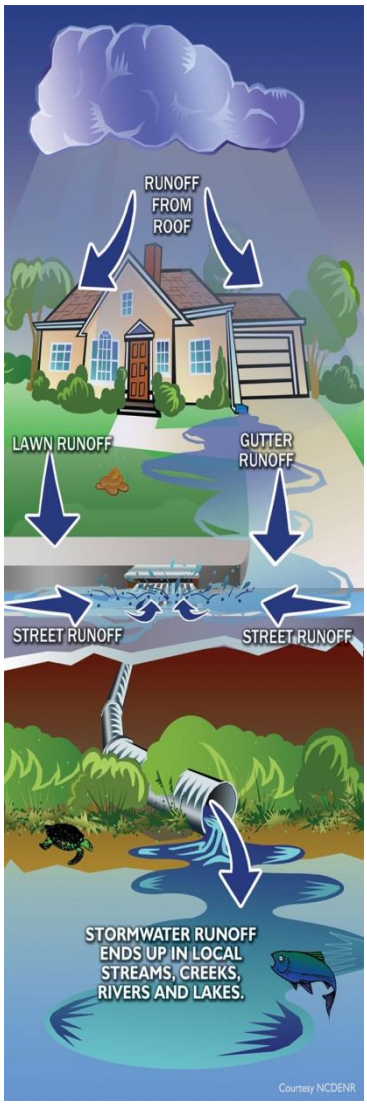
Stormwater Pollution Prevention for Homeowners

What is Stormwater Pollution?

Stormwater is water that originates from a precipitation event, such as rain or snow. Some of this water soaks into the ground. What the ground cannot absorb when the rain falls is called stormwater runoff. The water not absorbed into the ground flows off your property and drains into nearby streams, reservoirs, and other waterways. Eventually, it makes its way to the Chesapeake Bay.



Pervious surfaces are those areas where the ground absorbs stormwater, such as grassy areas, pastures, and farm fields. The larger the pervious surface area, the greater the opportunity for stormwater to be absorbed into the ground before flowing off into streams and storm drains. Water absorbed seeps into the soil and replenishes the local groundwater, which supplies water to local wells.

Impervious surfaces are areas where the ground is too hard to absorb water, such as gravel driveways, or where the ground is covered by other surfaces that cannot absorb water. Examples of impervious surfaces include roads, parking lots, buildings, driveways, and sidewalks. Water that falls on these impervious surfaces is forced to run off and go elsewhere.

Storm drains are installed in most areas where development is more concentrated, such as in and around our municipalities and growth areas. In Carroll County and its municipalities, water that flows into these storm drains does ***not*** get treated at a wastewater treatment plant. Some storm drains lead directly to streams and waterways, while other storm drains direct water to a stormwater management facility that treats or filters the stormwater before it is released into a stream. It is very important to construct and maintain these facilities to help improve the water quality in our streams and waterways. Minimizing the amount of water and pollutants these facilities need to handle and treat will extend their lifespan and allow for longer periods between maintenance upgrades. Keep in mind that ditches and swales along the roads or across properties are part of the storm drain system and must be kept clean as well.

Why is it so important for homeowners to take action?

Nearly half of Carroll's land area drains into drinking water reservoirs. These reservoirs supply drinking water to many Carroll County residents, as well as residents in Baltimore City and County. Reducing pollutants reaching the reservoirs helps to provide safe, clean drinking water.

Fishing and swimming in our local streams and waterways is a popular pastime. Trout fishing is very popular in our colder streams. Minimizing stormwater runoff helps to ensure that the temperature of the streams remains low, as the temperature of the water running over land tends to get warmer as it makes its way to local streams. Preventing stormwater pollution from reaching the streams protects the health of the fish, as well as the stream habitat and the plants and animals that live within it.

During the hot summer weather of Maryland, the cool, refreshing waters of our streams are an appealing way to cool off and enjoy the outdoors. However, just like the fish and other animals and plants that make their homes in or near the water, too much pollution in the streams and waterways in which we swim, boat, and play can become unsafe for people as well.

To ensure our waters continue to be fishable and swimmable, water quality standards have been put in place by federal and state laws and regulations. The amount of a pollutant that can enter each waterway, and still meet water quality standards, is called a total maximum daily load, or TMDL for short. TMDLs implemented in local waterways throughout the state and County, including the Chesapeake Bay, have forced the State and local jurisdictions, like Carroll County and its municipalities, to take measures to reduce pollutants. Pollutant levels within these waterways must return to meeting water quality standards for each pollutant.

Measures to reduce stormwater pollution in Carroll County and its eight municipalities are enforced by the State and federal government through a stormwater permit issued by Maryland Department of the Environment (MDE). This permit requires that plans be developed and actions taken to reduce pollutants in our local waters as well as in the Chesapeake Bay. Strategies for reducing nitrogen, phosphorus, and sediment pollution are further implemented and enforced according to the State's Phase I and II Watershed Implementation Plans for restoring the Chesapeake Bay.

When taken collectively, homeowners have an opportunity to have a great impact on the reduction of stormwater runoff and pollution – both for the health of those people and animals that use the streams and aquatic life that live there. Together, these efforts help support your County's and municipalities' combined efforts to meet their permit conditions. Assisting our State in doing its part to restore the Chesapeake Bay helps to provide a healthy resource for all Marylanders to enjoy and to support a strong economy.

Common Sources of Pollution

There are many sources of potential pollutants in our own yards. Those that wind up on impervious surfaces are more easily washed into nearby streams when it rains. Let's take a look at some examples…

- Fertilizers, pesticides, and herbicides applied to lawns and gardens
- Fluids, such as motor oil and antifreeze, that leak from vehicles onto the driveway or street
- Harmful bacteria in pet waste, such as e-coli
- Pool and spa chemicals, such as chlorine
- De-icing materials and chemicals
- Yard waste that lands on pavement or near waterways
- Uncovered dirt or mulch in the yard
- Debris and trash on our sidewalks and driveways

Even with all of these potential pollution sources, there are many simple measures that homeowners can take to help reduce stormwater runoff and prevent stormwater pollution. These measures are often referred to as best management practices, or BMPs for short.

Let's first take a look at ways in which you can reduce the amount of stormwater runoff from your property.

Vehicle & Garage

- **Use a commercial car wash or wash your car on a lawn** or other unpaved surface to minimize the amount of dirty, soapy water flowing into the storm drain and nearby drainageway, and eventually into your local waterbody. Use smaller amounts of phosphate-free and bio-degradable soaps, and use a spray nozzle on the hose. Don't empty the wash bucket into the storm drain.
- Check your car, boat, motorcycle, and other machinery and equipment for leaks and spills. Make repairs as soon as possible. **Clean up spilled fluids with an absorbent material** like kitty litter or sand, and don't rinse the spills into a nearby storm drain. Remember to **properly dispose of the absorbent material**.

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- Recycle used oil and other automotive fluids at participating stations. Don't dump these chemicals down the storm drain or dispose of them in your trash.

Lawn & Garden

- **Use pesticides and fertilizers sparingly**. When use is necessary, use these chemicals in the recommended amounts. **Avoid application if the forecast calls for rain**; otherwise, chemicals will be washed into your local stream.
- **Select native plants and grasses that are drought- and pest resistant**. Native plants require less water, fertilizer, and pesticides
- **Mow high, and leave mulched grass clippings on the grass**. Sweep up clippings from pavement, and compost it or bag it. Putting grass clippings, leaves, and yard debris in the street, storm drain, ditch, or nearby waterways can cause problems for you and

your water. Storm drains can clog, streets can flood, and water can become polluted. To avoid this, mow high and use clippings as fertilizer, use a mulching lawn mower, compost leaves and clippings, or bag them for yard waste collection day. Grass clippings left on the lawn act as natural fertilizer, helping to develop a deeper and healthier root system, as well as choke out some of the potential weeds.

- **Don't overwater your lawn**. **Water during the cool times of the day**, and don't let water run off into the storm drain. Place the sprinkler or hose where the water will fall on the grass or in the garden and keep it **off paved areas** so that the water will sink into the soil rather than run off the property.
- **Cover piles of dirt and mulch** being used in landscaping projects to prevent these pollutants from blowing or washing off your yard and into local waterbodies. **Vegetate bare spots** in your yard to prevent soil erosion.
- **Maintain natural vegetation in floodplains**, along streams, and at edges of pastures and farm fields. Vegetation in floodplains and along streams not only helps to prevent flooding but also provides natural filtering of some of the pollutants before they reach the stream. Vegetation along pastures and farm fields helps to reduce or slow runoff, as well as reduce the impact of the wind blowing soil off the farm field.
- **Direct downspouts to grassy areas**. Downspouts directed to large grassy areas allow more of the runoff to soak into the ground. If directed to driveways or other pavement, it will all flow directly into storm drains and streams.
- **Use a rain barrel** to capture runoff from rooftops. Rooftop runoff captured in rain barrels can be saved and used later for watering plants and gardens. The water stored in the rain barrel will reduce the amount of water flowing off the property, particularly if you have several barrels. Hook one up to each downspout, and then add on from there as needed.
- **Sweep up yard debris** from driveways, sidewalks, and patios regularly, rather than hosing down areas. Debris can clog storm drains, causing flooding, and get into our local streams**. Compost or recycle yard waste** when possible.

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- **Minimize pavement or use permeable pavers**. Permeable pavers provide homeowners with the benefits of an impervious surface, but are designed to allow water to filter into or between the pavers, passing through a compacted stone aggregate subbase before filtering into the ground. Seek professional guidance.

Use plants and landscaping to help control runoff pollution

- **Plant native vegetation in sloped area**s to help slow runoff and filter pollutants.
- **Create a rain garden**. A rain garden is a shallow landscaped depression that captures stormwater from the property, slowing it down and allowing time to soak into the soil. Plant native plants that are able to withstand the periodic saturation, as well as hold up to and absorb some of the nitrogen and phosphorus in the runoff. Install rain gardens to collect and treat stormwater.
- **Install rain barrels** at down spouts to help collect rainwater from rooftops and prevent or minimize runoff.

Home Repair & Improvement

- Before beginning an outdoor project, **locate** the nearest **storm drains** and nearby drainageways. **Protect** them **from debris** and other materials.

- **Sweep up and properly dispose of construction debris** such as concrete and mortar.
- **Use hazardous substances** like paints, solvents, and cleaners **in the smallest amounts** possible, and follow the directions on the label. **Clean up spills immediately**, and dispose of the waste safely. Store substances properly to avoid leaks and spills.
- Purchase and use **nontoxic, biodegradable, recycled, and recyclable** products whenever possible.
- **Clean paint brushes in a sink, not outdoors**. **Properly dispose of excess paints** through a household hazardous waste collection program, or donate unused paint to local organizations. Oil-based paints must be taken to the appropriate dropoff. Latex paints may be taken to the landfill.
- **Reduce** the amount of **paved area** and **increase** the amount of **vegetated area** in your yard. Use **native** plants in your landscaping to reduce the need for watering during dry periods. Consider directing downspouts away from paved surfaces onto lawns and other measures to increase infiltration and reduce polluted runoff.

Eliminate Illicit Drain Connections

- Plumb indoor drains according to local sanitary code. **Do not discharge plumbing and sanitary drains to gutters, streams, or storm drains**.

Pet Care

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- **Pick up pet waste in your yard** immediately and throw in trash or flush in toilet. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.
- **When walking your pet, remember to pick up the waste and dispose of it properly**. Bring disposal bags with you to pick up after your pet. Take advantage of the bags that are supplied at local parks. Do not place in storm drain inlets.

Swimming Pool & Spa

- **Drain your swimming pool only when a test kit does not detect chlorine levels**. Consult local regulations.
- Whenever possible, **drain your pool or spa into the sanitary sewer system** if you live in a municipality. Make sure to check local ordinances and contact your local Department of Public Works before doing so.
- **Properly store pool and spa chemicals** to prevent leaks and spills, preferably in a covered area to avoid exposure to stormwater.

Winter

- **Use enough de-icing salts and chemicals to be safe without over applying.**
- **Sweep up any leftover de-icing materials** after snow events to be reused for the next event. Bird seed can be used to help with traction, and the birds will help you clean it up.

Septic Systems & Maintenance

- **Have your septic system inspected** by a professional and **have the septic tank pumped** as necessary (usually every 3 years).
- Care for the septic system **drainfield** by **not driving or parking vehicles on it**.
- **Plant only grass over and near the drainfield** to avoid damage from roots.
- **Flush responsibly**. Flushing household chemicals like paint, pesticides, oil, and antifreeze can **destroy** the biological treatment taking place in the system. Other items, such as diapers, paper towels, and cat litter, can **clog** the septic system and potentially damage components.

Reduce Waste and Recycle

- **Maintain well-fitted lids on trash and recycling containers**. Ensure that your trash and recycling containers have lids that fit well and cover the container. Not only will this keep critters out, it will also prevent trash from blowing or falling out of the container.
- **Don't rush to flush medications**. Flushing medication will cause these potentially harmful chemicals to seep into our drinking water and other waterbodies. Rainwater can dissolve and wash them away, depositing them in our waterways.
- **Visit the Carroll County Recycling webpage** at http://ccgovernment.carr.org/ccg/recycling/ for more information on recycling.

If each homeowner implemented a few simple activities, our combined efforts could have a big impact in our local streams and waterways for current and future generations!

For more information, help, or guidance regarding your business, contact:

Carroll County Department of Land & Resource Management
Phone: 410-386-2210

OR your municipality:

Hampstead	410-374-2761
Manchester	410-239-3200
Mount Airy	410-795-6012
New Windsor	410-635-6575
Sykesville	410-795-8959
Taneytown	410-751-1100
Union Bridge	410-775-2711
Westminster	410-848-9000

To report a concern about pollutants or possible illegal dumping into the storm drain system, contact:
Carroll County Resource Management Bureau, Environmental Inspection Services Division
Phone: 410-386-2210

For general information about stormwater pollution prevention, visit the "Protecting Carroll County Waters" webpage at:
http://ccgovernment.carr.org/ccg/plan/npdes/

Publication Information: Excerpts used in this document are reformatted from the U.S. Environmental Protection Agency's publication, "Make Your Home the Solution to Stormwater Pollution," for the purposes of public education and outreach efforts related to the NPDES / MS4 Stormwater Pollution Permit.