



## “After The Storm”

### **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 stormwater runoff from naturally soaking into the ground.

### **Why is stormwater runoff a problem?**

Stormwater can pick up debris, chemicals, dirt, and other pollutants and carry them 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 that we use for swimming, fishing, and providing drinking water.

### **The effects of pollution!**

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- **Sediment** (soils) can cloud the water and make it difficult or even impossible for aquatic plants to grow. Sediment can also destroy aquatic habitats.
- **Excess Nutrients** (fertilizers) can cause algae blooms. When these excess algae die off, 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 waters with low dissolved oxygen levels.
- **Bacteria and Other Pathogens** (animal and human wastes) can wash into swimming areas and create health hazards, sometimes causing beach closures.
- **Debris** (garbage) like plastic bags, six-pack rings, bottles, and cigarette butts etc; which wash into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- **Household Hazardous Wastes** (chemicals) like insecticides, pesticides, paint, solvents, used motor oil, and other automotive fluids can poison aquatic life. Land animals and people can become sick from eating diseased fish and shellfish or ingesting polluted water.

Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and can increase the costs of providing safe drinking water.

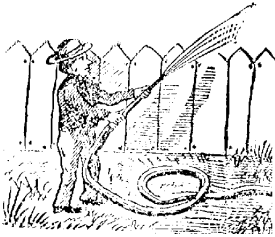
# **“Residential Stormwater Pollution Solutions!!!”**

## **Household!**

Recycle or properly dispose of household products that contain chemicals like insecticides, pesticides, paint, solvents, used motor oil, and other automotive fluids. Don't pour these items onto the ground or into storm drains.

## **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 excess nutrient and organic matter loads to streams and waterbodies.



- Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- Use pesticides and fertilizers sparingly. Use these types of chemicals only when necessary and in accordance with their recommended amounts. Use organic mulch and pest control methods whenever possible.
- Compost or mulch your yard wastes. Don't allow it to enter storm drains or streams.

## **Septic Systems!**

Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can create public health problems and environmental concerns.

- Inspect your system every three years and pump your tank as necessary (every three to five years).
- Don't dispose of household hazardous wastes into sinks or toilets.

## **Auto Care!**

Washing your car and degreasing 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 those materials directly into a waterbody.

- Use a commercial car wash that treats or recycles its wastewater, or wash your car in your yard so that the water is able to soak into the ground.
- Repair leaks and dispose of waste fluids and batteries at designated drop-off or recycling locations.

## **Landscaping!**

Use permeable pavement. Traditional concrete and asphalt don't allow water to soak into the ground. These surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through them and into the ground, thus decreasing storm water runoff.

## **Rain Barrels!**

You can collect rainwater from rooftops into mosquito-proof containers. This water can then be used later on lawn or garden areas.



### **Pet Wastes!**

Pet waste can be a major source of bacteria and excess nutrients in local waters. When walking your pets, remember to pick up any wastes and dispose of them properly. Flushing pet waste (in a degradable bag) is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into storm drains and eventually into local waterbodies.

### **Rain Gardens, Grassy Swales, and Vegetative Filter Strips!**

Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain water from rooftops or paved areas can be diverted into these areas rather than into storm drains. Filter strips are areas of native grass or plants located along roadways or streams. These areas trap pollutants that the stormwater carry's with it and keeps these pollutants from entering waterbodies.

## **“Commercial Stormwater Pollution Solutions!!!”**

### **Restaurants and Retail Stores!**

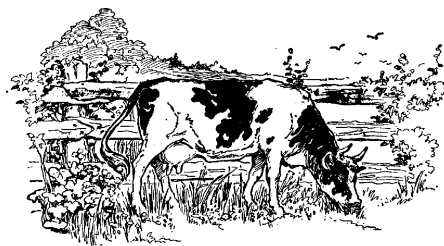
Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the stormwater system and eventually enter local waterbodies.

- Sweep up litter and debris from sidewalks, driveways, and parking lots especially around storm drains.
- Cover grease storage and dumpsters and keep them clean to avoid leaks.
- Report any chemical spills to the local hazardous waste cleanup team. They will know the best way to keep spills from harming the environment.

### **Construction Sites!**

Erosion control measures that are not properly maintained can cause excessive amounts of sediment and debris to be carried into stormwater systems. Construction vehicles can leak fuel, oils, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- Divert stormwater away from disturbed or exposed areas of the construction site.
- Install and properly maintain silt fences, vehicle mud removal areas, or other forms of erosion control especially after rainstorms.
- Do not disturb any more area than absolutely necessary and then seed and mulch bare areas as soon as possible.



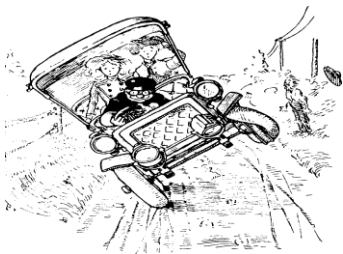
### **Agriculture!**

Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock allowed to enter streams can contaminate waterways with bacteria and viruses, making them unsafe for human contact.

- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- Maintain vegetation along riparian waterways.
- Rotate animal grazing to prevent soil erosion in fields.
- Apply fertilizers and pesticides according to label instructions to save money and minimize pollution

### **Automotive Fueling and Repair Facilities!**

Uncovered fueling stations allow spills to be washed into storm systems. Cars waiting to be repaired can leak oil, fuel, and other harmful fluids that can be picked up by stormwater.



- Clean up spills immediately and properly dispose of cleanup materials.
- Provide cover over fueling stations and design or retrofit facilities for spill containment.
- Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- Install and maintain oil/water separators.
- Dispose of used fluids at proper locations.

### **For more information on topics like this please visit:**

[www.michigan.gov/deq/0,1607,7-135-3313\\_3682\\_3714-118486--,00.html](http://www.michigan.gov/deq/0,1607,7-135-3313_3682_3714-118486--,00.html)

[www.epa.gov/npdes/stormwater](http://www.epa.gov/npdes/stormwater)

[www.epa.gov/nps](http://www.epa.gov/nps)

Or call the Village of Lexington offices at:

1-810-359-8631 or 1-810-359-5901

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