterCycle.jpg](http://www.ecy.wa.gov/washington_waters/images/WaterCycle.jpg)

In 1972, the National Pollutant Discharge Elimination System (NPDES) program was established under the Clean Water Act. This program requires communities to develop, implement, and enforce pollution reduction programs for new development and redevelopment projects. Practicing the appropriate methods of stormwater runoff management can protect human and environmental health.

Here are a few tips for home owners and small business to help reduce the number of toxins in our living environment:

- Do not dump anything down storm drains
- Dispose of litter, oil, antifreeze, paints, and other household chemicals properly
- Recycle
- Choose non-toxic products
- Conserve water
- Keep storm drains clear of debris, trash, sediment, and other litter
- Make sure septic system is operating properly
- Practice clean and responsible boating
- Wash vehicles at a car wash or where water flows into the grass
- Control soil erosion by planting grasses to stabilize erosion-prone areas

## Why is Stormwater Runoff a problem?

The majority of stormwater runoff bypasses treatment processes and pollutes popular waterways used for fishing, boating, and other recreational activities. With stormwater runoff being the leading cause of water pollution, many recreational waterways can become saturated with chemicals that can damage the

natural biological processes and become detrimental to wildlife and human health. The decrease in water edge ecosystems, riparian ecosystems, can also cause stream banks to become unstable and cause an increase in erosion and flooding.



[http://old.montgomeryparks.org/PPSD/Natural\\_Resources\\_Stewardship/stormwater/images/RainScaping.org-poster.jpg](http://old.montgomeryparks.org/PPSD/Natural_Resources_Stewardship/stormwater/images/RainScaping.org-poster.jpg)

**What are the MS4 general permit 6 minimum measures?**

1. Public Education and Outreach
  - Distribute educational materials and perform outreach to inform citizens about the impacts polluted storm water runoff discharges can have on water quality.
  
2. Public Participation/Involvement
  - Provide opportunities for citizens to participate in stormwater program development and implementation.

3. Illicit Discharge Detection and Elimination
  - Develop and implement a plan to detect and eliminate illicit discharges to the storm sewer system.
4. Construction Site Runoff Control
  - Develop, implement, and enforce an erosion and sediment control program for construction activities that disturb 1 or more acres of land.
5. Post-Construction Runoff Control
  - Develop, implement, and enforce a program to address discharges of post-construction stormwater runoff from new development and redevelopment areas.
6. Pollution Prevention/Good Housekeeping
  - Develop and implement a program with the goal of preventing or reducing pollutant runoff from municipal operations.

**What is green infrastructure and low impact development?**

- Green infrastructure is designed to reduce the impacts of precipitation events as well as treat stormwater runoff at the source. The implementation of green infrastructure is not only cost effective and easily managed but also provides habitat for small yet important species, flood protection, and helps to reduce the amount of air and water pollution within our cities.
- Green Infrastructure Fact Sheets:  
[http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr\\_004822.pdf](http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_004822.pdf)  
Source: City of Lancaster Green Infrastructure Plan
- Low impact development practices are measures taken during the construction processes to reduce the impact on vegetation and soil as much as possible. These practices help to keep the area around a construction site as stable as possible and still capable of promoting infiltration of water through the undisturbed soil.



[http://greenworkspc.com/wp-content/uploads/2013/05/Zidell\\_Surface\\_Conveyance\\_Diagram.jpg](http://greenworkspc.com/wp-content/uploads/2013/05/Zidell_Surface_Conveyance_Diagram.jpg)

- Go to the following links for information about this subject.
  - Low Impact Development Center: <https://www.lowimpactdevelopment.org> “The Low Impact Development Center was established in 1998 to develop and provide information to individuals and organizations dedicated to protecting the environment and our water resources through proper site design techniques that replicate pre-existing hydrologic site conditions.”
  - Environmental Protection Agency (EPA) Green Infrastructure  
Page: <http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm>
  - American Society of Landscape Architects (ASLA) Green Infrastructure  
Page: <http://www.asla.org/greeninfrastructure.aspx>
  - Residential Green Infrastructure  
Guide: <http://www.cleanwaterways.org/downloads/brochures/ResGreenInfrastructure.pdf>

### Additional Information

1. [http://www.ecy.wa.gov/washington\\_waters/stormwater.html](http://www.ecy.wa.gov/washington_waters/stormwater.html)  
**Department of Ecology: State of Washington**
2. [http://old.montgomeryparks.org/PPSD/Natural\\_Resources\\_Stewardship/stormwater/stormwater.shtm](http://old.montgomeryparks.org/PPSD/Natural_Resources_Stewardship/stormwater/stormwater.shtm)  
**Montgomery Parks**
3. <http://water.epa.gov/polwaste/nps/kids/index.cfm>  
**Non-Point Source Kids Page**  
Contains games, puzzles, interactive activities, educators' materials, and links to additional information.

4. <http://water.epa.gov/polwaste/nps/eduinfo.cfm>  
Contains links to educational materials including classroom lesson plans, classroom activities, publications, and a variety of additional information for educators, including links to other websites.
5. <http://water.epa.gov/polwaste/nps/index.cfm>  
**Non-Point Source Education Page**  
Contains links to an information related to a variety of public education, outreach, and involvement programs that are available through MDEQ including programs for teachers, students, volunteer groups, homeowners, volunteer groups, and stormwater management officials.
6. <http://www.dmr.state.ms.us>  
The Department of Marine Resources website has a wealth of information for the general public, children, teachers, boaters, and marinas, etc. Information includes pollution prevention and marinas, non-point source pollution, stormwater runoff management and best management practices provided via the Mississippi Gulf Coast Stormwater Management Toolbox, stormwater management tools for schools, Coastal Cleanups, and workshop information for teachers.
7. <http://water.epa.gov/polwaste/nps/index.cfm>  
Contains fact sheets, articles, and resources for general public and homeowners explaining what NPS pollution is and what individuals can do to prevent and reduce it. Topics include household chemicals, septic systems, and impervious surfaces.
8. <https://extension.msstate.edu/sites/default/files/publications/publications/p1869.pdf>  
**Correct Use of Your Septic Tank**  
Contains an explanation of how a septic system works, tips for proper operation and maintenance, and the risks associated with a failing system.
9. <http://extension.msstate.edu/insects-vegetable-gardens>  
**Control of Garden Bugs**  
Provides guidance and tips on controlling a wide variety of common garden insect pests. This document lists the appropriate type of control for each insect including type and rate of application for chemical controls, as well as safety precautions and conversion rates for common measurements.
10. [https://extension.msstate.edu/sites/default/files/publications/information-sheets/is1580\\_0.pdf](https://extension.msstate.edu/sites/default/files/publications/information-sheets/is1580_0.pdf)  
**Non-Chemical Weed Control**  
This document contains information on managing and eliminating undesirable plants from landscaping that do not require chemicals. Addresses many of the reasons that weeds occur in the first place, and identifies methods of addressing the source of the problem in order to avoid repeated, unnecessary use of chemicals.
11. <http://act-5.wikispaces.com/Examples+of+household+products>  
**Household Cleaning Products**  
This document contains guidance on choosing the appropriate cleaner for a particular job; provides explanation of the chemicals contained in common household cleaners and the

dangers associated with each; and encourages use of less harmful cleaning chemicals with tips on making and using less harmful alternatives.

12. [http://www.deq.state.ms.us/MDEQ.nsf/page/NPS\\_Education\\_Public\\_Outreach](http://www.deq.state.ms.us/MDEQ.nsf/page/NPS_Education_Public_Outreach)

**Non-Point Source Education Page**

Contains links to a variety of public education, outreach, and involvement programs that are available through MDEQ including programs for teachers, students, volunteer groups, homeowners, volunteer groups, and stormwater management officials.