

# **AFTER THE STORM – A GUIDE TO UNDERSTANDING STORMWATER**

## **What is storm water runoff?**

Storm water runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent storm water from naturally soaking into the ground.

## **Why is storm water runoff a problem?**

Storm water can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.



## **The Effects of Pollution**



- Polluted storm water runoff can have many adverse effects on plants, fish, animals, and people.
- Sediment can cloud the water and make it difficult or impossible for native aquatic plants to grow and provide an ideal habitat for nuisance aquatic weeds. Sediment also can destroy aquatic habitats.
- Excess nutrients can cause algae blooms that can pose a serious health hazard. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't 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 like ducks, fish, turtles, and birds.
- Household hazardous wastes like 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 storm water often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.

## Pet waste

Pet waste can be a major source of bacteria and excess nutrients in local waters. When walking your pet always bring a bag and remember to pick up the waste and dispose of it properly.

Either flush it or put it in the trash. Never dispose of pet waste in a storm drain. 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.



## 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.

- Don't overwater your lawn. Consider using a timer or put out an empty tuna can – when it's full you can stop watering.
- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Test your lawn soil and use zero phosphorus fertilizer whenever possible. UMass Extension offers low cost soil testing – visit the following website for more information:  
[https://ag.umass.edu/sites/ag.umass.edu/files/pdf-doc-ppt/routine\\_home\\_grounds\\_112917\\_0.pdf](https://ag.umass.edu/sites/ag.umass.edu/files/pdf-doc-ppt/routine_home_grounds_112917_0.pdf)
- Use organic mulch or safer pest control methods whenever possible.
- Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- Cover piles of dirt or mulch being used in landscaping projects.



## Automobile Care

Washing your car 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 dumping the materials directly into a waterbody.

- Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.



## Residential Landscaping



Landscaping techniques can have a major impact on water quality.

- Permeable Pavement — Traditional concrete and asphalt don't 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 storm water runoff.
- Rain Barrels - You can collect rainwater from rooftops in mosquito proof containers. The water can be used later on lawn or garden areas.
- Rain Gardens and Grassy Swales - Specially designed areas planted with native plants and low maintenance grasses can provide natural places for rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas 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 storm water picks up as it flows across driveways and streets.

## Community Education

Education is essential to changing people's behavior. Signs and markers near storm drains warn residents that pollutants entering the drains will be carried untreated into a local waterbody. Recycle or properly dispose of household products that contain chemicals, such as fertilizers, insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains. Plant a buffer garden on your shore. Everything you do, no matter how small has an impact and will help improve the water quality of Lake Attitash.



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