

# MUNICIPAL SEPARATE STORM SEWER SYSTEM PERMITS



COMPENDIUM OF CLEAR, SPECIFIC &  
MEASURABLE PERMITTING EXAMPLES



Office of Wastewater Management  
Water Permits Division  
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# Introduction

Much progress has been made since the first stormwater regulations were promulgated in 1990 to manage stormwater impacts. This progress includes the advancement of green infrastructure, the scientific and technological advancements of measuring and monitoring stormwater and the progress made in source control and other areas. Viewing rainwater as a vital freshwater resource and ways to increase climate resiliency are changing the way stormwater is managed.

However, uncontrolled stormwater discharges remain a significant cause of water quality impairment. Urban-related stormwater has been identified as the source of impairment for tens of thousands of miles of rivers, streams, and coastal shorelines, as well as hundreds of thousands of acres of lakes, reservoirs and ponds in the United States. These impairments are largely due to the expansion of the built environment, which removes vegetation, reduces the natural infiltration capability of the land, generates increased runoff and the discharge of pollutant-laden stormwater, and leads to stream erosion. Stormwater contains a variety of pollutants such as sediment, nutrients, chlorides, pathogens, metals, and trash. Furthermore, the increased volume and velocity of stormwater discharges alter streams and rivers by causing scouring and erosion of streambeds and banks. These surface water impacts threaten public health and safety due to flooding and exposure to pollutants; lead to economic losses to property and fishing industries; increase drinking water treatment costs; and decrease opportunities for recreation, swimming, and wildlife uses.

Regulated municipal separate storm sewer systems (MS4s) are required to reduce the discharge of pollutants from its MS4 to the maximum extent practicable (MEP) and to meet the water quality requirements of the Clean Water Act as appropriate. EPA refers to these requirements collectively as “the MS4 permit standard.” MS4 permits generally implement this standard through requirements to develop and implement stormwater management programs (SWMPs) which include the following types of controls: public education and outreach, public participation and involvement, illicit discharge detection and elimination, construction site runoff control, post-construction runoff control, pollution prevention and good housekeeping. The permit may also include water quality-related requirements to address issues such as Total Maximum Daily Loads (TMDLs) and protecting designated uses such as swimming. Permit requirements for meeting the MS4 permit standard are continually adapted to current conditions and the effectiveness of the control measures with the goal of attaining water quality standards.

In November 2016, the U.S. Environmental Protection Agency (EPA) changed its regulations governing the use of general permits for small MS4s in response to a remand from the United States Court of Appeals for the Ninth Circuit in 2003 in a case called *Environmental Defense Center, et al. v. EPA*. The final “MS4 General Permit Remand Rule” establishes two alternative approaches an NPDES permitting authority can use to issue and administer small MS4 general permits. Both approaches ensure that the permitting authority establishes what is necessary for the MS4 to meet “the MS4 permit standard” and that the public participation requirements of the Clean Water Act are met. The MS4 General Permit Remand Rule also clarifies that narrative, numeric, or other types of permit requirements can be used as long as they are expressed in a “clear, specific, and measurable” manner.

# Compendia of Clear, Specific & Measurable Permitting Examples

EPA has developed several compendia of excerpts from existing MS4 permits that provide examples of permit language for permitting authorities' consideration as they undertake implementation of the General Permit Remand Rule, particularly with respect to establishing permit terms and conditions that are "clear, specific, and measurable." To develop the compendia, EPA reviewed all state and EPA-issued individual and general small MS4 final permits issued up to October 2016 and compiled examples of permit language on the following areas.

## Part 1: Six Minimum Control Measures

This compendium illustrates example permit provisions for the six minimum controls measures of the stormwater management plan that may qualify as "clear, specific, and measurable" requirements under the final MS4 General Permit Remand Rule.

[https://www.epa.gov/sites/production/files/2017-01/documents/part1-epa\\_compendium\\_of\\_ms4\\_general\\_permit\\_requirements\\_508.pdf](https://www.epa.gov/sites/production/files/2017-01/documents/part1-epa_compendium_of_ms4_general_permit_requirements_508.pdf)

## Part 2: Post-Construction Standards

Many permitting authorities have included quantitative performance and/or design standard that are clear, specific, and measurable requirements for the post-construction program to control discharges from new development and redevelopment. The review of existing state and EPA permits for this compendium focused on retention-based, post-construction standards that address not only control of pollutant loads but at the same time reduce volume and velocity impacts of stormwater discharges.

[https://www.epa.gov/sites/production/files/2017-01/documents/part2-revised\\_sw\\_compendium\\_post\\_construction\\_508.pdf](https://www.epa.gov/sites/production/files/2017-01/documents/part2-revised_sw_compendium_post_construction_508.pdf)

## Part 3: Water Quality-Based Requirements

MS4 permits also include water quality-based requirements for specific pollutant parameters that are consistent with approved Total Maximum Daily Loads (TMDLs) or with the need to protect impaired waters prior to TMDL development or other water quality objectives. This compendium identifies different ways existing state and EPA permits implement TMDLs through quantitative requirements or pollutant-specific management measures, or a combination of both; how permitting authorities measure progress of implementation of water quality-based requirements; and provides examples of water quality-based requirements related to discharges to impaired waters without approved TMDLs.

[https://www.epa.gov/sites/production/files/2017-06/documents/part3-sw\\_compendium\\_wqrels\\_508.pdf](https://www.epa.gov/sites/production/files/2017-06/documents/part3-sw_compendium_wqrels_508.pdf)

## Part 4: Transportation Stormwater

This compendium presents examples of different permitting approaches that specifically address linear, department of transportation (DOT) MS4s. EPA reviewed current individual and general MS4 final permits issued to DOTs through September 2016. The compendium also includes examples from MS4 permits that may not be specific to DOTs but address activities DOT systems typically encounter.

[https://www.epa.gov/sites/production/files/2018-11/documents/dot\\_ms4\\_compendium\\_10.16.18.pdf](https://www.epa.gov/sites/production/files/2018-11/documents/dot_ms4_compendium_10.16.18.pdf)

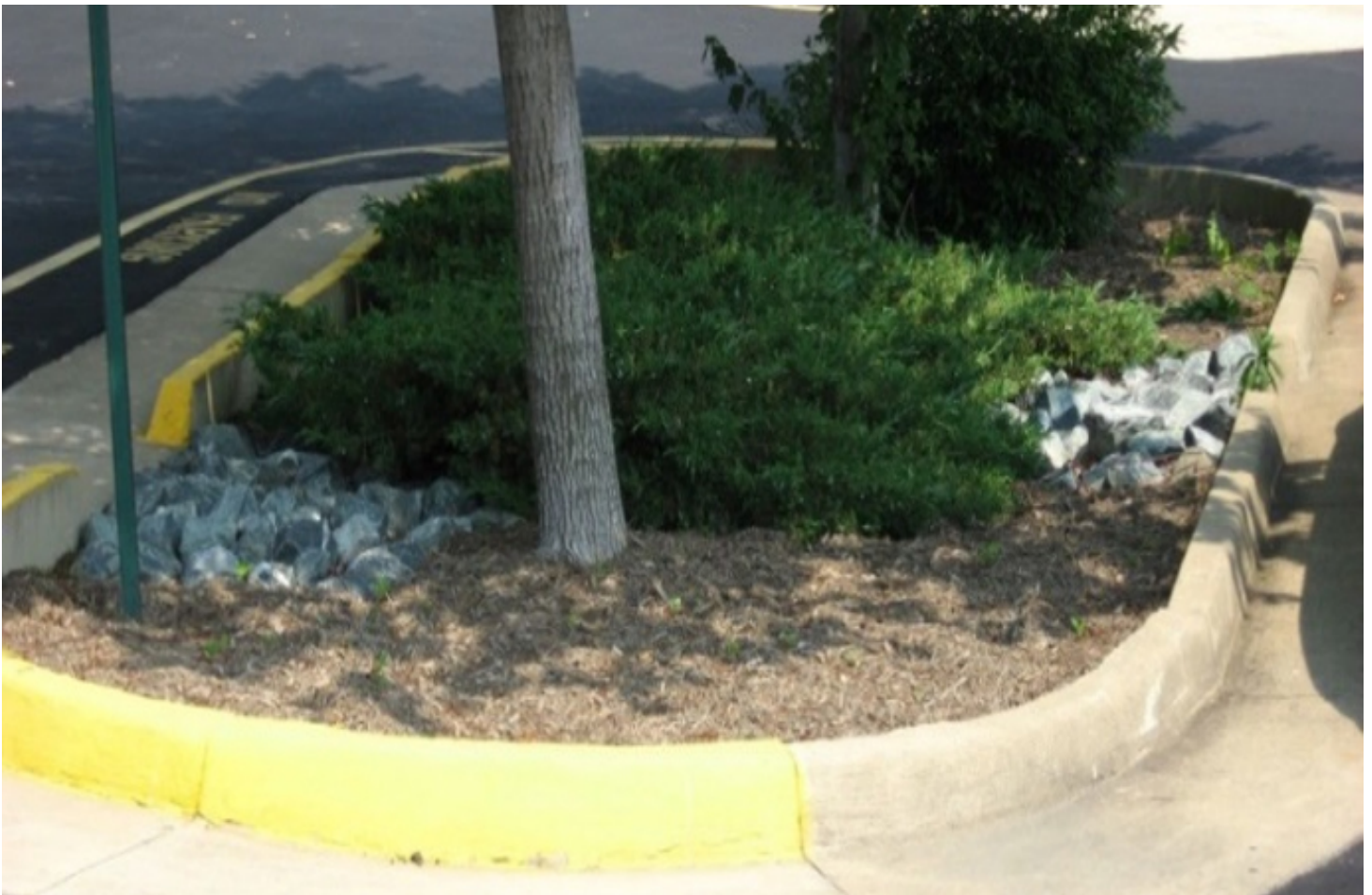


EPA notes that this compendium is intended to serve as a snapshot of existing permit provisions in November 2016. EPA anticipates that as permits are reissued in the coming months and years, the information in this compendium will need to be updated to include newer examples or modified information. EPA has an interest in ensuring the accuracy of the information contained in this document, and therefore welcomes input on any aspect of this compendium at any time.

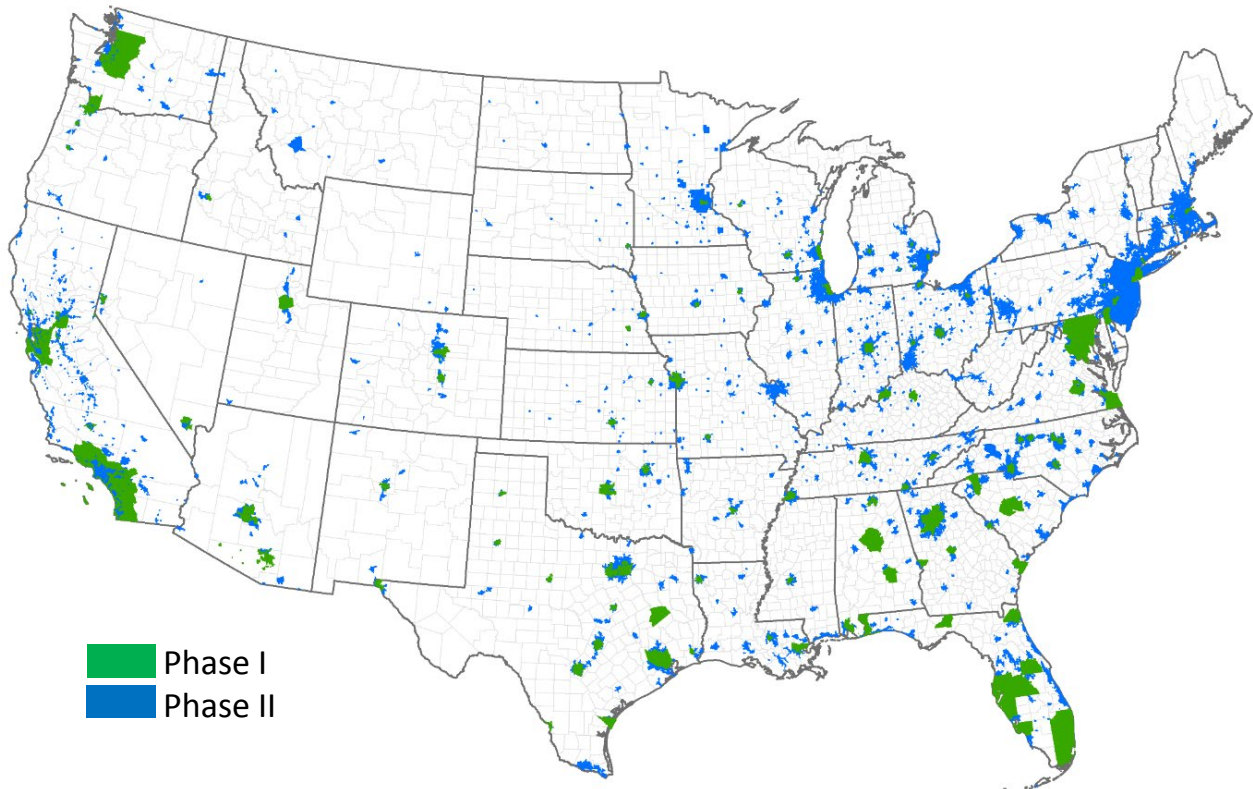
The Agency will update the compendium as needed based on the comments received and new information. EPA notes that the inclusion of any particular permit example should not be read as an Agency endorsement of the entire approach taken in that permit, nor should it be read as EPA's independent determination that the permit terms meet the regulatory requirements. This includes the regulatory requirement for permitted small MS4s "to reduce the discharge of pollutants from [the] MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act."

In addition, this document does not contain or impose any legally binding requirements on EPA, states, or the regulated community, and does not confer legal rights or impose legal obligations upon any member of the public. EPA made every attempt to ensure the accuracy of the examples included in this document; however, in the event of a conflict between this compendium and any statute, regulation, or permit, the statute, regulation or permit controls.

For more information about the NPDES Stormwater Program visit <https://www.epa.gov/npdes/npdes-stormwater-program>.



# National Map of Regulated MS4s



## Quick Facts

855 Phase I  
MS4s

covered by 250  
Individual Permits

6,695 Phase II MS4s

6,589 covered by 54 General  
Permits

106 covered by 100 Individual  
Permits

3 Watershed Permits cover 3  
Phase I and 40 Phase II MS4s

Regulated  
MS4 area  
represents 4%  
of the U.S.  
land area and  
> 80% of the  
population

Regulated MS4s are typically cities, counties, towns, and villages. Phase II MS4s also include nontraditional MS4s such as public universities, departments of transportation, hospitals and prisons. The universe of the Phase II MS4 program changes every 10 years according to the U.S. Census Bureau definition of urbanized area.