

The Water Permits Division (WPD) within the U.S. Environmental Protection Agency's Office of Wastewater Management leads and manages the National Pollutant Discharge Elimination System (NPDES) permit program in partnership with EPA Regional Offices, states, tribes, and other stakeholders.

In 1999, the United States Environmental Protection Agency (USEPA) issued a mandate pursuant to the Clean Water Act requiring urban areas to improve water quality. Specifically, the National Pollutant Discharge Elimination System (NPDES) regulations have imposed six minimum control measures which are targeted at improving our Nations water resources.

The six minimum control measures include:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Storm Water Runoff Control
5. Post-Construction Storm Water Runoff Control
6. Pollution Prevention and Good Housekeeping



Authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating sources that discharge pollutants into waters of the United States.

The City of Hastings was required to develop a Storm Water Management Plan (SWMP) as part of the permitting process. The SWMP outline steps that will be taken in doing our part to protect water quality. The SWMP is intended to be a working document and change as needed in order to improve effectiveness. The City of Hastings Storm Water Management Plan can be viewed under the Hastings Stormwater Management Tab of the web site.

To learn more about Storm Water and the National Pollutant Discharge Elimination System visit the following links:



<http://www.epa.gov/npdes>

<http://www.deq.state.ne.us>

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EFFECTS OF STORMWATER POLLUTION

Storm water pollution may affect your health:

Hastings' water supply field is located in two Watersheds. Our main source of drinking water comes from ground water recharge surrounding the Little Blue & Upper Big Blue. The larger the amounts of polluted storm water going into them, the higher the risk of contamination to our water supply. For drinking water, filtering out pollutants and contaminants increases treatment costs, so we all pay higher water bills or our water is not as clean. When reservoirs fill up with sediment, reservoir capacity is reduced because they are full of silt, not water.

Bacteria and toxins can enter your body through water activities, such as swimming, especially just after rain. Polluted runoff can damage streams, rivers, lakes, and ponds. Excess nutrients can cause algae blooms and fish kills, muddy water keeps fish from feeding and breeding, and excess bacteria can harm both wildlife and people.



If pollutants reach high levels, the water can be unsuitable or even dangerous for humans and animals. Pollution can cause conditions unsafe for swimming and even recreational use that does not involve direct contact with the water, such as boating and fishing.

Storm water pollution affects the environment when:

- Toxic substances, such as vehicle wastes, pesticides, & fertilizers and paint pollute streams and waterways.
- Toxic waterways are unsafe for swimming and drinking and affect aquatic life.
- Plant material, sewage, and some chemicals starve water of oxygen, choking aquatic and marine life.
- Heavy metals from storm water accumulate in the tissue of fish and seafood and cause poisoning.
- Large amounts of unsightly litter from storm water will end up in waterways destroying their beauty.
- Bacteria and viruses from untreated human and animal wastes are allowed to drain into natural waterways, making them unsafe for swimming and drinking.

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WHAT IS STORMWATER POLLUTION?

Common sense tells us that rainwater is one of the purest forms of water there is. So, how is it possible that rainwater can be one of the largest contributing factors of environmental pollution? This process is quite simple when you break it down. The journey from our atmosphere to the ground is not the problem, the pollution lies in the journey from impermeable surface which rain falls upon, to the storm water system and then on to our rivers.

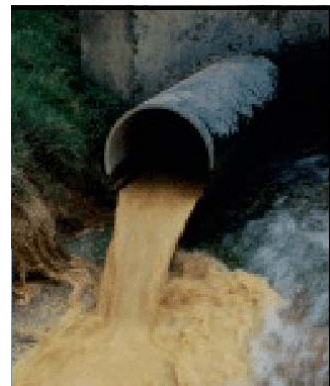


When rainwater falls on our streets, sidewalks, and driveways, it is unable to soak into the soils that are being covered up by urbanization. In turn, the rainwater is directed into the nearest storm drain by means of sloping pavement and curb & gutter systems. As storm water moves across these impermeable surfaces and into the storm water system chemicals, debris, and waste left on the ground are picked up along the way. Once these pollutants are picked up by runoff they travel to our lakes and rivers via, storm drainage systems.

Unlike the common sewer system, storm water drainage does not get treated before discharging into creeks, and rivers. This means that whatever we put down these storm drains winds up in the lakes and rivers where we go fishing, swimming, boating, and camping. People who would never dream of polluting a lake or river might pour antifreeze, fertilizer, paint or used motor oil, or toss pet waste, cigarette butts or litter down stormdrains and not realize they are polluting waterways.

Common pollutants we all can help control

- Fertilizers and weed killers
- Insecticides and fungicides
- Loose grass clippings and leaves
- Soil from exposed areas in the yard
- Pet waste
- Poorly maintained septic systems
- Detergents from car washing
- Household cleaners
- Improper disposal of paint
- Oil and other chemicals
- Sediment runoff from construction sites
- Trash and litter



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WHAT CAN I DO TO HELP?

Residential

Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them 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 nutrients and organic matter to streams.

- Don't over water your lawn. Consider using a soaker hose instead of a sprinkler.
- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. 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.

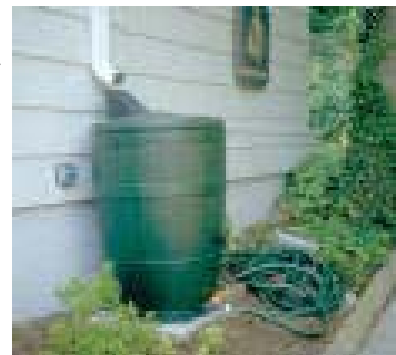
Auto care:

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 water-body.

- 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:

- **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 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.



WHAT CAN I DO TO HELP?

Commercial:

Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local water-bodies.

- 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 spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

Construction:

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the storm water system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by storm water and deposited into local water bodies.

- Divert storm water away from disturbed or exposed areas of the construction site.
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.

Automotive Facilities:

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

- 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 water bodies.
- Install and maintain oil/water separators.

Agriculture:

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

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



Pet Waste:

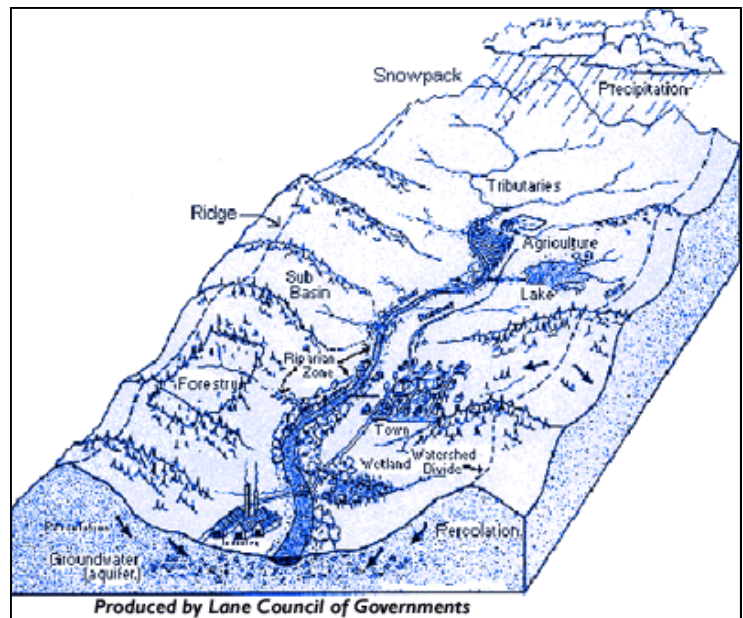
When our pets leave those little surprises, rain washes all that pet waste and bacteria into the storm drains. And then pollutes our waterways. So what should you do? Dispose of it properly (preferably in the toilet). Then that little surprise gets treated like it should.

WHAT IS A WATERSHED?

John Wesley Powell, scientist geographer, put it best when he said that a watershed is:

"that area of land, a bounded hydrologic system, within which all living things are inextricably linked by their common water course and where, as humans settled, simple logic demanded that they become part of a community."

Watersheds come in all shapes and sizes. They cross county, state, and national boundaries. In the continental US, there are 2,110 watersheds; including Hawaii Alaska, and Puerto Rico, there are 2,267 watersheds.



A watershed or water basin is the region of land that drains into a specified body of water such as a river, lake, or creek. Rain that falls anywhere within a given body of water's watershed will eventually drain into that body of water. A map of Nebraska Watersheds is shown below. It can be seen that a large area contributes to each watershed. In the Hastings area all drainage is in one way or another channeled to the Blue River, from there it ends up into the Missouri River and then onto the Gulf of Mexico. However, the journey is not complete without the waters first traveling through

many of our local recreational lakes.

