

Land development changes the natural landscape and drainage patterns in watersheds throughout North Dakota.

Activities such as new home construction typically involve clearing the vegetation that once slowed runoff and allowed rain and snowmelt to soak into the soil. New home construction also directs stormwater to a storm sewer or drainage ditch.

Stormwater runoff is not directed to a wastewater treatment plant but runs directly into rivers, streams, lakes and wetlands. Although runoff from one lot may not be enough to cause pollution problems, runoff from hundreds of lots throughout a watershed is a different story.

## SEDIMENT

Lots with bare soil are highly susceptible to erosion. As runoff from rainfall and snowmelt travels over bare soil, it picks up sediment that can be carried to a local river, stream, lake or wetland. Some soils, like clay, may take hours to settle out of water. Suspended in the water, sediment can reduce the amount of sunlight that reaches aquatic plants and may damage the gills of fish. When sediment settles out, it fills in spaces where fish lay eggs, and suffocates the eggs and aquatic insect larvae that inhabit the bottom. Soil-laden water also can interfere with recreation, making the waterbody unappealing.

During home construction, one or more of the following erosion or sediment controls may have been installed:

- **Sediment logs or silt fences** pond and filter stormwater, allowing sediment to settle out.
- **Inlet protection devices** prevent soil from entering the storm sewer.
- **Downspout extensions** direct flow from the downspout over bare soils.
- **Detention/retention areas** pond water and allow soil to settle out.

Erosion and sediment controls need to be installed so they do not cause flooding. Periodic cleaning and maintenance are necessary for devices to function properly. These measures are only temporary. Homeowners must stabilize the soil by planting grass, spreading mulch or laying sod.

## FERTILIZER

Fertilizer carried in runoff to rivers, streams, lakes and wetlands can cause pollution. Nutrients in fertilizer, such as phosphorus and nitrogen, promote algae growth in a waterbody. Large algal blooms are unattractive and interfere with recreation. Excessive algae growth also impacts aquatic life. As algae dies, its decomposition depletes the oxygen in the water that fish and other aquatic life need for survival.

The following recommendations can help homeowners protect the environment when using fertilizer:

- Test the soil to determine if fertilizer is necessary.
- Apply the product according to the manufacturer's directions; avoid over-application.
- Do not apply over sidewalks, driveways or streets.





## Ways To Reduce Stormwater Pollution

The following practices can further reduce stormwater pollution:

Keep trash, along with leaves and grass clippings, off streets and out of storm drains and ditches.

Repair automotive leaks.

Properly dispose of hazardous materials.

Do not pour oil, pesticides, paint or other materials down the storm drain.

Apply pesticides, fertilizers and de-icing materials according to the directions.

Pick up pet waste.

Wash vehicles on the lawn or in commercial washes.

## RUNOFF CONTROL Landscaping

Proper landscaping can help control stormwater runoff. Below are some common landscaping practices:

- Maintain a vegetative buffer zone between the property and waterbodies.
- Create rain gardens to absorb stormwater runoff.
- Use rain barrels to store rainfall and apply the water to lawn or gardens.
- Plant native plants, shrubs or trees in areas that are rarely disturbed.
- Landscape with plants that have low water requirements.

Check local requirements before implementing landscape measures. Landscape features to retain or store stormwater need to be properly built and maintained so they do not become breeding areas for mosquitoes.

Retention measures, such as rain gardens, should allow water to soak into the soil within 24 hours of a light rainfall event. Rain barrels should have lids and spigots, along with screening to cover all overflow openings.



***The best way to solve stormwater pollution is to prevent it in the first place.***

### FOR MORE INFORMATION

For more information about stabilization practices or additional ways to reduce stormwater pollution, contact the local public works department or the North Dakota Department of Environmental Quality at 701-328-5210 or <https://deq.nd.gov>

For more information about lawn care and plant selection, contact the local county extension office.

*Feel free to use this information, but please credit the North Dakota Department of Environmental Quality.*