

MO-R040000—Permit Requirements for Phase II Municipal Separate Storm Sewer Systems (MS4)



Post-construction low impact development



Public Participation event – stream cleanup



Illicit Discharge Detection and Elimination BMP

Urban stormwater runoff is generated from rain and snow or ice melt events that flow over land or impervious surfaces, such as paved streets, parking lots, and building rooftops, and does not infiltrate into the soil. This runoff picks up pollutants like trash, chemicals, toxic metals, oils, sediment, bacteria and excess nutrients like nitrogen and phosphorous that can cause environmental harm to our rivers, streams, and lakes. Once stormwater picks up these pollutants, it is polluted; and polluted stormwater is widely recognized as the single largest threat to water quality, which is due in part to the fact that stormwater runoff does not receive or receives very little treatment before entering the receiving waterbody. To ensure stormwater pollution runoff is reduced or prevented, federal and state agencies require stormwater permits for Municipal Separate Storm Sewer Systems (MS4s).

A MS4 is a conveyance or system of conveyances including roads and highways with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, paved or unpaved channels, or storm drains designated and utilized for routing of stormwater. MS4s do not include any waters of the state, but do discharge to waters of the state. Additionally, MS4s are not a part or portion of a combined sewer system, and are not part of a publicly owned treatment works. In order to be designated as a regulated MS4 and thus required to obtain the MS4 general permit, municipalities, county governments, and state and federal agencies need to meet one of the three determinations below:

- Permittee is located in an Urbanized Area¹ and the population being served by the MS4 is 1,000 or more;
- Permittee is not located in an Urbanized Area but the population being served by the MS4 is 10,000 or more with a population density of 1,000 or more (total population / total area);
- The department determines that stormwater runoff from the permittee is causing or contributing to significant water quality impacts.

The permit authorizes regulated MS4s to discharge stormwater runoff from their MS4 to receiving waterbodies. The general permit requires regulated MS4s to develop, implement, and enforce a Stormwater Management Program (SWMP) per the requirements listed in the permit that will reduce the discharge of pollutants to the Maximum Extent Practicable² (MEP) into the MS4 for the goal of attainment with Missouri's Water Quality Standards.

The MS4 permit establishes six control elements under the SWMP, which are known as minimum control measures. When the six minimum control measures are implemented in concert, the results are expected to result in significant reduction of pollutants being discharged into receiving waterbodies, which in turn improves water quality of those waterbodies. The six minimum controls and descriptions are as follows:

- **Public Education and Outreach** – Providing education material and performing outreach to inform citizens about the impacts polluted stormwater runoff discharges can have on water quality.
- **Public Participation/Involvement** – Providing opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and encouraging citizen representatives on stormwater management panel.
- **Illicit Discharge Detection and Elimination** – Developing and implementing a plan to detect and eliminate illicit discharges to the storm sewer system, which includes the developing of a system map and informing the community about hazards associated with illegal discharges and improper disposal of waste.
- **Construction Site Runoff Control** – Developing, implementing, and enforcing an erosion and sediment control program for construction activities that disturb one or more acres of land or less if the area is part of a common plan that is one or more acres.
- **Post-Construction Runoff Control** – Developing, implementing, and enforcing a program to address discharges of post-construction stormwater runoff from new development and redevelopment areas. Applicable controls could include preventative actions such as protecting sensitive areas (e.g., wetlands) or the use of structural Best Management Practices (BMPs) such as grassed swales or porous pavement.
- **Pollution Prevention/Good Housekeeping** – Developing and implementing a program with the goal of preventing or reducing pollutant runoff from municipal operations. The program must include municipal staff training on pollution prevention measures and techniques (e.g., regular street sweeping, reduction in the use of pesticides or street salt, or frequent catch-basin cleaning).

In addition to requiring the six minimum control measures, the MS4 permit also requires BMPs and measurable goals subject to an evaluation procedure known as the Iterative Process for each of the minimum control measures. The general permit does establish some BMPs; however, it is the responsibility of the permittee to develop and implement BMPs in order to successfully implement the six minimum control measures. This approach allows the permittee flexibility in determining the appropriateness of the BMP based on unique determining factors (e.g., topography, hydrology, beneficial uses of the receiving waterbody, cost, etc.)

Measurable goals design objectives or targets established by the permittee that quantify or track the performance of the BMP. At a minimum, measurable goals should contain descriptions of actions that will be taken to implement each BMP, what is anticipated by the permittee to be achieved, and the frequency and dates for such actions to be taken. If a BMP is found to be ineffective or rather the BMP is not meeting its target, then the permittee must reevaluate their BMP and determine if the BMP is to be modified or replaced with an effective BMP, which is the Iterative Process. .

When the permittee implements BMPs, measurable goals, and the Iterative Process, they are implementing reasonable further progress, which is to say they are continuing to replace ineffective BMPs with effective BMPs. Reasonable further progress for each of the BMPs under a specific minimum control measure establishes that the permittee is meeting MEP. The department has a role in MEP as well with the review and rating of each SWMP as well as ensuring that each SWMP is placed on public notice and subject to public hearings.

For more information about MS4 permitting, please feel free to visit the department's Stormwater Information Clearinghouse web page at: <http://dnr.mo.gov/env/wpp/stormwater/index.html>, or contacting the department at (800) 361-4827 or (573) 751-4400.

1 – **Urbanized Area** is a densely populated core of census tracts and/or census blocks that have populations of at least 50,000, along with adjacent territory containing non-residential urban land uses as well as territory with low population density included to link outlying densely settled territory with the densely settled core. It is a calculation used by the Bureau of Census to determine the geographic boundaries of the most heavily developed and dense urban area.

2 – **Maximum Extent Practicable** is the technology-based standard for MS4s as established in section 402(p)(3)(B)(iii) of the federal Clean Water Act. It is the successfully comprehensive implementation of each minimum control measure (BMPs and measurable goals), iterative process, and reasonable further progress. It is fully realized when the department reviews and rates (i.e., approves) the SWMP for any given permittee.