

# Establishing Strategies for a Transportation MS4

*Technology Transfer Summary*

Sponsored by Iowa Department of Transportation & Federal Highway Administration

**Iowa DOT Project Number:** SPR RB36-013

**Performing Organization:** University of Iowa

**Principal Investigator:** Rebecca Kauten

## Background

The National Pollutant Discharge Elimination System (NPDES) was established by the U.S. Environmental Protection Agency as a means of addressing surface pollution from both known (point) and non-specific (non-point) sources. The program impacts industrial wastewater, runoff from active construction sites, and stormwater runoff as it is managed within municipal separate storm sewer systems, or “MS4” communities. As part of NPDES permit requirements nationwide, all permitted MS4s must establish a Stormwater Management Program for comprehensive planning and adaptive management.

## Problem Statement

MS4 permit holders are expected to maintain a Storm Water Management Plan (SWMP) following the minimum control measures (MCMs) as defined by USEPA. When implemented, MCMs should result in a significant reduction in pollutants discharged into receiving waters. The minimum measures, as defined by USEPA, are outlined below:

**Public Education/Outreach** – Defines and establishes methods, strategies and tools to inform the public about MS4 management programs and describes ways to reduce stormwater pollution.

**Public Participation/Involvement** – Describes and defines methods and strategies to involve the public in developing, implementing, and reviewing MS4 management programs and promotes ways to reduce stormwater pollution.

**Illicit Discharge Detection and Elimination (IDDE)** – Establishes methods and practices for identifying and eliminating illicit discharges and spills to storm drain systems and inlets to waters of the US.

**Construction Site Runoff Control** – Establishes methods and practices for MS4s and construction site operators to address stormwater runoff from active construction sites.

**Post-Construction Runoff Control** – Establishes methods and practices for MS4s, developers, and property owners to address stormwater runoff after construction activities have ended.

**Pollution Prevention/Good Housekeeping** – Describes methods and practices for ongoing maintenance, observation and action to ensure or reduce negative impacts to waters of the U.S.

As of 2014, Iowa DOT remains the only state transportation agency within the United States without an MS4 permit or that does not operate under the guidelines of an MS4 permit regarding stormwater management.

It is anticipated that the Iowa DOT will be required to obtain a MS4 permit from the Iowa Department of Natural Resources (DNR) in the future. The research generated as a result of this project is intended to provide a strategic approach and recommendation for Iowa DOT as it develops a plan for agency-wide and agency-specific MS4 program implementation.

## Goal

The overall objective of this project has been to identify best practices and approaches to MS4 program planning for the Iowa Department of Transportation. Information is primarily based on existing state MS4 programs as examples and references for use as an agency-based MS4 program is developed.

**Extended literature review of existing transportation MS4 programs in the Region VII EPA regulatory region: Iowa, Kansas, Missouri, and Nebraska.** The project objectives have been driven primarily by information gathered from existing DOT/MS4 programs. Existing MS4 program documentation from Region VII states was gathered, reviewed and critiqued for content and relevance to both federal regulatory requirements and relevance for application by Iowa DOT.

**Peer Exchange facilitation for further evaluation of other state MS4 program components.** A one-day peer exchange among the Region VII state transportation agencies occurred in conjunction with the Great Rivers Chapter of the International Erosion Control Association annual conference in Kansas City, Missouri. This event took place October 27 and 28, and concluded with a transportation MS4 panel discussion presented to conference attendees on October 29.

**Develop cost and time estimates for implementation of various MS4 program components.** Data collected and analyzed as part of this project is intended to assist with establishment of an overall, agency-wide strategy for implementing an MS4 program. An important goal of the project is to recommend a cost-effective, practical strategy for proper program implementation. Timelines and budgetary recommendations are based on information gathered as part of this research project.

## Key Findings & Recommendations

Rather than implement a distributed approach to MS4 program management, this report recommends Iowa DOT adopt a single environmental office or contact within the agency to oversee program implementation. Activities associated with MS4 program compliance will likely be distributed among various agency divisions. The MS4 Strategy is about re-aligning existing activities to ensure both the acknowledgment of impact and a concerted effort of reduction, prevention and ongoing planning.

Years 1-5: MS4 compliance should concentrate on establishing common language, definitions and standard practices. Program development may consist of inventorying existing efforts as a means of acknowledging and crediting current effort. Internal and external stakeholders should be identified and enlisted to participate in the MS4 program process. Initial efforts will likely revolve around Central Office activities, with years 3-5 including more statewide implementation and engagement with

District Offices. Further training and audits may be included in the final year of the initial permit cycle, with plans to incorporate such accountability (i.e.: reporting) on a one, three and five year cycle.

Upon completion of the initial MS4 permit, Iowa DOT may then choose to incorporate performance measures, increase internal training to incorporate all six MCMs, and grow an agency-wide perspective on the objectives and consequences related to MS4 compliance. Program evaluation may require five or more years of implementation to measure success over time.

Based on estimated values for implementing all six MCMs for an agency-wide MS4 Program, a total annual budget of \$1,312,745 includes a mix of new and existing funding to both staff compliance activities and promote full implementation of a transportation agency MS4 permit. In many instances, these initial costs may be reduced over time. Funds recommended in this MS4 Program Implementation Budget are for initial expenses over an 18-month compliance period.

## Alignment Strategies

Two critical alliances should be considered as Iowa DOT advances toward an agency-wide MS4 program: engagement with existing MS4 permit holders, and engagement with local watershed projects as external, primary stakeholders. Currently, 41 municipalities and 3 universities in Iowa hold MS4 permits, and Dickinson County maintains a local ordinance for low-impact development requirements similar to municipal MS4 requirements.

## Transportation MS4 Concept

In many ways, the MS4 Strategy is about re-aligning existing activities to ensure both the acknowledgment of impact and a concerted effort for pollutant reduction and/or prevention and ongoing planning. As staff turnover occurs, job descriptions for new and replacement hires should include duties and activities aligned with agency-wide MS4 program goals.