

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. MO-0136557

Owner: See page two (2)
Address: See page two (2)

Continuing Authority: See page two (2)
Address: See page two (2)

Facility Name: Boone County, City of Columbia, University of Missouri MS4
Facility Address: 180 General Services Building
900 East Stadium Blvd

Legal Description: See pages two (2) through six (6)
UTM Coordinates: See pages two (2) through six (6)

Receiving Stream: See pages two (2) through six (6)
First Classified Stream and ID: See pages two (2) through six (6)
USGS Basin & Sub-watershed No.: See pages two (2) through six (6)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

SIC/NAICS Codes: 9511/9241110

Phase II Municipal Separate Storm Sewer System (MS4) Co-permitted urbanized area consisting of conveyances or system of conveyances, which includes roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels and storm drains, and is owned or operated by the City of Columbia, Boone County, and the University of Missouri.

July 1, 2020
Effective Date


Edward B. Galbraith, Director, Division of Environmental Quality

June 30, 2025
Expiration Date


Chris Wieberg, Director, Water Protection Program

OWNER AND CONTINUING AUTHORITY (continued):

Owner: University of Missouri
Address: 180 General Services Building
900 East Stadium Blvd.
Columbia, MO 65211

Owner: City of Columbia
Address: 701 E. Broadway,
Columbia, MO 65201

Owner: County of Boone
Address: 801 E. Walnut,
Columbia, MO 65201

Continuing Authority: Same as above
Address: Same as above

FACILITY DESCRIPTION (continued):

All outfalls below were obtained from the above listed owner's application and are representative outfalls.

OUTFALL 002

Legal Description: Sec 13, T48N, R13W, Boone County
UTM Coordinates: X = 557724, Y = 4310923
Receiving Water: Flat Branch
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0603

OUTFALL 003

Legal Description: Sec 13, T48N, R13W, Boone County
UTM Coordinates: X = 557604, Y = 4310953
Receiving Water: Flat Branch
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0603

OUTFALL 004

Legal Description: Sec 13, T48N, R13W, Boone County
UTM Coordinates: X = 557604, Y = 4310953
Receiving Water: Flat Branch
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0603

OUTFALL 005

Legal Description: Sec 13, T48N, R13W, Boone County
UTM Coordinates: X = 558157, Y = 4311019
Receiving Water: Flat Branch
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0603

OUTFALL 006

Legal Description: Sec 24, T48N, R13W, Boone County
UTM Coordinates: X = 557639, Y = 4309381
Receiving Water: Hinkson Creek
First Classified Stream and ID: Hinkson (C) (1008)
USGS Basin & Sub-watershed No.: 10300102-0603

OUTFALL 007

Legal Description: Sec 24, T48N, R13W, Boone County
UTM Coordinates: X = 557519, Y = 4309349
Receiving Water: Hinkson Creek

First Classified Stream and ID: Hinkson (C) (1008)
USGS Basin & Sub-watershed No.: 10300102-0603

OUTFALL 008

Legal Description: Sec 24, T48N, R13W, Boone County
UTM Coordinates: X = 557665, Y = 4309104
Receiving Water: Hinkson Creek
First Classified Stream and ID: Hinkson (C) (1008)
USGS Basin & Sub-watershed No.: 10300102-0603

OUTFALL 009

Legal Description: Sec 24, T48N, R13W, Boone County
UTM Coordinates: X = 557786, Y = 4309105
Receiving Water: Hinkson Creek
First Classified Stream and ID: Hinkson (C) (1008)
USGS Basin & Sub-watershed No.: 10300102-0603

OUTFALL 010

Legal Description: Sec 24, T48N, R13W, Boone County
UTM Coordinates: X = 558579, Y = 4309234
Receiving Water: Hinkson Creek
First Classified Stream and ID: Hinkson (C) (1008)
USGS Basin & Sub-watershed No.: 10300102-0603

OUTFALL 021

Legal Description: Sec 35, T49N, R13W, Boone County
UTM Coordinates: X = 556176, Y = 4315320
Receiving Water: Bear Creek
First Classified Stream and ID: Bear Creek (C) (1015)
USGS Basin & Sub-watershed No.: 10300102-0706

OUTFALL 023

Legal Description: Sec 29, T48N, R12W, Boone County
UTM Coordinates: X = 561461, Y = 4307098
Receiving Water: Clear Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (39600)
USGS Basin & Sub-watershed No.: 10300102-0903

OUTFALL 025

Legal Description: Sec 11, T48N, R13W, Boone County
UTM Coordinates: X = 555862, Y = 4312173
Receiving Water: County House Branch
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0603

OUTFALL 027

Legal Description: Sec 11, T48N, R13W, Boone County
UTM Coordinates: X = 556749, Y = 4312704
Receiving Water: Flat Branch Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0603

OUTFALL 030

Legal Description: Sec 1, T48N, R12W, Boone County
UTM Coordinates: X = 567065, Y = 4313740
Receiving Water: Grindstone Creek
First Classified Stream and ID: North Fork Grindstone Creek (C) (1010)
USGS Basin & Sub-watershed No.: 10300102-0602

OUTFALL 031

Legal Description: Sec 15, T49N, R12W, Boone County

UTM Coordinates: X = 563744, Y = 4319662
Receiving Water: Hinkson Creek
First Classified Stream and ID: Hinkson Creek (C) (1008)
USGS Basin & Sub-watershed No.: 10300102-0602

OUTFALL 034

Legal Description: Sec 18, T48N, R12W, Boone County
UTM Coordinates: X = 560231, Y = 4310479
Receiving Water: Hominy Creek
First Classified Stream and ID: Hominy Creek (C) (1011)
USGS Basin & Sub-watershed No.: 10300102-0602

OUTFALL 036

Legal Description: Sec 8, T48N, R13W, Boone County
UTM Coordinates: X = 551429, Y = 4312729
Receiving Water: Harmony Creek
First Classified Stream and ID: Harmony Creek (C) (4062)
USGS Basin & Sub-watershed No.: 10300102-0903

OUTFALL 038

Legal Description: Sec 10, T47N, R13W, Boone County
UTM Coordinates: X = 553836, Y = 4302172
Receiving Water: Little Bonne Femme Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0903

OUTFALL 039

Legal Description: Sec 16, T48N, R13W, Boone County
UTM Coordinates: X = 553654, Y = 4311233
Receiving Water: Tributary to Scotts Branch
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0603

OUTFALL 042

Legal Description: Sec 31, T48N, R13W, Boone County
UTM Coordinates: X = 558456, Y = 4306335
Receiving Water: Mill Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0903

OUTFALL 043

Legal Description: Sec 3, T48N, R12W, Boone County
UTM Coordinates: X = 565257, Y = 4313811
Receiving Water: Hominy Branch Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0903

OUTFALL 044

Legal Description: Sec 21, T48N, R12W, Boone County
UTM Coordinates: X = 562627, Y = 4309356
Receiving Water: Tributary to South Fork Grindstone Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0602

OUTFALL 045

Legal Description: Sec 29, T48N, R13W, Boone County
UTM Coordinates: X = 551712, Y = 4308495
Receiving Water: Meredith Branch Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0603

OUTFALL 046

Legal Description: Sec 17, T48N, R13W, Boone County
UTM Coordinates: X = 550943, Y = 4310651
Receiving Water: Tributary to Perche Creek
First Classified Stream and ID: Perche Creek (P) (3960)
USGS Basin & Sub-watershed No.: 10300102-0708

OUTFALL 047

Legal Description: Sec 10, T47N, R13W, Boone County
UTM Coordinates: X = 554799, Y = 4302977
Receiving Water: Tributary to Little Bonne Femme Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0903

OUTFALL 048

Legal Description: Sec 2, T48N, R14W, Boone County
UTM Coordinates: X = 546541, Y = 4314588
Receiving Water: Tributary to Sugar Branch Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0708

OUTFALL 049

Legal Description: Sec 17, T48N, R13W, Boone County
UTM Coordinates: X = 551970, Y = 4310557
Receiving Water: Goodin Branch
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0603

OUTFALL 050

Legal Description: Sec 4, T48N, R13W, Boone County
UTM Coordinates: X = 553319, Y = 4304200
Receiving Water: Tributary to Little Bonne Femme Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0903

OUTFALL 051

Legal Description: Sec 25, T49N, R13W, Boone County
UTM Coordinates: X = 558103, Y = 4317783
Receiving Water: Tributary to Cow Branch Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10300102-0706

OUTFALL 052

Legal Description: Sec 12, T49N, R13W, Boone County
UTM Coordinates: X = 557501, Y = 4322789
Receiving Water: Rocky Fork Creek
First Classified Stream and ID: Rocky Fork (C) (1014)
USGS Basin & Sub-watershed No.: 10300102-0903

A. COVERAGE, AUTHORIZATION AND RESTRICTIONS

1. This Missouri State Operating Permit (permit) authorizes the discharge of stormwater to waters of the state from the City of Columbia, County of Boone, and University of Missouri (permittees) Municipal Separate Stormwater Sewer System (MS4) located within urbanized areas as determined by the most recent Decennial Census by the Bureau of Census or specifically designated in accordance with Missouri regulation 10 CSR 20-6.200(1)(D)29.B.

The City of Columbia, County of Boone, and University of Missouri (MS4 Operators) are responsible for management and operation of the municipal separate storm sewer system that is subject to the terms of this Phase II MS4 permit.

The permit area may change based upon areas incorporated into or removed from the permittee's jurisdictional area, or population fluctuations which effect the urbanized areas with the results of the 2020 Decennial Census by the Bureau of Census during the term of this permit.

2. The following non-stormwater sources may be discharged from the MS4, unless they are determined by the MS4 Operators or the Department to be significant contributors of pollutants to the permittee's MS4, or they are otherwise prohibited by the MS4 Operators:
 - a) Water line and hydrant flushing;
 - b) Landscape irrigation and lawn watering;
 - c) Rising groundwater and springs;
 - d) Uncontaminated groundwater infiltration as defined at 40 CFR 35.2005(b)(20);
 - e) Uncontaminated pumped ground water;
 - f) Potable water sources;
 - g) Foundation or footing drain;
 - h) Air conditioning condensate;
 - i) Uncontaminated water from crawl space pumps;
 - j) Flows from riparian habitat and wetlands;
 - k) Street and sidewalk wash water, water used to control dust, and routine external building wash-down that does not use detergents, excluding street sweeper waste water;
 - l) Discharges or flows from emergency fire-fighting activities (fire-fighting activities do not include washing of trucks, run-off water from training activities, and similar activities);
 - m) Individual residential car washing; and
 - n) Dechlorinated and uncontaminated residential swimming pool, spa and hot tub discharges.

3. This permit does not authorize discharges into the MS4 that are:
 - a) Non-stormwater discharges unless covered under another Missouri State Operating permit; and
 - b) Stormwater discharges that combine with sources of non-stormwater discharges except where:
 - i. Non-stormwater discharges are in compliance with a separate National Pollution Discharge Elimination System (NPDES) permit; or
 - ii. Determined not to be a substantial contributor of pollutants to waters of the state by the MS4 Operator(s).

4. 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(s).

5. Any pesticide discharged into the MS4 shall comply with the requirements of Federal Insecticide, Fungicide and Rodenticide Act as amended (7 U.S.C. 136 ET. SEQ.) and the use of such pesticides shall be in a manner consistent with its label.

B. DISCHARGE LIMITATIONS

1. The permittees shall develop, implement, and maintain Best Management Practices (BMPs), with evaluations through adaptive management, 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. Specific requirements are listed in Parts D, E, F, G, and H.
2. The permittees 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, and 40 CFR 122.28(d)(2), and in accordance with the Missouri Clean Water Law (MCWL) and state regulations 10 CSR 20-6.200.
3. The permittees 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. The Department may require corrective action(s) if the Department determines this MS4 is causing or creating a significant instream exceedance of Missouri's Water Quality Standards.

C. DISCHARGES TO IMPAIRED WATERS

1. In order to implement the Hinkson Creek TMDL finalized by EPA on or about January 28, 2011, the permittees shall continue to implement BMPs and other actions and monitoring activities as set forth in the *Collaborative Adaptive Management Implementation Schedule and Agreement for Hinkson Creek TMDL* signed by the Department on April 26, 2012 (CAM Agreement).

- a) The permittee shall assess the Stormwater Management Program and updated the Stormwater Management Plan as required in Part D of this permit to reflect the actions taken pursuant to the CAM Agreement based upon various actions or monitoring activities as specified in section 8.4 of the CAM Agreement.
2. In the event that the CAM Agreement is terminated (based on any of the grounds described therein), the permittees shall:
 - a) Within 90 days, submit to the Department a report describing all historical and planned efforts to implement the Hinkson Creek TMDL; and
 - b) Within 6 months, update the Stormwater Management Plan to:
 - i. Reflect further actions necessary to implement the Hinkson Creek TMDL; and
 - ii. Describe a monitoring program (and Quality Assurance Project Plan) to determine whether stormwater controls are adequate.
3. In the event that the co-permittees determine or are required to terminate the CAM Agreement and the receiving stream has not attained its beneficial uses, the co-permittees are then subject to items 4 through 11 under Part C of this permit.
4. Develop a TMDL Assumptions and Requirement Attainment Plan (ARAP) to address the TMDL's assumptions and requirements where applicable and in accordance with 40 CFR 122.44(k)(2) and (3). The TMDL ARAP shall be incorporated into the Stormwater Management Program and include, at a minimum, the following:
 - a) A process to identify potential sources of the pollutant(s), BMPs to be implemented to address the sources within the permittees' MS4, a prioritization of those actions, and a schedule including beginning and ending milestones by month and year. The schedule for the implementation of the TMDL ARAP is not limited to the term of this operating permit (i.e., 5 years) as attainment can take years or even multiple permit terms;
 - b) BMPs developed or designed with a purpose of reducing the pollutant(s) of concern. Each BMP shall contain a description of the BMP, the purpose of the BMP, and the expected results of the BMP;
 - c) Measurable goals shall be established for each BMP or in conjunction with multiple BMPs. 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. Measureable goals shall be quantifiable; however, if it is not feasible to utilize a measurable goal that is quantifiable, then the permittee shall provide justification why utilizing a measurable goal is infeasible. If applicable, measurable goals shall also 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; and
 - d) An iterative process to be utilized by the permittee that documents 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.
5. The permittees shall draft and submit the TMDL ARAP to the Department within 30 months of termination of the CAM for Department review and rating. The initial TMDL ARAP is to be submitted to the Department's Water Protection Program, MS4 Group at P.O. Box 176, Jefferson City, MO 65102. All other revisions are to be included in the MS4 Annual Report.
6. If the Department approves the TMDL ARAP, it will be presumed that the TMDL ARAP is affordable by the permittee. However, if the Department disapproves the submitted TMDL ARAP and requires additional or different controls or expenses, the Department will conduct an affordability analysis in support of the disapproval unless waived by the permittees.
7. The deadline for the TMDL ARAP may be extended by request of the permittees and with written approval by the Department.
8. If the TMDL ARAP has been submitted to the Department but has not received approval, then the permittees are not required to implement any actions listed in their TMDL ARAP and shall notify the Department of this in their MS4 Annual Report.
9. The permittees shall provide a summary of the controls that list the BMPs, the expected results of the BMPs, and how the measurable goals are utilized to document effectiveness of the BMPs, and the status of the measurable goals in the MS4 Annual Report.
10. The permittees may demonstrate that 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 goal of attainment with the TMDL's assumptions and requirements. The demonstration is subject to Department approval. If the permittees are to provide a demonstration that no additional controls are needed, they shall contact the Water Protection Program's MS4 Group to begin the process.

11. If the EPA approved or established TMDL does not contain an applicable WLA to the permittee, then the permittees are not required to develop and implement any actions contained in Part C, Section 4 – 10 of this permit.

D. STORMWATER MANAGEMENT PROGRAM

1. To the extent allowable under state and local law, the MS4 Operators, either individually or in combination, shall continue implementation, enforcement, and reevaluation of a Stormwater Management Program. Terms and conditions in this permit that require additional action shall be addressed through the Stormwater Management Program. The Stormwater Management Program must also be implemented and enforced in new MS4 areas added during the permit term. Implementation of appropriate BMPs for the new areas must occur.
2. On June 5, 2012, EPA published its Integrated Municipal Stormwater and Wastewater Planning Approach Framework (“Framework”). The stated purpose of the Framework is to assist municipalities on their critical paths by 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 to best prioritize capital investments. The City of Columbia developed the “Columbia Wastewater and Stormwater Integrated Management Plan,” dated September 28, 2018. This plan was adopted by the Columbia City Council, Resolution 198-18. This integrated management plan was acknowledged by the Department in a letter dated March 21, 2019. The Integrated Management Plan includes a five year action plan that will guide the City’s activities during this permit cycle.
3. As part of the Stormwater Management Program, the permittees shall develop a document, with appropriate appendices and supplemental attachments, to explain the Stormwater Management Program. This Stormwater Management Plan (Management Plan) shall be used to explain BMPs and the on-going evaluation of the BMPs, the tracking, and methods of documentation. This document may be electronic.
4. The MS4 Operators must utilize the procedures and other supplemental documents contained or referenced in the Management Plan during the activities performed to attain permit compliance. 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. Once the Management Plan completes the public notice process and is reviewed and approved by the Department, it shall be considered incorporated as part of this permit. The Management Plan clarifies details specific to the individual MS4s and communities.
5. The six (6) Minimum Control Measures (MCMs) described in Section E of this operating permit, shall be included in the Stormwater Management Program and explained in the Management Plan. The requirements listed below do not supersede or remove any requirement to comply with county or other local ordinances, if applicable.

The Management Plan shall contain the following for each of the six (6) MCMs described in Section E of this operating permit:

- a) The title and contact information for the person(s) responsible for the Stormwater Management Program, for each of the co-permittees;
 - b) A well-defined and detailed description of each BMP, which shall be developed, designed, or implemented with a goal of reducing stormwater pollution, for the corresponding MCM;
 - c) The measurable goal/expected result of each BMP, explain in specific terms the objective or results of this BMP if it is successful and the pollutant(s) reduced;
 - d) The time, expressed as months and years, when the permittee will undertake required actions, or steps to implement BMPs, including interim milestones and the frequency of the action when applicable. 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;
 - e) The method of documentation used for activities performed. Incorporate quantifiable elements to measure the outcomes of each BMP, include an annual (or more frequent) measurement to document progress, and a summary of that measurement;
 - f) A description of the method, or documentation of, how each BMP is evaluated to see if the BMP is subject to replacement or modification. Using adaptive management, the permittees shall continuously evaluate the effectiveness of each BMP for potential modifications to improve the effectiveness; and
 - g) The evaluations shall be specific to each BMP, with development and growth of each BMP as the goal of the evaluation.
6. The MS4 Operator may replace or modify ineffective BMPs with effective BMPs. For any major modifications, the MS4 Operator shall follow the public notice requirements in Section E.2.2 of this permit. If the name of an MCM contact changes, that may be updated on the next annual report and/or via email to the Department at MS4@dnr.mo.gov.

7. The permittees shall implement the Stormwater Management Program on all new areas added as prompt as practicable, but no later than one year from addition of the new areas. The plan shall include revised schedules for implementation. Implementation may be accomplished in a phased manner to allow additional time for controls that cannot be implemented immediately. Information on all new annexed areas or areas added as a result of the 2020 Decennial Census and any resulting updates required to the Stormwater Management Program shall be available to the Department upon request.
8. Within one (1) year of the effective date of this operating permit, the permittees shall revise their Stormwater Management Plan, if necessary, and submit it to the Water Protection Program's MS4 Group for approval.

E. MINIMUM CONTROL MEASURES (MCMs)

1. *MCM 1 Public Education and Outreach on Stormwater Impacts*
 - a) The MS4 Operators shall review, update, and continue implementing a comprehensive stormwater education, and outreach program to educate residents, public employees, businesses, and the general public about the impacts of stormwater discharges on waterbodies and steps the public can take to reduce pollutants in stormwater runoff. The education and outreach program at minimum shall:
 - i. Define the target audiences and/or the pollutants or sources of pollution the program is designed to address;
 - ii. Distribute appropriate educational materials and/or media to the target audience(s) using methods and procedures determined by the MS4 Operator(s); and
 - iii. Create opportunities for residents to participate in the implementation of stormwater controls.
2. *MCM 2 Public Involvement and Participation*
 - a) The permittees shall develop and implement a comprehensive public participation program that provides opportunities for public participation in the development, implementation, and review of the permittee's Stormwater Management Program. This program must provide opportunities for public participation of the permittee's permit renewal and shall, at a minimum, comply with any state and local public notice requirements in the planning and implementation activities related to developing and implementing the Stormwater Management Program.
 - b) The following notice procedure for the Management Plan shall be followed at a minimum:
 - i. The MS4 Operators shall hold a public notice period for a minimum of thirty (30) days to allow the public to review the Stormwater Management Program and Plan prior to the submission to the Department.
 - ii. As part of the public notice, if the MS4 Operators have a public website, their draft Management Plan shall be posted on their website with a way to submit comments either by mail or email, along with any standard public notice methods for the MS4s.
 - iii. The MS4 Operators shall respond to comments received during the comment period, and if necessary, revise the BMPs and Management Plan.
 - iv. The MS4 Operators shall retain copies of any public comments, and records of information submitted by the public received as part of the public notice process.
 - c) The MS4 Operators shall hold a public information meeting to provide information on and describe the contents of the proposed Stormwater Management Program and Plan. This information shall be advertised at least thirty (30) days prior to the public meeting. If the permittees hold one combined meeting, it shall be advertised to the three service areas, and held in a location near the population center of the three MS4 areas.
 - d) The MS4 Operators shall each have a publically available mechanism to take public inquiries, concerns, or take information about stormwater and stormwater related topics. This shall encompass all MCMs of this permit. This mechanism may be a phone number, voicemail box, an email address, or social media platform.
 - e) If the MS4 Operator(s) utilizes a stormwater management panel or committee, the MS4 Operator(s) shall provide opportunities for citizen representatives on the panel or committee.
 - f) A representative of each MS4 Operator shall report to the designated entity of each MS4 Operator (Boone County Board of Commissioners, Columbia City Council, or MU Environmental Health & Safety) at minimum annually. This report shall include the status of, or updates on, the Stormwater Management Program, and compliance with the Stormwater Management Program.
 - i. If designated entity holds open public meetings, this presentation must be a forum which is open to the public. It is recommended that members of the designated entities and/or other elected officials of the MS4 service area participate in stormwater activities.

3. *MCM 3 Illicit Discharge Detection and Elimination (IDDE) Program:*

- a) The permittees shall develop, implement, and enforce a program to detect and eliminate illicit discharges, as defined in 10 CSR 20-6.200 and 40 CFR 122.22(b)(2), into the permittee's MS4. The program must include a plan to detect and address non-stormwater discharges, including illegal dumping to the MS4 system. The Management Plan shall include procedures for implementing the IDDE Program.
- b) The MS4 Operators shall maintain a stormwater sewer map that shall be updated, at minimum annually, to include features which are added, removed, or changed. The permittees shall make the map data and its origin available to the Department upon request. This storm sewer map, must show at a minimum:
 - i. The locations of all MS4 outfalls;
 - ii. The names and locations of all receiving waters of the state that receive discharges from the MS4 outfalls;
 - iii. The municipal boundaries of each entity in the MS4 area.
- c) The MS4 Operators shall effectively prohibit non-stormwater discharges into the permittee's storm sewer system and implement appropriate enforcement procedures and actions. This prohibition shall be through ordinance or other regulatory mechanism, to the extent allowable under State or local law.
- d) The MS4 Operators shall inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

4. *MCM 4 Construction Site Stormwater Runoff Control*

- a) The permittees shall continue to enforce a program to reduce pollutants in any stormwater runoff to their small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activities 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.
- b) The permittees' program shall include, at a minimum, the development and implementation of:
 - i. An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State or local law;
 - ii. Requirements for construction site operators to implement appropriate erosion and sediment control best management practices;
 - iii. Requirements for construction site operators to 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;
 - iv. Procedures for site plan review which incorporate consideration of potential water quality impacts;
 - v. Procedures for receipt and considerations of information submitted by the public, and
 - vi. Procedures for site-inspection and enforcement of control measures.

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

- a) The permittees shall develop, implement, and enforce a program to address the quality of stormwater 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 discharge into the regulated MS4. This program shall include, at a minimum, the following information:
 - i. Strategies which include a combination of structural and/or non-structural best management practices appropriate for the MS4 community;
 - ii. An ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State or local law; and
 - iii. Ensure adequate long-term operating and maintenance of BMPs owned or operated by the MS4 Operators and, to the extent possible, privately owned BMPs.

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

- a) The MS4 Operators shall develop or maintain controls for reducing or eliminating the discharge of floatables and pollutants from areas owned or operated by the MS4 Operator.
- b) The MS4 Operators shall maintain an employee training program for MS4 staff to prevent or reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.

F. SHARING RESPONSIBILITY

1. Implementation of one or more of the minimum measures may be shared with another entity outside of the permittees, or another entity assumes responsibility for the measure if:
 - a) The other entity, in fact, implements the control measure; and
 - b) The particular control measure, or component of that measure, is at least as stringent as the corresponding permit requirements.
2. This co-permittee obligation and written agreement, such as a memorandum of understanding, shall be described and maintained as part of the Stormwater Management Plan. If the other entity agrees to report on the minimum measure, then the permittees shall supply the entity with the reporting requirements contained in Part G - MONITORING, RECORDKEEPING, AND REPORTING. If the entity fails to implement the control measure on the permittee's behalf, then the permittees remain liable for any discharges due to that failure to implement.

G. MONITORING, RECORDKEEPING, AND REPORTING

1. The MS4 Operators shall retain records of all monitoring information, including all calibrations and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, 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 sampled, measured, reported or applied. This period may be extended by official request of the Department at any time. If applicable, monitoring that has been conducted by the permittee shall include:
 - a) The date, location, and time of sampling or measurement;
 - b) The individual(s) who performed the sampling or measurement;
 - c) The date(s) analyses were performed;
 - d) The individual(s) who performed the analyses;
 - e) The analytical technique(s) or method(s) used; and
 - f) The results of such analyses.
2. 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 136 unless another method is required under 40 CFR sub-chapter N or O.
3. The permittees shall retain records for a period of at least three (3) years or for the term of this operating permit, whichever is longer. The term of the operating permit means the period of time from the issuance of this operating permit to the re-issuance of an operating permit renewal. Records shall include, but is not limited to, the following:
 - a) The Stormwater Management Plan;
 - b) A copy of their operating permit;
 - c) A copy of all ordinances pertaining to MS4 activities;
 - d) A copy of all policies pertaining to MS4 activities; and
 - e) Copies of all reports required by this operating permit.
4. The permittees shall submit the items listed in Section G of this operating permit upon request of the Department, and ensure that these items are at a location accessible to the Department during inspections or audits. In addition, the permittees shall ensure that these items are available to the public upon request by the public.
5. MS4 Annual Report - the permittees shall submit a MS4 Annual Report containing, at a minimum:
 - a) Information regarding progress achieving the statutory goal of reducing the discharge of pollutants to the Maximum Extent Practicable;
 - b) The status of the MS4's compliance with permit conditions;
 - c) Assessment(s) of the appropriateness of identified BMPs and corresponding measureable goals for each MCM;
 - d) 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;
 - e) A summary of the CAM Agreement or TMDL ARAP;
 - f) If a permittee is utilizing an integrated planning approach, then the MS4 Annual Report shall provide a summary of the status of the integrated plan related to the MS4 activities.
 - g) A summary of the stormwater activities the permittees plan to undertake during the next reporting cycle (including an implementation schedule);
 - h) Any proposed changes to the permittees' Stormwater Management Program, including changes to any identified BMPs or measurable goals that apply to the Stormwater Management Program; and

- i) Notice that the permittees individually or in combination are relying on another government or non-government entity to satisfy some of the permittees' permit obligations. If applicable, the permittees shall supply the name of the entity, the name of the entity's primary contact person, and other relevant contact information.

The MS4 Annual Report shall be submitted by **April 28th** every year during the life of this permit until this operating permit is renewed. The MS4 Annual Report shall contain all required information and cover the reporting period of January 1st to December 31st.

The permittees shall submit the MS4 Annual Report on the STORMWATER ANNUAL REPORT – SMALL MS4 PERMITS, form (MO 780-1846) or revisions thereafter.

- 6. Permittees shall submit the MS4 Annual Report via the Department's Electronic Discharge Monitoring Report (eDMR) Submission System. Per 40 CFR 122.34(c)(3) reports must be submitted electronically by the owner, operator, or the duly authorized representative of the small MS4 to the NPDES permitting authority or initial recipient, as defined in 40 CFR 127.2(b). All general permit covered facilities under this master general permit shall comply with the Department's requirements for electronic reporting.
 - a) Registration to participate in the Department's eDMR system is required as part of the application for general permit coverage in order to constitute a complete permit application and may be accessed at dnr.mo.gov/env/wpp/edmr.htm.
 - b) Electronic Submissions. To access the eDMR system, use the following link in your web browser: <https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx>. 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.
 - c) Waivers from Electronic Reporting. 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.
 - d) 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 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.
 - i) The permittee must electronically submit annual reports unless a waiver is granted by the Department compliance with 40 CFR Part 127.
 - ii) The Department will either approve or deny this electronic reporting waiver request within 120 calendar days of receipt.

H. STANDARD PERMIT CONDITIONS

- 1. **Duty to Comply:** The permittees shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri CWL and the Federal CWA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal.
It is a violation of the Missouri CWL to fail to pay fees associated with this permit, [§644.055 RSMo].
- 2. **Duty to Mitigate:** The permittees 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.
- 3. **Proper Operation and Maintenance:** The permittees 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 also includes adequate laboratory controls and appropriate quality assurance procedures. This condition of this permit 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 this permit.
- 4. **Advanced Notice:** The permittees shall give advanced notice to the Department of any planned changes which may result in noncompliance with the terms and conditions of this permit.
- 5. **Inspection and Entry:** The permittees shall allow the department or an authorized representative (including an authorized contractor as a representative to USEPA or the Department) upon the presentation of credentials and other documents as may be required by law to:

- a) Enter the permittees' premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
 - b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c) Inspect any facility, equipment (including monitoring and control equipment), practices, or operation regulated or required under this permit; and
 - d) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the federal CWA and/or Missouri's CWL, any substance or parameter at any location.
6. **Monitoring Methods:** Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless another method is required under 40 CFR subchapters N or O or unless otherwise specified in this permit or an approved Quality Assurance Project Plan (QAPP).
7. **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.
8. **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, termination, or notification of planned changes or anticipated noncompliance does not stay any term or condition of this permit.
9. **Duty to Reapply:** If the permittee wishes to continue an activity regulated by this permit after the permit expiration date, the permittee must apply for and obtain a renewed permit. The renewal application shall be submitted at least 180 days prior to expiration of this permit unless the Department allows a later deadline not to exceed the expiration of this permit.

I. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to pursue an appeal before the administrative hearing commission (AHC) pursuant to Sections 621.250 and 644.051.6 RSMo. To appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557
Jefferson City, MO 65102-1557
Phone: 573-751-2422
Fax: 573-751-5018
Website: <https://ahc.mo.gov>

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0136557
BOONE COUNTY, CITY OF COLUMBIA, UNIVERSITY OF MISSOURI
MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollutant 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 "Clean Water Act"). 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 Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified for less.

As per 40 CFR Part 124.8(a) and 10 CSR 20-6.020(1)(A)2., a factsheet 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 Missouri State Operating Permit (MSOP or operating permit) listed below. A factsheet is not an enforceable part of an operating permit.

Part I: Facility Information

Facility Type: Municipal: Stormwater (Urban Stormwater Runoff)
Facility SIC Code(s): #9511

Facility Description:

The Boone County, City of Columbia, and University of Missouri (permit holders) Phase II MS4 is a co-permitted urbanized area that consist of conveyances and systems of conveyances, which include roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, and storm drains that are owned or operated by the permit holders.

MS4 is defined as a conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains designed and utilized for routing stormwater, which: (1) does not include any waters of the state (as defined in §644.016(27), RSMo); (2) is owned and operated by the permittee; (3) is not part or portion of a combined sewer system; and (4) is not part of a publicly owned treatment works [10 CSR 20-6.200(1)(C)16].

The permittee's MS4 collects and routes stormwater from industrial, commercial, and residential areas located within the permittee's municipal boundary and discharges the stormwater to waters of the state.

Facility Performance History & Comments:

Department records indicate that a Compliance Monitoring Activity action (water pollution emergency) occurred on 09/25/2012 resulting in an Enforcement Action Request and Notice of Violation (NOV). The Compliance Monitoring Activity documents the following as Observations: (1) Caused pollution of waters of the state; (2) Violated Water Quality Standards; and (3) Operating w/o required permit. The activity found this facility to be in non-compliance. On 09/25/2012, the Department's Northeast Regional Office issued NOV 2012092712564656. The NOV cited the violations of Failed to apply for/obtain required permit; violation of water quality standards; and caused pollution of waters of the state. The NOV was resolved through Abatement Order on Consent, NO. 2014-WPCB-1226.

Department records show a compliance audit was conducted 4/19/2018 by the Department's Northeast Regional Office on the Boone County portion of the MS4 permit. The county was issued an Unsatisfactory Finding, with no further action required.

Part II: Receiving Stream Information

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. 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.

A NPDES Permitted Feature is a term borrowed from the Department's Missouri Clean Water Information System (MoCWIS), which is typically a three character code used to describe if the point source location is an outfall, monitoring location, well, internal monitoring location, stormwater outfall, etc.

An outfall is a point source where a regulated separate storm sewer system discharges to waters of the state; however, there are other types permitted features that do not clearly fall under the term outfall. There are locations from regulated MS4s that meet the definition of a point source; however, they do not meet the definition of an outfall.

The full description of these permitted features will include:

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 and classification

First Classified Stream and ID: Name, class, waterbody ID – currently provided by the Department.

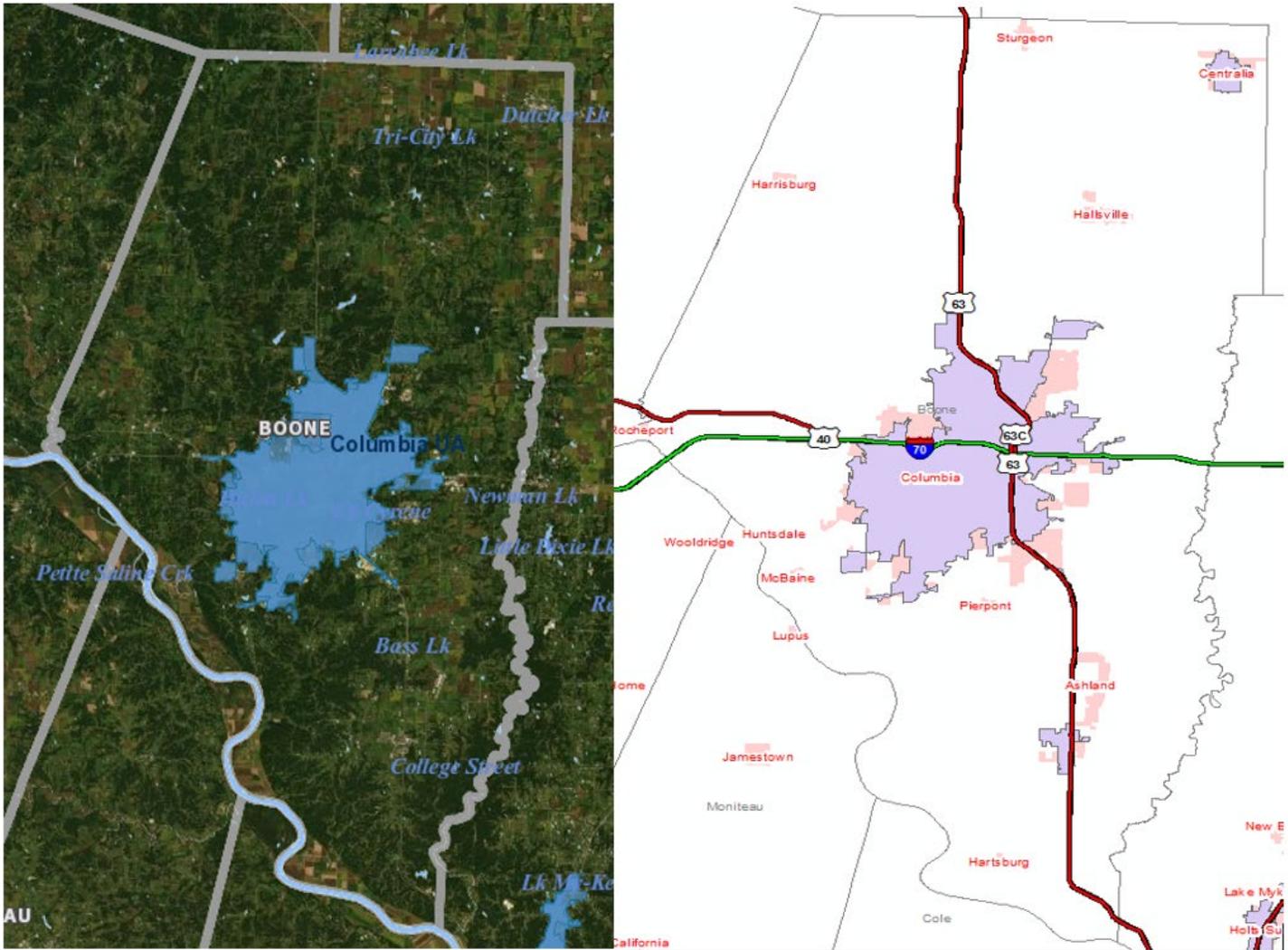
USGS Basin and Sub-watershed No.: (# - #) [12 digit USGS Hydrologic Unit Code (HUC)]

In addition to the above mentioned permitted feature, there are other types of permitted features for which the permittee is required to track but are not listed on the certification page. The permittee is required to track and map all outfalls into their regulated MS4 via the Illicit Discharge Detection and Elimination Minimum Control Measure. The map and tracking of these types of outfalls is part of the permittee's stormwater management plan, which is an enforceable document under this operating permit.

Applicable Designated Waters of the State

This permit allows regulated MS4s to discharge stormwater to the following waters, depending on location of the regulated MS4: Missouri or Mississippi River, lakes or reservoirs, losing streams, metropolitan no-discharge waters, special streams, subsurface waters and other waters of the state.

Boone County with municipalities, Urbanized Areas and Urbanized Clusters.



PART III: RATIONALE FOR PERMIT TERMS AND CONDITIONS

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 in the U.S. Fish and Wildlife Service (USFWS) Endangered Species webpage, which is located at: <http://www.fws.gov/Endangered/>. Additionally, the USFWS 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.gov/ipac/>.

Assistance in determining applicability to NHPA conditions and requirements can be found in 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.

Antidegradation

Antidegradation consists of policies designed to ensure protection of water quality for a particular waterbody where the water quality exceeds levels necessary to protect fish and wildlife propagation and recreation on and in the water. This also includes special protection of waters designated as outstanding natural resource waters. Anti-degradation plans are adopted by each state to minimize adverse effects on water.

In accordance with Missouri's water quality regulations for antidegradation [10 CSR 20-7.031(3)]. Facilities must submit the antidegradation review request to the Department prior to establishing, altering, or expanding discharges. See <http://dnr.mo.gov/env/wpp/permits/antideg-implementation.htm>

The Department has determined that the best avenue forward for implementing the Antidegradation requirements for this co-permitted MS4 is by requiring the appropriate development, implementation, and maintenance of a successful Stormwater Management Program and further development of the Stormwater Management Plan. The permit directs the permittees to develop and implement effective Best Management Practices (BMPs), develop and implement self-evaluating measurable goals, and develop and implement an iterative process (how BMPs are determined ineffective and the steps needed to replace or revise the BMPs). This process ensures that MS4s apply Reasonable Further Progress, which subsequently ensures that the MS4s are reducing pollutants in stormwater runoff to the Maximum Extent Practicable (MEP). This selection and documentation of appropriate control measures will then serve as the analysis of alternatives and fulfill the requirements of the Antidegradation Rule and Implementation Procedure at 10 CSR 20-7.031(3).

Any expansion to the MS4s boundary must be updated in their Stormwater Management Plan and must be subject to BMPs, measurable goals, and adaptive management. Renewal of coverage for a facility requires a review of the Stormwater Management Plan by the Department to assure that the selected BMPs continue to be appropriate.

Application requirements

Phase II or 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. For entities covered under a NPDES permit, failure to comply with any applicable NPDES permit requirement also constitutes a violation of the Missouri CWL and its implementing regulations.

Iterative Process

The iterative process is a documented process consisting of action items and analysis that is to be conducted by the permittee to ensure that BMPs are effective, and that the permittee is meeting the MEP standard. The process starts with the evaluation of a BMP with its designated measurable goal, which is the reason quantifiable measurable goals greatly assist in the iterative process. If the BMP is found effective, then the permittee with regards to the BMP continues as normal until the next round of evaluation. If the BMP is found to be ineffective, then the permittee is required to conduct analysis to determine if the ineffective BMP is truly ineffective or if the measurable goal set was ill-chosen or unattainable due to no fault of the BMP.

If the measurable goal was ill-chosen or unattainable, then the permittee would need to conduct analysis to determine a more appropriate measurable goal, preferably quantifiable. If the measurable goal wasn't ill-chosen or unattainable, then the permittee is to conduct analysis, research, or review to determine a replacement BMP that is to be effective at reaching the existing measurable goal. However, if the replacement BMP requires a new measurable goal, preferably quantifiable, then it is advantageous for the permittee to develop an appropriate measurable goal for the BMP. The replacement of the ineffective BMP with an effective BMP provides the permittee with reasonable further progress.

This process should occur as an annual evaluation; however, it would be naïve to believe that all BMPs can be evaluated annually. Thus, BMPs should be evaluated every 5 years (i.e., the life of the permit) as required by this operating permit.

Maximum Extent Practicable (MEP) Standard

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 the 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 increases and specifies public notice requirements and authorization requirements, including Stormwater Management Plan 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; and
- Frequency of actions.

All requirements in this permit and the Stormwater Management Plan 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. Exact 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 that will 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 that are 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. It is recommended that the below categories are used when developing goals:

- **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. An objective must be established, not just tracking for the sake of tracking. The goal may be numeric or narrative.
- **Measuring progress in implementing the BMP** - Some BMPs are developed over time, and 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). Surveys are a very useful tool for gauging effectiveness of education.
- **Tracking program/BMP effectiveness** - Measurable goals can be developed to evaluate BMP effectiveness, for example, by evaluating a structural BMPs 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 hydrologic or habitat condition of the waterbody or watershed.

Additionally, it is recommended that measurable goals include, where appropriate, the following items:

- The activity, or BMP, to be completed;
- A schedule or date of completion; and
- A quantifiable target to measure progress toward achieving the activity or BMP.

Measurable goals that include these items (not necessarily all three) are easy quantifiable, which leads to being easily tracked, and ultimately leading to a clear demonstration of reducing pollutants to the MEP. However, just because a co-permittee has a measurable goal, it does not equate that it is effective as a measurable goal. In order to help in the selection of measurable goals that will work for the co-permittee, it is recommended that the below criteria is used in selecting measurable goals:

- Consider the objective for each minimum measure – The BMP that you chose should work toward one or more common objectives related to stormwater quality improvement and reducing pollutants to the MEP. Objectives should be based on what is known about existing pollutant sources and problems in the watershed and what is required by the minimum measure. The objective can be something the co-permittee can quantify or it can be a goal or purpose statement.
- Review the programs that are already in place for each minimum measure – Use a self-audit/self-analysis. Coordination with other agencies, non-profit groups, citizen groups, etc. to identify existing initiatives that can be used as part of the stormwater management program.
- Corresponding BMP – Select BMPs that can be utilized for more than one minimum control measure and work toward meeting each minimum measure. These BMPs should address the minimum measures objective identified above and meet the regulatory requirement in the minimum measure. Likewise, when a BMP can be utilized for more than one minimum control, the measurable goal can also be used on more than one minimum measure.
- Milestones for implementation – Measurable goals should include a timeframe and a quantity to measure, if possible. To assist in this, the co-permittees should consider the following questions:
 - When will BMP be implemented?
 - What and when can institutional, funding, and legal issues, if any, be resolved before implementation can occur?
 - How will progress of implementation be tracked? (Spreadsheets or databases are very useful in tracking progress?)
 - How can the BMP be measured to demonstrate pollutants are being reduced to the MEP? Changes in behavior, number of BMPs implemented, or documented improvements in water quality are results that can demonstrate this.
- Evaluation and Effectiveness of each BMP – Co-permittees will need to ascertain what effects individual and collective BMPs have on water quality and associated indicators. Instream monitoring, such as physical, chemical, and biological monitoring is ideal because it allows the MS4 to determine if the BMP is improving water quality resulting from management efforts. Intermediate goals can provide documentation of progress toward the measurable goal. Ultimately, the evaluation method that is used by the MS4 permit holder for each BMP should lead to a determination of the environmental benefits of each minimum measure and overall effectiveness of the Stormwater Management Program in reducing pollutants to the MEP.

Minimum Control Measures (MCMs)

The Phase II rule defines a small MS4 stormwater management program as being comprised of six (6) Minimum Control Measures (MCMs) that, when administered in concert, are expected to result in the reduction of the discharge of pollutants into receiving water bodies.

This operating permit requires the co-permittees to design their programs to do the following: reduce the discharge of pollutants to the MEP, protect water quality, and satisfy the appropriate water quality requirements of the Clean Water Act per 40 CFR 122.34(a). 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 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 MS4 operators 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.

The national menu of BMPs for each specific MCM can be found at:

<https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#edu>

Public Education and Outreach

Terms and conditions related to this MCM are in accordance with 40 CFR 122.34(b)(1).

The permit requires the permittee to have and implement a public education and outreach program to inform the public about the impacts of stormwater discharges on waterbodies and steps the public can take to reduce pollutants in stormwater runoff. The implementation of this MCM is important as an informed public community is critical for the success of a stormwater management plan. This is due to an informed public provides greater support for the permittee Stormwater Management Program when the public has a greater understanding of the causes of urban stormwater pollution and how each individual can take steps to reduce stormwater pollution at its source.

Additionally, an informed public leads to increased compliance as they become aware of the responsibilities of the permittee, what is not allowable, and volunteerism. It is part of the Missouri Nutrient Loss Reduction Strategy to enhance public involvement and education of nutrients in urban stormwater runoff. Residents can learn practical ways to decrease nutrients into the stormwater. Educating people on way they can make an impact on a bigger picture can cause small changes which will add up. Focusing on trash is a way to show MS4 audiences the problem with a very visible media. By seeing how litter travels in the stormwater, it is easier to understand how smaller pollutants, such as oils, heavy metals, nutrients, or bacteria travel through the stormwater.

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-permittee situation 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.

For more information on MCM 1, please visit: https://www.epa.gov/sites/production/files/2018-12/documents/epa_stormwater_phase_ii_final_rule_factsheet_2.3_public_education_12-04-18.pdf

Public Participation/Involvement

This MCM is required in accordance with 40 CFR 122.34(b)(2).

The permit requires the permittee to have and implement a public involvement and participation program. The implementation of this MCM is important because the public can provide input and assistance that may otherwise be overlooked by the permittee. In addition, public involvement provides broader public support, can shorten implementation schedules, can be an economic benefit (volunteers are little to no cost), and can provide an important cross-connection with other MCMs as well as other community and governmental programs.

The Stormwater Management Plan shall use the same procedure as the operating permit because the Management Plan becomes an enforceable part of the permit. Following the public notice processes laid out in 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.

For more information on MCM 2, please visit: https://www.epa.gov/sites/production/files/2018-12/documents/epa_stormwater_phase_ii_final_rule_factsheet_2.4_public_participation_12-04-18.pdf

Illicit Discharge Detection and Elimination (IDDE)

This MCM is required in accordance with 40 CFR 122.34(b)(3).

The permit requires the permittee to implement and enforce a program that detects and eliminates illicit discharges to their MS4. One of the first parts of this MCM is the requirement of a storm sewer map. This MCM is important because discharges from MS4s often include wastes and wastewater from other non-stormwater sources. Studies have provided data that support there is real potential for almost half of the discharge from a MS4 is not directly attributable to precipitation runoff with a significant percentage of the discharge coming from illicit discharges.

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. A priority area may be industrial areas, areas with a concentration of food establishments with grease disposal, or parts of the city with older infrastructure that 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 pollutant when determining priority areas.

Each MS4 Operator 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.

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 should 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.

For more information on MCM 3, please visit: https://www.epa.gov/sites/production/files/2018-12/documents/epa_stormwater_phase_ii_final_rule_factsheet_2.5_illicit_discharge_12-04-18.pdf

Construction Site Runoff Control

This MCM is required in accordance with 40 CFR 122.34(b)(4).

The permit requires the permittee to implement and enforce their program to reduce pollutants in stormwater runoff to their MS4 from construction activities on land disturbance permits. Polluted stormwater runoff from construction sites often flows to MS4 and ultimately is discharged into local waterbodies. Of the pollutants that have the potential to be discharged, sediment is usually the main point of concern. According to the 2000 National Water Quality Inventory, States and Tribes report that sediment is 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.

To learn more about MCM 4, please visit: https://www.epa.gov/sites/production/files/2018-12/documents/epa_stormwater_phase_ii_final_rule_factsheet_2.6_construction_runoff_12-04-18.pdf

Post-Construction Runoff Control

This MCM is required in accordance with 40 CFR 122.34(b)(5).

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.

Structural controls have traditionally been concrete or "gray" infrastructure created to quickly move the stormwater away from the place it fell. 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 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.

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.

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>.

To learn more about MCM 5, please visit: https://www.epa.gov/sites/production/files/2018-12/documents/epa_stormwater_phase_ii_final_rule_factsheet_2.7_post-construction_runoff_12-04-18.pdf

Pollution Prevention/Good Housekeeping

This MCM is required in accordance with 40 CFR 122.34(b)(6).

The permit requires the permittee to implement an operation and maintenance program for municipal operations owned and operated by the permittee. This MCM is important because it requires the permittee to examine and subsequently alter their own actions to help ensure a reduction in pollutant sources that comes from streets, parking lots, open spaces, and storage and vehicle maintenance areas.

The MS4 Operator's actions and facilities are the example for the residents of that MS4. Leading by example can be a strong piece for education.

To learn more about MCM 6, please visit: https://www.epa.gov/sites/production/files/2018-12/documents/epa_stormwater_phase_ii_final_rule_factsheet_2.8_pollution_prevention_12-04-18.pdf

Pesticide Rule:

The Department has developed a Pesticide General Permit #MO-G870000 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 state.

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 well 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 state. 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.

The permittee/facility is 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.

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; 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.

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, and responsible persons/positions for each of the measurable goals, and any applicable TMDL assumptions and requirements.

Stormwater Management Plan

The Stormwater Management Plan is a documented implementation plan 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 Stormwater Management Plan is required. The Management Plan shall lay out the additional terms and conditions necessary to meet the requirement to meet the permit standard per 40 CFR 122.34.

Stormwater Management Plan 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 MS4 Operators, the Department is offering the two-step operating permit. Because the Stormwater Management

Plan must be formally incorporated as part of the operating permit, the operating permit and the Stormwater Management Plan must be subject to public comments and response to comments.

In order to assure equal treatment of the permit written by the Department and the Stormwater Management Plan developed by the MS4 permittees, and to ensure the two parts work together to reach the permit standard, the Stormwater Management Plan shall use the same public notice and public meeting procedures as the operating permit. This includes holding a thirty (30) day public comment period to receive comments on the Stormwater Management Program and Plan.

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):

- *Illicit discharge detection and elimination*; to prohibit non-stormwater discharges into the storm sewer system, and implement appropriate enforcement procedures and actions;
- *Construction site stormwater runoff control*; to require erosion and sediment controls at construction sites, as well as sanctions designed to ensure compliance; and
- *Post-construction*; to address post-construction runoff from new development and redevelopment projects, and sanctions designed to ensure compliance.

Stormwater Management Program Reporting Frequency

The previous version of this operating permit required annual reporting of the Stormwater Management Program. The annual reporting ensures the annual review of the MCMs and overall stormwater management program is being conducted as required in this permit.

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. An MS4 Operator 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.

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 can 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 under this portion of the factsheet or contact the Department's MS4 Team.

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, "...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." 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; and, 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.”

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 (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.

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 found in TMDLs) 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 permit holder 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 under the six MCMs, only the determination of beneficial use re-attainment must be reviewed and timely approved by applicable program staff (i.e., the MS4 program coordinator 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 operating permit, integrated planning actions may be considered as actions taken to specifically restore a waterbody’s beneficial uses. Regardless if the MS4 permit holder 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.*”

Part IV – Administrative Requirements

Cost Analysis for Compliance

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a “finding of affordability” on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable. The Department is not required to determine Cost Analysis for Compliance because the permit contains no new conditions or requirements that convey a new cost to the facility.

Definitions

All definitions contained in 10 CSR 20-6.200 shall apply to this permit and are incorporated herein by reference. For convenience, simplified explanations of some regulatory/statutory definitions have been provided, but in the event of a conflict, the definition found in the regulation takes precedence.

- *Control Measure* as used in this permit refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to waters of the state.
- *Director* refers to the Director of staff, Water Protection Program, Missouri Department of Natural Resources.
- *Discharge* when used without a qualifier, refers to “discharge of a pollutant” as defined at 40 CFR 122.2.
- *Illicit Connection* means any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.
- *Illicit Discharge* refers to any discharge to a municipal separate storm sewer that is not entirely composed of stormwater, except discharges authorized under an NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from emergency fire-fighting activities.
- *Load Allocation* is similar to wasteload allocation, except refers to nonpoint source pollutants; whereas, wasteload allocation pertains to point source pollutants. Per EPA, load allocation refers to the portion of the loading capacity attributed to (1) the existing or future nonpoint sources of pollution, and (2) natural background sources. Wherever possible, nonpoint source loads and natural loads should be distinguished.
- *MS4* is an acronym for "Municipal Separate Storm Sewer System" and is used to refer to a Large, Medium, or Small MS4 (e.g., "the City Small MS4").
- *Permittee(s) or permit holder(s)*, as used in this permit refers to the holder(s) of this operating permit.
- *Representative Outfalls*: Representative outfalls can be 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.
- *Site-specific Permit* also means individual permit (per EPA's definition) and one that is specific to the permittee's facility or discharges.
- *Stormwater* means stormwater runoff, snow melt runoff, and surface runoff and drainage.
- *Stormwater Management Program and Plan* refers to a comprehensive documented program and the documented plan to manage the quality of stormwater discharged from the municipal separate storm sewer system.
- *Wasteload allocation* means the amount of pollutants each point source discharger is allowed by the department to release into a given stream after the department has determined the total amount of pollutants that may be discharged into that stream without endangering its water quality. Point sources are typically permitted.

Public Notice

The Department shall give public notice that 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 in and 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 permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed operating permit, please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

✓ The Public Notice period for this operating permit was held from April 24, 2020 through May 25, 2020.

Date of Fact Sheet: February 13, 2020

Completed By:
Sarah Wright-Aholt, MS4 Permitting Coordinator
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February 27, 2020

Missouri Department of Natural Resources
Water Protection Program – Operating Permits Section
PO Box 176
Jefferson City, MO, 65102

RE: MS4 Renewal Application, Permit MO-0136557

Water Protection Program:

Enclosed please find the renewal application materials for MS4 Permit #MO-0136557, including the Joint Stormwater Management Program (SWMP) and an Electronic Discharge Monitoring Report (eDMR) System Registration submitted by the University of Missouri, the City of Columbia, and the County of Boone.

If you have any questions, you may contact Ted Haeussler at (573) 882-7018 or HaeusslerT@missouri.edu.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jon White'.

Jon White
Manager, Environmental Health & Safety

Attachments: Form L
Form M
Joint Stormwater Management Program
eDMR System Registration Form

cc: Erin Keys, City of Columbia Public Works
Nicki Fuemmeler, Boone County Resource Management



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM,

FORM M – APPLICATION FOR STORMWATER GENERAL PERMIT: PHASE 2 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROGRAM (FORM K OR L MUST BE INCLUDED)

<p>1. Name of municipality/area(s) to be covered by this permit: City of Columbia/County of Boone/University of Missouri</p>
<p>2. Physical location of municipality/area(s) (address assigned): See attached</p>
<p>3. Total area of municipality/area (s) <u>See attached</u> acres or _____ square miles.</p>
<p>4. A Stormwater Management Plan (SWMP) must be developed for this municipality/area. This plan must be developed in accordance with requirements & guidelines specified within the general permit for stormwater discharges from regulated MS4 activities. The application will be considered incomplete if the SWMP has not been developed in accordance with the terms of the general permit. A copy of the SWMP must be submitted along with this application.</p>
<p>5. Summarize the measures from the SWMP that will be used for <u>PUBLIC EDUCATION AND OUTREACH</u>. (Attach additional sheets if necessary.)</p> <p>See attached sheet with summary of measures from the SWMP that will be used for PUBLIC EDUCATION AND OUTREACH, (MCM 1).</p>
<p>5. Summarize the measures from the SWMP that will be used for <u>PUBLIC INVOLVEMENT AND PARTICIPATION</u>. (Attach additional sheets if necessary.)</p> <p>See attached sheet with summary of measures from the SWMP that will be used for PUBLIC INVOLVEMENT AND PARTICIPATION, (MCM 2).</p>
<p>7. Summarize the measures from the SWMP that will be used for <u>ILLICIT DISCHARGE DETECTION AND ELIMINATION</u>. (Attach additional sheets if necessary.)</p> <p>See attached sheet with summary of measures from the SWMP that will be used for ILLICIT DISCHARGE DETECTION AND ELIMINATION, (MCM 3).</p>
<p>8. Summarize the measures from the SWMP that will be used for <u>CONSTRUCTION SITE STORM WATER RUNOFF CONTROL</u>. (Attach additional sheets if necessary.)</p> <p>See attached sheet with summary of measures from the SWMP that will be used for CONSTRUCTION SITE STORM WATER RUNOFF CONTROL, (MCM 4).</p>

9. Summarize the measures from the SWMP that will be used for POST CONSTRUCTION STORM WATER MANAGEMENT.
(Attach additional sheets if necessary.)

See attached sheet with summary of measures from the SWMP that will be used for POST CONSTRUCTION STORM WATER MANAGEMENT, (MCM 5).

10. Summarize the measures from the SWMP that will be used FOR POLLUTION PREVENTION AND GOOD HOUSEKEEPING.
(Attach additional sheets if necessary.)

See attached sheet with summary of measures from the SWMP that will be used for FOR POLLUTION PREVENTION AND GOOD HOUSEKEEPING, (MCM 6).

11. The municipality/area(s) or discharge from MS4 is within 100 feet of waters classified per 10 CSR 20-7.031 Water Quality Standards (check each that applies, and for those present, please identify their location in an attachment):

- Public drinking water supply lake (L1) Major reservoirs (L2)
 Outstanding national or state resource waters Streams designated for cold-water habitat
 Permanently flowing streams (P), except for Missouri and Mississippi Rivers
 None

12. Is the discharge from the MS4 within two stream miles upstream of biocriteria reference locations as defined in 10 CSR 20-7.031?

- YES (If yes, please list these receiving waters in an attachment.) NO

13. Is any part of the area(s) defined as wetland? YES NO

Note: A Clean Water Act, Section 404 Permit may be required for the development in wetland area(s) from the US Army Corps Of Engineers.

14. Does any of the stormwater discharge to a sinkhole, losing stream, or any other topographical feature that would be a direct conduit to ground water?

- YES (If yes, please identify the location(s) of these geologic features in an attachment.) NO

15. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

(Attach additional pages if additional signatures are required for a co-permit).

OWNER OR AUTHORIZED REPRESENTATIVE See attached	OFFICIAL TITLE See attached
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
SIGNATURE	DATE SIGNED

Attachments for Form M – Application for Storm Water Permit under the General Permit: Small Municipal Separate Storm Sewer System (MS4)

2. Physical Location of Municipality/Area(s) (Address Assigned)

University of Missouri
180 General Services Building
900 E Stadium Blvd
Columbia, MO 65211

City of Columbia
701 E. Broadway
P.O. Box 6015
Columbia, MO 65205

County of Boone
801 E. Walnut, Room 315
Columbia, MO 65201

3. Total Area of Municipality/Area(s)

The total area covered by this permit application is 691.15 square miles (Boone County Assessor) as follows:

City of Columbia: 58.22 square miles, exclusive of the Columbia campus of the University of Missouri and Boone County Property within Columbia City limits.

Boone County: 613.49 square miles, exclusive of Columbia City property, University of Missouri (MU) property, the property of ten 11 municipalities, and state and federal holdings.

Univ. of Missouri: 12.57 square miles, of which 7.53 square miles are surrounded by the City of Columbia

4. Storm Water Management Plan (SWMP)

The Joint Storm Water Management Plan for City of Columbia, Boone County, and the University of Missouri (MU) is attached.

5. Summary of Measures for Public education and Outreach (MCM 1):

See attached table.

6. Summary of Measures for Public Involvement and Participation (MCM 2)

See attached table.

7. Summary of Measures for Illicit Discharge, Detection, and Elimination (MCM 3)

See attached table.

8. Summary of Measures for Construction Site Stormwater Runoff Control (MCM 4)

See attached table.

9. Summary of Measures for Post Construction Stormwater Management (MCM 5)

See attached table.

10. Summary of Measures for Pollution Prevention and Good Housekeeping (MCM 6)

See attached table.

11. Areas within 100 Feet of Specially Classified Waters

The following waters in the application area are classified as outstanding state resource waters (from 10 CSR 20-7 Table E):

<u>Water body</u>	<u>Length</u>	<u>Location</u>
Bass Creek	1 mile	in Three Creeks Conservation Area
Bonne Femme Creek	2 miles	Three Creeks Conservation Area
Devils Ice Box Cave Branch	1.5 miles	Rock Bridge State Park
Gan's Creek	3 miles	Rock Bridge State Park
Turkey Creek	4.6 miles	in Three Creeks Conservation Area

There are no public drinking water supply lakes (L1); outstanding national resource waters; streams designated for cold-water sport fishery in the application area.

12. Discharge from MS4 within two stream miles upstream of biocriteria reference locations. List of receiving waters:

The following are permanent flow streams (P) in Boone County:

Bonne Femme Creek
Little Bonne Femme Creek
Perche Creek
Hinkson Creek
Sugar Branch

14. Discharges to Sinkholes, Losing streams, or Any Other Topographical Features That Would be a Direct Conduit to Ground Water

Sinkholes:

See Attached Table A

Losing Streams:

See Attached Table B

15. Certifications

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designated to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

This certification applies to those responsibilities of the University of Missouri. The University cannot accept responsibility for issues that are under the jurisdiction of the City of Columbia or Boone County.

University of Missouri:

Gary Ward Vice Chancellor, Operations (573) 882-4097
Name Title Phone

GW
 _____
Signature Date 02/27/2020

15. Certifications

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designated to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

This certification applies to those responsibilities of the City of Columbia. The City cannot accept responsibility for issues that are under the jurisdiction of the University of Missouri or Boone County.

City of Columbia:

David Sorrell Assistant Director, Utilities (573) 441-5530
Name Title Phone

 2-26-2020
Signature Date

15. Certifications

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designated to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

This certification applies to those responsibilities of Boone County. The County cannot accept responsibility for issues that are under the jurisdiction of the City of Columbia or the University of Missouri.

Boone County:

Danial K. Atwill Presiding Commissioner (573) 886-4305
Name Title Phone

 2.27.2020
Signature Date

Attachments for Form M: MCM Summaries (Application questions 5-10)

5. BMPs for MCM 1: Public Education and Outreach

BMP	MEASURABLE GOALS	STATUS	RESPONSIBLE PERMITTEE
Identify target audience	Target municipal inspectors, contractors, developers, engineers, residents, and schools annually	Ongoing	All Permittees
Select education topic annually	Select specific topic to focus on for year	Ongoing	All Permittees
Develop education and outreach materials	Develop brochures, fact sheets, and public service announcements	Ongoing	All Permittees
Distribute education & outreach materials	Prepare and distribute at events. Review and update as necessary	Ongoing	All Permittees
Maintain Hinkson Creek GIS Habitat Viewer	Maintain viewer; review and update as necessary	Ongoing	Boone County
Maintain stormwater websites	Maintain websites; review and update as necessary	Ongoing	All Permittees
Conduct educational outreach activities	Staff community events, make presentations to citizen's groups, present and distribute materials to schools and industry groups	Ongoing	All Permittees
Collect used tires and e-waste	Collect every other year	Ongoing	All Permittees
Collect Household Hazardous Waste	Hold collection event twice a month from April through November	Ongoing	City of Columbia
Collect Household Hazardous Waste	Hold collection event annually	Ongoing	All Permittees

6. BMPs for MCM 2: Public Involvement and Participation

BMP	MEASURABLE GOALS	STATUS	RESPONSIBLE PERMITTEE
Observe all public notice requirements	Allow citizens and civic groups to provide input concerning policies	Ongoing	All Permittees
Involve public/stakeholders in policy development	Hold public hearings/stakeholder meetings when properties are annexed or request a change in zoning, during the platting process, and throughout the project design stage	Ongoing	City of Columbia, Boone County
Involve public/stakeholders in policy development	Annually publicize and present Campus Master Plan	Ongoing	MU
Select education topic annually	Select specific topic to focus on for year	Ongoing	All Permittees
Present public involvement/participation activities	Promote Adopt-A-Spot/Adopt-A-Road programs, environmental volunteer programs, public service announcements, and community clean-up events	Ongoing	All Permittees
Social networks/website updates	Establish and maintain social networks and websites	Ongoing	All Permittees
Collect Household Hazardous Waste	Hold collection event twice a month from April through November	Ongoing	City of Columbia
Collect Household Hazardous Waste	Hold collection event annually	Ongoing	All Permittees

7. BMPs for MCM 3: Illicit Discharge Detection and Elimination

BMP	MEASURABLE GOALS	STATUS	RESPONSIBLE PERMITTEE
Maintain storm sewer system map with all pipes, inlets and associated attributes	Review and update digital maps as necessary	Ongoing	All Permittees
Implement/enforce IDDE ordinance/regulatory mechanism	Implement, maintain, and enforce IDDE ordinances/regulatory mechanisms. Review and update as necessary	Ongoing	All Permittees
Non-stormwater discharges as significant contributors	Evaluate on a case-by-case basis to determine whether such discharges may be directed to the storm sewer system	Ongoing	All Permittees
Implement plan to detect and address incidental non-stormwater discharges	Implement plan to detect and address non-stormwater discharges which may include on-site inspections, smoke and dye testing, CCTV inspections, and public watch and reporting programs	Ongoing	All Permittees
Inform public employees, businesses, and general public of hazards associated with IDDE	Include this information as an element in the outreach, education and municipal training programs	Ongoing	All Permittees

8. BMPs for MCM 4: Construction Site Stormwater Runoff Control

BMP	MEASURABLE GOALS	STATUS	RESPONSIBLE PERMITTEE
Require MDNR land disturbance permit for sites one acre and greater	Enforce sanctions to ensure compliance to the maximum extent practicable under state or local law and track the number of land disturbance permits issued	Ongoing	All Permittees
Implement/maintain/enforce land disturbance requirements/regulatory mechanisms	Implement/maintain/enforce requirements and/or regulatory mechanisms to control runoff from all construction sites. Review and update as necessary	Ongoing	All Permittees
Erosion and sediment controls for construction sites	Implement stormwater design manuals. Review and update as necessary	Ongoing	All Permittees
Require construction site operators to control waste and erosion on construction sites	Require and review Stormwater Pollution Prevention Plans (SWPPP)	Ongoing	Boone County and MU
Maintain procedures for handling information submitted by the public	Implement procedures for receipt and consideration of information submitted by public. Track this information	Ongoing	All Permittees
Conduct site inspections	Inspect locally permitted sites regularly	Ongoing	All Permittees

9. BMPs for MCM 5: Post-construction Stormwater Management

BMP	MEASURABLE GOALS	STATUS	RESPONSIBLE PERMITTEE
Identify structural/non-structural strategies	Water quality improvement projects, BMP monitoring projects, LEED building standards, etc.	Ongoing	All Permittees
Identify structural/non-structural strategies	Track permits for installation of private BMPs	Ongoing	City of Columbia, Boone County
Implement/maintain stormwater management/ water quality manual or equivalent	Review and update as necessary	Ongoing	All Permittees
Implement/maintain stormwater management ordinance/MU Stormwater Master Plan	Review and update as necessary	Ongoing	All Permittees
Implement/maintain stream buffer ordinance/MU Stormwater Master Plan	Review ordinance/master plan and revise standards as necessary	Ongoing	All Permittees
Ensure adequate long-term operation and maintenance of BMPs	Inspect according to schedule	Ongoing	All Permittees
Maintain operation and maintenance schedule	Maintain inventory, maintenance and inspection schedules of BMPs	Ongoing	All Permittees
Collect Household Hazardous Waste	Hold collection event twice a month from April through November	Ongoing	City of Columbia
Collect Household Hazardous Waste	Hold collection event annually	Ongoing	All Permittees

10. BMPs for MCM 6: Pollution Prevention and Good Housekeeping

BMP	MEASURABLE GOALS	STATUS	RESPONSIBLE PERMITTEE
Establish operation and maintenance schedule	Maintain hazardous materials management and SPCC operation and maintenance schedules	Ongoing	All Permittees
Identify employee groups to train	All impacted employees	Ongoing	All Permittees
Implement training presentation	Update and implement training presentations associated with pollution prevention/good housekeeping measures	Ongoing	All Permittees
Schedule/conduct pollution prevention training	All impacted employees trained	Ongoing	All Permittees
Collect Household Hazardous Waste	Hold collection event twice a month from April through November	Ongoing	City of Columbia
Collect Household Hazardous Waste	Hold collection event annually	Ongoing	All Permittees

Table A: Attachment for Form M: Sinkholes in Boone County (Application question 14)

DNR SINKHOLE	TOWNSHIP	YDIR	RANGE	XDIR	SECT	LATITUDE	LONGITUDE
395	45	N	12	W	5	38.70489502	-92.30158997
397	45	N	12	W	5	38.70524216	-92.3015976
396	45	N	12	W	5	38.70595932	-92.3014679
398	45	N	12	W	5	38.70622253	-92.30335999
308	45	N	12	W	9	38.6898613	-92.27797699
309	45	N	12	W	23	38.66458511	-92.25521088
310	45	N	12	W	23	38.67055893	-92.24372864
403	46	N	11	W	8	38.7866745	-92.18347931
307	46	N	13	W	13	38.76302338	-92.34307098
306	46	N	13	W	13	38.7634201	-92.34223175
387	47	N	12	W	5	38.87687683	-92.29251099
155	47	N	12	W	5	38.88573074	-92.2936554
154	47	N	12	W	6	38.88948441	-92.31335449
226	47	N	12	W	7	38.86275864	-92.30952454
221	47	N	12	W	7	38.86285782	-92.31272888
224	47	N	12	W	7	38.86293411	-92.30753326
216	47	N	12	W	7	38.86303329	-92.31400299
217	47	N	12	W	7	38.86302948	-92.31102753
215	47	N	12	W	7	38.86326599	-92.32614899
213	47	N	12	W	7	38.86352921	-92.31523132
211	47	N	12	W	7	38.86367416	-92.31072998
209	47	N	12	W	7	38.86435318	-92.30818176
207	47	N	12	W	7	38.86474991	-92.30639648
204	47	N	12	W	7	38.86489868	-92.32293701
205	47	N	12	W	7	38.86491776	-92.32429504
200	47	N	12	W	7	38.86528778	-92.3061676
202	47	N	12	W	7	38.86542511	-92.30801392
198	47	N	12	W	7	38.86566925	-92.32382965
210	47	N	12	W	7	38.86580276	-92.31474304
195	47	N	12	W	7	38.86588669	-92.31020355
188	47	N	12	W	7	38.86649704	-92.31062317
191	47	N	12	W	7	38.866539	-92.32601929
187	47	N	12	W	7	38.86652374	-92.30888367
185	47	N	12	W	7	38.86674881	-92.32415009
184	47	N	12	W	7	38.86676407	-92.32492065
181	47	N	12	W	7	38.86716843	-92.31704712
179	47	N	12	W	7	38.86741638	-92.31156921
176	47	N	12	W	7	38.86746216	-92.31020355
183	47	N	12	W	7	38.86746979	-92.30712128
177	47	N	12	W	7	38.86748886	-92.31616974

Table A: Attachment for Form M: Sinkholes in Boone County (Application question 14)

DNR SINKHOLE	TOWNSHIP	YDIR	RANGE	XDIR	SECT	LATITUDE	LONGITUDE
175	47	N	12	W	7	38.86782455	-92.30770111
174	47	N	12	W	7	38.86793518	-92.31484985
173	47	N	12	W	7	38.86817932	-92.31758881
170	47	N	12	W	7	38.86826324	-92.30583191
169	47	N	12	W	7	38.86853409	-92.31613159
168	47	N	12	W	7	38.86856461	-92.31521606
165	47	N	12	W	7	38.86993027	-92.31860352
164	47	N	12	W	7	38.87031555	-92.32678986
163	47	N	12	W	7	38.87041092	-92.3267746
162	47	N	12	W	7	38.8711319	-92.32674408
219	47	N	12	W	8	38.86257553	-92.29125214
218	47	N	12	W	8	38.86263657	-92.29954529
225	47	N	12	W	8	38.86265945	-92.29772186
220	47	N	12	W	8	38.8627243	-92.30085754
214	47	N	12	W	8	38.86302948	-92.29827118
212	47	N	12	W	8	38.86356735	-92.29967499
208	47	N	12	W	8	38.86455536	-92.29935455
203	47	N	12	W	8	38.86495209	-92.298172
201	47	N	12	W	8	38.86504745	-92.30011749
199	47	N	12	W	8	38.86540985	-92.3009491
194	47	N	12	W	8	38.86600876	-92.30131531
193	47	N	12	W	8	38.86604309	-92.29670715
192	47	N	12	W	8	38.86621094	-92.30522919
189	47	N	12	W	8	38.86639404	-92.30466461
206	47	N	12	W	8	38.86672974	-92.29303741
197	47	N	12	W	8	38.86711884	-92.29750061
178	47	N	12	W	8	38.86750793	-92.2961731
186	47	N	12	W	8	38.86761475	-92.28778839
384	47	N	12	W	8	38.86761856	-92.28814697
171	47	N	12	W	8	38.86817551	-92.2984314
167	47	N	12	W	8	38.86940002	-92.29904175
166	47	N	12	W	8	38.86949539	-92.30123138
385	47	N	12	W	8	38.8697052	-92.28968048
386	47	N	12	W	8	38.87468719	-92.29360199
388	47	N	12	W	8	38.87617493	-92.29017639
250	47	N	12	W	16	38.85943222	-92.28431702
258	47	N	12	W	17	38.8580246	-92.29611969
255	47	N	12	W	17	38.85871887	-92.28899384
256	47	N	12	W	17	38.85889816	-92.29980469
252	47	N	12	W	17	38.85931778	-92.3044281
251	47	N	12	W	17	38.859478	-92.30506897

Table A: Attachment for Form M: Sinkholes in Boone County (Application question 14)

DNR SINKHOLE	TOWNSHIP	YDIR	RANGE	XDIR	SECT	LATITUDE	LONGITUDE
247	47	N	12	W	17	38.85946655	-92.29694366
253	47	N	12	W	17	38.85979843	-92.30139923
244	47	N	12	W	17	38.85990143	-92.30229187
243	47	N	12	W	17	38.85991669	-92.30358124
245	47	N	12	W	17	38.85997009	-92.30502319
246	47	N	12	W	17	38.86009979	-92.28898621
238	47	N	12	W	17	38.86037827	-92.29821014
241	47	N	12	W	17	38.86156845	-92.29453278
230	47	N	12	W	17	38.86183167	-92.30085754
227	47	N	12	W	17	38.86214828	-92.30400848
268	47	N	12	W	18	38.85352707	-92.31578064
267	47	N	12	W	18	38.85432053	-92.30821991
266	47	N	12	W	18	38.85486221	-92.30845642
265	47	N	12	W	18	38.85494232	-92.30789185
264	47	N	12	W	18	38.85506821	-92.30916595
263	47	N	12	W	18	38.85523224	-92.30725861
262	47	N	12	W	18	38.8555603	-92.30998993
261	47	N	12	W	18	38.85564041	-92.30913544
260	47	N	12	W	18	38.85603714	-92.30956268
259	47	N	12	W	18	38.85666656	-92.30713654
257	47	N	12	W	18	38.85871506	-92.32633209
254	47	N	12	W	18	38.85970688	-92.30797577
249	47	N	12	W	18	38.8598175	-92.31250763
248	47	N	12	W	18	38.8598938	-92.31887054
240	47	N	12	W	18	38.86040497	-92.325737
239	47	N	12	W	18	38.860466	-92.31467438
242	47	N	12	W	18	38.86061096	-92.32485199
237	47	N	12	W	18	38.86085892	-92.32339478
236	47	N	12	W	18	38.86100769	-92.31389618
235	47	N	12	W	18	38.86128998	-92.32608795
231	47	N	12	W	18	38.8614769	-92.31234741
229	47	N	12	W	18	38.86174774	-92.32349396
234	47	N	12	W	18	38.86187363	-92.32209778
228	47	N	12	W	18	38.86200714	-92.30641937
233	47	N	12	W	18	38.86210632	-92.32540131
223	47	N	12	W	18	38.86252213	-92.30628967
222	47	N	12	W	18	38.86264801	-92.32286835
276	47	N	12	W	21	38.83512497	-92.27470398
275	47	N	12	W	21	38.83525467	-92.27401733
274	47	N	12	W	21	38.83546829	-92.27244568
273	47	N	12	W	21	38.84065628	-92.27126312

Table A: Attachment for Form M: Sinkholes in Boone County (Application question 14)

DNR SINKHOLE	TOWNSHIP	YDIR	RANGE	XDIR	SECT	LATITUDE	LONGITUDE
272	47	N	12	W	21	38.84223557	-92.27098846
271	47	N	12	W	21	38.84260941	-92.27579498
270	47	N	12	W	21	38.84329605	-92.27490234
269	47	N	12	W	21	38.84345627	-92.28498077
285	47	N	12	W	28	38.82569122	-92.28546906
277	47	N	12	W	28	38.83141708	-92.27075958
300	47	N	12	W	29	38.81902695	-92.29653168
299	47	N	12	W	29	38.81902695	-92.29516602
298	47	N	12	W	29	38.81907272	-92.29820251
297	47	N	12	W	29	38.81926727	-92.30052948
296	47	N	12	W	29	38.81943512	-92.29722595
295	47	N	12	W	29	38.81963348	-92.29458618
294	47	N	12	W	29	38.81993866	-92.29792023
293	47	N	12	W	29	38.82059479	-92.29999542
292	47	N	12	W	29	38.82239151	-92.29567719
291	47	N	12	W	29	38.82378006	-92.28868866
290	47	N	12	W	29	38.82413483	-92.28967285
289	47	N	12	W	29	38.82423401	-92.29172516
288	47	N	12	W	29	38.82462311	-92.29101563
287	47	N	12	W	29	38.82500076	-92.28820801
286	47	N	12	W	29	38.82544708	-92.28779602
284	47	N	12	W	29	38.82596588	-92.29075623
283	47	N	12	W	29	38.8263855	-92.29143524
282	47	N	12	W	29	38.8264122	-92.29257965
281	47	N	12	W	29	38.82677078	-92.29302216
280	47	N	12	W	29	38.8273735	-92.29843903
278	47	N	12	W	29	38.82817459	-92.2947464
279	47	N	12	W	29	38.82817841	-92.29359436
305	47	N	12	W	32	38.81377792	-92.30062866
304	47	N	12	W	32	38.81507492	-92.29724884
303	47	N	12	W	32	38.81575012	-92.29826355
302	47	N	12	W	32	38.81598282	-92.29114532
412	47	N	12	W	32	38.81840515	-92.30324554
301	47	N	12	W	32	38.81840897	-92.2959671
158	47	N	13	W	2	38.87943268	-92.34796143
157	47	N	13	W	2	38.87979126	-92.34656525
156	47	N	13	W	2	38.88001251	-92.34774017
196	47	N	13	W	12	38.86591339	-92.32789612
190	47	N	13	W	12	38.86644363	-92.33058929
182	47	N	13	W	12	38.86715317	-92.32875061
180	47	N	13	W	12	38.86729431	-92.33036041

Table A: Attachment for Form M: Sinkholes in Boone County (Application question 14)

DNR SINKHOLE	TOWNSHIP	YDIR	RANGE	XDIR	SECT	LATITUDE	LONGITUDE
172	47	N	13	W	12	38.86830521	-92.33020782
414	47	N	13	W	13	38.85188293	-92.34472656
415	47	N	13	W	13	38.85196304	-92.34505463
232	47	N	13	W	13	38.86156845	-92.33348083
161	47	N	13	W	21	38.83559036	-92.39796448
160	47	N	13	W	21	38.83594131	-92.39785767
159	47	N	13	W	22	38.84436798	-92.3757782
413	47	N	13	W	24	38.84057617	-92.33737183
422	48	N	12	W	19	38.92089844	-92.30919647
407	48	N	12	W	30	38.91736221	-92.30913544
420	48	N	12	W	30	38.91869736	-92.3092041
421	48	N	12	W	30	38.9201355	-92.30886841
140	48	N	13	W	17	38.94802856	-92.41248322
137	48	N	13	W	17	38.94817734	-92.41116333
132	48	N	13	W	17	38.94961166	-92.41361237
131	48	N	13	W	17	38.94992828	-92.41112518
130	48	N	13	W	17	38.95062637	-92.4123764
417	48	N	13	W	20	38.9372673	-92.41397095
419	48	N	13	W	27	38.91566086	-92.36649323
399	48	N	13	W	27	38.91625214	-92.36682129
106	48	N	14	W	2	38.98403931	-92.47040558
105	48	N	14	W	2	38.98451996	-92.46942902
104	48	N	14	W	2	38.98498917	-92.4699707
103	48	N	14	W	2	38.98517609	-92.46609497
102	48	N	14	W	2	38.98522568	-92.46712494
100	48	N	14	W	2	38.98606491	-92.46709442
101	48	N	14	W	2	38.98621368	-92.46560669
99	48	N	14	W	2	38.98630524	-92.467453
98	48	N	14	W	2	38.98644257	-92.46715546
97	48	N	14	W	2	38.98719788	-92.46602631
96	48	N	14	W	2	38.98734283	-92.46801758
95	48	N	14	W	2	38.98744202	-92.46538544
94	48	N	14	W	2	38.98809052	-92.4683609
375	48	N	14	W	4	38.97525787	-92.49871826
13	48	N	14	W	7	38.96625137	-92.53565216
10	48	N	14	W	7	38.96692276	-92.53459167
8	48	N	14	W	7	38.96774673	-92.53466797
6	48	N	14	W	7	38.96818542	-92.53491211
5	48	N	14	W	7	38.96868134	-92.53647614
4	48	N	14	W	7	38.96895981	-92.53385162
3	48	N	14	W	7	38.96976089	-92.53922272

Table A: Attachment for Form M: Sinkholes in Boone County (Application question 14)

DNR SINKHOLE	TOWNSHIP	YDIR	RANGE	XDIR	SECT	LATITUDE	LONGITUDE
2	48	N	14	W	7	38.97170639	-92.54239655
1	48	N	14	W	7	38.97256088	-92.54107666
401	48	N	14	W	7	38.97265625	-92.54212189
26	48	N	14	W	8	38.96060944	-92.5225296
23	48	N	14	W	8	38.96068192	-92.52542114
366	48	N	14	W	8	38.96108627	-92.52690887
405	48	N	14	W	8	38.96131134	-92.52924347
404	48	N	14	W	8	38.96217346	-92.52896118
21	48	N	14	W	8	38.96241379	-92.52310181
22	48	N	14	W	8	38.96263504	-92.52306366
20	48	N	14	W	8	38.96310806	-92.52243042
19	48	N	14	W	8	38.96389389	-92.52375793
423	48	N	14	W	8	38.96413803	-92.52636719
17	48	N	14	W	8	38.96416473	-92.52336884
18	48	N	14	W	8	38.96419907	-92.52508545
15	48	N	14	W	8	38.96478271	-92.52363586
16	48	N	14	W	8	38.9656105	-92.52603912
14	48	N	14	W	8	38.96593475	-92.52703094
406	48	N	14	W	8	38.96637726	-92.52970886
12	48	N	14	W	8	38.96645355	-92.53147125
9	48	N	14	W	8	38.96687317	-92.53039551
7	48	N	14	W	8	38.96809006	-92.52902222
147	48	N	14	W	15	38.9457016	-92.49411011
145	48	N	14	W	15	38.94639969	-92.49239349
144	48	N	14	W	15	38.94701004	-92.49221039
143	48	N	14	W	15	38.94709778	-92.49442291
142	48	N	14	W	15	38.94755554	-92.49041748
141	48	N	14	W	15	38.94805145	-92.49156189
139	48	N	14	W	15	38.94827271	-92.4942627
138	48	N	14	W	15	38.94834518	-92.4947052
136	48	N	14	W	15	38.94845581	-92.49079895
134	48	N	14	W	15	38.94871902	-92.49485016
135	48	N	14	W	15	38.94876862	-92.49391174
133	48	N	14	W	15	38.9490242	-92.49539948
127	48	N	14	W	15	38.95207214	-92.49143219
126	48	N	14	W	15	38.95223236	-92.4925766
124	48	N	14	W	15	38.95233917	-92.49378204
128	48	N	14	W	15	38.95328522	-92.49346161
120	48	N	14	W	15	38.95434189	-92.49333954
119	48	N	14	W	15	38.95463181	-92.49227142
117	48	N	14	W	15	38.95468903	-92.49427795

Table A: Attachment for Form M: Sinkholes in Boone County (Application question 14)

DNR SINKHOLE	TOWNSHIP	YDIR	RANGE	XDIR	SECT	LATITUDE	LONGITUDE
118	48	N	14	W	15	38.95471573	-92.49302673
129	48	N	14	W	15	38.95474243	-92.49402618
115	48	N	14	W	15	38.95506287	-92.49429321
116	48	N	14	W	15	38.95520782	-92.49567413
114	48	N	14	W	15	38.95600128	-92.49488831
113	48	N	14	W	15	38.95669937	-92.49349213
112	48	N	14	W	15	38.95675278	-92.49568176
368	48	N	14	W	15	38.95752335	-92.49491882
110	48	N	14	W	15	38.95856476	-92.48902893
109	48	N	14	W	15	38.95856476	-92.48961639
111	48	N	14	W	15	38.9589119	-92.48990631
108	48	N	14	W	15	38.95906067	-92.48939514
107	48	N	14	W	15	38.95914841	-92.48832703
372	48	N	14	W	16	38.94610596	-92.50496674
66	48	N	14	W	16	38.94641876	-92.50460815
378	48	N	14	W	16	38.94675064	-92.50413513
60	48	N	14	W	16	38.94717026	-92.50467682
61	48	N	14	W	16	38.94743729	-92.504776
377	48	N	14	W	16	38.94750214	-92.50328827
59	48	N	14	W	16	38.94778061	-92.51448822
376	48	N	14	W	16	38.94786453	-92.50302124
58	48	N	14	W	16	38.94787216	-92.50029755
57	48	N	14	W	16	38.94788361	-92.50501251
369	48	N	14	W	16	38.94844437	-92.50263977
371	48	N	14	W	16	38.94872284	-92.50191498
370	48	N	14	W	16	38.94930649	-92.50183868
50	48	N	14	W	16	38.94984436	-92.50154877
53	48	N	14	W	16	38.94985199	-92.51342773
49	48	N	14	W	16	38.95035553	-92.50441742
51	48	N	14	W	16	38.95039368	-92.50052643
48	48	N	14	W	16	38.95104218	-92.50406647
47	48	N	14	W	16	38.9515152	-92.50547028
125	48	N	14	W	16	38.95263672	-92.49755096
45	48	N	14	W	16	38.95277405	-92.50585175
44	48	N	14	W	16	38.95322418	-92.50387573
123	48	N	14	W	16	38.95343399	-92.49881744
41	48	N	14	W	16	38.95350647	-92.50566864
40	48	N	14	W	16	38.95407104	-92.5043335
122	48	N	14	W	16	38.95420456	-92.49965668
38	48	N	14	W	16	38.9545784	-92.50263214
121	48	N	14	W	16	38.95497513	-92.49755096

Table A: Attachment for Form M: Sinkholes in Boone County (Application question 14)

DNR SINKHOLE	TOWNSHIP	YDIR	RANGE	XDIR	SECT	LATITUDE	LONGITUDE
36	48	N	14	W	16	38.95502853	-92.50214386
35	48	N	14	W	16	38.9559021	-92.50324249
33	48	N	14	W	16	38.95644379	-92.50204468
31	48	N	14	W	16	38.95711517	-92.50097656
29	48	N	14	W	16	38.95820236	-92.50212097
11	48	N	14	W	16	38.95849228	-92.50697327
365	48	N	14	W	16	38.95951843	-92.49880981
62	48	N	14	W	17	38.94684982	-92.51659393
56	48	N	14	W	17	38.94848633	-92.51657867
54	48	N	14	W	17	38.94903564	-92.51493073
52	48	N	14	W	17	38.9495697	-92.51490784
55	48	N	14	W	17	38.94964981	-92.51694489
46	48	N	14	W	17	38.95184708	-92.52098083
43	48	N	14	W	17	38.95298767	-92.51516724
42	48	N	14	W	17	38.95337677	-92.51622772
39	48	N	14	W	17	38.95426941	-92.52388
37	48	N	14	W	17	38.95522308	-92.52378845
34	48	N	14	W	17	38.95626831	-92.52523041
32	48	N	14	W	17	38.95731354	-92.51850891
28	48	N	14	W	17	38.95813751	-92.52531433
30	48	N	14	W	17	38.95827103	-92.52313232
27	48	N	14	W	17	38.95964432	-92.51935577
25	48	N	14	W	17	38.95994186	-92.52022552
24	48	N	14	W	17	38.9601326	-92.51895905
69	48	N	14	W	21	38.93762207	-92.50888824
70	48	N	14	W	21	38.93763351	-92.50319672
68	48	N	14	W	21	38.93881607	-92.50430298
67	48	N	14	W	21	38.94161606	-92.50714874
65	48	N	14	W	21	38.94373322	-92.50095367
64	48	N	14	W	21	38.94400024	-92.5002594
149	48	N	14	W	21	38.9443779	-92.49697876
379	48	N	14	W	21	38.94478226	-92.50543976
367	48	N	14	W	21	38.94507217	-92.51119232
373	48	N	14	W	21	38.94509125	-92.50518799
63	48	N	14	W	21	38.94514465	-92.50093842
374	48	N	14	W	21	38.94577026	-92.50512695
153	48	N	14	W	22	38.94091415	-92.4928894
152	48	N	14	W	22	38.94189072	-92.49106598
151	48	N	14	W	22	38.94304657	-92.49273682
150	48	N	14	W	22	38.94406509	-92.49140167
148	48	N	14	W	22	38.94538498	-92.4949646

Table A: Attachment for Form M: Sinkholes in Boone County (Application question 14)

DNR SINKHOLE	TOWNSHIP	YDIR	RANGE	XDIR	SECT	LATITUDE	LONGITUDE
146	48	N	14	W	22	38.94544601	-92.49007416
339	49	N	13	W	19	39.01618576	-92.41583252
334	49	N	13	W	19	39.01665497	-92.41664124
380	49	N	13	W	19	39.01792908	-92.41681671
394	49	N	13	W	19	39.01886749	-92.41656494
393	49	N	13	W	19	39.01891327	-92.417099
323	49	N	13	W	19	39.01894379	-92.4154129
321	49	N	13	W	19	39.01997375	-92.41903687
320	49	N	13	W	19	39.02051163	-92.417099
317	49	N	13	W	19	39.0210228	-92.41622162
341	49	N	13	W	20	39.01486969	-92.40387726
416	49	N	13	W	20	39.01564789	-92.40301514
338	49	N	13	W	20	39.01594925	-92.40396118
337	49	N	13	W	20	39.01609802	-92.41419983
336	49	N	13	W	20	39.01628113	-92.40339661
335	49	N	13	W	20	39.01665878	-92.41424561
333	49	N	13	W	20	39.01678467	-92.4131546
332	49	N	13	W	20	39.01686859	-92.4002533
330	49	N	13	W	20	39.01740646	-92.40019226
329	49	N	13	W	20	39.01769638	-92.39700317
328	49	N	13	W	20	39.01807785	-92.40163422
327	49	N	13	W	20	39.01820374	-92.40213013
325	49	N	13	W	20	39.01832581	-92.41378021
326	49	N	13	W	20	39.01837158	-92.40052032
324	49	N	13	W	20	39.01838303	-92.41310883
331	49	N	13	W	20	39.01847076	-92.40990448
322	49	N	13	W	20	39.01905823	-92.41464996
381	49	N	13	W	20	39.01984406	-92.41334534
319	49	N	13	W	20	39.02053833	-92.41433716
318	49	N	13	W	20	39.02111816	-92.41105652
316	49	N	13	W	20	39.02122116	-92.39890289
315	49	N	13	W	20	39.02189255	-92.40209198
382	49	N	13	W	21	39.01783371	-92.39575958
410	49	N	13	W	22	39.02262115	-92.37042999
418	49	N	13	W	27	39.00151062	-92.36878967
409	49	N	13	W	27	39.00212097	-92.36852264
364	49	N	13	W	29	39.00522614	-92.4145813
363	49	N	13	W	29	39.00786972	-92.41485596
362	49	N	13	W	29	39.00858688	-92.41472626
359	49	N	13	W	29	39.00944519	-92.41465759
356	49	N	13	W	29	39.01107025	-92.4140625

Table A: Attachment for Form M: Sinkholes in Boone County (Application question 14)

DNR SINKHOLE	TOWNSHIP	YDIR	RANGE	XDIR	SECT	LATITUDE	LONGITUDE
353	49	N	13	W	29	39.01109314	-92.39854431
351	49	N	13	W	29	39.01154709	-92.40013123
347	49	N	13	W	29	39.01196671	-92.39865875
345	49	N	13	W	29	39.01295471	-92.40048218
343	49	N	13	W	29	39.01305771	-92.39965057
361	49	N	13	W	30	39.00878143	-92.4199295
360	49	N	13	W	30	39.0089798	-92.42092896
358	49	N	13	W	30	39.00926208	-92.41977692
357	49	N	13	W	30	39.01010132	-92.41899109
354	49	N	13	W	30	39.01132965	-92.41744995
352	49	N	13	W	30	39.01150131	-92.41941833
350	49	N	13	W	30	39.01167297	-92.41788483
355	49	N	13	W	30	39.0118866	-92.41909027
349	49	N	13	W	30	39.01189804	-92.41887665
348	49	N	13	W	30	39.01198578	-92.41620636
346	49	N	13	W	30	39.0126152	-92.41744995
344	49	N	13	W	30	39.01305771	-92.41710663
342	49	N	13	W	30	39.01344681	-92.41985321
400	49	N	13	W	30	39.01435471	-92.42190552
340	49	N	13	W	30	39.01475906	-92.41564941
408	49	N	14	W	26	39.01157761	-92.45912933
93	49	N	14	W	35	38.98905945	-92.46683502
91	49	N	14	W	35	38.98993683	-92.46691132
90	49	N	14	W	35	38.99131775	-92.46266174
92	49	N	14	W	35	38.99156189	-92.46614075
88	49	N	14	W	35	38.99176025	-92.46161652
402	49	N	14	W	35	38.99210739	-92.46003723
89	49	N	14	W	35	38.99228287	-92.46339417
86	49	N	14	W	35	38.99295425	-92.46658325
87	49	N	14	W	35	38.99316406	-92.46736145
84	49	N	14	W	35	38.99326324	-92.4622345
85	49	N	14	W	35	38.99342728	-92.45967102
81	49	N	14	W	35	38.99383545	-92.46231079
82	49	N	14	W	35	38.99385834	-92.46765137
83	49	N	14	W	35	38.99395752	-92.46652222
78	49	N	14	W	35	38.99694443	-92.46561432
79	49	N	14	W	35	38.9970665	-92.4640274
76	49	N	14	W	35	38.99716187	-92.46268463
77	49	N	14	W	35	38.99716949	-92.46136475
75	49	N	14	W	35	38.99778748	-92.46107483
391	49	N	14	W	35	38.99792862	-92.46969604

Table A: Attachment for Form M: Sinkholes in Boone County (Application question 14)

DNR SINKHOLE	TOWNSHIP	YDIR	RANGE	XDIR	SECT	LATITUDE	LONGITUDE
74	49	N	14	W	35	38.99855042	-92.4630127
390	49	N	14	W	35	38.99869537	-92.46945953
73	49	N	14	W	35	38.99879456	-92.46141815
72	49	N	14	W	35	38.99905777	-92.46220398
389	49	N	14	W	35	38.99966049	-92.46824646
71	49	N	14	W	35	38.99983978	-92.46073151
392	49	N	14	W	35	39.00174332	-92.46787262
80	49	N	14	W	36	38.99401474	-92.44075775
314	50	N	12	W	18	39.12658691	-92.3098526
311	51	N	13	W	24	39.18982697	-92.33003235
383	51	N	13	W	25	39.18682098	-92.33110809
313	51	N	13	W	35	39.16188431	-92.34519196
312	51	N	13	W	35	39.16365814	-92.35167694
411	51	N	13	W	36	39.16962433	-92.32398987

Table B: Attachment for Form M: Losing Streams in Boone County (Application question 14)

<u>Stream Name</u>	<u>MILES</u>	<u>STREAM ID</u>	<u>REACH CODE</u>	<u>Start (Long)</u>	<u>Start (Lat)</u>	<u>Stop (Long)</u>	<u>Stop (Lat)</u>
Gans Creek	12.98	19006116000	10300102001175	-92.28954629280	38.88202454770	-92.28742335970	38.88341294850
Tributary to Bell Branch	0.63	190032197000	10300102003500	-92.52292955900	38.96682599430	-92.53068778310	38.96898457130
Fox Hollow Branch	2.07	19001884000	10300102001068	-92.32820689420	38.78065266130	-92.33593356290	38.78111646140
Fox Hollow Branch	2.07	19001884000	10300102001069	-92.31364472940	38.78200919330	-92.32820689420	38.78065266130
Fox Hollow Branch	2.07	19001884000	10300102001067	-92.33593356290	38.78111646140	-92.34279729900	38.78391012760
Fox Hollow Branch	2.07	19001884000	10300102001066	-92.34279729900	38.78391012760	-92.34668056690	38.78501112800
Fox Hollow Branch	2.07	19001884000	10300102001065	-92.34668056690	38.78501112800	-92.34801056780	38.78540893620
Gans Creek	12.98	19006116000	10300102001176	-92.28742335970	38.88341294850	-92.27571001560	38.89446791280
Bonne Femme Creek	5.60	19000484000	10300102000238	-92.27159568600	38.86280367860	-92.29648935810	38.84332687440
Bonne Femme Creek	5.60	19000484000	10300102000237	-92.29648935810	38.84332687440	-92.30470949320	38.83569407240
Bonne Femme Creek	5.60	19000484000	10300102000239	-92.26292355210	38.87541988140	-92.27159568600	38.86280367860
Tributary to Jemerson Creek	1.87	19001582000	10300102009648	-92.27416334340	38.74984172540	-92.27842987720	38.74439792460
Tributary to Jemerson Creek	0.60	19001582000	10300102009666	-92.28421554650	38.74773492520	-92.29093568070	38.74112172340
Tributary to Jemerson Creek	0.55	19001582000	10300102009655	-92.27357074290	38.74471932500	-92.27481647690	38.74329412420
Tributary to Jemerson Creek	0.55	19001582000	10300102009646	-92.27116148390	38.74637420310	-92.27357074290	38.74471932500
Tributary to Jemerson Creek	0.20	19001582000	10300102009649	-92.27019838630	38.74433942050	-92.27357074290	38.74471932500
Tributary to Slate Creek	1.15	19000682000	10300102004022	-92.25839629660	38.70694322360	-92.27442567280	38.69998045030
Tributary to Slate Creek	0.68	19000682000	10300102009939	-92.25976707750	38.69580690850	-92.26785167080	38.70186805070
Slate Creek	1.97	19000682000	10300102001385	-92.26671987270	38.72036252100	-92.27742207330	38.69819651650
Sinking Creek	3.01	19025099000	10300102008335	-92.49671617870	38.97199178200	-92.49864342490	38.96696428440
Sinking Creek	3.01	19025099000	10300102008389	-92.50330195930	38.96620255030	-92.51240436020	38.95926414900
Sinking Creek	3.01	19025099000	10300102008343	-92.49864342490	38.96696428440	-92.50330195930	38.96620255030
Tributary to Jemerson Creek	0.59	19001582000	10300102009681	-92.30441315120	38.74547172340	-92.30149335000	38.73809405590
Tributary to Fowler Creek	1.58	19000984000	10300102004204	-92.23264813410	38.76874573140	-92.22739646420	38.74875892790
Tributary to Jemerson Creek	1.87	19001582000	10300102004013	-92.27842987720	38.74439792460	-92.29847168260	38.74001365600
Tributary to Slate Creek	0.46	19000682000	10300102009866	-92.27163307350	38.71455345330	-92.27224813950	38.70833005170
Tributary to Jemerson Creek	0.55	19001582000	10300102004013	-92.27481647690	38.74329412420	-92.27842987720	38.74439792460
Tributary to Slate Creek	0.40	19000682000	10300102004025	-92.26097193720	38.71890252070	-92.25834167530	38.71371837030
Tributary to Slate Creek	0.47	19000682000	10300102009890	-92.28379647550	38.71050991820	-92.27896914140	38.70560485110
Tributary to Slate Creek	1.30	19000682000	10300102004024	-92.26450433850	38.71905465420	-92.27370233970	38.70328331770
Tributary to Little Bonne Femme Creek	1.06	19000179000	10300102003935	-92.33736890640	38.88821468010	-92.33740577170	38.87433627720
Tributary to Bonne Femme Creek	2.15	19001984000	10300102003964	-92.29136938490	38.82282611350	-92.32085356260	38.82625233650
Tributary to Gans Creek	0.92	19000482000	10300102008879	-92.31289436580	38.88580868080	-92.31953616760	38.87579294540
Tributary to Bonne Femme Creek	1.93	19035395000	10300102003989	-92.24074007830	38.86513508130	-92.27159568600	38.86280367860
Tributary to Clear Creek	1.21	19000382000	10300102003934	-92.31944390340	38.90737148440	-92.32283590240	38.89190228140
Jemerson Creek	0.45	19001582000	10300102001112	-92.29847168260	38.74001365600	-92.30447613180	38.73715256570
Bass Creek	0.79	19001784000	10300102000853	-92.27719435140	38.82870627280	-92.28336677630	38.83053912370
Tributary to Bonne Femme Creek	0.76	19007301000	10300102009113	-92.32484649870	38.83890807170	-92.32262689780	38.83875353860
Tributary to Jemerson Creek	0.23	19001582000	10300102004013	-92.27220142430	38.74102939410	-92.27481647690	38.74329412420
Sinking Creek	3.01	19025099000	10300102001375	-92.51240436020	38.95926414900	-92.51386028190	38.94929139210
Tributary to Clear Creek	0.30	19223202000		-92.32852516930	38.89347707390	-92.32390510300	38.89153054760
Sinking Creek	0.45	19090706000		-92.48914358050	38.97494664280	-92.49600148950	38.97161630530
Tributary to Bonne Femme Creek	0.76	19007301000		-92.33400326020	38.84197194650	-92.32484649870	38.83890807170



JOINT STORMWATER MANAGEMENT PROGRAM

MS4 PERMIT #MO-0136557

Coverage for:

Boone County, Missouri

City of Columbia, Missouri

University of Missouri (MU)

Prepared by:

Boone County Resource Management

City of Columbia Utilities Department

MU Department of Environmental Health & Safety

February 2020

JOINT STORMWATER MANAGEMENT PROGRAM

Boone County/City of Columbia/MU

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D. REQUIREMENTS

This Joint Stormwater Management Plan (SWMP) has been developed in accordance with The Stormwater Phase II Final Rule requirements specified in Part D of the site-specific permit MO-0136557 for discharges from small regulated Municipal Separate Storm Sewer Systems (MS4s), as well as per state regulation 10 CSR 20-6.200 and federal regulations 40 CFR Parts 9 and 122. The three co-permittees, Boone County, City of Columbia and MU, have developed and implemented this program in order to protect water quality and effectively reduce stormwater pollutant runoff within their respective jurisdictions to the maximum extent practicable. MU will serve as the coordinating authority for this joint SWMP; however, MU does not have regulatory authority over either of the other co-permittees. Responsibility for implementation of all MCMs will be shared jointly among the three co-permittees. This plan will be reviewed on an annual basis and updated as necessary.

IN ACCORDANCE WITH PART D OF THE PERMIT, THE PERMITTEES WILL:

- Develop a SWMP that shall contain each of the six (6) MCMs described in Part E – Minimum Control Measures of the permit including all applicable requirements specified in Sections D.1.A –D.1.d. of the permit.
- Fully implement each MCM in accordance with the approved SWMP.
- Revise the SWMP when necessary and submit the revised SWMP to the Water Protection Program’s MS4 Coordinator for review and rating.
- Implement the SWMP on all new areas added to the MS4 area as expeditiously as practicable.
- List in the MS4 SWMP Report any transfer of ownership, continuing authority, or responsibility that occurs in the MS4 area.

This plan contains Best Management Practices (BMPs) and Measurable Goals (MGs) for the six Minimum Control Measures (MCMs) described in Sections E.1-E.6 of the permit. Measurable goals are selected to evaluate the effectiveness of individual control measures and the stormwater management program as a whole.

BMPs will be described as follows:

BMP: Best Management Practice

MG: Measurable Goal (Responsible Permittee*—Status**)

* Responsible permittee: Met by all co-permittees, unless otherwise noted

** Status: All are ongoing measurable goals, unless otherwise noted

CONTACTS

The individuals listed below are the persons primarily responsible for the content of this SWMP and are listed as specified by section D.1.d. of the permit.

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BACKGROUND INFORMATION

POPULATION AND LAND USE:

Boone County has a population of 162,642 (2010 US census). The largest city is Columbia, with a population over 108,000. Columbia is fifth largest city, and the second fastest growing community in Missouri. The City's current land mass is over 60 mi², with an annexation rate of 0.6 mi² per year.

Columbia is the home of the University of Missouri, with more than 30,000 students, as well as Stephens College (862 students) and Columbia College (1,276 students). Other towns in Boone County include Centralia (4,027), Ashland (3,707), Hallsville (1,491), Sturgeon (872) Rocheport (239), Harrisburg (266), Hartsburg (103), Pierpont (76), McBaine (10) and Huntsdale (32).

Approximately 27% of the population lives in the rural areas of Boone County. According to the 2017 US Agriculture Census, there are over 1,184 farms in the county with an average size of 180 acres. The total land used for farming is almost 212,732 acres.

CLIMATE:

The average winter temperature is 20.9° F (in January). In summer, the average daily maximum temperature is 87.9° F (in July). The highest recorded temperature of 113.4 degrees occurred on July 14, 1954.

The total annual rainfall precipitation is between 34 and 50 inches. The heaviest recorded 1-day rainfall was 5.37 inches on August 12, 1993. Thunderstorms are common from April to July. The average seasonal snowfall is between 18 and 24 inches. Most snowfall occurs between December and February (Missouri Climate Center and City of Columbia Climate Action & Adaption Plan, 2018).

The average relative humidity in mid-afternoon is about 70%. Humidity is higher at night, peaking at dawn with an average of 83%. It is sunny 66% of the time in summer and 49% of the time in winter. The growing season in Boone County is 192 days. The first frost is around the second or third week in October, while the last frost is around the second or third week of April (Boone County Soil Survey, 2005, Missouri Climate Center).

HYDROLOGY:

Boone County is bordered by the Missouri River on the southwest, and by Cedar Creek on the east. There are twenty-three sub-basins that are entirely or partially within the county boundaries. Drainage is mainly towards the Missouri River, from northeast to southwest. However, the extreme northeastern section of the county (Centralia) flows towards the Salt River. The largest watershed is Perche Creek which drains more than 70% of the landmass.

Hinkson Creek, a 90 mi² watershed, is the single largest contributor to Perche Creek. Hinkson is fed by Grindstone Creek, Flat Branch, Hominy Branch, County House Branch, Meredith Branch, and Mill Creek. More than 90,000 people live in the Hinkson Creek Watershed.

Between Columbia and Ashland is the Bonne Femme Watershed. This area is well known for karst topography, with numerous caves, sinkholes and losing streams. The area also contains several state parks. The Bonne Femme Creek feeds the cave system for the Devil's Icebox, and Rockbridge State Park. Also, in this area is Three Creeks Conservation Area, maintained by the Missouri Department of Conservation. The streams running through these parks are designated as Outstanding State Resource Waters.

WATER QUALITY AND TMDLs IN BOONE COUNTY:

Several area streams do not support warm water aquatic life or whole-body contact recreation. These streams have been listed on the State's List of Impaired Waters as required by section 303(d) of the Clean Water Act (CWA). Once a waterbody is listed, then a Total Maximum Daily Load (TMDL) must be developed to set the maximum amount of pollution that can enter the stream and still maintain water quality standards. The following table shows the waterbodies in Boone County that are on the 2018 Impaired Waters List (Section 303(d)).

Waterbody Name	Pollutant	Source	Miles/acres impaired	TMDL
Bonne Femme Creek	Bacteria	Rural NPS	14.8	
Cedar Creek	Unknown	Unknown	37.4	
Little Bonne Femme Creek	Bacteria	Unknown	9.0	
Bass Creek	Bacteria	Rural NPS	4.4	
Foster Creek	Ammonia	Ashland WWTP	2.0	
Fowler Creek	Low D.O.	Unknown	6.0	
Gans Creek	Bacteria	Unknown	5.5	
Grindstone Creek	Bacteria	Urban/Rural NPS	2.5	
Hinkson Creek	Unknown	Urban Runoff	18.0	Developed

Hinkson Creek	Bacteria	Urban/Rural NPS	26.4	
Hominy Branch	Bacteria	Runoff-various	1.0	
Turkey Creek	Bacteria	Unknown	6.3	
Lake of the Woods	Mercury	Atmospheric	3.0	
Philips Lake	Mercury	Atmospheric	32.0	

In streams where the identified pollutant is bacteria, the sources could be from wildlife or agriculture in the rural areas, leaky septic systems, sanitary sewer or lagoon overflows, or cross connected pipes in the suburban areas.

According to the 2017 National Agricultural Statistics Service (NASS) there were 22,370 head of cattle, 88,873 hogs and pigs, 1,441 sheep, 1,664 goats, 1,937 horses and ponies and 13,316 poultry in the county.

E. MINIMUM CONTROL MEASURES

1. MCM 1: PUBLIC EDUCATION AND OUTREACH

An informed and knowledgeable community is a key component to the success of a stormwater management program. The public education and outreach component coordinates a variety of activities and partners to support all the minimum control measures. Education and outreach are the backbone to a comprehensive stormwater management program that educates the public in many formats and on a variety of levels. Outreach can be printed material, online material, activities, training and events. Those receiving the education can be K-12 and college students, employees, interest groups, elected officials and the general public. Connecting water quality to our everyday activities through a variety of elements can affect change in behavior and awareness.

Permit Requirement: Implement a coordinated public education program which involves the distribution of educational materials to the community, or equivalent outreach activities about the impacts of stormwater discharges on water bodies and steps the public can take to reduce pollutants in the stormwater runoff.

Raising citizen's understanding and awareness of stormwater impacts and issues is the primary goal of MCM 1 and the permittee's level of commitment to education and outreach programs is significant.

This requirement continues to be met by each of the three co-permittees with the following BMPs and associated Measurable Goals.

BMP 1: Maintain an education and outreach program to educate strategically targeted audiences about annually selected topics that are pertinent and timely to local water quality issues. The audiences will include municipal inspectors, contractors, developers, engineers, interest groups, general public, and schools. The intent of this BMP is to create and maintain a public that is conscientious of the impacts that their behaviors have on local watersheds in order to reduce pollution from residential and industrial activities.

MG: Maintain a list of all education and outreach programs conducted throughout the year.

BMP 2: Develop and distribute education and outreach materials.

MG: Develop brochures, fact sheets, public service announcements, etc. Update educational materials as necessary to remain current on local water quality issues.

MG: Prepare and distribute materials at events. Review and update educational materials as necessary.

BMP 3: Conduct education and outreach activities.

MG: The Permittees will staff at least ten (10) community events (e.g., Earth Day), make presentations to citizen's groups and present to schools and industry (e.g. Stream table demonstrations).

BMP 4: Maintain Hinkson Creek GIS Habitat Viewer.

MG: Maintain Hinkson Creek GIS Habitat viewer by reviewing annually and updating when pertinent data becomes available. (Boone County)

BMP 5: The co-permittees will provide and continue to maintain dedicated stormwater resource websites. These websites educate the community about the impacts of stormwater runoff, permit and inspection requirements, and general watershed information.

MG: Maintain stormwater resource websites such as:
www.como.gov/utilities/stormwater, www.showmeboone.com/stormwater,
<http://ehs.missouri.edu/ehs/env/stormwater>, www.helpthehinkson.org and
www.cavewatershed.org by reviewing and updating as necessary.

BMP 6: Many household products are hazardous because they contain chemicals that are toxic, corrosive, flammable, or reactive. Improper disposal can cause these products to find their way into receiving streams and lakes. The co-permittees will provide the public with proper, publically announced, disposal opportunities to minimize the presence of these chemicals in local waterways.

MG: Hold a special co-permittee coordinated Household Hazardous Waste collection event annually as funding permits. This event may include the collection of used tires and e-waste.

MG: Continue the twice a month City of Columbia Household Hazardous Waste Collection Program. This collection event takes place between and including the months of April through November. (City of Columbia)

2. MCM 2 - PUBLIC INVOLVEMENT/PARTICIPATION

The public has a role in the success of a stormwater management program. The public can participate through public hearings and public meetings. The public has the opportunity to be involved in various stormwater quality awareness and improvement activities. Furthermore, a developing avenue for participation and involvement is interaction through social media.

Permit Requirement: Implement an effective public involvement/participation program that complies with State and local public notice requirements.

This requirement continues to be met by each of the three co-permittees with the following BMPs and associated Measurable Goals.

BMP 1: Implement an effective public involvement/participation program that allows citizens and civic groups to provide input concerning policies and complies with state and local public notice requirements.

MG: Hold public hearings/stakeholder meetings when properties are annexed or request a change in zoning, during the platting process, and throughout the project design stage. (City of Columbia, Boone County)

MG: Annually publicize and present the Campus Master Plan, which identifies planning principles and includes current and proposed construction projects. (MU)

BMP 2: Select a targeted topic for each calendar year.

MG: Select a specific topic to focus on for year. The topic may be based on issues that are of highest importance for that year.

BMP 3: Continue to implement and maintain public involvement/participation activities to engage citizens and continue to form partnerships that reach a diverse audience.

MG: Promote Adopt-A-Spot/Adopt-A-Road programs, City of Columbia Volunteer Services, public service announcements, and community clean-up events.

MG: Maintain social media and websites for promotion of public involvement and participation to facilitate conversation of pertinent topics.

BMP 4: Many household products are hazardous because they contain chemicals that are toxic, corrosive, flammable, or reactive. Improper disposal can cause these products to find their way into receiving streams and lakes. The co-permittees will provide the public with proper, publically announced, disposal opportunities to minimize the presence of these chemicals in local waterways.

MG: Hold a special co-permittee coordinated Household Hazardous Waste collection event annually as funding permits. This event may include the collection of used tires and e-waste.

MG: Continue the twice a month City of Columbia Household Hazardous Waste Collection Program. This collection event takes place between and including the months of April through November. (City of Columbia)

3. MCM 3 - ILLICIT DISCHARGE DETECTION AND ELIMINATION

Illicit discharges enter the system through either direct or indirect connections. Direct connections are usually vehicular accidents and first responders continue to be educated on clean up techniques. Other direct connections happen mistakenly and require education on the spot. A robust program to detect and address indirect wastewater connections is underway. The necessary legal measures are in place to prohibit and enforce illicit discharges. Addressing indirect wastewater connections and educating the public continue to be primary activities for this measure.

Permit Requirement: Develop, implement and enforce a program to detect and eliminate illicit discharges into the regulated MS4. The responsibility will be shared jointly among the three co-permittees.

This requirement continues to be met by each of the three co-permittees with the following BMPs and associated Measurable Goals.

BMP 1: Continue to maintain stormwater drainage system map(s) with all outfalls, pipes, inlets and associated attributes by reviewing and updating.

The purpose of this BMP is to document the location of all new and existing stormwater outfalls, pipes, inlets, and other associated attributes for locational and logistical reference. A geospatial tool helps permittees understand the impacts of illicit discharges to the MS4.

MG: The co-permittees will review new development and update stormwater drainage system map(s) accordingly.

BMP 2: Effectively prohibit, through IDDE ordinance, or other IDDE regulatory mechanisms, non-stormwater discharges into the stormwater drainage system and implement appropriate enforcement procedures and actions.

The purpose of this BMP is to maintain water quality by restricting certain discharges into the stormwater drainage system.

MG: Document and track IDDE Ordinance/Regulatory Mechanism enforcements. Document any illicit discharges and illegal dumping enforcement actions taken.

MG: Review IDDE Ordinances/Regulatory Mechanisms annually and update as needed.

BMP 3: Evaluate certain non-stormwater discharges or flows, or certain categories of non-stormwater discharges or flows, to determine if they are significant contributors of pollutants to the MS4.

MG: Address occasional incidental non-stormwater discharges on a case-by-case basis to determine whether such discharges may appropriately be directed to the storm sewer system. The co-permittees have not identified any of the listed non-stormwater discharges as significant contributors to the regulated MS4.

BMP 4: Maintain an implementation schedule to detect and address incidental non-stormwater discharges including discharges from illegal dumping and spills to the MS4.

The purpose of this BMP is to detect cross connections in the sanitary sewer system and other discharges to the MS4.

MG: Each permittee will visually inspect a minimum of 20% of permitted MS4 outfalls each year on a rotating basis.

MG: Continue plan to detect and address non-stormwater discharges which may include on-site visual inspections, smoke and dye testing, closed circuit television (CCTV) inspections.

MG: Track non-stormwater discharges reported by the public through provided outlets via web-based reporting and hotlines.

BMP 5: Inform public employees, businesses, and the general public of the hazards associated with illegal discharges and improper disposal of waste.

MG: Include this information as an element in the outreach, education and municipal training programs. Update this information as necessary.

4. MCM 4 - CONSTRUCTION SITE STORMWATER RUNOFF CONTROLS

Construction site runoff is a publicly visible element of the stormwater management program. Regulatory mechanisms are in place to control construction site runoff. Site plan review and inspections for construction site runoff control are ongoing. Each permittee continues to refine internal procedures for inspection and enforcement. Public concerns that are received are inspected in a timely manner.

Permit Requirement: Develop, implement and enforce a program that reduces pollutants in stormwater runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre.

Construction activities that result in a land disturbance of greater than or equal to one acre have the potential to contribute more pollutants to local waterways.

The purpose of the construction site stormwater runoff control MCM is to prevent soil, construction material, and other materials from leaving the construction site and entering the stormwater drainage system. Sediment is the primary pollutant of concern.

This requirement continues to be met by each of the three co-permittees with the following BMPs and associated Measurable Goals.

BMP 1: Require an MDNR/City land disturbance permit for sites that will disturb one acre or greater. The purpose of this BMP is to ensure that proper disposal mechanisms are utilized to control runoff from construction sites disturbing greater than one acre.

MG: Track the number of land disturbance permits issued each year.

BMP 2: Enforce ESC/Land Disturbance Ordinance/Regulatory Mechanism (City Chapter 12 Land Disturbance Ordinance, County Chapter 24 Erosion and Sediment Control Ordinance, MU Business Policy and Procedure Manual Chapter 7, Section 7.001).

MG: Track inspections and enforcements.

BMP 3: Maintain land disturbance regulatory mechanism.

MG: Conduct an annual review of regulatory mechanism and report any changes.

BMP 4: Develop and maintain stormwater design manual(s) requiring construction site operators to implement appropriate erosion and sediment control best management practices.

The purpose of this BMP is to require construction site operators to implement appropriate erosion and sediment control best management practices to improve downstream water quality.

MG: Implement and maintain stormwater design manuals. Review annually and update as necessary.

BMP 5: Require construction site operators to control waste and erosion on construction sites by requiring Stormwater Pollution Prevention Plans (SWPPPs)/soil erosion control plans.

MG: Document SWPPP site plan and SWPPP reviews and record any comments provided to the construction company pertaining to the contractor's SWPPP. (Boone County and University of Missouri)

MG: Document soil erosion control plan and reviews. Record any comments provided to the construction company pertaining to erosion and sediment control measures. (City of Columbia)

BMP 6: Maintain procedures for receipt and consideration of information submitted by the public. Maintain websites and hotline phone numbers.

MG: Track information submitted by the public.

BMP 7: Conduct site inspections to ensure construction site operators implement appropriate erosion and sediment control best management practices.

MG: Inspect 100% of locally permitted sites.

5. MCM 5 - POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

The necessary regulatory mechanisms are in place to require post construction runoff control for all new development. Opportunities to retrofit post construction runoff controls are identified and implemented when possible. Maintenance of structural BMPs (Best Management Practices) is a critical component to the success of post construction runoff controls. Inventory and inspection of BMPs encourages proper maintenance which supports pollutant and runoff reductions.

Permit Requirement: Develop, implement and enforce a program to address the quality of stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre. This includes projects less than one acre which are part of a larger common plan for development or sale that discharge into the regulated MS4.

This requirement continues to be met by each of the three co-permittees with the following BMPs and associated Measurable Goals.

BMP 1: Identify and develop strategies including structural and/or non-structural BMPs to improve the quality of stormwater runoff.

MG: Continue to implement and track water quality improvement projects, BMP monitoring projects, LEED building standards, etc.

MG: Track permits for installation of private BMPs for development and redevelopment projects. (City of Columbia, Boone County)

BMP 2: Continue to maintain Stormwater Management/Water Quality Manual or equivalent.

MG: Conduct on-going reviews of the Stormwater Management/Water Quality Manuals or equivalent and/or update as necessary.

BMP 3: Continue to maintain stormwater ordinance(s) or other regulatory mechanism(s) to address post-construction runoff from new development and redevelopment projects.

MG: Review and update as necessary.

BMP 4: Continue to maintain Stream Buffer Ordinances and MU Stormwater Master Plan.

MG: Review the ordinances and master plan and revise standards as necessary.

BMP 5: Promote adequate long-term operation and maintenance of BMPs by maintaining an operation and maintenance schedule of post-construction BMPs.

The purpose of this BMP is to utilize inspection and maintenance of post-construction stormwater controls to improve downstream water quality.

MG: Maintain an inventory, a maintenance schedule, and an inspection schedule of post-construction BMPs.

MG: Inspect BMPs according to the operation and maintenance schedule.

MG: Track maintenance of all structural and non-structural BMPs.

BMP 6: Many household products are hazardous because they contain chemicals that are toxic, corrosive, flammable, or reactive. Improper disposal can cause these products to find their way into receiving streams and lakes. The co-permittees will provide the public with proper, publically announced, disposal opportunities to minimize the presence of these chemicals in local waterways.

MG: Hold a special co-permittee coordinated Household Hazardous Waste collection event annually as funding permits. This event may include the collection of used tires and e-waste.

MG: Continue the twice a month City of Columbia Household Hazardous Waste Collection Program. This collection event takes place between and including the months of April through November. (City of Columbia)

6. MCM 6 - POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

All permittees' employees receive regular training on maintaining facilities and properly using and storing potential pollutants. In addition to training, operations personnel continue to improve road salt application methods, street sweeping procedures, and site maintenance to reduce pollutants to our waterways. Pollution prevention opportunities are extended to the greater community through household hazardous waste drop offs, recycling programs, and education and outreach efforts.

Permit Requirement: Develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing and/or reducing pollutant runoff from municipal operations, including those not currently required to be permitted as associated with industrial activities. The program must include employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance.

This requirement continues to be met by each of the three co-permittees with the following BMPs and associated Measurable Goals.

BMP 1: Maintain operation and maintenance schedule for operation and maintenance program.

MG: Review annually hazardous materials management and SPCC operation and maintenance schedules. Update schedules as necessary. (Boone County, MU)

MG: Participate in facility safety inspection audits to identify any deficiencies related to stormwater management and water quality protection items at various City facilities. Provide recommendations and/or corrective measures. (City of Columbia)

BMP 2: The co-permittees will continue to identify and train all impacted employees.

MG: Each co-permittee will maintain and update a list of impacted employees.

BMP 3: Review and update pollution prevention/good housekeeping training presentation(s).

MG: Annually review and update as necessary training presentation(s) with current regulatory information, procedures, and projects associated with pollution prevention/good housekeeping.

BMP 4: Continue to schedule and conduct Pollution Prevention training.

MG: Train all impacted employees annually. The training will be provided in person or via electronic methods. Maintain an attendance roster and training date for each training session.

BMP 5: Many household products are hazardous because they contain chemicals that are toxic, corrosive, flammable, or reactive. Improper disposal can cause these products to find their way into receiving streams and lakes. The co-permittees will provide the public with proper, publically announced, disposal opportunities to minimize the presence of these chemicals in local waterways.

MG: Hold a special co-permittee coordinated Household Hazardous Waste collection event annually as funding permits. This event may include the collection of used tires and e-waste.

MG: Continue the twice a month City of Columbia Household Hazardous Waste Collection Program. This collection event takes place between and including the months of April through November. (City of Columbia)



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
**FORM L – APPLICATION FOR CO-PERMITTEE PHASE 2 SMALL MS4
 GENERAL PERMIT (FORM M MUST ALSO BE SUBMITTED)**

FOR AGENCY USE ONLY	
CHECK NUMBER OR JETPAY CONFIRMATION #	
DATE RECEIVED	FEE SUBMITTED

**PLEASE READ ALL THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.
 SUBMITTAL OF AN INCOMPLETE APPLICATION MAY RESULT IN THE APPLICATION BEING RETURNED.
 (FOR INDIVIDUAL SMALL MS4, PLEASE FILL OUT FORM K INSTEAD OF FORM M.)**

1. REASON FOR APPLICATION:

- a. These municipalities/area(s) are currently operating a separate storm sewer system under MO – 0136557.
- b. This is a new permit.

2. NAMES OF EACH MUNICIPALITY/AREA TO BE INCLUDED (Attach additional sheets as necessary)

NAME OF MUNICIPALITY/AREA MS4 See attached			
ADDRESS (HEADQUARTERS PHYSICAL LOCATION) See attached	CITY	STATE	ZIP CODE

3. OWNER OF EACH MUNICIPALITY/AREA TO BE INCLUDED (Attach additional sheets as necessary)

OWNER #1 NAME See attached		TELEPHONE NUMBER WITH AREA CODE	
EMAIL ADDRESS See attached			
ADDRESS (MAILING) See attached	CITY	STATE	ZIP CODE
OWNER #2 NAME See attached		TELEPHONE NUMBER WITH AREA CODE	
EMAIL ADDRESS See attached			
ADDRESS (MAILING) See attached	CITY	STATE	ZIP CODE

4. CONTINUING AUTHORITY OF EACH MUNICIPALITY/AREA TO BE INCLUDED (Attach additional sheets as necessary)

CONTINUING AUTHORITY #1 NAME See attached		TELEPHONE NUMBER WITH AREA CODE	
EMAIL ADDRESS See attached			
ADDRESS (MAILING) See attached	CITY	STATE	ZIP CODE
CONTINUING AUTHORITY #2 NAME See attached		TELEPHONE NUMBER WITH AREA CODE	
EMAIL ADDRESS See attached			
ADDRESS (MAILING) See attached	CITY	STATE	ZIP CODE

5. INDIVIDUAL MUNICIPALITY/AREA APPLICANT CONTACT (Attach additional sheets as necessary)

CONTACT #1 NAME See attached		TELEPHONE NUMBER WITH AREA CODE	
EMAIL ADDRESS See attached			
ADDRESS (MAILING) See attached	CITY	STATE	ZIP CODE
CONTACT #2 NAME See attached		TELEPHONE NUMBER WITH AREA CODE	
EMAIL ADDRESS See attached			
ADDRESS (MAILING) See attached	CITY	STATE	ZIP CODE

6. COORDINATING AUTHORITY (A single entity providing coordination for all co-applicants included in this application)

NAME University of Missouri			
ADDRESS (MAILING) 180 General Service Building	CITY Columbia	STATE MO	ZIP CODE 65211

7. COORDINATING AUTHORITY CONTACT PERSON			
NAME Todd Houts	TELEPHONE WITH AREA CODE (573) 882-7018		
TITLE Director, MU Environmental Health & Safety			
E-MAIL ADDRESS houtst@missouri.edu			
8. STORMWATER OUTFALLS FOR EACH MUNICIPALITY/ AREA (Attach additional sheets as necessary)			
Outfall Number	Legal Description	GPS Coordinates (specify units)	Receiving Water Body
	Qtr 1 ___ ¼ Qtr 2 ___ ¼ Sec. ___ T ___ R ___	See attached	See attached
	Qtr 1 ___ ¼ Qtr 2 ___ ¼ Sec. ___ T ___ R ___	See attached	See attached
	Qtr 1 ___ ¼ Qtr 2 ___ ¼ Sec. ___ T ___ R ___	See attached	See attached
	Qtr 1 ___ ¼ Qtr 2 ___ ¼ Sec. ___ T ___ R ___	See attached	See attached
9. ADDITIONAL MUNICIPALITY/ AREA INFORMATION			
Attach a 1" = 2000' scale map showing the location of the municipality/area in relation to the local road system. Indicate on the map the municipality/area boundaries, the receiving stream(s); all known stormwater outfalls; and the map section, township, and range or GPS Coordinates.			
10. FEES			
Permit fees may be paid by attaching a check, or online by credit card or eCheck through the JetPay system. For permit renewals of active permits, fees are invoiced annually via a separate request. Use the URL provided to access JetPay and make an online payment:			
<ul style="list-style-type: none"> For new general permits (MOR): https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/604 For modifications: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/596 			
11. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM			
Per 40 CFR Part 127, National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting shall be submitted by the permittee via an electronic system to ensure a timely, complete, accurate, and nationally-consistent set of data. One of the following options must be checked in order for this application to be considered complete. Visit dnr.mo.gov/env/wpp/edmr.htm for more information.			
<input checked="" type="checkbox"/> You have completed and submitted with this permit application the required documentation to participate in the eDMR system. <input type="checkbox"/> You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system. <input type="checkbox"/> You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.			
12. CERTIFICATION			
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.			
NAME AND OFFICIAL TITLE (TYPE OR PRINT) See attached	TELEPHONE NUMBER WITH AREA CODE		
SIGNATURE	DATE SIGNED		

Before mailing, please ensure all sections are complete and additional forms, if applicable, are included. Submitting an incomplete application may result in the application being returned.

HAVE YOU INCLUDED THE FOLLOWING?

- | | |
|--|---|
| <input checked="" type="checkbox"/> Appropriate fees | <input type="checkbox"/> Map at 1" = 2000' |
| <input checked="" type="checkbox"/> Form M | <input checked="" type="checkbox"/> Additional sheets for Co-permittees |

Attachments for Form L – Application for Co-Permittee Small MS4 General Permit

2. Names/Addresses of Each Municipality/Area to be Included

University of Missouri
180 General Services Building
900 E Stadium Blvd
Columbia, MO 65211

City of Columbia
701 E. Broadway
P.O. Box 6015
Columbia, MO 65205

County of Boone
801 E. Walnut, Room 315
Columbia, MO 65201

3. Owner of Each Municipality/Area to be Included

The Curators of the University of Missouri
(573) 882-7018
environmental@missouri.edu
225 University Hall
Columbia, MO 65211

City of Columbia
(573) 441-5530
stormwater@como.gov
701 E. Broadway
P.O. Box 6015
Columbia, MO 65205

County of Boone
(573) 886-4330
stormwater@boonecountymo.org
801 E. Walnut, Room 315
Columbia, MO 65201

4. Continuing Authority of Each Municipality/Area to be Included

The Curators of the University of Missouri
(573) 882-7018
environmental@missouri.edu
225 University Hall
Columbia, MO 65211

City of Columbia
(573) 874-7250
stormwater@como.gov
701 E. Broadway
Columbia, MO 65201

County of Boone
(573) 886-4330
stormwater@boonecountymo.org
801 E. Walnut
Columbia, MO 65201

5. Individual Municipality/Area Applicant Contact

University of Missouri
Todd Houts, Director, Environmental Health and Safety
(573) 882-7018
houts@missouri.edu

City of Columbia
David Sorrell, Assistant Director, Utilities
(573) 441-5530
stormwater@como.gov

Boone County
Stan Shawver, Director, Resource Management
(573) 886-4330
stormwater@boonecountymo.org

8. Representative Stormwater Outfalls for Each Municipality Area

Format:

Outfall # - Legal Description: (¼, ¼, Sec., Township, Range)
GPS coordinates (Lat. & Long.):
Receiving Water Body:

Co-permittee: MU

Outfall

MU001 - Legal Description: NW¼ of the NE¼ Section 13, Township 48N Range 13W
GPS Coordinates: Latitude 38 ° 56' 48" Longitude 92° 20' 03"
Receiving Water: Flat Branch Creek

MU003 - Legal Description: NW¼ of the NE¼ Section 13, Township 48N Range 13W
GPS Coordinates: Latitude 38° 56' 50" Longitude 92° 20' 02"
Receiving Water: Flat Branch Creek

- MU006 - Legal Description: NW¼ of the NE¼ Section 13 Township 48N Range 13W
GPS Coordinates: Latitude 38° 56' 51" Longitude 92° 20' 07"
Receiving Water: Flat Branch Creek
- MU009 - Legal Description: NE¼ of the NE¼ Section 13, Township 48N Range 13W
GPS Coordinates: Latitude 38° 56' 52" Longitude 92° 19' 47"
Receiving Water: Flat Branch Creek
- MU011 - Legal Description: NE¼ of the NE¼ Section 13, Township 48N Range 13W
GPS Coordinates: Latitude 38° 56' 53" Longitude 92° 19' 44"
Receiving Water: Flat Branch Creek
- MU014 - Legal Description: NE¼ of the NW¼ Section 24 Township 48N Range 13W
GPS Coordinates: Latitude 38° 56' 00" Longitude 92° 20' 06"
Receiving Water: Hinkson Creek
- MU015 - Legal Description: NE¼ of the NW¼ Section 24, Township 48N Range 13W
GPS Coordinates: Latitude 38° 55' 59" Longitude 92° 20' 11"
Receiving Water: Hinkson Creek
- MU016 - Legal Description: SE¼ of the NW¼ Section 24, Township 48N Range 13W
GPS Coordinates: Latitude 38° 55' 51" Longitude 92° 20' 05"
Receiving Water: Hinkson Creek
- MU017 - Legal Description: SW¼ of the NE¼ Section 24, Township 48N Range 13W
GPS Coordinates: Latitude 38° 55' 51" Longitude 92° 20' 00"
Receiving Water: Hinkson Creek
- MU018 - Legal Description: SE¼ of the NW¼ Section 24, Township 48N Range 13W
GPS Coordinates: Latitude 38° 55' 56" Longitude 92° 20' 07"
Receiving Water: Hinkson Creek
- MU022 - Legal Description: SW¼ of the NE¼ Section 24, Township 48N Range 13W
GPS Coordinates: Latitude 38° 55' 55" Longitude 92° 19' 52"
Receiving Water: Hinkson Creek
- MU024 - Legal Description: NW¼ of the NW¼ Section 19, Township 48N Range 12W
GPS Coordinates: Latitude 38° 55' 57" Longitude 92° 19' 27"
Receiving Water: Hinkson Creek
- MU027 - Legal Description: SE¼ of the NW¼ Section 13, Township 48N Range 13W
GPS Coordinates: Latitude 38° 56' 38" Longitude 92° 20' 17"
Receiving Water: Flat Branch Creek
- MU028 - Legal Description: SE¼ of the NW¼ Section 13, Township 48N Range 13W
GPS Coordinates: Latitude 38° 56' 39" Longitude 92° 20' 14"
Receiving Water: Flat Branch Creek
- MU033 - Legal Description: NW¼ of the NW¼ Section 19, Township 48N Range 12W
GPS Coordinates: Latitude 38° 56' 04" Longitude 92° 18' 48"
Receiving Water: Hinkson Creek

- MU034 - Legal Description: SW $\frac{1}{4}$ of the SE $\frac{1}{4}$ Section 28, Township 48N Range 12W
GPS Coordinates: Latitude 38° 56' 14" Longitude 92° 18' 46"
Receiving Water: Hinkson Creek
- MU040 - Legal Description: NE $\frac{1}{4}$ of the NW $\frac{1}{4}$ Section 24, Township 48N Range 13W
GPS Coordinates: Latitude 38° 56' 06" Longitude 92° 20' 12"
Receiving Water: Hinkson Creek
- MU041 - Legal Description: SW $\frac{1}{4}$ of the SW $\frac{1}{4}$ Section 13, Township 48N Range 13W
GPS Coordinates: Latitude 38° 56' 13" Longitude 92° 20' 26"
Receiving Water: Hinkson Creek
- MU043 - Legal Description: NW $\frac{1}{4}$ of the NW $\frac{1}{4}$ Section 24, Township 48N Range 13W
GPS Coordinates: Latitude 38° 56' 03" Longitude 92° 20' 28"
Receiving Water: Hinkson Creek
- MU044 - Legal Description: NW $\frac{1}{4}$ of the NW $\frac{1}{4}$ Section 24, Township 48N Range 13W
GPS Coordinates: Latitude 38° 56' 00" Longitude 92° 20' 31"
Receiving Water: Hinkson Creek

Co-permittee: City of Columbia

- BC2136 - Legal Description: NW $\frac{1}{4}$ of the SW $\frac{1}{4}$ Section 35, Township 49N Range 13W
GPS Coordinates: Latitude 38° 59' 13" Longitude 92° 21' 05"
Receiving Water: Bear Creek
- BC2178 - Legal Description: SE $\frac{1}{4}$ of the NW $\frac{1}{4}$ Section 21, Township 49N Range 12W
GPS Coordinates: Latitude 39° 01' 02" Longitude 92° 16' 41"
Receiving Water: Bear Creek
- CC294 - Legal Description: NW $\frac{1}{4}$ of the SE $\frac{1}{4}$ Section 29, Township 48N Range 12W
GPS Coordinates: Latitude 38° 54' 45" Longitude 92° 17' 28"
Receiving Water: Clear Creek
- CC488 - Legal Description: SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ Section 36, Township 48N Range 13W
GPS Coordinates: Latitude 38° 54' 03" Longitude 92° 19' 37"
Receiving Water: Clear Creek
- CH541 - Legal Description: NE $\frac{1}{4}$ of the SE $\frac{1}{4}$ Section 11, Township 48N Range 13W
GPS Coordinates: Latitude 38° 57' 31" Longitude 92° 21' 19"
Receiving Water: County House Branch
- CH723 - Legal Description: NW $\frac{1}{4}$ of the SW $\frac{1}{4}$ Section 22, Township 48N Range 13W
GPS Coordinates: Latitude 38° 57' 31" Longitude 92° 21' 19"
Receiving Water: County House Branch
- FB1277 - Legal Description: NE $\frac{1}{4}$ of the NE $\frac{1}{4}$ Section 11, Township 48N Range 13W
GPS Coordinates: Latitude 38° 57' 48" Longitude 92° 20' 42"
Receiving Water: Flat Branch

- FB1533- Legal Description: NW¼ of the SW¼ Section 23, Township 48N Range 13W
GPS Coordinates: Latitude 38° 55' 52" Longitude 92° 21' 58"
Receiving Water: Flat Branch
- GR666 - Legal Description: NW¼ of the SE¼ Section 19, Township 48N Range 12W
GPS Coordinates: Latitude 38° 55' 29" Longitude 92° 18' 37"
Receiving Water: Grindstone Creek
- GR895 - Legal Description: SW¼ of the NW¼ Section 1, Township 48N Range 12W
GPS Coordinates: Latitude 38° 58' 19" Longitude 92° 13' 33"
Receiving Water: Grindstone Creek
- HC2460 - Legal Description: NW¼ of the S ¼ Section 15, Township 49N Range 12W
GPS Coordinates: Latitude 39° 01' 32" Longitude 92° 15' 49"
Receiving Water: Hinkson Creek
- HC2534 - Legal Description: NE¼ of the SE¼ Section 29, Township 48N Range 13W
GPS Coordinates: Latitude 38° 54' 57" Longitude 92° 24' 02"
Receiving Water: Hinkson Creek
- HM350 - Legal Description: NE¼ of the NE¼ Section 3, Township 48N Range 12W
GPS Coordinates: Latitude 38° 58' 38" Longitude 92° 15' 02"
Receiving Water: Hominy Branch
- HM399 - Legal Description: SE¼ of the NE¼ Section 18, Township 48N Range 12W
GPS Coordinates: Latitude 38° 56' 35" Longitude 92° 18' 18"
Receiving Water: Hominy Branch
- HR850 - Legal Description: NW¼ of the NW¼ Section 11, Township 48N Range 13W
GPS Coordinates: Latitude 38° 57' 52" Longitude 92° 21' 38"
Receiving Water: Harmony Creek
- HR897 - Legal Description: SW¼ of the NE¼ Section 8, Township 48N Range 13W
GPS Coordinates: Latitude 38° 57' 50" Longitude 92° 24' 23"
Receiving Water: Harmony Creek
- LB552 - Legal Description: NE¼ of the SW¼ Section 36, Township 48N Range 13W
GPS Coordinates: Latitude 38° 53' 56" Longitude 92° 20' 17"
Receiving Water: Little Bonne Femme Creek
- LB570 - Legal Description: NW¼ of the SW¼ Section 10, Township 47N Range 13W
GPS Coordinates: Latitude 38° 52' 07" Longitude 92° 22' 46"
Receiving Water: Little Bonne Femme Creek
- MB755 - Legal Description: SE¼ of the NE¼ Section 16, Township 48N Range 13W
GPS Coordinates: Latitude 38° 57' 01" Longitude 92° 22' 51"
Receiving Water: Meredith Branch
- MB867 - Legal Description: NE¼ of the NE¼ Section 29, Township 48N Range 13W
GPS Coordinates: Latitude 38° 55' 36" Longitude 92° 24' 01"
Receiving Water: Meredith Branch

MC1092 - Legal Description: SE¼ of the NE¼ Section 32, Township 48N Range 13W
GPS Coordinates: Latitude 38° 54' 20" Longitude 92° 24' 17"
Receiving Water: Mill Creek

MC1352 - Legal Description: NW¼ of the NW¼ Section 31, Township 48N Range 13W
GPS Coordinates: Latitude 38° 54' 21" Longitude 92° 19' 33"
Receiving Water: Mill Creek

Co-permittee: Boone County

BC260 - Legal Description: Section 03, T48N, R12W
GPS Coordinates: X = 565257.4, Y = 4313811
Receiving Water: Hominy Branch Creek

BC246 - Legal Description: Section 21, Township 48N Range 12W
GPS Coordinates: X = 562627.9, Y = 4309356
Receiving Water: Tributary to South Fork Grindstone Creek

BC221 - Legal Description: Section 29, Township 48N Range 13W
GPS Coordinates: X = 551712.6, Y = 4308495
Receiving Water: Meredith Branch Creek

BC218 - Legal Description: Section 17 Township 48N Range 13W
GPS Coordinates: X = 550943.3, Y = 4310651
Receiving Water: Tributary to Perche Creek

BC182 - Legal Description: Section 10, Township 47N Range 13W
GPS Coordinates: X = 554799.4, Y = 4302977
Receiving Water: Tributary to Little Bonne Femme Creek

BC163 - Legal Description: Section 02, Township 48N Range 14W
GPS Coordinates: X = 546541.3, Y = 4314588
Receiving Water: Tributary to Sugar Branch Creek

BC090 - Legal Description: Section 17, Township 48N Range 13W
GPS Coordinates: X = 551970.7, Y = 4310557
Receiving Water: Goodin Branch

BC121 - Legal Description: Section 04, Township 48N Range 13W
GPS Coordinates: X = 553319.2, Y = 4304200"
Receiving Water: Tributary to Little Bonne Femme Creek

BC134 - Legal Description: Section 25, Township 49N Range 13W
GPS Coordinates: X = 558103.4, Y = 4317783
Receiving Water: Tributary to Cow Branch Creek

BC196 - Legal Description: Section 12, Township 49N Range 13W
GPS Coordinates: X = 557501.7, Y = 4322789
Receiving Water: Rocky Fork Creek

9. Additional Municipality/Area Information

Below are the links to maps for each co-permittee illustrating the municipality/area boundaries, the receiving stream(s); all known stormwater outfalls; and the map section, township, and range or GPS Coordinates.

Boone County:

www.showmeboone.com/stormwater

City of Columbia:

<https://www.como.gov/utilities/stormwater/education/understanding-the-issue/improve-stormwater/>

University of Missouri:

<https://ehs.missouri.edu/ehs/env/stormwater/mums4outfallsmap>

12. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designated to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

This certification applies to those responsibilities of the University of Missouri. The University cannot accept responsibility for issues that are under the jurisdiction of the City of Columbia or Boone County.

University of Missouri:

Gary Ward
Name

Vice Chancellor, Operations
Title

(573) 882-4097
Phone


Signature

02/27/2020
Date

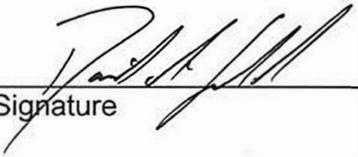
12. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designated to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

This certification applies to those responsibilities of the City of Columbia. The City cannot accept responsibility for issues that are under the jurisdiction of the University of Missouri or Boone County.

City of Columbia:

David Sorrell Assistant Director, Utilities (573) 441-5530
Name Title Phone

 2-26-2020
Signature Date

12. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designated to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

This certification applies to those responsibilities of Boone County. The County cannot accept responsibility for issues that are under the jurisdiction of the City of Columbia or the University of Missouri.

Boone County:

Daniel K. Atwill Presiding Commissioner (573) 886-4305
Name Title Phone

 2.27.2020
Signature Date



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SYSTEM REGISTRATION

Complete this form to register a permit for electronic reporting. This form should also be used to identify or change authorized representatives assigned an electronic signature for the department's eDMR system.

A. PERMIT INFORMATION

PERMIT NUMBER MO- 0136557	FACILITY NAME Boone County/City of Columbia/University of Missouri MS4		
ADDRESS 180 General Services Building	CITY Columbia	STATE MO	ZIP CODE 65211
PERMIT ACCOUNT ACTION <input checked="" type="checkbox"/> New Application <input type="checkbox"/> Revised Permit or Account Information <input type="checkbox"/> Request for Reactivation			

B. USER ACCOUNT INFORMATION

USER ACCOUNT ACTION <input checked="" type="checkbox"/> Add <input type="checkbox"/> Update <input type="checkbox"/> Delete	ACCOUNT TYPE <input type="checkbox"/> Viewer <input type="checkbox"/> Preparer <input checked="" type="checkbox"/> Certifier		
LAST NAME White	FIRST NAME Jon	MIDDLE INITIAL D	
JOB TITLE Manager, Environmental Management Services	EMPLOYER'S NAME University of Missouri		
EMAIL whitejo@missouri.edu	TELEPHONE NUMBER WITH AREA CODE (573) 882-6256		
ADDRESS 180 General Services Building	CITY Columbia	STATE MO	ZIP CODE 65211

USER ACCOUNT ACTION <input checked="" type="checkbox"/> Add <input type="checkbox"/> Update <input type="checkbox"/> Delete	ACCOUNT TYPE <input type="checkbox"/> Viewer <input type="checkbox"/> Preparer <input checked="" type="checkbox"/> Certifier		
LAST NAME Haeussler	FIRST NAME Ted	MIDDLE INITIAL	
JOB TITLE Environmental Compliance Professional	EMPLOYER'S NAME University of Missouri		
EMAIL haeusslert@missouri.edu	TELEPHONE NUMBER WITH AREA CODE (573) 882-3950		
ADDRESS 180 General Services Building	CITY Columbia	STATE MO	ZIP CODE 65211

USER ACCOUNT ACTION <input checked="" type="checkbox"/> Add <input type="checkbox"/> Update <input type="checkbox"/> Delete	ACCOUNT TYPE <input checked="" type="checkbox"/> Viewer <input type="checkbox"/> Preparer <input type="checkbox"/> Certifier		
LAST NAME Houts	FIRST NAME Todd	MIDDLE INITIAL A	
JOB TITLE Director, Environmental Health & Safety	EMPLOYER'S NAME University of Missouri		
EMAIL houtst@missouri.edu	TELEPHONE NUMBER WITH AREA CODE (573) 882-5019		
ADDRESS 180 General Services Building	CITY Columbia	STATE MO	ZIP CODE 65211

C. PERMIT REGISTRATION

I request the above identified permit be registered for electronic reporting and request any department initiated minor permit revisions (where no fee is required) that may be necessary to allow use of the department's eDMR system. As the permit holder, I agree the authorized representatives will follow permit requirements and the procedures for the electronic submission of DMR forms and reports, as described in the permit holder participation package.

Please establish or revise the above user accounts in accordance with the information provided for each identified account. The person(s) identified as certifier(s) are hereby designated as the authorized representatives for all reporting purposes. I understand each person to receive a certifier account on the eDMR system must complete Part D and must sign in the presence of a Notary Public.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

CONTINUING AUTHORITY OR OWNER NAME (TYPE OR PRINT) Todd Houts	CONTINUING AUTHORITY OR OWNER SIGNATURE 	DATE 2-26-2020
OFFICIAL TITLE (TYPE OR PRINT) Director, MU Environmental Health & Safety		

D. CERTIFIER REGISTRATION

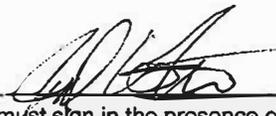
The continuing authority or owner and certifier intend to have the submission of eDMRs be the functional equivalent of the paper submissions required by a permit issued in accordance with the Missouri Clean Water Law, Chapter 644, RSMo and/or the Clean Water Act, 33 U.S.C. § 1251, *et seq.* The certifier will use a validly issued PIN as a signature when submitting eDMRs. The continuing authority or owner and certifier agree not to contest the validity of eDMRs submitted under an authorized PIN based on the fact such submissions were completed electronically. The continuing authority or owner and certifier further agree the provisions of the Uniform Electronic Transactions Act, Sections 432.200 through 432.295, RSMo, shall apply, except as otherwise stated herein.

The continuing authority or owner and certifier agree:

1. Any eDMR submitted under the PIN specific to the certifier shall be considered a "writing" or "in writing;" and any such records shall be deemed for all purposes:
 - a. To have been "signed" by the certifier.
 - b. To constitute an "original" when printed from electronic files or records.
2. Electronic DMRs constitute admissible evidence in any judicial or administrative proceeding.

An electronically submitted DMR will not satisfy a reporting requirement until it has been received and accepted by the department. If an electronically submitted DMR is rejected, the permit holder shall take the necessary steps to properly resubmit such DMR within 24 hours of the notice of rejection.

By signing below, the continuing authority or owner and certifier agree with the terms and conditions of Part D.

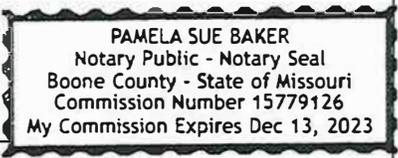

 _____ (Jon White)
 Certifier (must sign in the presence of Notary)

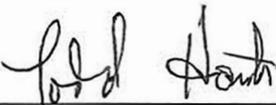
2/27/20
 Date



 Notary Public 1*

2/27/2020
 Date



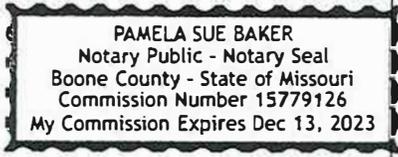

 _____ (Todd Houts)
 Continuing Authority or Owner (must sign in presence of Notary)

2/27/20
 Date



 Notary Public 2*

2/27/2020
 Date



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D. CERTIFIER REGISTRATION

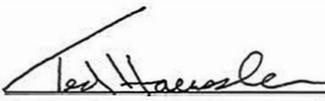
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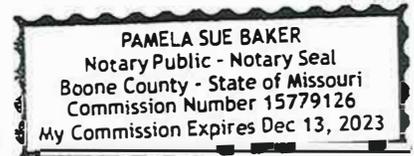
(Ted Haeussler)
Certifier (must sign in the presence of Notary)

2/27/2020
Date



Notary Public 1*

2/27/2020
Date





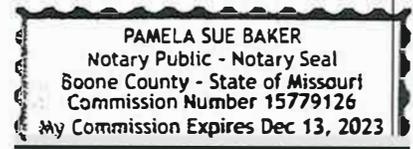
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Continuing Authority or Owner (must sign in presence of Notary)

Date



Notary Public 2*

2/27/2020
Date



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MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SYSTEM REGISTRATION

Complete this form to register a permit for electronic reporting. This form should also be used to identify or change authorized representatives assigned an electronic signature for the department's eDMR system.

A. PERMIT INFORMATION

PERMIT NUMBER MO- 0136557	FACILITY NAME Boone County/City of Columbia/University of Missouri MS4		
ADDRESS 180 General Services Building	CITY Columbia	STATE MO	ZIP CODE 65211
PERMIT ACCOUNT ACTION <input checked="" type="checkbox"/> New Application <input type="checkbox"/> Revised Permit or Account Information <input type="checkbox"/> Request for Reactivation			

B. USER ACCOUNT INFORMATION

USER ACCOUNT ACTION <input checked="" type="checkbox"/> Add <input type="checkbox"/> Update <input type="checkbox"/> Delete	ACCOUNT TYPE <input type="checkbox"/> Viewer <input type="checkbox"/> Preparer <input checked="" type="checkbox"/> Certifier		
LAST NAME Sorrell	FIRST NAME David	MIDDLE INITIAL	
JOB TITLE Assistant Director, Utilities	EMPLOYER'S NAME City of Columbia		
EMAIL David.Sorrell@como.gov	TELEPHONE NUMBER WITH AREA CODE (573) 441-5530		
ADDRESS P.O. Box 6015	CITY Columbia	STATE MO	ZIP CODE 65205

USER ACCOUNT ACTION <input checked="" type="checkbox"/> Add <input type="checkbox"/> Update <input type="checkbox"/> Delete	ACCOUNT TYPE <input type="checkbox"/> Viewer <input type="checkbox"/> Preparer <input checked="" type="checkbox"/> Certifier		
LAST NAME Keys	FIRST NAME Erin	MIDDLE INITIAL	
JOB TITLE Engineering & Operations Manager	EMPLOYER'S NAME City of Columbia		
EMAIL Erin.Keys@como.gov	TELEPHONE NUMBER WITH AREA CODE 573) 441-5530		
ADDRESS P.O. Box 6015	CITY Columbia	STATE MO	ZIP CODE 65205

USER ACCOUNT ACTION <input checked="" type="checkbox"/> Add <input type="checkbox"/> Update <input type="checkbox"/> Delete	ACCOUNT TYPE <input type="checkbox"/> Viewer <input checked="" type="checkbox"/> Preparer <input type="checkbox"/> Certifier		
LAST NAME Thompson	FIRST NAME Kori	MIDDLE INITIAL	
JOB TITLE Engineering Supervisor	EMPLOYER'S NAME City of Columbia		
EMAIL Kori.Thompson@como.gov	TELEPHONE NUMBER WITH AREA CODE (573) 441-5530		
ADDRESS P.O. Box 6015	CITY Columbia	STATE MO	ZIP CODE 65205

C. PERMIT REGISTRATION

I request the above identified permit be registered for electronic reporting and request any department initiated minor permit revisions (where no fee is required) that may be necessary to allow use of the department's eDMR system. As the permit holder, I agree the authorized representatives will follow permit requirements and the procedures for the electronic submission of DMR forms and reports, as described in the permit holder participation package.

Please establish or revise the above user accounts in accordance with the information provided for each identified account. The person(s) identified as certifier(s) are hereby designated as the authorized representatives for all reporting purposes. I understand each person to receive a certifier account on the eDMR system must complete Part D and must sign in the presence of a Notary Public.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

CONTINUING AUTHORITY OR OWNER NAME (TYPE OR PRINT)	CONTINUING AUTHORITY OR OWNER SIGNATURE	DATE
David Sorrell		2-26-2020
OFFICIAL TITLE (TYPE OR PRINT)		
Assistant Director, Utilities		

D. CERTIFIER REGISTRATION

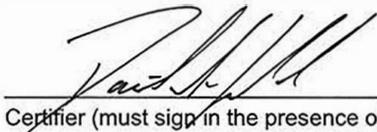
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 _____ (David Sorrell)
 Certifier (must sign in the presence of Notary)

2-26-2020
 Date

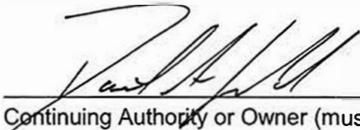


 Notary Public 1*

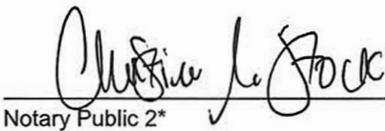
2/26/2020
 Date



CHRISTINA M STOCK
 My Commission Expires
 March 4, 2022
 Cooper County
 Commission #18185291


 _____ (David Sorrell)
 Continuing Authority or Owner (must sign in presence of Notary)

2-26-2020
 Date



 Notary Public 2*

2/26/2020
 Date



CHRISTINA M STOCK
 My Commission Expires
 March 4, 2022
 Cooper County
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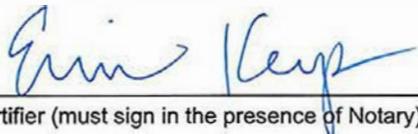
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 (Erin Keys)
 Certifier (must sign in the presence of Notary)

2/26/2020
 Date

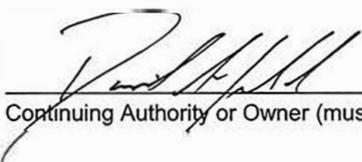


 Notary Public 1*

2/26/2020
 Date



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 My Commission Expires
 March 4, 2022
 Cooper County
 Commission #18185291



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 Continuing Authority or Owner (must sign in presence of Notary)

2-26-2020
 Date



 Notary Public 2*

2/26/2020
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CITY OF COLUMBIA, MISSOURI

OFFICE OF CITY MANAGER

December 12, 2019

Chris Weiberg, Director
Water Protection Program
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RE: City of Columbia Sanitary Sewer Utility and Storm Water Utility Signatory Requirements for Permit Applications and Reports

Dear Mr. Weiberg:

The purpose of this letter is to provide written notification of positions authorized to sign, electronically or otherwise, permit applications and reports for the City of Columbia related to the sanitary sewer system and storm water system. As the principal executive officer of the City of Columbia, I designate the individuals in the following positions as "duly authorized employee" for the purposes of these applications and reports:

Assistant Director, Utilities Department – David Sorrell, P.E.
Engineering and Operations Manager, Utilities Department – Erin Keys, P.E.

If you need additional information, please contact David Sorrell, Assistant Director, Utilities Department either by phone 573-441-5532 or email david.sorrell@CoMo.gov

Sincerely,

John D. Glascock, P.E.
Interim City Manager

c: David Sorrell, Assistant Director
Erin Keys, Engineering and Operations Manager

701 E. BROADWAY • P.O. BOX 6015 • COLUMBIA, MISSOURI 65205-6015

(573) 874-7214 • FAX (573) 442-8828 • TTY (800) 735-2966

www.GoCOLUMBIAMo.COM



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SYSTEM REGISTRATION

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B. USER ACCOUNT INFORMATION

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LAST NAME Fuemmeler	FIRST NAME Nicki	MIDDLE INITIAL	
JOB TITLE Stormwater Coordinator	EMPLOYER'S NAME Boone County		
EMAIL nfuemmeler@boonecountymo.org	TELEPHONE NUMBER WITH AREA CODE 573-886-4330		
ADDRESS 801 E. Walnut, Room 315	CITY Columbia	STATE MO	ZIP CODE 65201

USER ACCOUNT ACTION <input checked="" type="checkbox"/> Add <input type="checkbox"/> Update <input type="checkbox"/> Delete	ACCOUNT TYPE <input type="checkbox"/> Viewer <input type="checkbox"/> Preparer <input checked="" type="checkbox"/> Certifier		
LAST NAME Florea	FIRST NAME Bill	MIDDLE INITIAL	
JOB TITLE Senior Planner	EMPLOYER'S NAME Boone County		
EMAIL bflorea@boonecountymo.org	TELEPHONE NUMBER WITH AREA CODE 573-886-4330		
ADDRESS 801 E. Walnut, Room 315	CITY Columbia	STATE MO	ZIP CODE 65201

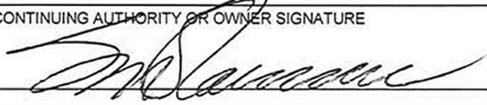
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LAST NAME	FIRST NAME	MIDDLE INITIAL	
JOB TITLE	EMPLOYER'S NAME		
EMAIL	TELEPHONE NUMBER WITH AREA CODE		
ADDRESS	CITY	STATE	ZIP CODE

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CONTINUING AUTHORITY OR OWNER NAME (TYPE OR PRINT) Stan Shawver	CONTINUING AUTHORITY OR OWNER SIGNATURE 	DATE 2/26/2020
OFFICIAL TITLE (TYPE OR PRINT) Director, Resource Management		

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Nicki Fuemmeler (Nicki Fuemmeler)
 Certifier (must sign in the presence of Notary)

2/26/2020
 Date



Paula L. Evans
 Notary Public 1* Paula L. Evans

2/26/2020
 Date

Stan Shawver (Stan Shawver)
 Continuing Authority or Owner (must sign in presence of Notary)

2/26/2020
 Date

 Notary Public 2*

 Date

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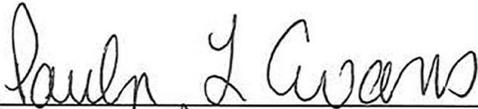


(Bill Florea)

Certifier (must sign in the presence of Notary)

2/26/2020

Date



Notary Public 1* Paula L. Evans

2/26/2020

Date

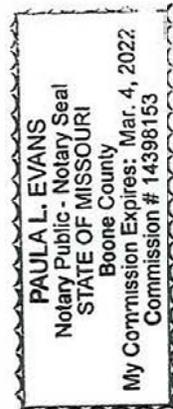


(Stan Shawver)

Continuing Authority or Owner (must sign in presence of Notary)

2/26/2020

Date



Notary Public 2*

Date

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