Table of Contents

Part 1. Permit Coverage and Applicability

Part 2. Permit Restrictions and Exemptions

Part 3. Stormwater Management Program and Plan

Section 3.1 - Stormwater Management Program

Section 3.2 - Content of the Stormwater Management Plan

Section 3.3 - Sharing Responsibility

Section 3.4 - Reviewing and Updating the Stormwater Management Program and Plan

Part 4. Minimum Control Measures (MCM)

Section 4.1 - MCM 1. Public Education and Outreach Program on Stormwater Impacts

Section 4.2 - MCM 2. Public Involvement and Participation

Section 4.3 - MCM 3. Illicit Discharge Detection and Elimination

Section 4.4 - MCM 4. Construction Site Stormwater Runoff Control

Section 4.5 - MCM 5. Post-Construction Stormwater Management in New Development and Redevelopment

Section 4.6 - MCM 6. Pollution Prevention/Good Housekeeping for Municipal Operations

Part 5. Monitoring, Recordkeeping, and Reporting

Section 5.1 - Monitoring

Section 5.2 - Recordkeeping

Section 5.3 - MS4 Annual Report

Part 6. Special Conditions for Total Maximum Daily Loads

Section 6.1 - MS4s Subject to Total Maximum Daily Loads (TMDL)

Part 7. Standard Permit Conditions

PART 1. PERMIT COVERAGE AND APPLICABILITY

This permit is for coverage under this Two-Step General Permit for Phase II MS4s.

1.1.A Permit Area: This Missouri State Operating Permit (permit) covers all areas served by a Municipal Separate Storm Sewer System (MS4) for which the applicant is identified as the Continuing Authority.

1.1.B Applicability: This permit authorizes discharges of stormwater from regulated MS4s, as defined in 10 CSR 20-6.200(D)24. This permit also authorizes the discharge of stormwater commingled with flows contributed by process wastewater, non-process wastewater, or stormwater associated with industrial activity provided such discharges are authorized under separate National Pollutant Discharge Elimination System (NPDES) permits or no exposure certification as defined in 10 CSR 20-6.200(C).

The permittee, or co-permittee, is authorized to discharge under the terms and conditions of this general permit if the permittee:

1. Owns or operates a regulated Small MS4 as defined in 10 CSR 20-6.200 (D)16;
2. Also is located in the Urbanized Area as defined by the most recent U.S. Census for which the applicant is identified as the Continuing Authority with a population of at least 1,000;
3. OR inside the municipal corporate limits of a jurisdiction with a population of at least ten thousand (10,000) and a population density of one thousand (1,000) people per square mile or greater;
4. OR is inside the service area of a publicly owned separate storm sewer system designated by the Department if it is determined that its discharges from the MS4 have caused, or have the potential to cause, an adverse impact on water quality.

1.1.C Authorized discharges. The following are types of discharges authorized by this permit:

1. *Stormwater discharges*. This permit authorizes stormwater discharges to waters of the state from the regulated MS4 identified in Section 2.1.A except as excluded in Section 2.1.E of this permit.
2. *Non-Stormwater discharges*. The permittee is authorized to discharge the following non-stormwater sources provided the permitting authority has not determined these sources to be substantial contributors of pollutants to the permittee's MS4:
    - Water line flushing;
    - Landscape irrigation and lawn watering;
    - Diverted stream flows;
    - Rising ground waters and springs,
    - Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(b)(20));
    - Discharges from potable water sources;
    - Foundation or footing drains;
    - Air conditioning condensation;
    - Irrigation water;
    - Water from crawl space pumps;
    - Individual residential car washing;
    - Flows from riparian habitat and wetlands;
    - Street and sidewalk wash water, water used to control dust, that does not use detergents;
    - Dechlorinated and uncontaminated residential swimming pool discharges; and
    - Discharges or flows from firefighting activities. Fire-fighting activities do not include washing of trucks, run-off water from training activities, and similar activities.

1.1.D In the event the regulated MS4 has an oil water separator which is used to exclusively treat stormwater; this permit authorizes the operation of oil water separators solely for the treatment of stormwater. The oil water separators must be appropriately operated and sized per manufacturer's or engineering specifications. The specifications and operating records must be made accessible to Department staff upon request. Oil water separator sludge is considered used oil; sludge must be disposed of in accordance with 10 CSR 25-11.279.

PART 2. PERMIT RESTRICTIONS AND EXEMPTIONS

2.1.A Limitations on coverage: The permittee, shall prohibit non-stormwater discharges and stormwater discharges that combine with sources of non-stormwater into the MS4, except where:

1. Non-stormwater discharges are in compliance with a separate NPDES permit; and
2. Authorized by Section 1.1.C of this permit.

2.1.B This operating permit does not affect, remove, or replace any requirement of the Endangered Species Act; the National Historic Preservation Act; the Comprehensive Environmental Response, Compensation and Liability Act; or the Resource

Conservation and Recovery Act. Determination of applicability to the above mentioned acts is the responsibility of the permittee. Additionally, this permit does not establish terms and conditions for runoff resulting from silvicultural activities listed in Section 402(l)(3)(a) of the Clean Water Act.

2.1.C Discharge Limitations

1. The permittee shall implement Best Management Practices (BMPs) via an iterative process to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP) into the MS4 for the goal of attainment with Missouri's Water Quality Standards. Requirements are listed in Parts 4, 5, 6, and 7 of this operating permit.
2. The permittee shall implement and enforce a Stormwater Management Program per the requirements listed in this operating permit in accordance with section 402(p)(3)(B)(iii) of the CWA, corresponding NPDES regulations, 40 CFR 122.34, 40 CFR 122.28(d)(2), and in accordance with the Missouri Clean Water Law (MCWL) and its implementing regulations under 10 CSR 20-6.200.
3. The permittee shall comply with all provisions and requirements contained in this permit and with their individual Stormwater Management Program including plans, ordinances, and schedules developed in fulfillment of this permit.
4. If the Department determines a regulated MS4 is causing or contributing to instream excursions of Missouri's Water Quality Standards, then the Department may require corrective action(s) or require an application for a site-specific permit to ensure that BMPs are being implemented via an iterative process to reduce pollutants to the MEP.
5. Newly designated regulated MS4s applying for coverage under this general permit and discharging to waterbodies or watersheds subject to an existing EPA approved or established TMDL may be denied coverage under this general permit and required to apply for and obtain a site-specific operating permit for stormwater discharges from their regulated MS4.

2.2 Authorization to Discharge and Application Requirements

2.2.A Authorization to discharge stormwater from a regulated MS4 requires each permittee (existing and recently designated regulated MS4s) to submit a complete application for the MS4 general permit. The permittee shall submit their application on the latest version of the application form(s); either Form K, or Form L and Form M.

2.2.B The application shall be signed and dated by an authorized signatory.

1. All permit applications shall be signed and certified in accordance with 40 CFR 122.22 and 10 CSR 20-6.010(2) by either a principal executive officer or by an individual having overall responsibility for environmental matters for the permittee.
2. All reports required by this permit, and other information requested by the Department shall be signed by a person described in Section 2.2.B.1 of this permit, or by a duly authorized representative of that person. A person is a duly authorized representative only if the authorization is made in writing by a person designated in Section 2.2.B.1 of this permit.

2.2.C Existing regulated permittees seeking renewal of their MS4 permit shall submit a renewal application within 180 days prior to the expiration date of this operating permit unless the permittee has been notified by the Department that an earlier application is required in accordance with 10 CSR 20-6.200 (1)(D) 24. B.

2.2.D Newly designated regulated MS4s shall submit their permit application within 180 days following notification by the Department that permit coverage is required.

2.2.E As part of the application, permittees shall submit their written Stormwater Management Plan (SWMP) including any implementation schedules and items listed under Part 3 of this operating permit.

1. Once a SWMP is approved by the Department it is incorporated into this permit, and is a legally enforceable document.
2. If the SWMP does not meet the requirements of Section 3.1, the application shall be deemed incomplete and the Department may require the permittee resubmit the SWMP within thirty (30) days OR for the MS4 to be covered under the Phase II MS4 Comprehensive General Permit.

PART 3. STORMWATER MANAGEMENT PROGRAM AND PLAN

3.1 Stormwater Management Program

3.1.A To the extent allowable under state and local law, a Stormwater Management Program must be developed, continued, or revised; and implemented according to the requirements of this general permit.

1. **Existing permittees** shall assess program elements that were described in the previous permit, modify as necessary, and/or implement new elements, as necessary.
2. **Newly regulated permittees** shall have the program fully implemented within 5 years of issuance of this permit.

3.1.B As part of the Stormwater Management Program, the permittee shall update or develop a document, the SWMP, with appropriate appendices and/or supplemental attachments, explaining the Stormwater Management Program. This SWMP shall be a comprehensive document used to explain programmatic BMPs and the on-going evaluation of the BMPs, the tracking, and methods of documentation. This document may be electronic.

The SWMP must contain all the actions that are necessary in order to meet the conditions of this permit. All MS4 requirements established in the permittee's Stormwater Management Program shall be described in clear, specific, and measurable terms in the SWMP. These descriptions may include narrative, numeric, or other types of requirements (for example: implementation of specific tasks or BMPs, BMP design requirements, performance requirements, adaptive management requirements, schedules for implementation and maintenance, and frequency of actions).

At a minimum, the SWMP shall include:

1. The name, title, phone number, and email for the person(s) responsible the Stormwater Management Program the person(s) responsible for each minimum control measure if different from the primary responsible person.
2. A description of each programmatic BMP developed or designed with a purpose of reducing stormwater pollution.
   Each description shall contain:
   a) A clear, well-defined, and detailed description of the BMP.
   b) The goal/expected result of each BMP, explaining in specific terms the objective or results of this BMP if it is successful and the pollutant(s) reduced.
3. Clearly explained measurable goals which shall be established for each BMP or in conjunction with multiple BMPs. These goals shall be used to measure effectiveness over time.
   These measurable goals may serve as BMP design objectives or goals that quantify the progress of implementation of the actions or performance of the permittee's BMPs.
   a) Measurable goals should describe specific actions taken by the permittee to implement each BMP.
   b) Each measurable goal shall contain a statement clearly indicating how it will be established to determine the appropriateness of identified BMPs and progress toward the expected results of the BMP.
   c) Measurable goals shall be quantifiable when feasible; however, if it is not feasible to utilize a measurable goal that is quantifiable, then the permittee shall provide justification indicating why the measurable goal cannot be quantifiable.
   d) If applicable, measurable goals shall also include frequency and the dates for such actions, or utilize interim and completion milestone dates, and a periodic frequency of measurement to document progress. It is recommended that interim and final milestone dates are established with a format of month and year. If the format of month and year cannot be utilized, the permittee shall ensure that schedules have the minimum format of 1st, 2nd, 3rd, 4th, and 5th year of the operating permit. If not applicable, please note that in the SWMP.
4. Clearly explain the method of documentation used for activities performed. Incorporate measurable elements to assess the outcomes of each BMP, include an annual (or more frequent) measurement to document progress, and a summary of that measurement. Measurable goals may be quantifiable, or when necessary, narrative, visual, or qualitative.
5. A description of the iterative process to be utilized by the permittee documenting how each BMP is evaluated and subject to replacement or modification. The permittee shall apply reasonable further progress by replacing or modifying ineffective BMPs with effective BMPs.
6. List of all water bodies, if any, that have been identified as impaired within the boundaries of the regulated MS4.
7. Details of requirements in Part 4 of this permit.

3.1.C The permittee must utilize the procedures and other supplemental documents contained in or referenced in the SWMP during the activities performed to attain permit compliance.

3.1.D Stormwater SWMP Submittal requirements.

1. **Existing MS4s:** Permittees who were regulated under the previous NPDES general permit MOR04, shall update or revise, and submit to the Department, their SWMP, following the requirements included in this general permit, along with the permit application for coverage.
   a) The permittee shall continue to operate under the conditions of the previous permit and existing SWMP until the revised SWMP document is approved by the Department.
   b) Existing permittees shall ensure full implementation of any new elements in the revised SWMP as soon as practicable.

2. **Newly designated MS4s:** Newly designated MS4s shall create and submit to the Department, a SWMP under this general permit along with the permit application for coverage.
   b) Newly designated MS4s must achieve full implementation of the Stormwater Management Program as described in their SWMP as soon as practicable, but no later than five (5) years from receipt of their MS4 Operating Permit. Newly designated MS4s shall begin executing and following their SWMP upon the issuance date of their permit unless comments from the Department require adjustments.

3.1.E Permittees shall implement BMPs consistent with the provisions of both this permit and their specific Stormwater Management Program to achieve compliance with the standard of reducing pollutants to the maximum extent practicable per 40 CFR 122.34.

3.1.F The permittee may replace or modify ineffective BMPs with effective BMPs following the requirements of 3.3.

3.2 Sharing Responsibility

3.2.A Co-permittees agreements.

1. Implementation of one or more of the minimum control measures may be shared with another governmental entity or the governmental entity can assume responsibility for the measure via the co-permittee option if:
   a. The co-permittee has a MS4 located within or partially within an Urbanized Area as determined by the most recent Bureau of Census, which can include, but is not limited, to: municipalities, county, military bases, large hospitals, prison complexes, universities, sewer districts, and highway departments;
   b. The co-permittee, in fact, implements the control measure(s).
2. This co-permittee obligation and written acceptance, shall be described and maintained as part of the SWMP.
3. If the co-permittee agrees to report on the control measure, the co-permittee shall cooperate with the reporting requirements contained in Section 5.3 of this permit.
4. If one co-permittee fails to implement the control measures, then that co-permittee shall remain liable for any discharges due to that failure to implement. Additionally, the Department may require corrective actions(s), require an application for a site-specific permit, or require the co-permittee to apply and obtain their own Phase II MS4 general permit.

3.2.B Implementation of one or more of the minimum control measures or BMPs may be contracted out to another entity or organization, such as a non-profit organization. However the permittee retains responsibility for the MCM or BMP as specified in the SWMP. The written agreements between another entity or organization stipulating arrangements and responsibilities for meeting permit requirements shall be made available to the Department upon request.

3.3 Reviewing and Updating the Stormwater Management Program and SWMP

3.3.A The permittee shall conduct, at minimum, an annual review of their Stormwater Management Program. This is recommended to be in conjunction with preparation of the MS4 Stormwater Management Program Report required under Section 5.

3.3.B The permittee may adjust their Stormwater Management Program during the life of the permit in with approval by the Department.

3.3.C Modifications to the Stormwater Management Program may be requested by the permittee or the Department. The request for modification must be made in writing, set forth a time schedule for the permittee to develop the changes, and offer the permittee opportunities to propose alternative program changes to meet the objective of the requested modification. Modifications shall include documentation of an analysis of why the original BMP was ineffective, the expectations of the replacement BMP, and an analysis of why the replacement BMP is expected to achieve the goals of the BMP to be replaced. All changes required by the Department will be made in accordance with 10 CSR 20-6.200.

3.3.D The Department may require changes to the Stormwater Management Program as needed to:

1. Address impacts on receiving water quality caused or affected by discharges from the MS4.
2. Include more stringent requirements necessary to comply with new federal or state statutory or regulatory requirements; or
3. Include such other conditions deemed necessary by the Department to comply with the goals and requirements of the MCWL.

3.3.E Within 90 days of a transfer of ownership, change of Continuing Authority, or change in responsibility for Stormwater Management Program implementation, the permittee shall submit a revised plan, if necessary, for implementing the revised Stormwater Management Program on all affected areas. This revised Stormwater Management Program shall go through the Public Notice process detailed in Section 4.2.A of this Permit.

The SWMP shall include revised schedules for implementation. Information on all new annexed areas and any resulting updates required to the Stormwater Management Program shall be included in the MS4 Stormwater Management Program Report.

PART 4. MINIMUM CONTROL MEASURES

Entities seeking coverage under this general permit shall develop and implement a Stormwater Program that includes the following six (6) Minimum Control Measures (MCMs), as applicable. All program elements must be implemented according to the schedule established in the individual MS4's SWMP and Section 3.1 of this permit.

All six MCMs apply to all MS4s regulated under this permit, unless specifically requested by the permittee to the Department for an exemption from a MCM, or if a specific MCM(s) are covered in a co-permittee situation. Specific program elements under each MCM shall be implemented by all permittees. Permittees shall provide justification within their individual SWMP for any requirements that were not implemented because they were not feasible as described in each MCM.

4.1 **MCM 1. Public Education and Outreach on Stormwater Impacts**

The permittee shall implement a public education program to distribute educational materials to the community and/or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff. The public education and outreach program shall, at a minimum include the following:

4.1.A Identify target audiences and explain why the target audiences are likely to have significant stormwater pollution impacts in the SWMP.

4.1.B Identify target pollutants and/or sources of pollution that the permittee's education program is designed to address and how the those pollutants/ sources relate to the specific target audience(s).

4.1.C Develop or utilize appropriate educational BMPs (materials, events, activities, etc.) to be used in conjunction with the target pollutants and target audiences. Explain opportunities about the BMPs and how the BMPs inform and educate target audiences to reduce pollutants in stormwater runoff.

4.2 **MCM 2. Public Involvement/Participation in Program Development**

The permittee shall implement a public involvement/participation program that reaches out and engages the public in the development and implementation of the permittee's Stormwater Management Program. The public involvement/ participation program shall, at a minimum, include the following:

4.2.A The permittee shall hold a public notice period for a minimum of thirty (30) days on the draft SWMP. The permittee shall respond to public comments received during the public notice period. The permittee shall retain copies of any public comments and responses, for a minimum of three years.

4.2.B The permittee shall hold a public hearing regarding the proposed Stormwater Management Program and Plan within the MS4 service area. Public notice of the public hearing shall be given at least thirty (30) days before the hearing. Public notice of the hearing may be given at the same time as public notice of the draft SWMP and the two notices may be combined.

4.2.C The permittee shall have a publicly available method to accept public inquiries or concerns, and to take information provided by the public about stormwater and stormwater related topics. This method, or a combination of methods, shall cover all MCMs.

4.2.D If the permittee utilizes a stormwater management panel or committee, the permittee shall provide opportunities for citizen representatives on the panel or committee.

4.3 **MCM 3. Illicit Discharge Detection and Elimination**

The permittee shall implement and enforce a program to detect and eliminate illicit discharges (as defined in 10 CSR 20-6.200 at 40 CFR 122.26(b)(2)) into the permittee's regulated MS4. The illicit discharge detection and elimination program shall at minimum, include the following:

4.3.A Develop, and maintain an up to date storm sewer system map, show the location of all outfalls, the names and location of all waters of the state that receive discharges from those outfalls, and the boundary of the regulated MS4 area.

1. A description of the sources of information or procedures used for the map(s), how the permittee plans to verify the outfall locations with field surveys, and how the map will be regularly updated shall be included in the SWMP.
2. The permittee shall make the map and any accompanying necessary information available to the Department upon request.

4.3.B. To the extent allowable under state, or local law, through ordinance(s), or other regulatory mechanism(s), the permittee shall effectively prohibit, unauthorized non-storm water discharges into the storm sewer system and implement appropriate enforcement procedures and actions. Identify in the SWMP the regulatory mechanism(s) the permittee will use to effectively prohibit illicit discharges into the MS4 by including a link to or a copy of the relevant sections.

4.3.C Develop and implement a plan to detect and address unauthorized non-storm water discharges, including illegal dumping, to the system. An explanation of these strategies shall be included in the SWMP with:

1. Applicable response timelines;
2. Procedures for tracing the source of an illicit discharge, including specific techniques used to detect the location of the source;
3. Procedures for removing the illicit discharge; and
4. Other practices that are a part of this plan.

4.3.D The permittee shall inform public employees, businesses, and the general public of hazards associated with illegal discharges and the improper disposal of waste. The SWMP shall include a description of how this plan will coordinate with all other minimum control measures, monitoring, Integrated Planning (where applicable), and TMDL implementation (where applicable).

4.3.E Implement a dry weather field screening strategy for unauthorized non-stormwater flows. The SWMP shall include a description of diagnostic monitoring procedures, including procedures for visual screening, sampling, or field analyzation and what parameters are sampled for to be used as indicators of discharge sources.

4.3.F Maintain and describe procedures to identify priority areas likely to have illicit discharges such as, but not limited to, any area where there is ongoing evidence of illicit discharges, or dumping; areas with higher likelihood of illicit connections such as neighborhoods with onsite sewage; or regions with a high percentage of directly connected impervious areas.

4.3.G Provide procedures to ensure the permittee's illicit discharge ordinance (or other regulatory mechanism) is implemented by means of appropriate enforcement procedures, including fines, and actions. A description of these enforcement procedures shall be included in the SWMP.

4.4 <u>MCM 4. Construction Site Stormwater Runoff Control</u>

The permittee shall develop, implement, and enforce a program to reduce pollutants in any storm water runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of storm water discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. The construction site stormwater program shall at minimum, include the following:

4.4.A The permittee shall have an ordinance and/or other regulatory mechanism to require construction site operators to implement erosion and sediment control BMPs at construction/land disturbance sites.

1. The ordinance or regulatory mechanism shall include sanctions which are designed to ensure compliance, to the extent allowable under state, or local law.
2. The SWMP must contain a copy of or a link to the relevant ordinance or regulatory mechanism.

4.4.B The permittee shall maintain requirements for construction site operators to:

1. Implement appropriate erosion and sediment control best management practices; and
2. Control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.

4.4.C The permittee shall maintain and apply procedures for review of all pre-construction site plans for consideration of potential water quality impacts.

4.4.D The permittee shall maintain and apply mechanisms for receipt and consideration of information submitted by the public.

4.4.E The permittee shall maintain and apply procedures for site inspection and enforcement of control measures, this shall include prioritization of site inspection processes.

4.4.F The permittee shall inspect (or require inspection of) any structure that functions to prevent pollution of stormwater or to remove pollutants from stormwater and ensure that all BMPs are implemented and effective. This shall include a monitoring plan and\or documentation with implementation schedules described in the SWMP.

4.4.G The permittee shall maintain and apply a plan designed to ensure compliance with the permittee's erosion and sediment control regulatory mechanism, this shall include the sanctions and enforcement mechanisms to be used to ensure compliance.

4.5 MCM 5. Post-Construction Stormwater Management in New Development and Redevelopment

The permittee shall develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that would disturb one acre or more, and that discharge into the permittee's regulated MS4. The post-construction stormwater management program shall at minimum, include the following:

4.5.A The permittee shall develop, and implement strategies which include a combination of structural and/or non-structural best management practices (BMPs) appropriate for the community, including, but not limited to the assessment of site characteristics at the beginning of the construction site design phase to ensure adequate planning for stormwater program compliance. The goal of this approach is to arrive at designs that protect sensitive areas, minimize the creation of stormwater pollution, utilize BMPs that effectively remove stormwater pollution, and attempt to maintain predevelopment runoff conditions.

1. Details of these strategies to minimize water quality impacts shall be included in the SWMP.
2. The SWMP shall include a link to or copy of standards developed or adopted.

4.5.B To the extent allowable under state, or local law, through ordinance, or other regulatory mechanism, the permittee's Stormwater Management Program shall address post-construction runoff from new development and redevelopment projects. The regulatory mechanism the permittee will use shall be identified in the SWMP by including a link to or a copy of the ordinance(s) or regulatory mechanism(s). If the permittee needs to develop a mechanism, the schedule for implementation shall be described in the SWMP.

4.5.C The permittee shall maintain a plan to ensure adequate long-term operation and maintenance of Post-Construction BMPs, both structural and non-structural. Descriptions of and/or examples of agreements between the permittee and other parties such as post-development landowners or regional authorities shall be included in the SWMP.

4.5.D The permittee shall maintain and apply an inspection plan with implementation schedules for post-construction BMPs.

4.5.E The permittee shall inspect or require the inspection of post-construction stormwater BMPs to ensure all BMPs are implemented and effective.

4.6 MCM 6. Pollution Prevention/Good Housekeeping for Municipal Operations

The permittee shall develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. As part of the Stormwater Management Program, the pollution prevention/good housekeeping program shall at a minimum, include the following:

4.6.A An employee training program for municipal operations staff who work with material handling, at municipal vehicle or equipment maintenance areas, storage yards, and material storage facilities. The training shall be used to prevent and reduce stormwater pollution from activities such as, but not limited to, park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance. The SWMP shall include:

1. A description of any existing, available training material the permittee plans to use such as those available from EPA, the state, or other organizations. Include the frequency of training and topics covered.
2. A description of how this training will coordinate with all other MCMs.
3. A description of how this training will coordinate with monitoring, integrated planning, and TMDL implementations where applicable.

4.6.B The permittee shall maintain an updated list of all municipal operations/facilities that are impacted by this operation and maintenance program.

4.6.C The permittee shall maintain an updated list of industrial facilities that the permittee owns or operates that are subject to NDPES permits for discharges of stormwater associated with industrial activity that ultimately discharge to the permittee's MS4. The permittee shall include the permit number or a copy of the No Exposure Exemption Certification (if applicable) for each facility in the SWMP. NPDES permitted facilities not owned or operated by the permittee are not required to be

part of the list, however the permittee should be familiar with all such facilities in their MS4 service area as they may signify a priority area for the IDDE (MCM #3) program.

4.6.D The permittee shall develop or maintain controls for reducing or eliminating the discharge of floatables and pollutants from municipal parking lots, maintenance and storage yards, waste transfer station, fleet or maintenance shops with outdoor storage areas, salt/sand storage locations, snow disposal areas owned or operated by the permittee, or other locations expected to contribute floatables and/or pollutants.

4.6.E The permittee shall maintain and apply maintenance procedures, maintenance schedules, and long-term inspection schedules for controls to reduce floatables and other pollutants to the permittee's regulated MS4.

4.6.F The permittee shall utilize procedures for the proper disposal of waste removed from the separate storm sewers and areas of jurisdiction, including dredged material, accumulated sediments, floatables and other debris.

4.6.G The permittee shall utilize procedures for the washing of municipal vehicles and equipment.

1. Use of any soap or detergent shall only be where there is connection to sanitary sewer or equivalent; and
2. Any wash water that contains pollutants such as salt, oils, grease, sediment, grass clippings, lawn chemicals, or pesticides shall not be discharged to waters of the state or the MS4 system without appropriate treatment to ensure the discharged effluent is in compliance with Missouri Water Quality Standards.

4.6.H All paints, solvents, petroleum products and petroleum waste products (except fuels) under the control of the permittee shall be stored so that these materials are not exposed to stormwater.

1. Sufficient practices of spill prevention, control, and/or management shall be provided to prevent any spill of these pollutants from entering waters of the state.
2. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.

4.6.I If the permittee has new flood management projects (projects developed or designed to reduce flooding), the permittee shall utilize procedures to assess all flood management projects for impacts of water quality, incorporating water quality protection devices or practices.

PART 5. MONITORING, RECORDKEEPING, AND REPORTING

5.1 Monitoring

5.1.A The permittee shall retain records of any monitoring information used to complete the application for this operating permit, implementation of any part of this operating permit, and implementation for any part of the permittee's Stormwater Management Program for a period of at least three (3) years from the date of the sample, measurement, or analysis. This period may be extended by official written request by the Department at any time. These records may be maintained electronically. Monitoring data shall include, if applicable, the below information:

1. All calibrations and maintenance records;
2. All original strip chart recordings for continuous monitoring instrumentation;
3. The date, location, and time of sampling or measurement;
4. Name of the individual(s) who performed the sampling or measurements;
5. The date(s) analyses were performed;
6. Name of the individual(s) who performed the analyses;
7. The analytical techniques or methods used; and
8. The results of such analyses.

5.1.B Any monitoring conducted for the purpose of implementation of any part of this permit shall be conducted in accordance to test procedures approved under 40 CFR Part 136 unless another method is required under 40 CFR subchapters N or O.

5.2 Recordkeeping

All records required by this permit may be maintained electronically, as long as they are accessible upon request by the Department. If a non-electronic version is kept, the permittee shall retain the most recent versions of the records and shall be accessible to the Department upon request.

5.2.A The permittee shall retain records of all activities requiring recordkeeping by the Stormwater Management Program, a copy of the NPDES permit, a copy of all ordinances, policies, and formal procedures for all six (6) MCMs and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the report or application. This period may be extended by official request of the Department at any time.

5.2.B The permittee shall retain the most recent version of their SWMP at a reasonable location accessible to the Department upon request.

5.2.C If requested in writing by the public, the permittee shall submit the items required under Part 5 of this permit, including a copy of the permit, or SWMP.

5.2.D The permittee shall submit the items contained in Part 5 of this permit to the Department upon request.

5.3 MS4 Stomwater Management Program Report

5.3.A The permittee shall submit MS4 Stormwater Management Program reports to the Department on the status of the MS4's program. MS4 Stormwater Management Program Reports shall contain all required information (see below) from January 1st to December 31st each year. The report shall be submitted on the Department approved, MS4 Stormwater Management Program Report form. If approved by the Department, permittees may submit the MS4 Stormwater Management Program Report using an alternative report format. The report is due on February 28th each year.
These reports shall contain, at a minimum:

1. Information regarding progress toward achieving the statutory goal of reducing the discharge of pollutants to the MEP;
2. The status of the MS4's compliance with permit conditions;
3. Assessment(s) of the appropriateness of identified BMPs and corresponding measurable goals for each MCM;
4. A summary of results of information collected and analyzed during the reporting period, including monitoring data or quantifiable values per the MS4's measurable goals;
5. A summary of the TMDL Assumptions and Requirement Attainment Plan (ARAP), if applicable, containing the implementation status of BMPs and measurable goals specific to the TMDL ARAP or progress toward implementing the schedule for implementation of the TMDL ARAP. The summary shall also include any changes to BMPs and corresponding measurable goals;
6. If the permittee is utilizing integrated planning, the permittee shall provide a summary of the status of the integrated plan;
7. A summary of the stormwater activities the permittee plans to undertake during the next reporting cycle (including implementation schedules); and
8. Notice that the permittee is relying on another government entity to satisfy some of the permittee's permit obligations. If applicable, the permittee shall supply the name of the entity, the name of the entity's primary contact person, and other relevant contact information.

5.3.B Electronic Discharge Monitoring Report (eDMR) Submission System. Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data about the NPDES program. All general permit covered facilities under this master general permit shall comply with the Department's requirements for electronic reporting.

1. Discharge Monitoring Reporting Requirements.
   a) Registration to participate in the Department's eDMR system shall be completed before the first report is due. Registration is done online through the Missouri Gateway for Environmental Management (MoGEM) online portal. Information about the eDMR system can be found at https://dnr.mo.gov/env/wpp/edmr.htm and information about MoGEM can be found at https://dnr.mo.gov/mogem/. The first user shall register as an Organization Official and the association to the facility must be approved by the Department.
   b) The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
2. Electronic Submissions. After successful account registration, to access the eDMR system use the following link in your web browser: https://apps5.mo.gov/mogems/welcome.action. If you experience difficulties with using the eDMR system you may contact edmr@dnr.mo.gov or call 855-789-3889 or 573-526-2082 for assistance.
3. Waivers from Electronic Reporting.
   a) The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the Department in compliance with 40 CFR Part 127.
   b) The permittee may obtain a temporary or permanent electronic reporting waiver by first submitting an eDMR Waiver Request Form (Form 780-2692): http://dnr.mo.gov/forms/780-2692-f.pdf, by contacting the appropriate permitting office or emailing edmr@dnr.mo.gov. The Department will either approve or deny this electronic reporting waiver request within 120 calendar days of receipt.
   c) Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period the approved electronic reporting waiver is effective.
4. Other actions. The following shall be submitted electronically after such a system has been made available by

the Department:
a) General Permit Applications/Notices of Intent to discharge (NOIs);
b) Notices of Termination (NOTs);
c) No Exposure Certifications (NOEs); and
d) Low Erosivity Waivers and Other Waivers from Stormwater Controls (LEWs).

PART 6. SPECIAL CONDITIONS FOR TOTAL MAXIMUM DAILY LOADS

6.1 MS4s Subject to Total Maximum Daily Loads (TMDL)

6.1A Any regulated MS4 identified in an EPA approved or established TMDL with an applicable Wasteload Allocation (WLA) shall implement steps toward the attainment of applicable WLAs in accordance with 40 CFR 122.44(k)(2) and (3).

6.1.B The permittee shall develop a TMDL ARAP to address the TMDL's assumptions and requirements where applicable.

6.1.C The TMDL ARAP shall be incorporated into the Stormwater Management Program and include, at a minimum:

1. A plan to identify potential sources of the pollutants(s);
2. A plan to implement BMPs to address the sources within the MS4 service area; and
3. A schedule, including beginning and ending milestones, which are expressed as month and year to implement planned BMPs.

The schedule for the implementation of the TMDL ARAP shall be completed as soon as practicable, but is not limited to the five year term of this operating permit as attainment can take years or even multiple permit terms.

6.1.D BMPs shall be developed or designed with a purpose of reducing the pollutant(s) of concern. The ARAP shall list each BMP and shall contain a description of the BMP, the purpose of the BMP, and the expected result of the BMP.

6.1.E Measurable goals shall be established for each BMP or in conjunction with multiple BMPs.

1. Each measurable goal shall contain a statement clearly indicating how it will be established to determine the appropriateness of identified BMPs and progress toward the expected results of the BMP.
2. Measurable goals shall be quantifiable; however, if it is not feasible to utilize a measurable goal that is quantifiable, then the permittee shall provide justification indicating why the measurable goal cannot be quantifiable.
3. If applicable, measurable goals shall also utilize interim and completion milestone dates, and a periodic frequency of measurement to document progress. Interim and final milestone dates shall be established with a format of month and year, or as 1st, 2nd, 3rd, 4th, and 5th year of the operating permit cycle.

6.1.F An iterative process shall be utilized by the permittee documenting how each BMP is evaluated and subject to replacement or modification. The permittee shall apply reasonable further progress by replacing or modifying ineffective BMPs with effective BMPs.

6.1.G The permittee shall draft and submit their TMDL ARAP to the Department as soon as practicable but no later than 30 months after the date the EPA approves or establishes the TMDL or the effective date of their operating permit, whichever is later.

The initial TMDL ARAP is to be submitted to the Department's Water Protection Program, MS4 Team for review and approval at MS4@dnr.mo.gov or Water Protection Program, MS4 Team, P.O. Box 176, Jefferson City, MO 65102. The deadline for the TMDL ARAP may be extended through written request by the permittee and written approval by the Department.

6.1.H The permittee shall submit annual TMDL ARAP status reports to the Department on or before February 28th of each year until the TMDL ARAP has been submitted. The annual status report shall provide a brief update on the status of completion of the TMDL ARAP to be submitted to the Department. The deadline for the TMDL ARAP status report may be extended through written request by the permittee and with written approval by the Department. The annual status report shall be submitted to the Department's Water Protection Program, MS4 Team at MS4@dnr.mo.gov or Water Protection Program, MS4 Team, P.O. Box 176, Jefferson City, MO 65102.

6.1.I If the Department approves the TMDL ARAP, it will be presumed that the TDML ARAP is affordable by the permittee. If the Department disapproves a submitted TMDL ARAP and requires any additional or different controls or expenses, the Department will conduct an affordability analysis in support of the disapproval unless waived by the permittee. In addition

to the disapproval, the Department shall provide an itemized list of recommendations, discrepancies, and plan corrective action(s) to the permittee in written correspondence, which will also provide deadlines for any corrective action(s).

6.1.J If the TMDL ARAP has been submitted to the Department but has not received approval, the permittee is not required to implement any actions listed in their TMDL ARAP and shall notify the Department of this in their MS4 Annual Report.

6.1.K If the TMDL ARAP has received Department approval, the permittee shall implement their TMDL ARAP in accordance to schedules established in the TMDL ARAP. Implementation of all TMDL ARAP control measures shall be documented and retained by the permittee, and made available to the Department or the EPA upon request.

6.1.L If the permittee has an approved TMDL ARAP, the permittee shall provide a summary listing the BMPs and the status of the measurable goals in the MS4 Annual Report.

6.1.M If the permittee is subject to a TMDL, the permittee may demonstrate no additional controls are needed beyond the successful implementation of the six Minimum Control Measures (MCMs), which includes modifications to the BMPs or measurable goals, for the attainment with the TMDL's assumptions and requirements. The demonstration is subject to Department approval. The permittee shall contact the Water Protection Program's MS4 Team to begin the process.

6.1.N If the permittee has already developed an integrated plan, a separate ARAP is not be required provided the integrated plan meets the requirements outlined in section 6.1 of this permit.

6.1.O Permittees subject to existing TMDL Assumptions and Requirements shall submit their plan and status of implementation to the Department with the MS4 Stormwater Management Program Report required by this permit. Existing plans shall be subject to the same conditions listed in items 6.1.

6.1.P If the EPA approved or established TMDL indicates that the permittee does not cause or contribute to the impairment, the permittee is not required to develop and implement any action contained in Part 6 of this permit.

PART 7. STANDARD PERMIT CONDITIONS

7.1.A Duty to Comply. The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and the Federal Clean Water Act and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal.

7.1.B Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

7.1.C Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance may also include adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems installed by a permittee only when necessary to achieve compliance with the conditions of the permit.

7.1.D Inspection and Entry. The permittee shall allow the Department or an authorized representative (including an authorized contractor acting as a representative of the Department), upon the presentation of credentials and other documents as may be required by law to:

1. Enter the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit.
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, and have the authority to request records be provided electronically in absentia.
3. Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.
4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Act, any substance or parameters at any location.

7.1.E Monitoring Methods. See Part 5.1 of this operating permit.

7.1.F Need to Halt or Reduce Activity Not an Excuse. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

7.1.G Permit Actions. This permit may be modified, revoked, reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

7.1.H Duty to Reapply.

a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
c. A permittees with currently effective general permit shall submit an application for renewal at least 180 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.) Continuation of expiring permits are in accordance with 10 CSR 20-6.010(10)(C) and subsequent amendments.

7.1.I Administrative Continuation of the Permit. If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with 10 CSR 20-6.010(10)(C) and remain in force and effect. Any permittee who was granted permit coverage prior to the expiration date, and who has applied for renewal at least 180 days prior to the expiration date, will automatically remain covered by the continued permit until the earlier of:

1. Reissuance or replacement of this permit, at which time the permittee shall comply with the application conditions of the new permit to maintain authorization to discharge;
2. Notice of termination;
3. Issuance of a site-specific permit or alternative general permit for MS4 discharges; or
4. A permit decision by the Director not to reissue this general permit, at which time the permittee shall seek coverage under an alternative general permit or a site-specific permit.

7.1.J Permit Transfers. Subject to 10 CSR 20-6.010(11), an operating permit may be transferred upon submission to the Department. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the MCWL or the CWA. (See 40 CFR 122.61. In some cases, modification or revocation and reissuance is mandatory.)

7.1.K Procedures for Modification or Revocation. If at any time the Department determines that the quality of waters of the state may be better protected by reopening this permit, or revoking this permit and requiring the owner/operator of the permitted site to apply for a site-specific (individual) permit or alternative general permit, the Department may revoke a general permit and require any person to obtain such an operating permit as authorized by 10 CSR 20-6.010(13), 10 CSR 20-6.200(1)(B) or 10 CSR 20-6.200(6).

7.1.L If this permit is reopened, modified, or revoked pursuant to this section, the permittee retains all rights under Chapters 536 and 644 Revised Statutes of Missouri upon the Department's reissuance of the permit as well as all other forms of administrative, judicial, and equitable relief available under law.

7.1.M The Department may require the permittee to apply for and obtain a site-specific or alternative general permit if:

1. The permittee is not in compliance with the conditions of this general permit.
2. The discharge no longer qualifies for this general permit due to changed site conditions and regulations.
3. The permittee will be notified in writing of the need to apply for a site-specific permit or an alternative general permit. When a site-specific permit or alternative general permit is issued to the authorized permittee, the

applicability of this general permit to the permittee will be terminated upon the effective date of the site-specific or alternative general permit, whichever the case may be.

7.1.N Site-Specific Permit or Alternative General Permit. The permittee may apply for a site-specific permit or alternative general permit in lieu of coverage under this general permit. In such cases, the permittee shall submit an application for the alternate permit in accordance with the requirements of 10 CSR 20-6.200 with reasons supporting the request. The request may be granted by issuance of any site-specific permit or an alternative general permit.

7.1.O Property Rights. This permit does not convey any property rights of any sort, or any exclusive privilege.

7.1.P Duty to Provide Information. The permittee shall furnish to the Department, within a reasonable amount of time, any information which the Department may request to determine whether cause exists for modifying, revoking, and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

7.1.Q Falsification Penalties. Any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than six months, or by both. Second and successive convictions for violations under this paragraph by any person shall be punished by a fine of not more than $50,000 per day of violation, or by imprisonment for not more than two years, or both;

7.1.R Reopener Clause. Nothing in this permit shall prevent the Department from re-opening, modifying, or revoking this permit as authorized by law.

7.1.S Signatory Requirements.

1. All permit applications shall be signed and certified in accordance with 40 CFR 122.22 and 10 CSR 20-6.010(2)(B) by either a principal executive officer or by an individual having overall responsibility for environmental matters for the permittee.
2. All reports required by this permit, and other information requested by the Department shall be signed by a person described in section 2.2.B of this permit, or by a duly authorized representative of that person. A person is a duly authorized representative if:
   a) The authorization is made in writing by a person designated in Section 2 of this permit;
   b) The authorization specifies an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of stormwater manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the permittee. A duly authorized representative may thus be either a named individual or any individual occupying a named position.
   c) The written authorization is submitted to the Director; and
   d) If an authorization under section 2.2.B is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new, written authorization satisfying the requirements of this paragraph must be submitted to the Director prior to, or together, with any reports, information, or applications signed by an authorized representative.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
PHASE II SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)
MO-R040000
MASTER GENERAL PERMIT

The Federal Water Pollution Control Act [Clean Water Act (CWA)] Section 402 of Public Law 92-500 (as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of stormwater from certain point sources. All such discharges are unlawful without a permit (Section 301 of the CWA). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Missouri Department of Natural Resources (Department) under an approved program, operated in accordance with federal and state laws (Federal CWA and Missouri Clean Water Law Section 644 as amended). Permits are issued for a period of five (5) years unless otherwise specified.

Per 40 CFR 124.56, 40 CFR 124.8, and 10 CSR 20-6.020(1)(A)2., a Fact Sheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the permit. A Fact Sheet is not an enforceable part of an MSOP.

This Fact Sheet is for a Master General Permit.

Part I – Facility Information

Facility Type:	Industrial; Stormwater
Facility SIC Code(s):	#9511
Facility NAICS Code:	#924110
Facility Description:	Urban Stormwater Runoff. The permittee's MS4 collects and routes stormwater from industrial, commercial, roadways, and residential areas located within the permittee's municipal boundary and discharges the stormwater to waters of the state.

This Permit establishes Stormwater Management Program and Stormwater SWMP requirements for all permit holders under this permit. As a Two-Step permit, the Stormwater SWMP shall be reviewed and approved by the Department.

Clarification:
Coverage under this general permit may be issued to Public entities located inside the service area of a publicly owned separate storm sewer system designated by the Department if it is determined that its discharges from the MS4 have caused, or have the potential to cause, an adverse impact on water quality. Extension of such coverage shall be at the discretion of the Department.

Significant Changes to this permit include:
- ✓ Establishment of terms and conditions of the permit necessary to meet the MS4 permit standard in clear, specific and measurable terms per 40 CFR 122.34.
- ✓ Establishment of public notice, public comment and public hearing process necessary to meet the permit standard per 40 CFR 124.10.
- ✓ Oil water separator clarification language added.
- ✓ Change in frequency of program reporting.

DEFINITIONS
The definitions in this section shall apply to this permit only, and do not supersede or replace the definitions contained in Section 644.016, RSMo, 10 CSR 20-2.010, and 10 CSR 20-6.200(1)(D), which are all incorporated herein by reference. To aid understanding of some key terms, explanations of several statutory and regulatory definitions are provided. However, in the event of any inconsistencies, the statutory and regulatory definitions are controlling.

Adaptive management: A repetitive or cyclical process of decision making that requires monitoring activities to adjust behavior, decisions, and actions and to incorporate new knowledge and actual changes.
Adaptive management enables MS4 permittees to continually improve their stormwater control strategies and practices as they implement their programs and learn from experience to better control pollutant discharges. The process starts with the evaluation of a BMP with its designated measurable goal. If the BMP is found effective, then the permittee continues with this BMP until the next round of evaluation. If the BMP is found to be ineffective, then the permittee is required to conduct analysis to determine what can be altered or modified or if the BMP needs to be replaced.

Best Management Practices (BMPs): "Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas." 10 CSR 20-6.200(1)(D)1.

- BMPs can be temporary or permanent, and include structural items or non-structural practices or activities including schedules of activities, prohibitions of practices, maintenance procedures, structural controls, local ordinances, information distribution, and other management practices to prevent or reduce the discharge of pollutants.
- BMPs encompass both the enforceable terms and conditions of this permit as well as particular activities and practices selected by the permittee that will be undertaken to meet the permit requirements but that are not themselves enforceable.
- A deficiency of a BMP means it was ineffective at providing the necessary protections for which it was designed.
- Corrective action describes the steps the facility took to eliminate the deficiency

Clear, specific, and measurable terms: This permit is written to contain clear, specific, and measurable terms, using plain language to clearly establish permit requirements and the standards that will be used to assess compliance. "Such terms and conditions may include narrative, numeric, or other types of requirements (*e.g.*, implementation of specific tasks or best management practices (BMPs), BMP design requirements, performance requirements, adaptive management requirements, schedules for implementation and maintenance, and frequency of actions)." 40 C.F.R. § 122.34(a)

Common Plan of Development or Sale: An area where multiple separate and distinct land disturbing activities may be taking place at different times, on different schedules, but under one proposed plan. This plan may consist of many small construction projects that collectively add up to one or more acres of total disturbed land. For example, an original common plan of development of a residential subdivision might identify the streets, house lots, and areas for parks, schools and commercial development that the developer plans to build or sell to others for development. All these areas would remain part of the common plan of development or sale until the intended construction is completed.

Construction activities: Clearing, grading, and excavating that result in land disturbance of equal to or greater than one (1) acre. Construction activity also includes the disturbance of less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one (1) acre. *See* 10 CSR 20-6.200(1)(D)28.

Construction Site Operator: The entity or entities with operational control over construction plans and specifications including the ability to make modifications to those plans and specifications; or with day-to-day operational control of those activities at a project that are necessary to ensure compliance with a Stormwater Pollution Prevention Plan (SWPPP) for the site or other permit conditions. Typically this is the owner of the site or the general contractor of the project.

Control Measure: Any BMP or other method used to prevent or reduce the discharge of pollutants to waters of the state.

Conveyance: Curbs, gutters, artificial channels, swales, ditches, drains, pipes, catch basins, paved or unpaved channels, storm drains, or other constructed or natural features designed or utilized for routing of stormwater.

Co-permittee: "A permittee to a state operating permit that is responsible only for permit conditions relating to the discharge for which it is owner or operator, or both." 10 CSR 20-6.200(1)(D)4.
An operator of a regulated municipal separate storm sewer system (MS4) that applies jointly with one or more other applicants for coverage under a single municipal stormwater permit. Applicants within one urbanized area, or within a common watershed, or in an area served in common by one service provider may apply as co-applicants to share the administrative responsibilities of the application process and to become co-permittees under an issued permit.
A co-permittee must comply with the conditions of the permit relating to discharges from the MS4 the co-permittee owns or operates. Co-permittees will need to cooperate with each other to develop, implement, and report on their programs.

Discharge: "[T]he causing or permitting of one or more water contaminants to enter the waters of the state." Section 644.016(6) RSMo
The water contaminant authorized to be discharged by this permit is urban stormwater runoff.

Illicit Discharge: "Any discharge to a municipal separate storm sewer that is not composed entirely of storm water, except discharges pursuant to a state operating permit, other than storm water discharge permits and discharges from fire fighting activities." 10 CSR 20-6.200(1)(D)7.
Illicit discharge does not mean permitted discharge(s) from which wastewater is introduced into the conveyance system, if such discharges are properly managed and permitted by the Department or other authorized permitting authority; this may include de minimis determinations as made by the Department. An MS4 entity does not have authority to provide de minimis wastewater determinations.

Should the MS4 permittee identify wastewater introduction into the system which is not properly permitted or authorized by the Department of Natural resources, the MS4 must contact the discharging facility and Department to assure the proper permit is obtained, and any adjoining MS4s through which the illicit discharge may flow.

Infill development: The building of homes, businesses and public facilities on unused and underutilized lands within existing urban areas. Infill development is the use of land in established neighborhoods for new development or redevelopment.

Iterative process: A documented process consisting of action items and analysis conducted by the permittee to ensure BMPs are effective. This includes evaluating results and adjusting actions on the basis of what has been learned, as a part of adaptive management.

Maximum Extent Practicable (MEP): An adaptive management approach whereby the permittee will implement management measures, including structural and non-structural BMPs. MEP is a permittee-specific determination guided by factors such as: community financial capability and the need for reasonable rate or funding increases, weighing program-wide priorities compared to site-specific MS4 improvements, MS4 impacts to receiving waters, local priorities, watershed planning, integrated planning, MS4 size, climate, implementation schedules, hydrology, topography, geology, and the MS4's capacity to perform additional operation and maintenance.

Minimum Control Measure (MCM): The Phase II Rule defines a small MS4 storm water management program as comprised of six areas of management, known as Minimum Control Measures. When administered properly and collectively, they are expected to result in reduction of the discharge of pollutants into receiving water bodies.

Modification: A revision to the MS4's Stormwater Management Program during the life of this permit. Modifications may include:

a. Addition of new components, controls, or requirements to the Stormwater Management Program;
b. Replacing or modifying ineffective or unfeasible BMPs in accordance with adaptive management and the permittee's iterative process;
c. Modifying the iterative process or adaptive management procedures;
d. Replacing or modifying time schedules that are not explicitly required by this permit;
e. The addition or removal of jurisdictional areas;
f. Contact names for the Stormwater Management Program; and
g. Other changes as determined appropriate by the permittee.

Major vs. Minor Modifications:
A **minor modification** does not need to be submitted to the Department for review and approval or to be public noticed. This includes changes in MS4 staff contacts or goals that result in the same, or substantially similar outcome over the permit term.
A **major modification** requires submittal to the Department for review and approval and may require public notice.
A major modification would be a change in a BMP or entire implementation of a MCM.

MS4 Operator: "The owner, or an agent of the owner, of a separate storm sewer with responsibility for operating and maintaining the effectiveness of the system." 10 CSR 20-6.200(1)(D)17.

Municipal Separate Storm Sewer (MS4): "A municipal separate storm sewer system" 10 CSR 20-6.200(1)(D)11.
"Municipal separate storm sewer means 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 storm water which—

A. Does not include any waters of the state as defined in section 644.016, RSMo.
B. Is owned and operated by the state, city, town, village, county, district, association, or other public body created by or pursuant to the laws of Missouri having jurisdiction over disposal of sewage, industrial waste, storm water, or other liquid wastes;
C. Is not a part or portion of a combined sewer system;
D. Is not a part of a publicly owned treatment works as defined in 40 CFR 122.2." 10 CSR 20-6.200(1)(D)16.

Non-Structural Controls: Pollution prevention practices that focus on management by limiting or eliminating pollutants before they mix with stormwater. Non-structural controls may include but are not limited to; site and land use planning, vegetated filters, stream buffers, low impact development (LID), open space preservation, and impervious cover restrictions.

Outfall: "A point source as defined by 10 CSR 20-2.010 at the point where a municipal separate storm sewer discharges and does not include open conveyances connecting two (2) municipal separate storm sewers, pipes, tunnels, or other conveyances which connect segments of waters of the state and are used to convey waters of the state." 10 CSR 20-6.200(1)(D)18.
Outfalls are the point of discharge from the MS4 to waters of the state. Outfalls include discharges from pipes, ditches, swales, and other points of concentrated flow. An outfall is not where a stream or waters of the state leave the municipal boundary.

Owner: "A person who owns and controls the use, operation, and maintenance of a separate storm sewer." 10 CSR 20-6.200(1)(D)20. "Person" is defined by Section 644.016(15) RSMo as "any individual, partnership, copartnership, firm, company, public or private corporation, association, joint stock company, trust, estate, political subdivision, or any agency, board, department, or bureau of the state or federal government, or any other legal entity whatever which is recognized by law as the subject of rights and duties."

Permittee: Refers to the MS4 Operator, or the entities identified as the owner and continuing authority of this general permit.

Stormwater: "[S]torm water runoff, snowmelt runoff and surface runoff, and drainage." 10 CSR 20-6.200(1)(D)31.

Stormwater Management Program: A comprehensive and documented program to manage the quality of stormwater discharges from the MS4.

Stormwater Management Plan (SWMP): The document explaining the MS4's Stormwater Program. It should be a comprehensive document that explains BMPs and the ongoing evaluation of the BMPs, as well as tracking, methods of documentation, and other procedures for each requirement of this permit. The permittee must utilize the procedures and other supplemental documents contained with or referenced in the SWMP during the activities performed to attain permit compliance.

In this two-step general permit, during the application process the SWMP is reviewed for approval by the Department. Once approved, the SWMP shall be considered an enforceable addition to this permit, which makes the permit specific to the individual MS4 and community.

Structural Controls: Pollution prevention practices that require the construction, or use of a device, to capture or prevent pollution in stormwater runoff. Structural controls may include but are not limited to: extended detention basins, bio-retention, infiltration basins, stormwater wetlands, bio-swales, vegetative lined ditches, subsurface drains, permeable pavement or concrete, sand filter basins, stormwater planters, proprietary BMPs, storage tanks, and hydrodynamic separators.

Urbanized Area (UA): An area of densely developed territory as defined and used by the U.S. Census Bureau, that may include multiple MS4s. The Census Bureau delineates urbanized areas after each decennial census.

Waters of the State: "[A]ll waters within the jurisdiction of this state, including all rivers, streams, lakes and other bodies of surface and subsurface water lying within or forming a part of the boundaries of the state which are not entirely confined and located completely upon lands owned, leased or otherwise controlled by a single person or two or more persons jointly or as tenants in common." Section 644.016(27) RSMo.

Part II – Receiving Stream Information

Municipal Stormwater Outfalls:

Applications for MS4 operating permit (renewal or new) require the MS4 to provide information regarding the location of outfalls from the regulated MS4. In accordance with 10 CSR 20-6.200(1)(D)18, an outfall is defined as, "A point source as defined by 10 CSR 20-2.010 at the point where a municipal separate storm sewer discharges and does not include open conveyances connecting two (2) municipal separate storm sewers, pipes, tunnels or other conveyances which connect segments of waters of the state and are used to convey water of the state." A point source is, as defined in 644.016(16), RSMo "Any discernible, confined and discrete conveyance including but not limited to, any pipe, ditch, channel, tunnel conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, separate storm sewer or vessel or other floating craft from which pollutants are, or may be, discharged."

The NPDES MS4 operating permit covers all discharges from the permittee's stormwater system into waters of the state. It should be noted outfalls listed under the Facility Description in the operating permit only include representative stormwater outfalls. **Representative outfalls** are outfalls that discharge to the primary stem of principal watercourses in separate sub-regional watersheds and are representative of various land uses. Representative outfalls are listed in the permit as a subset of ALL of the MS4's outfalls. Listing all MS4 stormwater outfalls could add several extra pages to the permit and would require the operating permit to be modified if any outfall changes were made. However, the permittee is required by the operating permit to maintain a map as part of their Stormwater Management Program of all stormwater outfalls that discharge to waters of the state.

Applications for renewal or to receive coverage (i.e., new permit) of the MS4 general permit require the permittee to provide the legal description, outfall number and receiving stream. In addition, the application for both co-permittees and individual MS4 permittees require a United States Geological Survey map showing the locations of the municipality/area in relation to the local road system and to indicate on the map the municipal/area boundary, receiving stream(s), all known stormwater outlets, and the map section, township, and range.

From this information, Department permit writers will establish a full description of these permitted features on the permit's certification page with the following:
Permitted Feature ID (e.g., Outfall #001)
Legal Description: ¼, ¼, Section, Township, Range, Direction
UTM Coordinates: X=000000.0, Y=0000000.0 (Easting, Northing respectively)
Receiving Stream: Name & Classification
First Classified Stream and ID: Name, Class, Waterbody ID – currently provided by the department
USGS Basin & Sub-watershed No.: (# – #) [12 digit USGS Hydrologic Unit Code (HUC)]

Applicable Designations of Waters of the State:
Per Missouri Effluent Regulations (10 CSR 20-7.015), the waters of the state are divided into seven (7) categories. This permit applies to facilities discharging to the following water body categories:

☒ Missouri or Mississippi River [10 CSR 20-7.015(2)]
☒ Lakes or Reservoirs [10 CSR 20-7.015(3)]
☒ Losing Streams [10 CSR 20-7.015(4)]
☒ Metropolitan No-Discharge Streams [10 CSR 20-7.015(5)]
☒ Special Streams [10 CSR 20-7.015(6)]
☒ All Other Waters [10 CSR 20-7.015(8)]

Missouri Water Quality Standards (10 CSR 20-7.031) defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's beneficial water uses shall be maintained in accordance with 10 CSR 20-7.031(4). A general permit does not take into consideration site-specific conditions.

The Permit Area may change based upon areas incorporated into or removed from the permittee's jurisdictional area during the term of this permit, or expansion of the Urbanized Area (UA). Areas added shall be covered under this permit and reflected in the Stormwater Management Program. For Permittees that are designated due to population density in a UA, which has areas that are not in the UA, the regulated MS4 is the portion which is inside of the UA.

The Department may require the regulated MS4 to submit an application for an alternate or additional general permit. Such as if the permittee is conducting regulated activities that are not covered under this permit but are addressed in a separate Master General Permit.

If the Department disapproves the application and requires and additional expenses, then the Department will conduct an affordability analysis in support of the disapproval for the. However, permittees may waive the requirement of the Department to conduct an affordability analysis at any time. If the permittee waives the affordability analysis, the Department shall assume all additional required controls are affordable.

Part III – Stormwater Management Program and Plan:

Stormwater Management Program
This permit, in accordance with 10 CSR 20-6.200 and 40 CFR Part 122, requires the permittee to develop and implement a Stormwater Management Program. The Stormwater Management Program shall address the six minimum control measures (MCMs); public education and outreach, public involvement/participation process, illicit discharge detection and elimination, construction site stormwater runoff control, post-construction stormwater management and pollution prevention/good housekeeping for municipal operations. In addition, the Stormwater Management Program addresses TMDL implementation plan components, if applicable.

The Stormwater Management Program also includes, but is not limited to, specific BMPs, relevant local regulations, policies, procedures, interim milestones, measurable goals, measures of success, designation of responsible persons/positions for each of the measurable goals, and any applicable TMDL assumptions and requirements.

Stormwater Management Plan (SWMP)
The SWMP is the document explaining the implementation of the Stormwater Management Program. This SWMP is a document describing a schedule of MS4 program activities including prohibitions of practices, implementation of required practices, development of standards for urban growth, maintenance procedures, education, trainings, inspections, and other management practices to prevent or reduce the pollution of waters of the state.

For this two-step permit, an approved SWMP is required. The SWMP shall lay out the additional terms and conditions necessary to meet the requirement to meet the permit standard per 40 CFR 122.34. Supplemental items are needed to show support of the implementation of the requirements per 40 CFR Part 122.34 (b). These items may include, but are not limited to:

- Standard operating procedures
- Inspection forms
- Maps
- Ordinances
- Stormwater Pollution Prevention Plans (SWPPPs)
- Operations and Maintenance Manual
- Tracking documents
- Inspection checklists
- Documentation of agreements for co-permittees
- Documentation of agreements for cooperative agreements

Once the SWMP is approved by the Department, it is an enforceable document. When an audit is conducted, an MS4 is held to the permit and if they are following their approved SWMP to determine compliance.

SWMP Public Notice Procedure:
The MS4 Remand Rule became effective on January 9, 2017 and requires public participation in the permitting process. In order to offer flexibility to the permittee, the Department is offering this two-step general permit. Because the SWMP must be formally incorporated as part of the general permit, the Master General Permit and the SWMP must be subject to public comments and response to comments.

In order to assure equal treatment of the Master General Permit written by the Department and the SWMP developed by the MS4 permittee, and to ensure the two parts work together to reach the permit standard, the SWMP shall use the same public notice and public meeting procedures as the Master General Permit as stated in 10 CSR 20-6.020 and 40 CFR 124.10, and Missouri Clean Water Law, Section 644.051 (17) RSMo. This includes holding a thirty (30) day public comment period to receive comments on the Stormwater Management Program and Plan, and a public information meeting with 30 days advanced notice of the public meeting.

Stormwater Management Program Ordinances:
To the extent allowable under state or local law, ordinances (or other regulatory mechanisms if a non-traditional MS4) are required to be developed, implemented and enforced within five years of initial permit issuance under the following sections, in accordance with 40 CFR 122.34(b):

1. *Illicit discharge detection and elimination*; to prohibit non-stormwater discharges into the storm sewer system, and implement appropriate enforcement procedures and actions;
2. *Construction site stormwater runoff control*; to require erosion and sediment controls at construction sites, as well as sanctions designed to ensure compliance; and
3. *Post-construction;* to address post-construction runoff from new development and redevelopment projects, and sanctions designed to ensure compliance. The "Missouri Guide to Green Infrastructure: Integrating Water Quality into Municipal Stormwater Management" (May 2012) was written specifically to aid MS4s in developing and implementing the post-construction runoff program. The guide can be viewed at http://www.dnr.mo.gov/env/wpp/stormwater/mo-gi-guide.htm. The EPA and the Department and certain MS4s have developed compliant model ordinances that may be adapted for use by other interested MS4s.

Stormwater Management Program Reporting Frequency:
The previous version of this operating permit required biennial reporting of the Stormwater Management Program for existing regulated MS4s; however, annual reporting will now be required for existing regulated MS4 permittees in accordance with 40 CFR 122.34(d)(3).

The annual reporting ensures the annual review of the MCMs and overall stormwater management program is being conducted as required in this permit. The annual requirement also ensures there is no further confusion regarding which year the biennial report was due. The annual report is also consistent with the permittees who are subject to TMDLs that must submit annual water quality schedules.

The reports shall be reported electronically by the owner, operator, or the duly authorized representative of the MS4 to the Department via the eDMR system. This annual report can be used by the Department and the public to evaluate the quality and compliance of an MS4's program. A permittee may consider including additional information with the annual report to show the quality and comprehensiveness of the MS4 program. The report can be used to showcase an outstanding program.

Part IV - Rationale and Derivation of Effluent Limitations & Permit Conditions

Professional Best Judgement:
The permit writer used professional best judgement as a high quality technical opinion developed by a permit writer after considerations of all reasonably available and pertinent data or information that forms the basis for the terms and conditions of a

NPDES permit.

Previous versions of the MS4 Master General Permit followed federal regulations for the BMPs applicable to Phase II MS4s via the Minimum Control Measures (MCMs) under 40 CFR 122.34(b). BMPs are Technology-based Effluent Limits (TBELs), which then subjects the BMPs to case- by-case determinations using professional best judgement.

The Remand Rule was a non-substantive rule, requiring the permitting authority (the Department) to ensure permit requirements include narrative, numeric, or other types of requirements. Permit requirements that simply copy the language of the federal Phase II regulations without providing further detail on the level of effort required or that do not include the minimum actions that must be carried out during the permit term do not provide clear, specific, and measurable requirements. The permit writer used professional best judgement in deciding the clear, specific and measurable requirements for this permit.

Integrated Planning
As noted in the June 5, 2012 EPA memorandum, "*Integrated Municipal Stormwater and Wastewater Planning Approach Framework*" EPA has increasingly embraced integrated planning approaches to municipal wastewater and stormwater management. EPA further committed to work with states and communities to implement and utilize these approaches in its October 27, 2011 memorandum "*Achieving Water Quality through Municipal Stormwater and Wastewater Plans*."

Integrated planning assist MS4 communities on their critical paths to achieving the human health and water quality objectives of the Clean Water Act by identifying efficiencies in implementing requirements that arise from distinct wastewater and stormwater programs, including how best to prioritize capital investments. Integrated planning can also facilitate the use of sustainable and comprehensive solutions, including green infrastructure, that protect human health, improve water quality, manage stormwater as a resource, and support other economic benefits and quality of life attributes that enhance the vitality of communities.

For more information regarding Integrated Planning please review both of the memorandums cited above or contact the Department's MS4 Team.

Maximum Extent Practicable (MEP)
Prior to 1987, municipal stormwater was subject to the same controls as other point sources like industrial and domestic discharges, which was section 301(b) of the CWA. However, in 1987, "Congress retained the existing, stricter controls for industrial stormwater discharges but prescribed new controls for municipal stormwater discharges," *NRDC v. EPA, 966 f.2D 1292, 9th Cir. 1992 (NRDC v. EPA)*. This "new control" was established in section 402(p)(3)(B)(iii) of the CWA, which states, "*Permits for discharges from municipal storm sewers – shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, designs and engineering methods, and such other provisions as the Administrator or State determines appropriate for the controls of such pollutants*."

The argument for "new controls" contained in the case of NRDC v. EPA was subsequently supported in the case of *Defenders of Wildlife v. Browner*, in which it was concluded that section 402(p)(3)(B) of the CWA "replaces" the requirements of 301(b) of the CWA with the MEP standard for MS4 discharges, and that it creates a "lesser standard" than section 301(b) of the CWA establishes on other types of discharges. Thus, MEP is a technology-based standard established by Congress in Section 402(p)(3)(B)(iii) of the CWA. As established in the *1999 National Pollution Discharge Elimination System Regulations for Revisions of Water Pollution Control Program Addressing Storm Water Discharges* (64 FR No. 235), MEP is, "*…the statutory standard that establishes the level of pollutant reduction that operators of regulated MS4s must achieve,*" (i.e., not water quality standards).

In addition to indicating that MEP is the statutory requirement, the EPA also clearly stated that MEP is applicable to the six (6) minimum controls measures in 64 FR No. 235, which states, "*The first component, reduction to the MEP, would be realized through implementation of the six minimum measures*." The description of MEP continues in 64 FR No. 235, with "*EPA envisions application of the MEP standard as an iterative process. MEP should continually adapt to current conditions and BMP effectiveness and should strive to attain water quality standards*." The iterative process, mentioned is also defined in 644 FR. No 235 with the following, "*…implement an iterative process of using BMPs, assessment, and refocused BMPs, leading toward the attainment of water quality standards*."

Ninth Circuit court ruling in EDC v. EPA (2003) found that the Phase II rule requirements for small MS4 General Permits violated the CWA. The court ruling found a lack of permitting authority review and lack of public participation in permit process. The MS4 Remand Rule was promulgated December 9, 2016 and became effective on January 9, 2017 as a result of this ruling. The Remand Rule requires more stringent public notice requirements and authorization requirements, including SWMP review, approval, and incorporation for two-step general permits.

The Remand Rule ensures permit requirements include narrative, numeric, or other types of requirements such as:
- Implementation of specific tasks or best management practices (BMPs)
- BMP design requirements, performance requirements

- Adaptive management requirements
- Schedules for implementation and maintenance
- Frequency of actions

All requirements in this permit must be expressed in clear, specific, and measurable terms. This applies to any part of the permit addressing the six MCMs, TMDLs, and annual reports. MCMs were not intended to serve as stand-alone permit requirements, but rather areas of stormwater management that must be addressed in the permit through clear, specific, and measurable terms and conditions that meet the MS4 permit standard. Verbatim adoption of the MCMs from the Federal regulations will not satisfy this requirement.

Measurable Goals
Measurable goals are designed objectives or goals that quantify the progress of program implementation and performance of BMPs. They are objective markers or milestones that the permittee uses to track the progress and effectiveness of BMPs in reducing pollutants to the MEP. At a minimum, measurable goal should contain descriptions of actions to be taken to implement each BMP, what is anticipated to be achieved by each goal, and the frequency and dates for such actions to be taken. BMPs and measurable goals are the mechanisms used to establish a clear and specific baseline against which future progress at reducing pollutants to the MEP can be measured.

There are a number of different ways the permittee can establish measurable goals. Examples of potential measurable goals include the following:

- **Tracking implementation over time** - Where a BMP is continually implemented over the permit term, a measurable goal can be developed to track how often, or where, this BMP is implemented.
- **Measuring progress in implementing the BMP** - Some BMPS are developed over time; a measurable goal can be used to track this progress until the BMP implementation is completed.
- **Tracking total numbers of BMPs implemented** - Measurable goals can be used to track BMP implementation numerically (e.g., the number of wet detention basins in place or the number of people changing their behavior due to the receipt of educational materials).
- **Tracking program/BMP effectiveness** - Measurable goals can be developed to evaluate BMP effectiveness, for example, by evaluating a structural BMP's effectiveness at reducing pollutant loading, or evaluating a public education campaign's effectiveness at reaching and informing the target audience to determine whether it reduces pollutants to the MEP. A measurable goal can also be a BMP design objective or performance standard.
- **Tracking environmental improvement** - The ultimate goal of the NPDES stormwater program is environmental improvement, which can be a measurable goal. Achievement of environmental improvement can be assessed and documented by ascertaining whether state water quality standards are being attained, or by tracking trends or improvements in water quality (chemical, physical, and biological) and other indicators, such as the hydraulics or habitat condition of the waterbody or watershed.

Through the SWMP, these measurable goals are submitted in proposed form and must be reviewed and approved, by the Department prior to becoming effective as enforceable requirements.
Because of changes due to the MS4 Remand Rule, some measurable goals are specifically laid out in this permit. The MS4 Remand Rule emphasizes that permit requirements must be expressed in “clear, specific, and measurable” terms, which may include narrative, numeric, or other types of requirements (e.g., implementation of specific tasks or best management practices (BMPs), BMP design requirements, performance requirements, adaptive management requirements, schedules for implementation and maintenance, and frequency of actions). These rule modifications do not alter the existing, substantive requirements of the six minimum control measures in 40 CFR 122.34(b).

Modifications

1. Minor changes to the Stormwater Management Program may be made at any time with written documentation in the MS4 Stormwater Management Program Report and Stormwater SWMP. Minor modifications include:
   a) Correction of typographical errors;
   b) A change in contact;
   c) More frequent occurrence of BMPs;
   d) Addition of new components, controls, or requirements to the Stormwater Management Program
   e) A change in a BMP which is merely a change in implementation of the Stormwater Management Program, and remains in compliance with the permit condition.
2. Major changes to the Stormwater Management Program must complete the Public Notice procedures in Section 4.2.B of this Permit. Major changes are any conditions which are less frequent, or less protective.

Where a permittee proposes to change a BMP it is implementing, and the change does not require the enforceable permit conditions to be changed in any way, but rather offers an alternative means of complying with the same permit conditions, is not considered to be a permit modification. For instance, if the MS4’s SWMP states that it conducts field tests of 20 percent of its outfalls on an annual basis for illicit discharges, and the permittee changes its method of conducting such tests that is described in its SWMP, even though

a revision to the SWMP document maintained by the permittee may be necessary, no modification would be necessary because the 20 percent requirement is still in effect. By contrast, where a permittee proposes to substitute one of its BMPs for another one, and that change would alter the compliance expectations defined in the SWMP, the permittee will need to notify the Department before proceeding to determine whether this would be considered a major modification and thus subject to the public notice process. For example, if the permittee's SWMP specify in precise detail the field screening methodology the MS4 will utilize for its priority outfalls, and the permittee has indicated it no longer intends to use this approach, then this proposed change will need to be evaluated by the Department for whether this is a major modification making the public notice needed. The important test here is to compare the permittee's proposed change with the terms and conditions of the permit.

Minimum Control Measures (MCMs)
The NPDES Permitting authority must include permit terms and conditions to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act. Terms and conditions that satisfy the requirements of this section must be expressed in clear, specific, and measurable terms. Such terms and conditions may include narrative, numeric, or other types of requirements (e.g., implementation of specific tasks or best management practices (BMPs), BMP design requirements, performance requirements, adaptive management requirements, schedules for implementation and maintenance, and frequency of actions) per 40 CFR 122.34(a).

In general, the Phase II MCMs are not intended to serve as permit requirements, but rather areas of stormwater management that must be addressed in the permit through clear, specific, and measurable terms and conditions. Relying on the literal adoption of the MCMs found will not meet the requirement to establish clear, specific, and measurable permit requirements under the MS4 remand rule. Per 40 CFR 122.33(b)(1)(ii) for the Two-Step General Permit, the final rule provides the permitting authority with the ability to determine what information it deems necessary to establish individual requirements for permittees that meet the MS4 permit standard. MCMs do not restrict the permitting authority from regulating additional sources of stormwater pollutant discharges that aren't specifically mentioned in the MCMs if considered necessary to meet the MS4 permit standard.

It is the permitting authority's responsibility, and not that of the small MS4 permittee, to establish permit terms and conditions that meet the MS4 regulatory standard and to delineate the requirements for implementing the six minimum control measures, other terms and conditions deemed necessary by the permitting authority to protect water quality, as well as any other requirement. The final rule also emphasizes that permit requirements must be expressed in "clear, specific, and measurable" terms.

MCM 1 Public Education, and Outreach on Stormwater Impacts
Terms and conditions related to this MCM are in accordance with 40 CFR 122.34(b)(1).
Public education and outreach is vital, as an informed and knowledgeable community is central to the success of a stormwater management program. Everyone has a part to play in both contributing to stormwater runoff and protecting water quality.

The permittee has the flexibility to choose which target audiences make sense for their MS4. The permittee can choose the audience, the medium, and the specific message. By educating the residents, the MS4 can help ensure greater support for stormwater management measures, and the public gains a greater understanding of the reasons why stormwater management programs are necessary and important. Public support is extremely beneficial for permittees to institute new funding initiatives for the stormwater program or in seeking support or volunteers to help implement the program.

Education to schools or youth will reach the next generation of residents, and they can bring their lessons home. Businesses of all types have potential to impact urban stormwater. Retail, restaurants, manufacturing, even home based businesses bring their own potential issues. Plastic bags, litter, grease disposal, and improper disposal methods should be evaluated and be seen as educational opportunities. Formal organizations such as Rotary Clubs, Lions, Churches, sports teams, or college organizations, can support the messages and provide audiences ready to listen, learn, and even help. In MS4s where development is happening, or being encouraged, educating developers is a great way to get in front of issues, and improve compliance with MCM #4.

The MS4 can target the education provided to specific groups. In educating Homeowner Associations (HOAs), for example, pollutants specific to them, such as fertilizer usage, car washing practices, stream buffers, and proper disposal of organic and household hazardous waste can be reviewed and specific BMPs and guidance provided to the HOAs to manage these pollutant sources. This audience can also be informed on maintenance of post-construction water quality facilities or ways they as homeowners can improve the quality of stormwater runoff. Another specific group that may be addressed is industrial facilities. Industrial facilities will bring potential new issues with the products or the production processes. Looking at each facility, and offering education based on the stormwater concerns, can reduce the pollutants in the runoff and diminish larger issues in the future.

Encouraging multiple stakeholder groups to become involved in the Stormwater Management Program will help foster a greater understanding of urban stormwater runoff and the potential impacts that can come from daily life in an urban setting. Because impacts are made in stormwater at businesses, and at home, it is vital to reach as many different groups as possible. Making the topic of stormwater management a relatable issue will help to get the message across, and give the recipients more reason to make changes.

When people participate in an activity, the underlying message becomes more tangible, and their personal impact has a stronger tie to the message. There are many ways to get people involved, and these ways will ideally reach different groups. Communities may already have philanthropic organizations willing to assist the permittee with activities. The Missouri Stream Team program is available state wide and engages in most of the activities listed in Part 4.2 this permit. Learn more at mostreamteam.org or contact StreamTeam@mdc.mo.gov.

The permittee shall offer support of their own in conjunction with or to organizations helping with participation activities. There are a variety ways to offer support to groups who plan or organize events. By engaging with the groups or individuals creating these participation opportunities, the permittee can find ways to help in a manner which fits them, and really impacts the activities positively.

Co-permittees may gain a lot by sharing resources for much of the Stormwater Management Program. However, a part of the participation element is having the connection between behavior and action. It is important to have events located in the area of each MS4 in a co-permit to gain ownership and accountability in the local stormwater management program. A visible activity in a physical or geographic area will impact those in that same area, which is a large part of what makes this MCM work.

Tracking is important to ensure the target audiences are getting the information about the targeted pollutants. Many MS4 programs will see cycles when education is more needed for certain topics, such as seasonal changes, or a re-education on a topic after a few years to remind the audience. Learning through tracking and adaptive management will help the MS4 get effective education to the audiences.

Recording elements such as the number of participants, the amount of litter collected, trees planted, or audience attending will help the permittee understand if the activity was useful or not. Attendance sheets, receipts, Stream Team Activity Reports, or a spreadsheet can be used to keep track of events and results. Sometime events may be less attended that anticipated, but the permittee should consider that even a small impact is still an impact. When using adaptive management properly, adjustments can be made and the activity can be repeated.

MCM 2 Public Participation
This MCM is required in accordance with 40 CFR 122.34(b)(2).
The Stormwater SWMP shall use the same procedure as the Master General Permit because the SWMP becomes an enforceable part of the Permit. Following the public notice processes laid out in Part 3.1 of this permit will give the public the opportunity to comment on or learn about the Stormwater Management Program and Plan. By using the public notice process for substantial changes, or major modifications the public in the MS4 service area will be aware of programmatic changes.

The permittee does not need to create a stormwater management panel or committee. Having such a panel or committee will give the permittee a more immediate way of getting public representation involved and getting feedback from the public. A board with a diverse membership can enhance a stormwater management program by getting multiple viewpoints. Involving so much feedback and input will help gain backing from the residents and this understanding of the program will garner support when needed.

Giving updates on the Stormwater Management Program to the governing body or board can help the decision makers understand the reasons behind the processes and the benefit a healthy stormwater management can have on the economic value to their area. This update can be an opportunity to show successes in the program, and may be in done in conjunction with preparing the annual report. These updates may be given as an in person presentation, as a written document, or via another method that will get the message effectively to the board.

MCM3 Illicit Discharge Detection and Elimination (IDDE)
This MCM is required in accordance with 40 CFR 122.34(b)(3).
An outfall is any point where a separate storm sewer system discharges to waters of the state, which is owned or operated by the permittee. Outfalls include discharges from stormwater conveyances such as pipes, ditches, swales, gutters, and other points of concentrated flow.

An outfall does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other waters of the state and are used to convey waters of the state (such as culverts). If waters of the state flow through a channelized area, this remains waters of the state, not an open conveyance.

Outfalls are not where streams leave the municipal boundaries of an MS4. Outfalls are not limited by size, as illicit discharge can travel through any size outfalls, even those that are small. While larger outfalls may collect more drainage from a larger area, small outfalls were also constructed to convey stormwater and are equally likely to have illicit discharges. Overland flows, or areas of non-concentrated or sheet flow, are not considered to be outfalls. Therefore they are not required to be mapped. Where a conveyance ends and discharges to a BMP, such as a vegetated area, and there is no conveyance to waters of the state, the conveyance end is not an outfall if the discharge does not reach waters of the state.

Mapping all MS4 outfalls is vital to a functioning illicit discharge program. Outfalls mapping gives the permittee a starting point to trace back to the source. Knowing the locations of outfalls and receiving waters are necessary to be able to conduct dry weather field screening for non-storm water flows and to respond to illicit discharge reports from the public. Outfalls must be mapped no matter their size. Mapping the storm sewer system which leads to those outfalls will further assist in illicit discharge tracing. Once an illicit discharge is detected at an outfall, it will be necessary to trace the discharge through that portion of the storm sewer system leading to the outfall in order to locate the source.

Because privately owned storm sewers and conveyances were authorized by a municipality or the county to become connected with the municipal system, the municipality or county with the MS4 permit does have responsibility for that stormwater. Facilities owned by homeowners associations, for example, are subject to local codes, ordinances, and enforcement. The municipalities are responsible, therefore, for discharges of wastes from private storm water conveyance systems. Therefore enforcement actions shall take place if an illicit discharge is detected from a private outfall. So while the outfalls from such private stormwater conveyances and outfall are not required for mapping, it is recommended to do so in order to assist with illicit discharge investigations and enforcement.

Ongoing dry weather field screening for non-stormwater flows is a strong tool for detecting illicit discharges. This process will verify outfall locations by walking, wading or even using a boat in the streams or along the streambanks and shorelines. Evidence of past non-stormwater flows, trash, improper disposal of yard waste, along with the structural integrity of the storm sewer system can be found. The field screenings are important in relation to priority areas. The field screening may identify new priority areas (problems areas) or the MS4 Operator may conduct more frequent screenings in the priority areas. When considering where priority areas are, look at land use on the watershed. Priority areas may be industrial areas, areas with a concentration of food establishments with grease disposal, or parts of the city with older infrastructure which may have cross contamination from aged domestic sewers, or an area of retail where litter may be an issue. The MS4 Operator should consider all types of pollutants when determining priority areas.

Investigating pollutants may involve sampling for the following parameters: specific conductivity, chloride, ammonia, nitrates, potassium, surfactant and/or fluorescence concentration, pH, *E. coli* and other chemicals indicative of suspected sources. Useful observations of any physical characteristics of the discharge include: flow rate, temperature, odor, color, turbidity, floatable matter, deposits, stains, and impacts to vegetation or wildlife. For guidance on illicit discharge investigations, and parameters to sample for see: https://www.epa.gov/sites/production/files/2015-11/documents/sw_idde_pittbacklit.pdf
Or https://stormwater.pca.state.mn.us/images/b/b2/Final_IDDE_Field_Guide_HRPDC.pdf

The program must include procedures for tracing the source of an illicit discharge. Once an illicit discharge is detected and field tests have provided source characteristics, the next step is to determine the location of the pollutant source. The map of the storm sewer system is a valuable tool, and is most often the first step in this plan. Techniques for tracing the discharge to its place of origin may include: following the flow up the storm drainage system via observations and/or chemical testing in manholes or in open channels, televising storm sewers, using infrared and thermal photography, conducting smoke or dye tests.

Education efforts in resolving the problem should occur before taking legal action; however, the MS4 needs to have the ability to enforce the IDDE plan. The procedures for removing the source of the illicit discharge will vary depending on the source of the discharge. The plan may include notifying the property owner and specifying a time for the owner to eliminate the discharge. Additional notifications and escalating legal actions, if needed, should also be described in this part of the plan. The permittee should also maintain contacts for environmental cleanup and environmental emergency response.

Per 260.505 RSMo, any emergency involving a hazardous substance must be reported to the Department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The Department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply when the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the noncompliance reporting requirement found in Standard Conditions Part I. http://dnr.mo.gov/env/esp/spillbill.htm.

Each MS4 will need to determine their own priority areas. However, if an area receives three complaints or reports of separate events within a six month range, the MS4 should consider prioritizing this area until the source is determined.

The permittee must have procedures for responding to reports of illicit discharges. The response timeliness should be appropriate to the situation. Actions taken under the illicit discharge program should be documented. The permittee must use tracking to show progress is being made to eliminate illicit connections and discharges.

Illicit flows may originate in one MS4 jurisdiction and cross into another MS4 jurisdiction before being discharged at an outfall. The MS4 that detects the illicit flow is expected to trace it to the point where it leaves their jurisdiction and notify the adjoining MS4 of the flow, and any other physical or chemical information. The adjoining MS4 shall then trace it to the source or to the location where it enters their jurisdiction. The process of notifying the adjoining MS4 should continue until the source is located and eliminated.

MCM 4 Construction Site Runoff Control
This MCM is required in accordance with 40 CFR 122.34(b)(4).

Polluted stormwater runoff from construction sites often flows to MS4 storm sewers and is ultimately discharged into local waterbodies. Of the pollutants that have the potential to be discharged, sediment is usually the main pollutant of concern. According to the 2000 National Water Quality Inventory, States and Tribes report sediment as one of the most widespread pollutants affecting assessed rivers and streams, second only to pathogens (bacteria). Sources of sediment include agriculture, urban runoff, construction and forestry. However, sediment runoff rates from construction sites are typically 10 to 20 times greater than those of agricultural lands and 1,000 to 2,000 times greater than those from forest lands.

During a short time period, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. The resulting siltation and contribution of other pollutants from construction sites can cause physical, chemical, and biological harm to Missouri's waters.

The permittee must establish a construction program that controls polluted runoff from construction sites with a land disturbance of greater than or equal to one acre. There must be control through ordinances and/or other regulatory mechanism, such as a permit.

Site Plan Review ensures the implementation of appropriate BMPs on construction sites to control erosion and sediment along with litter and other wastes at the site. To determine if a construction site is in compliance with such provisions, the permittee can review the site plans submitted by the construction site before ground is broken. Plan reviews can aid in compliance and enforcement efforts since they alert the permittee early in the process to the planned use or non-use of proper BMPs and provides a way to track new construction activities.

Land disturbance activities, such as clearing and grading the land surface, increases the potential for sediment discharges. Clearing reduces the natural uptake of water and nutrients by vegetation and excessive grading can smooth the ground surface, increasing amount and velocity of runoff. Vegetation inhibits erosion as the roots hold the topsoil in place, while leaves protect the surface against rain. Once the vegetative cover is gone, erosion is accelerated. The longer the exposed area is subject to erosive forces, the more severe the effect.

The goal for this land disturbance program should be to expose the smallest practical area of land, for the shortest possible time, to eroding forces. Phased construction minimizes the amount of land exposed at one time.

When the site becomes active, BMPs must be in place and the permittee inspection and enforcement activities must begin. To ensure that the BMPs are properly installed, the permittee is required to develop procedures for site inspection and enforcement of control measures to deter infractions. Procedures include steps to identify priority sites for inspection and enforcement based on the nature and extent of the construction activity, topography, the characteristics of soil and the receiving water body's quality. Inspections give MS4s an opportunity to provide additional guidance and education, issue warnings, or assess penalties.

Each site shall self-inspect to ensure their compliance with the regulations of both the MS4 and the State of Missouri Clean Water Law. An MS4 may require the site operator submit their self-inspection reports to the MS4 Operator as a form of oversite, tracking of compliance, or issues with the site. To fully ensure compliance the permittee must conduct oversite inspections as well. The permittee may choose to contract out these inspections to qualified inspectors, or consultants. If choosing this option, the permittee must make it clear to the site operators that the inspections are being conducted on behalf of the MS4.

Oversite inspections must be conducted at a frequency which ensures compliance, but not so often that the site operator can use the MS4 oversite inspections as their own inspections. Too frequent oversite inspections may cause the inspector to become complacent or too familiar with the site or the personnel. Inspections can be used as educational opportunities from the inspector to the site operator. Plan reviews before construction begins will help to identify priority sites based off of site characteristics. Past inspections and the tracking of compliance issues may also assist in this identification if there have been issues with particular construction site operators or neighbors in the area of a site.

Final inspections performed after the completion of the land disturbance project, ensure the site is properly stabilized, clean of solid waste and temporary BMPs. Terminating the Missouri Land Disturbance permit will reduce the number of NPDES permits open in that MS4 service area. Documenting inspections, such as with a checklist, will be evidence that the inspections are being conducting, ensure thoroughness and uniformity for the inspector. These documents be used to show the site operators that the inspectors are being consistent between sites.

MS4 staff must have enforcement tools available if they observe noncompliance with the MS4 regulatory mechanisms. The tools available may be notices of violation, stop work orders, or withholding of funds. These tools and mechanisms, and how to use them, should be described in the SWMP. The SWMP should also list who can use the enforcement tools, enforcement follow-up actions,

such as follow-up inspections; how and when enforcement is escalated if the violation isn't corrected, and documentation requirements.

Having an inventory of all sites with relevant contact information and project information ensures the permittee is aware of the projects in their area. The tracking of sites is useful not only for the permittee's recordkeeping and reporting purposes, but also for members of the public interested in ensuring that sites are in compliance.

MCM 4 also includes a requirement to allow the public to report concerns they have regarding construction sites and water quality impacts. An educated public is more aware of sediment runoff as a pollutant, therefore this may be reflected in the amount of reports of water quality impacts and improper site management increasing. Conversely, as education for the developer increases, the amount of reports on these things may decrease. It should also be noted that while erosion and sediment regulations are typically focused on sediment, MCM 4 is not limited to just sediment. MS4 Operators must enforce construction sites for other types of waste, such as litter or concrete washout.

Many MS4s use existing code or building inspectors to also look at the sediment and erosion aspects of a site. These inspectors must have training, and must understand why the sediment and erosion inspections are of value. The permit writer understands that not all MS4s are able to afford extra training for inspectors, however there are free resources available. Because of the great impact, even one mismanaged construction site can cause a stream to be damaged. The effort and time to establish these training resources to create a training program are necessary to have competent inspectors.

Educating the individual site operators will add more awareness for how to manage sediment and erosion on a site, and why this is important. More information on the Missouri land disturbance permit is found at: https://dnr.mo.gov/env/wpp/permits/issued/docs/RA00000.pdf and https://dnr.mo.gov/env/wpp/epermit/help.htm.

MCM 5 Post-Construction Runoff Control
This MCM is required in accordance with 40 CFR 122.34(b)(5).

If water quality impacts are considered from the beginning stages of a project, new development and redevelopment provide more opportunities for water quality protection. Post-construction stormwater management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly affect receiving waterbodies. Many studies indicate that prior planning and design for minimization of pollutants in post-construction stormwater discharges is the most cost-effective approach to stormwater quality management.

The Phase II 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 one acre of land.

This program requires ordinances, or policies, that address storm water runoff quality. Post-construction stormwater management can be utilized in ways that preserve and protect in a non-structural way, and in structural items that are used to mitigate the decreased water quality in the stormwater runoff.

Structural controls have traditionally been concrete or "gray" infrastructure created to quickly move the stormwater away from the place it falls. These have caused increased erosion and water quality degradation to the receiving streams. Current standards include water quality as a factor in design, and many standards are actually based on natural systems and rely upon vegetation and soil mechanisms in order to perform as intended. The choice of which structural BMPs are most appropriate comes not as a post-construction fix, but rather as a result of the site design review, which should also look at the stormwater management of the site comprehensively.

Numeric, or technical, performance standards are broken into two types for stormwater discharges, a treatment standard or a volume-based/retention standard. Treatment standards typically specify an amount of pollutant to be managed, for example 80% TSS removal. Volume-based or retention standards typically require the use of infiltration, evapotranspiration or harvest practices to control a specified volume of stormwater onsite and are usually expressed as a volume of rainfall, a percentile storm event or a groundwater recharge volume.

Non-structural controls focus on preserving open space, protecting natural systems, and incorporating existing landscape features such as wetlands and stream corridors into a site plan to manage stormwater at its source. There is also emphasis on clustering and concentrating development, minimizing disturbed areas, and reducing the size of impervious areas.

Both structural and non-structural controls consider comprehensive stormwater management items such as:

- Stormwater should be managed as a resource
- Natural features and systems should be preserved and utilized
- Stormwater should be managed as close to the source as possible

- The hydrologic balance of surface and ground water should be maintained
- Runoff should be slowed down
- Potential water quality and quantity problems should be prevented
- Problems that cannot be avoided should be minimized
- Stormwater management should be integrated into the initial site design process.

The Department has created the Missouri Guide to Green Infrastructure, Integrating Water Quality into Municipal Stormwater Management for guidance; https://dnr.mo.gov/env/wpp/stormwater/mo-gi-guide.htm.

Other guidance and model ordinances may be found at the following:
https://www.epa.gov/nps/urban-runoff-model-ordinances-post-construction-controls
https://www.epa.gov/nps/urban-runoff-model-ordinances-aquatic-buffers
https://www.epa.gov/nps/urban-runoff-model-ordinances-open-space-development
https://www3.epa.gov/npdes/pubs/sw_ms4_compendium.pdf
https://www.epa.gov/sites/production/files/2015-09/documents/urban_ch05.pdf
https://www.epa.gov/green-infrastructure
https://www.cwp.org/reducing-stormwater-runoff/

The permittee must ensure adequate long-term operation and maintenance of post construction BMPs. This is accomplished through agreements between the permittee and land owners or regional authorities. Tying a structural control to the land deed may be adequate for some MS4s. If the agreement is recorded with local land records, any successive owner of the property would take the responsibilities of the operations and maintenance of that structural control in the agreement.

Both structural controls and non-structural controls, must be tracked and inspected. An inspection program must be established to ensure the stormwater controls are working and being properly maintained.

Non-structural controls must also be reevaluated. If an urban growth area was identified, it must be evaluated to ensure is room for more development, or if a new growth area should be found. If open spaces or sensitive areas are protected by ordinances or similar mechanism, these places should be inspected to ensure there is no encroachment of development or by neighboring properties. If impervious areas were minimized, these places should be inspected to ensure no additional impervious areas were added.

Educating MS4 staff and residents on post-constructions BMPs will ensure the inspections are effective. There are free resources available online such as: https://www.youtube.com/watch?v=SM9sI9wQgz0&feature=youtu.be
As the public becomes more educated on post-construction stormwater runoff BMPs and controls, they may have more concerns to report. Through education however, there may be ways an MS4 can also gain participation to assist with maintenance issues, and to also further education on water quality and stormwater management.

MCM 6 Pollution Prevention/Good Housekeeping
This MCM is required in accordance with 40 CFR 122.34(b)(6).

The permittee's actions, and facilities are the example for the residents of that MS4. Leading by example can be an important component of education.

Training shall be given to any staff that have influence on stormwater for the MS4, not just environmental coordinators. By only focusing the training on a few members, the message will not get out. Each MS4 should take a realistic look at each department, division, and individual. If their work may either negatively impact or positively impact stormwater runoff, they must attend the training.

Training may be broken down into topics and dispersed throughout the year. It may be given in conjunction with other training. There are free resources available online such as;
https://stormwater.pca.state.mn.us/index.php?title=Employee_training
https://www.youtube.com/watch?v=UxOam2GEVgQ
https://www.youtube.com/watch?v=16ubsys6AZY

While emergency firefighting actives are an authorized non-stormwater discharge, other actives related to a fire department, such as washing of trucks, run-off water from training activities, test water from fire suppression systems, and hydrant pressure testing, are not. Live and simulated fire training should be conducted at facilities that have been built and engineered specifically for training exercises. These facilities should have run-off controls or BMPs to prevent discharging this water or foam used in training exercises. Any water used during training activities is considered wastewater and will require a separate permit (or de minimis determination) from the Department for discharge or land application. Water that is collected and conveyed to a wastewater treatment facility is not required to obtain a separate permit.

If firefighter training cannot be conducted at a specially designed facility, additional pollution prevention actions will need to be taken before training begins in order to prevent illicit discharges. Additional actions may include; sweeping prior to and after training; blocking off all potentially affected stormwater structures; directing to a sanitary sewer line; if spraying water over a landscape, arch the water so that velocities are dissipated and there is less chance of soil erosion; use dechlorination blankets and/or dechlorination diffusers after/prior to spraying, dispose of ashes and partially burnt debris in dumpsters.

Maintaining an Operations and Maintenance document, or SWPPP for each municipal site will ensure proper management, and behavior at those sites. This document should also include inspections for these sites as a method of checking up on the individual site programs. Inspections, cleaning, and routine maintenance of stormwater structures is necessary to ensure the structures are functioning properly and stormwater is managed properly.

Road salt and other deicers are a safety item for most residents of Missouri. However the chloride concentrations in streams is increasing which can potentially to harm aquatic life and may impair drinking water.

So while there is a need for road salt, there are changes that can be made to use less salt and still clear the roads for the safety of the public. This is seen in product management. Loading, unloading and cleanup practices in the loading and parking areas can greatly reduce the amount of salt loss to precipitation and subsequent stormwater. A winter maintenance program which tracks the rock salt use and finds ways to manage the product to reduce loss on the municipal yard is the goal of any BMPs designed and implemented for rock salt. In addition, educating private entities to reduce their usage of salt by incorporating salt reduction practices into their procedures is vital.

In contrast with road salt, brine spreads more evenly, stays where it falls, and begins working immediately. This is because the salt is already in solution. As a result, spraying liquid brine is more effective while using less salt. Beet juice has been suggested as an alternative, however, in practice, the sugar in the runoff has been shown to cause nutrient loading of waterways to increase. For training or additional resources including application rates please see;
https://www.wisaltwise.com/Tools/Application-Guidelines-Calculator
https://www.iwla.org/conservation/water/winter-salt-watch/road-salt-best-practices

Yard waste includes any organic debris such as grass clippings, leaves, and tree branches. Research by the U.S. Geological Survey show municipal leaf collection programs have the ability to reduce loads of total and dissolved phosphorus in a given drainage area by 84 and 83%, respectively, and total and dissolved nitrogen by 74 and 71%.This research indicates that nearly 60% of the annual phosphorus yield in urban and suburban environments comes from leaf litter in the fall, making it a huge contributor of nutrients to urban receiving waters. Removing leaf litter from roads and drain systems means; cleaner streets, safety, and a reduced likelihood of clogged storm drain inlets. Educating residents to not put leaves in, or on storm inlets and/or providing alternate means of disposal can help reduce the amount of effort needed to clean storm drain inlets. For more information please see;
https://www.sciencedirect.com/science/article/pii/S0048969716314462
https://slco.org/watershed/stream-friendly-practices/dont-dump-debris/

There is also free training on overall stormwater management for Permittees;
https://www.torranceca.gov/home/showdocument?id=18591
https://njmel.org/mel-safety-institute/webinars/
https://www.youtube.com/watch?v=Z09Yz_qS1f4
https://www.youtube.com/watch?v=ACP7DOdOEDE

Part V – Rationale for General Terms and Conditions:

Clean Water Act section 402(l)
On December 7, 2012, the U.S. EPA promulgated a rule (77FR 72970) clarifying that discharges of stormwater from silviculture activities do not require a NPDES permit. On March 20, 2013, the U.S. Supreme Court ruled that discharges of stormwater that run off from logging roads into ditches, culverts, and channels did not require a NPDES permit as stormwater from industrial activity.

In January 2014, Congress amended Clean Water Act 402(l) to prohibit the requirements of NPDES permits for the discharge of runoff "resulting from the conduct of the following silviculture activities conducted in accordance with standard industry practice: nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage or road construction and maintenance." In 2016, the U.S. EPA published its decision to not regulate forest road discharges under Phase II stormwater non-permitting programs.

Additional Federal Acts
In accordance with 40 CFR 122.49(b) and (c) the operating permit cites the Endangered Species Act (ESA) and the National Historic Preservation Act (NHPA) and places the permittee on notice that the operating permit does not affect, remove or replace the

requirements or compliance determination for NPDES operating permits. It is the responsibility of the permittee to determine if activities conducted within their MS4 or stormwater discharging from their MS4 are in compliance with the ESA and NHPA.

Assistance in determining applicability to ESA conditions and requirements can be found on the U.S. Fish and Wildlife Service (FWS) Endangered Species webpage, which is located at: http://www.fws.gov/endangered/. Additionally, the FWS Information for Planning and Conservation (IPaC) web-based project planning tool that streamlines the environmental review process is highly recommended and is located at: http://ecos.fws.gove/ipac/.

Assistance in determining applicability to NHPA conditions and requirements can be found on the Department's State Historic Preservation Office Section 106 Review, which is located at: http://dnr.mo.gov/shpo/sectionrev.htm. Additionally, the Advisory Council on Historic Preservation Citizen Guide to Section 106 Review, which explains the process, is located at: http://www.achp.gov/citizensguide.html.

In addition to the ESA and NHPA, this operating permit does not affect, replace or remove the requirements and compliance determinations with respect to substances not otherwise covered under a NPDES permit and regulated by federal law under the Resource Conservation and Recovery Act or the Comprehensive Environmental Response, Compensation, and Liability Act.

Anti-Backsliding
Anti-backsliding is a provision in federal regulations CWA §303(d)(4); CWA §402(o); 40 CFR 122.44(l) that requires a reissued permit to be as stringent as the previous permit with some exceptions.
The permit complies with Anti-backsliding regulations. This permit has not become less stringent, therefore backsliding doesn't apply. Areas of the permit were added to in order to follow the MS4 Remand Rule to ensure clear, specific, measurable elements.

Anti-Degradation
Antidegradation policies ensure protection of water quality for a particular water body on a pollutant by pollutant basis to ensure Water Quality Standards are maintained to support beneficial uses such as fish and wildlife propagation and recreation on and in the water. This also includes special protection of waters designated as an Outstanding National Resource Water or Outstanding State Resource Water [10 CSR 20-7.031(3)(C)]. Antidegradation policies are adopted to minimize adverse effects on water.

The Department has determined that the best avenue forward for implementing the anti-degradation requirements into the MS4 general permit is by requiring the appropriate development and maintenance of a Stormwater Management Program.

Application requirements
Small MS4s (as defined under 10 CSR 20-6.200) are to apply and obtain a small MS4 General Permit or site-specific permit in accordance with 40 CFR 122.33 and 10 CSR 20-6.200(5).

Compliance and Enforcement
Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri CWL, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Dischargers of stormwater from regulated MS4s, as defined in the Missouri Stormwater Regulations 10 CSR 20-6.200 who do not obtain coverage under this or other Missouri general permits, or under a site-specific NPDES permit, will be in violation of the Missouri CWL and its implementing regulations and subject to civil penalties of up to $10,000 per violation, per day. For entities covered under a NPDES permit, failure to comply with any NPDES permit requirement also constitutes a violation of the Missouri CWL and its implementing regulations.

Oil/Water Separators:
Oil water separator (OWS) tank systems are frequently found at industrial sites where process water and stormwater may contain oils and greases, oily wastewaters, or other immiscible liquids requiring separation. Food industry discharges typically require pretreatment prior to discharge to municipally owned treatment works. Per 10 CSR 26-2.010(2)(B), all oil water separator tanks must be operated according to manufacturer's specifications and authorized in NPDES permits per 10 CSR 26-2.010(2) or may be regulated as a petroleum tank.

This permit authorizes the operation of OWS for the treatment of stormwater without the requirement to obtain a separate permit. If the OWS treats water other than precipitation which has run across the property (for example: wash water, effluent from shop drains, drips, spills, etc.) the facility must obtain an MOG14 or site specific permit to cover the discharges.

Pesticide Rule
The Department has developed a Pesticide General Permit #MOG-870000 for point source discharges resulting from the application of pesticides. This permit has been developed as a result of federal requirements under NPDES.

The general permit authorizes the discharge of pesticides that leave a residue in water when such applications are made into, over or near waters of the United States. The department has determined that entities most likely affected by this permit include public health entities, including mosquito or other vector control districts and commercial applicators that service this sector. Others potentially affected by this permit include resource and land management entities, such as public and private entities managing public land; park areas and university campuses; as utilities maintaining easements and right-of-ways; golf courses; and other large residential developments which maintain a large grounds area. In addition, permits may be required for applications involving pesticide use for agricultural related activities when pesticides are applied to crops grown in or near a water of the United States.

The Department is collaborating closely with the Missouri Department of Agriculture, which already administers the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) along with the Missouri Pesticide Use Act, to ensure proper oversight of pesticide applications.

MS4s under this permit are subject to the pesticide rule. To determine if a permit is required, please visit the Department's website. The thresholds listed in Table 1 of the pesticide general permit will assist in determining if a permit is required. If a permit is required, the permittee/facility shall apply for either the Pesticide General Permit or a site-specific pesticide permit from the Department.

Secondary Containment
Prior to release of stormwater in secondary containments, the presence of petroleum sheen and odor must be observed. Steps must be taken if petroleum sheen or odor are observed to remove the petroleum from the stormwater prior to release. All secondary containment valves must remain closed when not actively draining stormwater. Release of stormwater from secondary containment must be controlled so as not to cause physical impacts such as forming rills, transporting solids, or scouring vegetation. If the stormwater is contaminated, the MS4 operator has the option of pumping out the secondary containment and taking it to an accepting wastewater treatment facility for treatment. Causing a sheen to be released to the environment is a violation of this permit and general water quality standards at 10 CSR 20-7.031(4)(B).

Standard Conditions:
The standard conditions Part I incorporate all sections of 10 CSR 20-6.010(8) and 40 CFR 122.41(a) through (n) by reference as required by law. These conditions, in addition to the conditions enumerated within the standard conditions should be reviewed by the facility to ascertain compliance with this permit, state regulations, state statues, federal regulations, and the Clean Water Act.

Water Quality Standards
As noted previously, the nature of the MS4 program is technology-based, which is in accordance with Section §402(p)(3)(B)(iii) of the CWA with the establishment of the technology-based standard MEP. Many in the MS4 community believe that MEP is the only standard applicable for compliance determination, which for the most part (specifically for the six (6) minimum control measures, is correct). Given the litigious nature surrounding the "agreeability" of MS4 compliance with WQS, MS4 permits have been the subject of court cases for several years.

40 CFR 122.34(a)(1) clearly requires that the MS4 permit will require the MS4 permittee to, *"…develop, implement, and enforce a storm water management program designed to reduce the discharge of pollutants from your MS4 to the maximum extent practicable (MEP), to protect water quality, and satisfy the appropriate water quality requirements of the Clean Water Act*." While this regulation seems to be in contradiction to Section §402(p)(3)(B)(iii) of the CWA due to the fact that it appears to require the permittee to "…*protect water quality*" and "*satisfy the appropriate water quality requirements…*" it actually is not; however, has been mistakenly applied to require strict, immediate compliance with WQS even in previously issued Missouri MS4 Master General Permits.

As noted in 64 FR No. 235, "*The Court, did, however, disagree with the EPA's interpretation of the relationship between CWA sections 301 and 402(p). The Court reasoned that MS4s are not compelled by section 301(b)(1)(C) to meet all State water quality standards, but rather the Administrator or the State may rely on section 402(p)(3)(B)(iii) to require such controls*." The discussion continues with, "…*the 1996 Policy describes how permits would implement an iterative process using BMPs, assessment, and refocused BMPs leading toward attainment of water quality standards. The ultimate goal of the iteration would be for water bodies to support their designated uses…*" and "*EPA also believes the iterative approach toward attainment of water quality standards represents a reasonable interpretation of CWA section 402(p)(3)(B)(iii)*."

A break-down of 40 CFR 122.34(a) is given in 64 FR No. 235, as follows, "*The first component, reduction to the MEP, would be realized through implementation of the six minimum measures. The second component, to protect water quality, reflects the overall design objective for municipal programs based on CWA section 402(p)(6). The third component, to implement other applicable water quality requirements of the CWA, recognizes the Agency's specific determination under the CWA section 402(p)(3)(B)(iii) of the need to achieve reasonable further progress toward the attainment of water quality standards according to the iterative BMP process, as well as the determination that State or EPA officials who establish TMDLs could allocate waste loads to MS4s, as they would other point sources*."

Part VI - 303(D) List, Total Maximum Daily Load (TMDL)

Section 303(d) of the CWA requires that each state identify waters that are not meeting water quality standards. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) List helps state and federal agencies keep track of waters that are impaired but not addressed by typical water pollution control programs. Federal regulations require permitting authorities to develop TMDLs to address impaired waters listed per Section 303(d) of the CWA. A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is impaired. Please visit the Department's website to determine if you are listed in an approved or established TMDL at: http://dnr.mo.gov/env/wpp/tmdl/index.html.

Federal regulation 40 CFR 122.34(a) establishes the requirements applicable to all MS4s with, "*Your NPDES MS4 permit will require at a minimum that you develop, implement, and enforce a storm water management program designed to reduce the discharge of pollutants from your MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act*." EPA translated this regulation into three parts in 64 FR No. 235, as follows, "*The first component, reductions to the MEP, would be realized through implementation of the six minimum measures. The second component, to protect water quality, reflects the overall design objective for municipal programs based on CWA section 402(p)(6). The third component, to implement other applicable water quality requirements of the CWA, recognizes the Agency's specific determination under CWA section 402(p)(3)(B)(iii) of the need to achieve reasonable further progress toward attainment of water quality standards according to the iterative BMP process, as well as the determination that State or EPA officials who establish TMDLs could allocate waste loads to MS4s, as they would to other point sources.*"

The above citation of 64 FR No. 235 clearly states that MEP is specific to the six (6) MCMs and clearly establishes that Wasteload Allocations (WLAs) are applicable to MS4s. However, unlike other traditional point sources that utilize treatment facilities, the EPA clearly indicated that attainment of the WLA is to be conducted via "*the iterative BMP process*." Thus, requiring any condition for the attainment of water quality standards in addition to the MCMs is going beyond MEP but the process for attainment of the WLA is still achieved with BMPs using the iterative process of establishing BMPs, evaluating the BMPs, and refocusing on BMPs.

However, just because a WLA for any given pollutant(s) of concern (POC) has been established in a TMDL for a MS4, additional BMPs or modifications to BMPs for the six MCMs should not be required as a trigger action. Rather, the MS4 permittee subject to an effective and approved TMDL should first make a determination if the implementation of their MCMs is adequately meeting the requirements and assumptions of the TMDL. As noted in 64 FR No. 235, "*At this time, EPA determines that water quality-based controls, implemented through the iterative process today are appropriate for the control of such pollutants and will result in reasonable further progress towards the attainment of water quality standards*." While potentially rare this does indicate that no further action may be necessary to implement the requirements and assumptions of the TMDL as the MS4 community may, through successful implementation to the MEP for each of the MCMs, have already demonstrated "*reasonable further progress*." This, rightfully so, places the burden of support on the MS4 community; however, in order for the MS4 community to continue operating only under the six MCMs, the determination of beneficial use re-attainment must be reviewed and timely approved by applicable program staff (i.e., the MS4 Team and Watershed Protection Section staff).

If the requirements and assumptions of the TMDL are not being met, then the MS4 will need to, at a minimum, develop BMPs that target the given POC with the goal or design for the reduction of the pollutant. Due to the nature of stormwater controls via the iterative process, subsequent determinations can and should be made by the MS4 community to determine if "*reasonable further progress*" has resulted in the attainment of the WLA.

In addition to the initial determination or additional BMPs as required in the MS4 general permit, integrated planning actions may be considered as actions taken to specifically restore a waterbody's beneficial uses. Regardless, if the MS4 permittee uses integrated planning or BMPs design to reduce pollutants, other factors need to be considered in accordance with 64 FR No. 235, which states, "*If the permitting authority (rather than the regulated small MS4 operator) needs to impose additional or more specific measures to protect water quality, then that action will most likely be the result of an assessment based on a TMDL or equivalent analysis that determines sources and allocations of pollutant(s) of concern. EPA believes that the small MS4's additional requirements, if any, should be guided by its equitable share based on a variety of considerations, such as cost effectiveness, proportionate contribution of pollutants, and ability to reasonably achieve Wasteload reductions. Narrative effluent limitations in the form of BMPs may still be the best means of achieving those reductions.*"

In addition to the above, the TMDL portion of the permit (Part 3) requires the development and implementation of a TMDL Assumption and Requirement Attainment Plan (ARAP). While the TMDL ARAP is not a Schedule of Compliance actions and schedules established in the TMDL ARAP will be subjected to the federal regulations on Schedules of Compliance [40 CFR 122.47]. Specifically if the development and implementation of the TMDL ARAP is to be conducted in a period of time extending one calendar year, then the permittee will be required to report annually for either the status of the development of the plan or for the implementation of the plan based on 40 CFR 122.47(a)(3)(ii).

Regarding the time period allowed for development of the TMDL ARAP (i.e., as soon as practicable not exceeding 30 months), the Department has determined the 30 month time period is appropriate as it allows the permittee the necessary time and flexibility that is needed to ultimately achieve attainment with the TMDLs assumptions and requirements. The Department has experience in the facilitation of an adaptive SWMP, along with EPA Region 7, with a MS4 community that addressed the assumption and requirements of an applicable TMDL. The time period to develop the adaptive SWMP took more than 30 months, but the assumptions and requirements of the TMDL were more complex than other straight forward TMDLs. Thus, the 30 month maximum time period allows the permittee to determine or develop appropriate BMPs, measurable goals, funding sources, local votes, strategic planning, opportunity to engage interested parties and stakeholders, etc… However, it would be naïve to believe that all regulated MS4s could develop a plan in 30 months, which is why the permit also indicates that the permittee can request an extension to the 30 months.
permittees seeking approval of the extension will need to provide appropriate justification of why the extension is needed, a revised time schedule of compliance, and reason for failing to meet the 30 month maximum time; however, the allowance of extending the time period beyond 30 months is not guaranteed.

Stakeholder Outreach
In an effort to improve overall effectiveness of the MS4 MOR04 permit renewal process, to introduce the MOR04C permit, and to maximize stakeholder input, the Department published a preliminary draft of this MS4 NPDES permit and conducted extensive outreach for stakeholders in the preparation of the draft MS4 NPDES permits. A listing of stakeholder meetings is as follows:

Meeting Location	Meeting Date	Total attendees	Number of regulated MS4s represented
Jefferson City, MO	March 2, 2020	5	2
Macon, MO	March 3, 2020	7	5
Springfield, MO	March 5, 2020	17	11
Lee's Summit, MO	March 9, 2020	28	18
Poplar Bluff, MO	March 13, 2020	12	8
Virtual	March 23, 2020	13	10

Additionally, the Department held virtual meetings with municipal permittees in an effort to explain and gather feedback about proposed permit conditions. These meetings were broken down by MCM. Notification of such workshops was provided via e-mail invitation to all provided MS4 contacts in Missouri's permitted municipalities. A listing of each workshop follows:

Meeting topic	Meeting Date	Total attendees	Number of regulated MS4s represented
MCM 1	April 6, 2020	37	23
MCM 3	April 7, 2020	30	21
MCM 6	April 9, 2020	37	23
MCM 5	April 13, 2020	42	29
MCM 4	April 14, 2020	35	24
MCM 2	April 14, 2020	28	17
Other parts of the draft permits	April 20, 2020	40	27

Part VII – Administrative Requirements

On the basis of preliminary staff review and applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the permit. The proposed determinations are tentative pending public comment.

Public Meeting:
A public meeting for this permit was held on July 30, 2020.

Public Notice:
The Department shall give public notice when a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest or because of water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and facility must be notified of the denial in writing.

The Department must give public notice of a pending permit or of a new or reissued Missouri State Operating Permit. The public comment period is a length of time not less than thirty (30) days following the date of the public notice, during which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed permit, please refer to the Public Notice page located at the front of

this draft permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- ✓ The Public Notice period for this permit was from September 4, 2020 through October 5, 2020.

Date of Fact Sheet: August 17, 2020

SARAH WRIGHT, ENVIRONMENTAL SPECIALIST
MUNICIPAL SEPARATE STORMSEWER SYSTEM (MS4) PERMITTING COORDINATOR
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - STORMWATER AND CERTIFICATION UNIT
sarah.wright-aholt@dnr.mo.gov
573-526-1139