



Focus on Stormwater – Phase II

from Ecology's Water Quality Program, Northwest Region

Why stormwater pollution prevention is important

Overview – What's the problem?

The widespread growth of our cities and of agricultural and resource extraction activities affects the natural environment in many ways. Some of the effects, though unintended, are negative and result in the alteration of natural hydrologic patterns, including “flashier” streamflow during storm events, destruction of aquatic habitat, and more pollution going into our lakes, streams, and rivers.

Urbanization is often associated with degradation of natural waters as land use activities change the way water flows and affect its purity. Precipitation forms surface runoff as rainwater and snowmelt drain from ever-increasing impervious areas of streets, roadways, and rooftops, along with runoff from farms, lawns, industries, construction sites, and related development.

The stormwater connection

As this flow of stormwater moves to our wetlands, creeks, streams, rivers, lakes, reservoirs, bays, and estuaries, it often picks up pesticides, fertilizers, soil, oil, heavy metals, and other harmful pollutants. A consequence of this polluted runoff is that the streams and waterways near our urban areas frequently have levels of pollutants that are higher than state water quality standards and therefore have poor water quality.

How stormwater quality and quantity affect us

The process of urbanization depletes the ground's ability to slow and absorb stormwater. Forests, farmlands, and meadows with their soft, porous soils and complex vegetative covers serve as natural sponges. When natural land covers are converted to impervious surfaces such as buildings, roads, and parking lots, these developed lands are unable to slow and absorb water in the same way. Precipitation on the developed landscape is not retained as well as it is in natural systems and runs off more quickly and in higher volumes. This run-off is also generally warmer than the smaller, slower, and steadier flows that come from areas that have not been paved over and developed.

The quality of stormwater is extremely important. Pollutants may have the potential to impair water for drinking, recreation, wildlife, fish and shellfish, and aesthetic values. Contaminated stormwater can seep into aquifers that are often sources of our drinking water. High volume stormwater runoff causes flooding and results in erosion, and sediment and silt washout. A single storm event lasting a few hours in a city may produce more water than the city's sewage treatment plant receives and treats in an entire month.

Greater overland flow of stormwater decreases water returning to the ground. Less groundwater recharge and reduced water storage in aquifers result in smaller summer streamflows and a concurrent greater need for irrigation. Another result can be an inflow of marine saltwater to some coastal area freshwater aquifers when these freshwater aquifers are not adequately recharged by stormwater infiltration.

A history of stormwater permitting

In 1972, the U.S. Congress declared a national goal to eliminate the discharge of pollutants to waters of the United States by 1985. The National Pollution Discharge Elimination System (NPDES) permitting program was created to eliminate ‘point’ (usually piped) discharge sources such as industries and sewage treatment plants unless the discharge is authorized by a permit. In 1987, Congress addressed the pollution problems from stormwater discharges by amending the Clean Water Act (CWA) to require implementation of a comprehensive national program in two phases.

Phase I: Implemented in 1990, requires certain large industries and municipalities with separate sanitary sewers and populations of 100,000 to develop stormwater programs and apply for NPDES discharge permits; 1992 – construction projects disturbing 5 acres need NPDES permits.

Phase II: The second phase requires small municipalities having separate storm sewer systems and populations less than 100,000 to have stormwater programs and apply for NPDES permits for their discharges; construction activities disturbing between 1-5 acres need NPDES permits.

Federal Stormwater Management Policy Timeline:

1948 – Federal Water Pollution Control Act (FWPCA) Originally Enacted.

1972 – Significant changes made to FWPCA, henceforth known as Clean Water Act (CWA).

1977 & 1981 – Minor amendments made to CWA.

1987 – NPDES and non-point source program was established.

1990 – Phase I implementation.

1997 – Proposed phase II rule signed by EPA administrator.

1999 – Final phase II rule signed by EPA and published in Federal Register.

2000 – The NPDES authorized state must modify their NPDES program if no statutory change is required.

2001 – The NPDES authorized state must modify their NPDES program if statutory change is required.

2002 – NPDES permit authority designates municipal separate storm sewer system (MS4s).

2003 – Municipal Industrial NPDES application due. In addition, regulated small MS4s and stormwater discharges associated with other activities submit permit application.

2004 – Permit authority with stormwater watershed plans designates small MS4s.

2008 – The regulated small MS4s programs developed and implemented.

2012 – Reevaluation of phase II rule by EPA.

Things your government is doing about stormwater

Federal, state, and local government agencies are collaborating with each other and their citizens to provide for:

- A public that is informed and involved in decisions and stormwater education.
- Identification and mapping of existing and potential sources of pollution.
- Established pollution prevention guidelines.
- Changes in building codes and practices to encourage low impact development and other similar practices that would help reduce urban runoff.
- Cooperative efforts with citizen groups to aggressively identify and eliminate illicit dischargers.
- Effective construction inspection and legal authority to enforce against violators.
- Investments in needed infrastructure; improvements in street sweeping and trash cleaning.
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If you need this information in an alternate format, please contact the Water Quality Program at 425-649-7041. If you are a person with a speech or hearing impairment, call 711 or 800-833-6388 for TTY.