

## Post-Construction Runoff Control Minimum Control Measure



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**T**his fact sheet profiles the Post-Construction Runoff Control minimum control measure, one of six measures that the operator of a Phase II regulated small municipal separate storm sewer system (MS4) is required to include in its stormwater management program in order to meet the conditions of its National Pollutant Discharge Elimination System (NPDES) permit. This fact sheet offers some general considerations on strategies used by MS4s to implement post-construction runoff control programs. It is important to keep in mind that the small MS4 operator has flexibility in choosing exactly how to satisfy the requirements in its NPDES permit.

## Why Is the Control of Post-Construction Runoff Important?

Post-construction stormwater management in areas undergoing new development or redevelopment helps control pollutants in runoff from these areas, which has been shown to significantly affect receiving waterbodies. Prior planning and design will minimize pollutants in post-construction stormwater discharges in the most cost-effective manner for stormwater quality management.

There are generally two forms of substantial impacts from post-construction runoff. The first is caused by an increase in the type and quantity of pollutants in stormwater runoff. As runoff flows over areas altered by development, it picks up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorus). These pollutants often become suspended in runoff and are carried to receiving waters, such as lakes, ponds, and streams. These pollutants can impact aquatic species in a variety of ways, including by being absorbed through fish tissue. The second kind of post-construction runoff impact occurs as a result of increasing the quantity of water delivered to the waterbody during storms. Increased impervious surfaces (e.g., parking lots, driveways, rooftops) interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving water. The effects of this process include streambank scouring and downstream flooding, which often lead to a loss of aquatic life and damage to property.

## What Is Required?

The Phase II regulations specify that permits require small MS4s to develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that result in the land disturbance of greater than or equal to 1 acre, or of less than one acre but that is part of a larger common plan of development or sale. NPDES permits will also require, at a minimum, that the small MS4 operator be required to:

- Develop and implement strategies which include a combination of structural and/or non-structural best management practices (BMPs).
- Use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under state, tribal, or local law.
- Ensure adequate long-term operation and maintenance of controls.

## What Is Considered a “Redevelopment” Project?

The post-construction runoff requirement in the Phase II Final Rule applies to “redevelopment” projects that alter the “footprint” of an existing site or building in such a way that there is a disturbance of equal to or greater than 1 acre of land (or less than one acre but part of a larger

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common plan of development or sale). Redevelopment projects do not include such activities as exterior remodeling.

Because redevelopment projects may have site constraints not found on new development sites, the Phase II regulations provide flexibility for implementing post-construction controls on redevelopment sites that consider these constraints.

## Post-Construction Permit Requirements

Each permit specifies the minimum elements that must be included in each post-construction runoff control program. These elements will differ from state to state although all permits will share the bottom-line requirement that the MS4 must implement a post-construction runoff control program that is tailored to the specific stormwater pollution control problems facing the community.

EPA has compiled several examples from federal and state MS4 permits that address the post-construction runoff minimum control measure. These examples are included in a series of permit compendia available on the EPA's stormwater website. See particularly Section E (Post-Construction Runoff) in the EPA's [\*Compendium of MS4 Permitting Approaches – Part 1: Six Minimum Control Measures\*](#).

## Post-Construction BMPs

This section includes some non-structural and structural BMPs that could be used to satisfy post-construction requirements in small MS4 permits. It is important to recognize that many BMPs are climate-specific, and not all BMPs are appropriate in every geographic area. Because the requirements of this measure are closely tied to the requirements of the construction site runoff control minimum measure (see Fact Sheet 2.6), EPA recommends that small MS4 operators develop and implement these two measures in tandem.

- **Planning Procedures.** Runoff problems can be addressed efficiently with sound planning procedures. Local master plans, comprehensive plans, and zoning ordinances can promote improved water quality in many ways, such as guiding the growth of a community away from sensitive areas to areas that can support it without compromising water quality.
- **Site-Planning Based BMPs.** These may include buffer and riparian zone preservation, site restrictions on the amount of disturbance and imperviousness, and maximization of open space.
- **Stormwater Harvesting BMPs.** These practices may include rain barrels and cisterns that collect and temporarily store stormwater from rooftops for later release and/or use.
- **Stormwater Retention/Detention BMPs.** Retention or detention BMPs control stormwater by gathering runoff in wet ponds, dry basins, or multichamber catch basins and slowly releasing it to receiving waters or drainage systems. These practices can be

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designed to both control stormwater volume and settle out particulates for pollutant removal.

- **Infiltration BMPs.** Infiltration BMPs are designed to facilitate the percolation of runoff through the soil to ground water, and, thereby, result in reduced stormwater runoff quantity and reduced mobilization of pollutants. Examples include infiltration basins/trenches, dry wells, and porous pavement.
- **Vegetative BMPs.** Vegetative BMPs are landscaping features that, with optimal design and good soil conditions, remove pollutants, and facilitate percolation of runoff, thereby maintaining natural site hydrology, promoting healthier habitats, and increasing aesthetic appeal. Examples include bioswales, filter strips, artificial wetlands, and rain gardens.

## For Additional Information

### Contacts

A list of contacts for the U.S. EPA's Office of Wastewater Management (Headquarters), each EPA regional office, and state office is located at:  
<https://www.epa.gov/npdes/contact-us-stormwater>

### Your NPDES Permitting Authority

Most states and territories are authorized to administer the NPDES Program, except the following, for which EPA is the permitting authority:

- American Samoa
- District of Columbia
- Guam
- Johnston Atoll
- Massachusetts
- Midway and Wake Islands
- New Hampshire
- New Mexico
- Northern Mariana Islands
- Puerto Rico
- Most Indian country lands

## Reference Documents

- [EPA's Stormwater Website](#)
- [Stormwater Phase II Final Rule \(64 FR 68722\)](#)
- [Final MS4 General Permit Remand Rule \(81 FR 89320\)](#)
- [Final Small MS4 Urbanized Area Clarification \(88 FR 37994\)](#)
- [Phase II Final Rule Fact Sheet Series](#)
- [National Menu of Best Management Practices for Stormwater Phase II](#)
- [MS4 Permits – Compendium of Clear, Specific, and Measurable Permitting Examples](#)
- [EPA's Green Infrastructure Website](#)
- [EPA's Urban Nonpoint Source Guidance Website](#)

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