

## How To Meet The Requirements of Storm Water Runoff Rules

Steven E. Kaiser, P.E.  
Larson Engineering, Inc.

Let's imagine that, because of increased demand for your product or service, you will be building a new facility. Or you have so many customers or employees that your current parking lot is inadequate and you'll double its size. The Department of Natural Resources, your county government and perhaps your local municipality will want to know how you plan to comply with the storm water runoff and erosion control requirements during and after construction.

Why all the concern about storm water runoff and erosion control? The water you drink and cook and bathe with is the same water that falls from the sky, the same water that's in lakes and streams, and in the ground beneath our feet. The quality, cleanliness, and usefulness of that water is determined to a surprisingly large degree by what runs off your property and into rivers, lakes, and streams. Aside from chemical pollutants, organic matter in runoff provides nutrients that cause algae to bloom. Breakdown of organic matter uses up oxygen in the water and can cause massive fish kills.

With population growth comes more roads and parking lots, homes and businesses. When it rains, all those roofs and paved areas prevent water from soaking into the ground. Runoff from pavement contains bits of tires, brakes, rusty metal and vehicle fluids. Runoff from roofs contains anything in its path as it makes its way from your downspout, across the ground, into a storm sewer and then into a body of water. These pollutants include everything from pesticides to animal waste to leaves and grass clippings.

Runoff from construction sites contains all of the above, plus just about anything you can think of connected to construction. The DNR estimates that an average acre under construction delivers 60,000 pounds of sediment per year to nearby waterways. That is more than any other land use, and that is why the DNR is regulating construction sites.

Almost all projects that involve land disturbing activity of 1 or more acres fall under the new rules. To comply, you will have to provide and adhere to a plan that manages erosion and storm water runoff during the construction phase and in the long term.

---

## **How To Meet The Requirements of Storm Water Runoff Rules**

Your construction phase plan must include ways to do the following:

- Reduce sediment (soil and other particles in runoff) by 80%.
- Prevent vehicles from tracking sediment onto adjacent roadways.
- Prevent sediment discharge from soil draining or drying activities.
- Protect storm drain inlets.
- Manage the use, storage, and disposal of chemicals, cement, and other materials to prevent them from polluting runoff.

With some variation for redevelopment and sites surrounded by already developed property, post-construction plans should include the following:

- Practices that reduce suspended solids by 80%.
- Ways to reduce peak runoff during storms (storm water detention ponds, rain gardens).
- Practices that allow water to infiltrate (go into the ground), unless your site is on clay soil where this is virtually impossible.
- Protective buffer areas between developments and lakes, streams, rivers and wetlands to prevent erosion and absorb pollutants.
- Where appropriate, construct auto fueling and maintenance areas to reduce petroleum runoff.

The DNR didn't just make up these rules to spoil your plans for a new facility. It is required by the Environmental Protection Agency to write and enforce these rules. The Wisconsin DNR held many hours of public hearings and took the input to heart. They've written rules that are flexible enough to be practical for the different localities where they are applied. Your local county and municipality rules may be more stringent, and if they are, it's because there is a local problem that needs to be mitigated or eliminated.

Fulfilling these requirements involves mostly low-tech devices like straw bales and the plastic fencing we've all seen at construction sites. Post construction, the storm water detention ponds, rain gardens and protective buffer zones can be attractive features that add to the value of your property.

When you are ready to build or expand, contact an engineering firm that has expertise in site design to help you develop your plan. If it's well done, it will provide you with maximum use of your property and sail through the approval process. You will know that you are contributing to clean lakes and streams for your enjoyment and that of future generations.