



Municipal Separate Storm Sewer System Stormwater Management Plan

City of Independence, Missouri

Prepared for
City of Independence, Missouri

December 2019

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Contents

1.0	Introduction	1
1.1	Location	1
1.2	Regulatory Background.....	2
1.3	Plan Objectives	3
2.0	MCM1: Public Education and Outreach.....	4
2.1	Purpose and Scope	4
2.2	Target Pollutants and Audiences.....	4
2.3	Best Management Practices	5
2.4	Measurable Goals	6
3.0	MCM2: Public Involvement and Participation.....	8
3.1	Purpose and Scope	8
3.2	Best Management Practices	8
3.3	Measurable Goals	9
4.0	MCM3: Illicit Discharge Detection and Elimination.....	10
4.1	Purpose and Scope	10
4.2	Target Pollutants and Audiences.....	10
4.3	Best Management Practices	11
4.4	Measurable Goals	12
5.0	MCM4: Construction Stormwater Runoff Control	14
5.1	Purpose and Scope	14
5.2	Target Pollutants and Audiences.....	14
5.3	Best Management Practices	15
5.4	Measurable Goals	16
6.0	MCM5: Post-Construction Stormwater Management in New Development and Redevelopment..	18
6.1	Purpose and Scope	18
6.2	Best Management Practices	18
6.3	Measurable Goals	19

7.0	MCM6: Pollution Prevention/Good Housekeeping	21
7.1	Purpose and Scope	21
7.2	Best Management Practices	23
7.3	Measurable Goals	24
8.0	MCM7: Industrial and High Risk Runoff	25
8.1	Purpose and Scope	25
8.2	Best Management Practices	25
8.3	Measurable Goals	26
9.0	MCM8: Flood Control Projects	28
9.1	Purpose and Scope	28
9.2	Best Management Practices	28
9.3	Measurable Goals	29
10.0	MCM9: Monitoring.....	30
10.1	Purpose and Scope	30
10.2	Best Management Practices	31
10.3	Measurable Goals	31
11.0	Reporting and Recordkeeping	33
11.1	Reporting	33
11.2	Recordkeeping.....	33
12.0	References	35

List of Tables

Table 1-1	Stormwater Outfall Locations and Receiving Waters	2
Table 2-1	MCM1 Target Pollutants and Audiences	4
Table 2-2	MCM1 Target Audiences and Outreach Mechanisms.....	5
Table 2-3	MCM1 Measurable Goals.....	7
Table 3-1	MCM2 Measurable Goals.....	9
Table 4-1	MCM3 Target Pollutants and Audiences	11
Table 4-2	MCM3 Measurable Goals.....	13
Table 5-1	MCM4 Target Pollutants and Audiences	14
Table 5-2	MCM4 Target Audiences and Outreach Mechanisms.....	15
Table 5-3	MCM4 Measurable Goals.....	17
Table 6-1	MCM5 Measurable Goals.....	20
Table 7-1	MCM6 Municipal Operations and Locations	22
Table 7-2	MCM6 Target Pollutants and BMPs.....	23
Table 7-3	MCM6 Measurable Goals.....	24
Table 8-1	MCM7 Measurable Goals.....	27
Table 9-1	MCM8 Measurable Goals.....	29
Table 10-1	MCM9 Measurable Goals.....	32
Table 10-2	MCM9 Stream Monitoring Locations.....	32

List of Attachments

Attachment A	State of Missouri, Department of Natural Resources Operating Permit MO-0130401
Attachment B	Stormwater Management Plan Contacts and Responsibilities

Abbreviations and Acronyms

BMP	best management practice
City	City of Independence
EPA	U.S. Environmental Protection Agency
MARC	Mid-America Regional Council
MCM	minimum control measure
MDNR	Missouri Department of Natural Resources
MEP	Maximum Extent Practicable
MS4 Permit	Missouri State Operating Permit (MO-0130401)
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
O&M	operation and maintenance
PHFs	pesticides, herbicides, fertilizers
SWMP	Stormwater Management Plan
SWOC	Storm Water Oversight Committee
USGS	U.S. Geological Survey
WPC	Water Pollution Control
WQEC	Water Quality Public Education Committee
SWPPP	Stormwater Pollution Prevention Plan
SOP	standard operating procedure

1.0 Introduction

1.1 Location

The City of Independence (City), which covers approximately 78.3 square miles, is located in Jackson County in western Missouri. As of the 2010 census, the City had a population of 116,830. The City is the fifth largest in Missouri and has a population density of 1,500 per square mile. The population continues to grow at an estimated rate of 0.1-0.4% per year.

The City is a Municipal Separate Storm Sewer System (MS4) community with a Phase I Medium MS4 National Pollutant Discharge Elimination System (NPDES) Missouri State Operating Permit (MO-0130401; MS4 Permit) issued by the Missouri Department of Natural Resources (MDNR). The City developed its previous Stormwater Management Plan (SWMP) in 1993 under the oversight of the Stormwater Task Force as a measure to implement this program and comply with their permit. In 2002, the City developed a stormwater communications plan designed to engage stakeholders to ensure public awareness and participation with respect to the SWMP. Revisions made to the SWMP since 1993 reflect changes to programs and permit requirements and incorporate feedback from the stormwater communications plan. The stormwater communication plan is no longer in effect; however, communication with the public has been incorporated into the SWMP. The SWMP describes the City's approach to implementing best management practices (BMPs) for each of the nine minimum control measures (MCMs), as outlined in the City's MS4 Permit, and described in Section 1.2. This version of the SWMP has been restructured and updated to meet newly add MCM requirements listed in the permit issued on September 1, 2018.

As of 2019, the City has an estimated 230 miles of storm sewers, over 13,800 stormwater structures (street curb inlets, concrete swales, crossroad pipes, and storm sewer inlets and outlets), 19 regional detention basins, and 23 local watersheds. Approximately 250 storm outlets are outfalls that discharge to waters of the state. The MS4 collects and routes stormwater from industrial, commercial, and residential areas located within the municipal boundary and discharges the stormwater to waters of the state. The City operates its own water treatment plant and wastewater treatment plant, and maintains both water distribution and wastewater collection lines.

Table 1-1 includes representative major stormwater outfalls that discharge to waters of the state. Several of the outfall streams, such as Little Blue River and East Fork Little Blue River, have designated uses in accordance with 10 CSR 20-7.031(1)(P) and the Missouri Use Designation Dataset (MUDD). Both the Little Blue River and East Fork Little Blue River have been designated for protection of aquatic life, irrigation use, livestock and wildlife watering, secondary contact, whole body contact, and human health protection. It should also be noted that the Little Blue River, a Tributary to the Little Blue River, the East Fork of Little Blue River, Mill Creek, and Rock Creek, are currently on the Section 303(d) list for impaired waters due to e. coli.

Table 1-1 Stormwater Outfall Locations and Receiving Waters

Outfall	UTM (Zone 15)	Receiving Water
001	X= 388985.91, Y= 4324046.52	Tributary to Burr Oak Creek
002	X= 376246.48, Y= 4324104.95	Tributary to Rock Creek
003	X= 382672.15, Y= 4325138.71	Tributary to Little Blue River
004	X= 381437.00, Y= 4327871.30	Spring Branch
005	X= 384183.45, Y= 4321201.62	East Fork Little Blue River
006	X= 389162.65, Y= 4329168.22	West Fire Prairie Creek
007	X= 383851.08, Y= 4331518.71	Tributary to Little Blue River
008	X= 379243.77, Y= 4321934.46	Tributary to Camp Creek
009	X= 382348.934, Y= 4320841.907	Little Blue River
010	X= 377136.589, Y= 4328664.202	Tributary to Mill Creek
011	X= 374803.93, Y= 4328357.18	Sugar Creek

1.2 Regulatory Background

As a city with a population of 116,830, the City is categorized as a Phase I Medium MS4 owner/operator by the U.S. Environmental Protection Agency (EPA). The MS4 Permit (Attachment A) authorizes the City to discharge stormwater. Sections A.2 and D of the MS4 Permit require the City to develop a written SWMP that includes nine MCMs established by the EPA, processes for BMP evaluation and reporting, and recordkeeping. The nine MCMs in the MS4 permit are:

1. Public Education and Outreach on Stormwater Impacts (Section E.1 of the MS4 Permit);
2. Public Involvement and Participation (Section E.2 of the MS4 Permit);
3. Illicit Discharge Detection and Elimination (Section E.3 of the MS4 Permit);
4. Construction Site Stormwater Runoff Control (Section E.4 of the MS4 Permit);
5. Post-Construction Stormwater Management in New Development and Redevelopment (Section E.5 of the MS4 Permit);
6. Pollution Prevention/Good Housekeeping for Municipal Operations (Section E.6 of the MS4 Permit);
7. Industrial and High Risk Runoff (Section E.7 of the MS4 Permit);
8. Flood Control Projects (Section E.8 of the MS4 Permit) and;
9. Monitoring (Section E.9 of the MS4 of the MS4 Permit).

1.3 Plan Objectives

The objective of this SWMP is to:

- provide BMPs to achieve pollutant reduction to the Maximum Extent Practicable (MEP) for each of the nine MCMs in stormwater discharge;
- provide measurable goals to evaluate BMPs;
- use an iterative process to evaluate BMPs and modify them as necessary;
- ensure the City is in compliance with the proper monitoring, recordkeeping, and reporting requirements, set forth by the MS4 permit; and
- list the responsible person(s) for each MCM. Attachment B includes a list of SWMP contacts and responsibilities.

2.0 MCM1: Public Education and Outreach

2.1 Purpose and Scope

This section of the SWMP was developed in accordance with MS4 Permit Section E.1. The purpose of MCM1 is to establish a public education program to distribute educational material to the community or conduct equivalent outreach activities to:

- educate the public on the impact of stormwater on waterbodies; and
- provide steps the public can take to reduce pollutants in stormwater runoff.

Current lists of target pollutants, audiences, and mechanisms for outreach are listed in Section 2.2.

The City's Water Pollution Control (WPC) Department, Parks and Recreation Department, and Public Works Department conduct public education and outreach. The City's WPC Environmental Compliance Manager will serve as the responsible person for MCM1 and will report education and outreach activities.

2.2 Target Pollutants and Audiences

Table 2-1 provides a list of target pollutants and their associated target audiences for MCM1. Table 2-2 provides the target mechanisms for each audience.

Table 2-1 MCM1 Target Pollutants and Audiences

Target Pollutant	Potential Sources/ Target Audience(s)
Pet waste	<ul style="list-style-type: none"> • Residents • K-12 students
Litter and yard waste	<ul style="list-style-type: none"> • Residents • Commercial businesses • Industrial facilities • City employees
Pesticides, herbicides, fertilizers (PHFs)	<ul style="list-style-type: none"> • Residents • Commercial businesses • Industrial facilities • City employees
Petroleum products	<ul style="list-style-type: none"> • Residents • Commercial businesses • Industrial facilities • City employees
Other toxic materials, including hazardous waste	<ul style="list-style-type: none"> • Residents • Commercial businesses • Industrial facilities • City employees
Sediment	<ul style="list-style-type: none"> • Developers • Industrial facilities • City employees

Table 2-2 MCM1 Target Audiences and Outreach Mechanisms

Target Audience	Target Outreach Mechanism
Students; K-12	<ul style="list-style-type: none"> • Tabling events • Tours • Presentations • Handouts
Residents	<ul style="list-style-type: none"> • Tabling events • Tours • Presentations • Handouts • Mailers • Social media • Regional household hazardous waste collection program
Commercial businesses	<ul style="list-style-type: none"> • Inspections • Social media • Mailers
Industrial facilities	<ul style="list-style-type: none"> • Inspections • Social media • Mailers
City employees	Training

2.3 Best Management Practices

The MS4 Permit requires the City to develop or design BMPs to address each MCM and describe the BMPs in the SWMP (Section D.1.a. of the MS4 Permit). The purpose of the following BMPs is to educate and inform all target audiences of potential stormwater pollutants that each audience manages or may encounter. The City has many ongoing public education BMPs to address MCM1, including:

- Online and hard copy public education materials - Education materials, such as the City’s website, pamphlets, brochures, mailers, coloring books, and videos, address stormwater discharge and pollutants. At a minimum, stormwater pollutant topics covered by the education materials should include pollution prevention, stormwater management, composting, oil and grease, and car washing.
- CityScene, the City’s quarterly newsletter – Newsletter topics change based on seasonal issues and frequently include water quality topics such as household hazardous waste disposal, yard waste disposal, PHFs, and illicit discharges.
- Giveaway items (incentives) – The intent of giveaway items is to incentivize behavioral changes; these items include pet waste bag dispensers, grease scrappers, grease can lids, and vehicle waste disposal bags.
- Social media – Social media activity promotes stormwater quality and outreach activities.
- Outreach events – Outreach events include but are not limited to, tabling events, wastewater treatment plant tours, educational presentations, and Missouri Stream Team activities.
- Signage – Signage may include, but is not limited to, promotional signage and drain and inlet stenciling.

- Illicit discharge outreach, including the reporting program – The City offers public participation activities to discourage illicit dumping, including the regional Household Hazardous Waste Program and City Drop-off Depot, which accepts trash and brush. The City also has a reporting program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with the discharge from the MS4. This program includes the ability to report illicit discharges, storm sewer, sanitary sewer, and other environmental concerns through the City’s Action Center located on the City’s web page. Concerns and issues may also be reported through social media or directly to City departments by telephone.
- Membership and participation in the Mid-America Regional Council (MARC)– The Mid-America Regional Council (MARC) is an association of city and county governments and the metropolitan planning organization for the bi-state Kansas City region. MARC’s water quality program provides educational resources, grants, research and public outreach for local governments as well as the general public. MARC has convened a committee of representatives from local governments and environmental organizations to develop a cooperative approach to water quality public education. MARC also sponsors water quality training for both professionals (e.g., KC Urban Stormwater Conference) and the public (e.g., rain garden workshops). The City participates in the following opportunities coordinated by MARC:
 - The Regional Household Waste Collection Program -WPC houses a mobile hazardous waste drop-off event annually as part of the program.
 - The Regional Water Quality Public Education Committee (WQEC) - the purpose of the WQEC is to develop public education materials that coordinate messaging across greater Kansas City; this coordinated effort strengthens messaging and effectiveness for the City’s residents.
 - Citizen surveys - biennial public attitude surveys are conducted through the WQEC to assess the public’s knowledge of and attitudes about water quality in greater Kansas City. The survey provides a benchmark for evaluation of water quality public education initiatives over time and provides guidance for future efforts.

2.4 Measurable Goals

The City has established measurable goals for each BMP, as required by Section D.1.b. of the MS4 Permit. The intent of the measurable goals is to provide quantifiable milestones to determine the appropriateness of identified BMPs and document progress toward the MCMs through the BMPs. Table 2-3 provides City’s measurable goals for the BMPs designated for MCM1.

Table 2-3 MCM1 Measurable Goals

BMP	Measurable Goal Tracking Mechanism	Interim Milestone Date	Completion Milestone Date	Measurement Frequency
Public education materials, including giveaway items	<ul style="list-style-type: none"> • Document the type and number items/materials distributed, distribution locations, and receiving audiences • Track the number of visits to resource library website • Update website annually 	Ongoing	Ongoing	Annually
Social Media	Evaluate social media plan on an annual basis	Ongoing	Ongoing	Annually
Outreach events	Document events, including event type and location, participation numbers, and topics covered.	Ongoing	Ongoing	Annually
Signage	<ul style="list-style-type: none"> • Document location of stenciled storm drains • Document new and/or replacement signage 	Ongoing	Ongoing	Annually
Illicit Discharge Reporting	Document number of service requests	Ongoing	Ongoing	Annually
Regional efforts and other information sources	<ul style="list-style-type: none"> • Document City participation in regional events, including the event type, location, date, and other attendees that participate in the event • Evaluate biennial public attitude surveys 	Ongoing	Ongoing	Annually

3.0 MCM2: Public Involvement and Participation

3.1 Purpose and Scope

This section of the SWMP was developed in accordance with MS4 Permit Section E.2. The purpose of MCM2 is to establish a public involvement/participation program to describe:

- how the public is involved; and
- opportunities provided to be involved with the permittee's MS4 program.

The City's public involvement/participation program currently includes, but are not limited to, the following opportunities to be involved in the MS4 program:

- a public notice period of at least 30 days to allow the public to review and comment on the draft MS4 permit
- the Storm Water Oversight Committee (SWOC)
- City Planning Commission biweekly meetings, broadcast on City 7, the government access cable television station
- City Council weekly meetings, broadcast on City 7
- neighborhood public meetings regarding storm water concerns

The City's WPC Director and WPC Environmental Compliance Manager will serve as the responsible persons for MCM2. The WPC Director will oversee the public notice of the SWMP and permit renewal process. The Environmental Compliance Manger will oversee public participation programs.

3.2 Best Management Practices

The purpose of the BMPs listed in this section is to support the public involvement/participation program in accordance with MCM2. BMPs to address MCM2 include the following:

- Stakeholder involvement opportunities - Stakeholder involvement opportunities include, but are not limited to:
 - City board positions and committees, such as the SWOC; and
 - comment periods on the City's SWMP, MS4 permit, and City ordinances.
- Neighborhood meetings – Neighborhood meetings often include presentations from City staff members.
- Live City meeting broadcasts– Broadcasts include weekly City Council meetings and biweekly City Planning Commission meetings on City 7. City Council and Planning Commission meetings are open to the public.

- Citizen survey – The City participates in the WQEC biannual survey to gauge change in attitude/behavior and exposure to stormwater education (refer to MCM1).

The following BMPs will be designed, developed, or further developed for MCM2:

- A formal public involvement and participation program - This program will establish how and where the public can be involved and provide notices to the public about involvement opportunities.
- Additional participation opportunities – Additional participation opportunities will be developed, as needed.

3.3 Measurable Goals

Table 3-1 provides City’s measurable goals for the BMPs designated for MCM2. The intent of the measurable goals is to provide quantifiable milestones to determine the appropriateness of identified BMPs and document progress toward the MCMs through the BMPs.

Table 3-1 MCM2 Measurable Goals

BMP	Measurable Goal Tracking Mechanism	Interim Milestone Date	Completion Milestone Date	Measurement Frequency
Stakeholder involvement opportunities	<ul style="list-style-type: none"> • Track participants in City boards and committees, including name and length of service • Document number of reviews/ comments per opportunity • Evaluate trends in review/comment participation 	Ongoing	Ongoing	Annually
Stormwater Oversight Committee	<ul style="list-style-type: none"> • Document number of meetings • Document participant numbers at each meeting 	Ongoing	Ongoing	Annually
City Council and neighborhood meetings	Document meetings that include MS4-related topics	Ongoing	Ongoing	Annually

4.0 MCM3: Illicit Discharge Detection and Elimination

4.1 Purpose and Scope

This section of the SWMP was developed in accordance with MS4 Permit Section E.3. The purpose of MCM3 is to establish procedures to prevent illicit discharges from City outfalls to receiving waterbodies and provide follow-up and enforcement in the event of an illicit discharge.

The City's program for illicit discharge detection and elimination currently includes:

- MS4 mapping
- annual dry weather field screening
- illicit discharge source investigations and elimination, including emergency spill response
- public reporting of non-stormwater discharges and spills
- illicit discharge education and training

The City's WPC Environmental Compliance Manager will serve as the responsible persons for MCM3. The Fire Department serves as the lead team for emergency spill response and containment procedures.

4.2 Target Pollutants and Audiences

Table 4-1 provides a list of target pollutants and their associated target audiences for MCM4.

Table 4-1 MCM3 Target Pollutants and Audiences

Target Pollutant	Potential Sources / Target Audience(s)
Petroleum products	<ul style="list-style-type: none"> • Commercial (vehicle service stations) • Industrial facilities
Litter and yard waste	<ul style="list-style-type: none"> • Residents • Commercial businesses • Industrial facilities • City employees
Pesticides, herbicides, fertilizers (PHFs)	<ul style="list-style-type: none"> • Residents • Commercial businesses • Industrial facilities • City employees
Other hazardous materials	<ul style="list-style-type: none"> • Residents • Commercial businesses • Industrial facilities • City employees
Bacteria (E.coli)	<ul style="list-style-type: none"> • Wildlife • Residents • Commercial businesses • Industrial facilities • Sanitary sewer

4.3 Best Management Practices

The purpose of the BMPs listed in this section is to educate and inform all target audiences of potential stormwater pollutants that each audience manages or may encounter. The City has many ongoing BMPs to address MCM3, including the following:

- MS4 map – The City maintains an up-to-date, publicly accessible map of the City’s storm sewer system (reference (1)).
- City ordinances – City Code, Chapter 7, Article 8, addresses the illicit discharge of pollutants into the MS4 and waters of the state (reference (2)).
- Public reporting mechanisms - Mechanisms for public reporting of non-stormwater discharges and spills include a City hotline number and service requests.
- Illicit discharge investigations and follow-up inspections – City staff respond to service requests within 72 hours. Staff conduct follow-up inspections as needed to ensure that corrective measures have been implemented by the responsible party to achieve and maintain compliance. WPC maintains a “Field Investigation Procedures for Illicit Discharges”. A copy of this manual is available at the Rock Creek Water Reclamation Plant.

- City employee training - Illicit discharge training for City employees include the following:
 - illicit discharge recognition and reporting
 - task training for field staff who may encounter illicit connections or discharges on a routine basis
- Dry weather field screening - Dry weather field screening procedures of the City's 24 subwatersheds (in partnership with U.S. Geological Survey [USGS]) include procedures for waterway observations, outfall inspections, and sample collection. USGS procedures include testing for the following parameters, at a minimum; chlorine, detergents, temperature, pH, and estimated discharge rate. The USGS data is used to help determine if the discharge is natural, allowable, or illicit. WPC conducts a follow-up investigation if a sample indicates a possible illicit discharge. Effective year two of the MS4 Permit, USGS will no longer be contracted for dry weather screening. WPC will continue to conduct dry weather screening annually.
- Emergency response procedures – The City's Incident Command System serves as the emergency response procedures for illicit discharges.
- Illicit discharge prevention outreach – The City offers public participation activities to discourage illicit dumping, including the regional Household Hazardous Waste Program (refer to Section 2.0) and Drop-off Depot, which accepts trash and brush.
- Facility inspections – The City inspects commercial and industrial facilities prior to the issuance of a City business license. During this inspection businesses are educated on stormwater requirements and proper handling of materials exposed to stormwater.
- Operation and maintenance (O&M) practices – The City employs O&M practices to limit infiltration to the MS4 or seepage from the municipal sanitary sewer. WPC inspects the sanitary sewer system using closed-circuit televised technology. Sewer system segments with high infiltration or exfiltration are placed on a list to be repaired, replaced, or lined using trenchless techniques.

The following BMPs will be designed, developed, or further developed for MCM3:

- Stormwater sample action levels – WPC plans to develop stormwater sample action levels based on sample results by year five of the permit.
- Dry weather screening procedures – WPC will update of dry weather screening procedures by year three of the permit.

4.4 Measurable Goals

Table 4-2 provides City's measurable goals for the BMPs designated for MCM3. The intent of the measurable goals is to provide quantifiable milestones to determine the appropriateness of identified BMPs and document progress toward the MCMs through the BMPs.

Table 4-2 MCM3 Measurable Goals

BMP	Measurable Goal Tracking Mechanism	Interim Milestone Date	Completion Milestone Date	Measurement Frequency
Overall illicit discharge detection and elimination program	<ul style="list-style-type: none"> Evaluate once per permit cycle Develop plan for updates, as necessary 	N/A	Permit year five	N/A
Map of MS4	Update map as needed	Initial map completed in 2010	Ongoing	N/A
Ordinances	City Code is updated as needed	Established in 1999	Ongoing	N/A
Public reporting mechanisms	<ul style="list-style-type: none"> Document hotline and service requests, including the date and type of request Document follow-up actions to requests, including the date(s) of inspection, follow-up action, and correction (if needed) 	N/A	Ongoing	Annually
Inspection and investigation actions and procedures	<ul style="list-style-type: none"> Document inspection and investigation actions, including the date(s) of inspection, follow-up action, and correction (if needed) Review procedures on an annual basis for applicability 	Ongoing (Procedures established in 2009)	Ongoing	Annually
Emergency response procedures	Update as needed, (maintained by Fire Department)	Ongoing	Ongoing	Annually
Field screening	Screen sub-watersheds annually with the goal to walk all 24 sub-watersheds during a permit cycle	Update procedures during year three	Ongoing	Annually
O&M practices	Document feet of sewer main inspected and feet of sewer main repaired	Ongoing	Ongoing	Annually

5.0 MCM4: Construction Stormwater Runoff Control

5.1 Purpose and Scope

This section of the SWMP was developed in accordance with MS4 Permit Section E.4. The purpose of MCM4 is to develop, implement, and enforce a stormwater runoff program for construction activities that result in land disturbance greater than or equal to one acre in size or part of a common plan of development or sale that would disturb land greater than or equal to one acre.

The City has currently enacted the following policies and procedures regarding construction stormwater runoff control:

- implementation and enforcement of sediment and erosion control at land disturbance sites
- Public Works guidance manuals that address ordinances and BMPs to control sediment and erosion
- procedures to inspect and enforce construction site control measures
- educational and training measures for construction site operators

Current lists of target pollutants, potential sources, target audiences, and mechanisms for outreach are listed in Section 5.2.

The Public Works Department Assistant Director (City Engineer) will serve as the responsible person for MCM4.

5.2 Target Pollutants and Audiences

Table 5-1 provides a list of target pollutants and their associated target audiences for MCM4. Table 5-2 provides the target mechanisms for each audience.

Table 5-1 MCM4 Target Pollutants and Audiences

Target Pollutant	Potential Sources	Target Audience(s)
Sediment	Land disturbance from clearing and grubbing activities	<ul style="list-style-type: none">• Development contractors• Businesses• Homeowners
Construction site waste (e.g., discarded building material, concrete truck washout, chemicals, litter and sanitary waste)	Construction activities	Construction site operators (development contractors, owners, and third parties)

Table 5-2 MCM4 Target Audiences and Outreach Mechanisms

Target Audience	Target Outreach Mechanism
Contractors	<ul style="list-style-type: none"> • Permitting • Public Works Sediment and Erosion Control Manual • Site Inspections • Public Works Department Stormwater Quality Manual • Erosion control handouts
Businesses	<ul style="list-style-type: none"> • Permitting • Public Works Sediment and Erosion Control Manual • Site inspections • Public Works Department Stormwater Quality Manual • Erosion control handouts
Homeowners	<ul style="list-style-type: none"> • Permitting • Public Works Sediment and Erosion Control Manual • Site inspections • Public Works Stormwater Quality Manual • Erosion control handouts

5.3 Best Management Practices

The purpose of the BMPs listed in this section is to educate and inform all target audiences of potential stormwater pollutants that each audience manages or may encounter. The City has many ongoing BMPs to address MCM4, including the following:

- City ordinances - City Code, Ch. 20, Article 16 establishes requirements for erosion and sediment control BMPs at construction sites and includes sanctions designed to ensure compliance (reference (2)).
- Construction waste BMPs – The Public Works Department’s Sediment and Erosion Control Manual and Stormwater Quality Manual establishes City requirements for construction projects, including construction waste BMPs.
- Permit tracking - The City uses Cityworks software to track construction sites by erosion control permits, permit dates, and basic site information.
- Inspection procedures - The City has procedures to inspect and enforce construction site control measures by inspecting erosion control permit locations.
- Operator training - The City provides resources for construction site operators for construction site education and training.

-
- Construction site discharge response procedures – The City (Public Works or WPC Departments) investigates public reports of discharges of pollutants from construction sites. Any violations identified are referred to Public Works and enforcement is conducted following their procedures.

The following BMP will be designed, developed, or further developed regarding MCM4 in year three of the permit:

- Stormwater Pollution Prevention Plan (SWPPP) reviews – The City will develop procedures for reviewing construction site SWPPPs prior to issuing erosion control permits.

5.4 Measurable Goals

Table 5-3 provides City's measurable goals for the BMPs designated for MCM4. The intent of the measurable goals is to provide quantifiable milestones to determine the appropriateness of identified BMPs and document progress toward the MCMs through the BMPs.

Table 5-3 MCM4 Measurable Goals

BMP	Measurable Goal Tracking Mechanism	Interim Milestone Date	Completion Milestone Date	Measurement Frequency
Ordinances	<ul style="list-style-type: none"> Track ordinance changes Track ordinance and regulatory mechanism reviews Document stop work orders issued as well as additional enforcement actions and outcomes 	N/A	N/A	As needed
Construction waste BMPs	Land disturbance inspections	Review of new BMP in year two annual report	Ongoing	Annually
Permit tracking	Track the number of issued permits and associated compliance activities, as needed	N/A	N/A	As needed
Inspection procedures	<ul style="list-style-type: none"> For each inspector training, document training records, including the contractor trained, date of training, instructor(s), and topics included Review inspection procedures for applicability on an annual basis 	Ongoing	Ongoing	Annually
Operator trainings	<ul style="list-style-type: none"> For each training, document training records, including the contractor trained, date of training, instructor(s), and topics included Review training procedures for applicability on an annual basis 	Ongoing	Ongoing	Annually
Construction site discharge response procedures	Track the number of reports and follow-up actions	Ongoing	Ongoing	Annually

6.0 MCM5: Post-Construction Stormwater Management in New Development and Redevelopment

6.1 Purpose and Scope

This section of the SWMP was developed in accordance with MS4 Permit Section E.5. The purpose of MCM5 is to develop, implement, and enforce a post-construction stormwater program for construction activities that result in land disturbance greater than or equal to one acre in size or part of a common plan of development or sale that would disturb land greater than or equal to one acre.

The City has currently enacted the following components of a post-construction stormwater management program:

- ordinances and other regulatory mechanisms to address post-construction runoff
- site plan reviews for new development or redevelopment projects
- stormwater design criteria including assessment of site characteristics, buffer criteria for streams, preservation of undisturbed natural areas
- long-term O&M of municipally owned, post-construction stormwater control measures
- inspections and enforcement to ensure long-term O&M of private post-construction stormwater controls (further development in progress)

The following persons and City departments are responsible for MCM5:

- The City's WPC Environmental Compliance Manager is responsible for oversight of the stream buffer setback regulations and on-site stormwater maintenance.
- The Public Works Department is responsible for oversight regarding flood plan management, on-site stormwater management, and land disturbance.
- Community Development is responsible for oversight of tree preservation plans.

6.2 Best Management Practices

The purpose of the BMPs listed in this section is to support the post-construction stormwater management program in accordance with MCM5. BMPs to address MCM5 include the following:

- City ordinances - City ordinances (reference (2)) pertaining to MCM5 address the following:
 - stream buffer and setback regulations, including stream buffer plan requirements (City Code, Ch. 7)

- development requirements and minimization of water quality impacts, including the preservation of undisturbed natural areas, trees, and steep slopes (City Code Ch. 14)
- requirements for property owners to maintain detention facilities (City Code Ch. 17)
- design criteria for public systems (City Code Ch. 20)
- enforcement is conducted in accordance with City Code
- Inspections (public BMPs) – The City conducts inspections of municipal detention facilities to ensure O&M on an annual or as-needed basis.
- Development reviews – The City conducts plan reviews for new development and redevelopment to ensure adequate planning for stormwater program compliance.
- Post-construction stormwater design criteria – The City requires developers to adhere to the Public Works Stormwater Quality Management Guide for the design of permanent stormwater BMPs.
- Preservation of undisturbed natural areas, trees, and steep slopes - The City requires the preservation of undisturbed natural areas, trees, and steep slopes to reduce post-construction stormwater runoff. Tree preservation plans are required for new construction projects or construction of an existing structure that requires site clearing and grubbing.
- Floodplain management controls - The City considers water quality impacts in the evaluation and development of floodplain management controls. Floodplain management controls are further discussed in the BMPs listed for MCM8: Flood Control Projects (refer to Section 9.0).

The following BMPs will be designed, developed, or further developed during year four of the permit regarding MCM5:

- A formal BMP O&M agreement plan – The City will develop a formal plan is to include agreements between permittee and parties to ensure ongoing BMP O&M following construction.
- Private permanent stormwater BMP inventory – The City will develop an inventory of privately-owned permanent stormwater BMPs. New BMPs will be added to the inventory/database during year two. Existing stormwater controls will be added to the inventory upon identification.
- Inspections (private BMPs) – The City will begin to inspect privately-owned permanent stormwater BMPs or verify of independent inspections are conducted by owners or operators.

6.3 Measurable Goals

Table 6-1 provides City’s measurable goals for the BMPs designated for MCM5. The intent of the measurable goals is to provide quantifiable milestones to determine the appropriateness of identified BMPs and document progress toward the MCMs through the BMPs.

Table 6-1 MCM5 Measurable Goals

BMP	Measurable Goal Tracking Mechanism	Interim Milestone Date	Completion Milestone Date	Measurement Frequency
Ordinances	<ul style="list-style-type: none"> • Review as needed • Document enforcement actions and outcomes • Document specific maintenance issues or violations found that need to be corrected by the property-owner or operator along with deadlines and follow-up inspection dates 	Ongoing	Ongoing	Annually
Inspections	Document inspection and maintenance activities, including requests	Ongoing	Ongoing	Annually
Development reviews	Document site plan reviews, including project, date reviewed, deficiencies, and follow-up actions, as necessary	Ongoing	Ongoing	Annually
Stormwater design criteria	<ul style="list-style-type: none"> • Document revisions to the stormwater design criteria manual • Update as needed 	Ongoing	Ongoing	N/A
Preservation of undisturbed natural areas, trees, and steep slopes	<ul style="list-style-type: none"> • Track the acreage of natural areas and steep slopes • Document tree preservation plans for projects to measure effectiveness, including the project and preservation area 	Ongoing	Ongoing	Annually

7.0 MCM6: Pollution Prevention/Good Housekeeping

7.1 Purpose and Scope

This section of the SWMP was developed in accordance with MS4 Permit Section E.6. The purpose of MCM6 is to develop and implement an O&M program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. The program includes the following requirements of the MS4 Permit for this SWMP:

- an O&M program for municipal operations owned and operated by the City
- an employee training program to prevent and/or reduce stormwater pollution from municipal operations
- a list of all municipal operations impacted by this program
- maintenance of BMPs, including maintenance schedules and inspections for structural controls
- controls to reduce and/or eliminate pollutant discharge from streets, roads, and highways, which include, at a minimum:
 - stored and covered deicing chemicals, as well as deicing practices
 - street sweepings and proper disposal on curb and gutter streets
 - street design, construction, and maintenance practices that reduce the discharge of pollutants to the MS4
 - periodic grated inlets, roadway stormwater inlets, and catch basin cleaning
- prevention of paints, solvents, and petroleum products from exposure to stormwater
- a plan to reduce pollutant discharge from PHFs

The City's WPC Environmental Compliance Manger will serve as the responsible person for MCM6.

Table 7-1 provides a list of municipal operations and their locations that are impacted by the City's operations and maintenance program. Table 7-2 provides the target pollutants and BMPs for each pollutant.

Table 7-1 MCM6 Municipal Operations and Locations

Municipal Operation	City Department	Location	Onsite Activities
Central Garage	Public Works	1030 S Crysler	Fleet Maintenance/Fuel
Massman Farm Street Maintenance Operations	Public Works	865 Vista Ave	Outdoor Operations ⁽¹⁾ /Drop-off Depot/Salt Storage
Park Maintenance Facility	Parks/Rec/Tourism	320 E. Lexington	Garage/Outdoor Operations ⁽¹⁾ /Fuel
Water Construction Maintenance Building	Water Department	420 N Forest Ave.	Garage/Outdoor Operations ⁽¹⁾ /Fuel
WPC Sewer Maintenance Building	Water Pollution Control (WPC)	14909 E. Truman Rd	Garage/Outdoor Operations ⁽¹⁾ /Fuel
WPC Sewer Maintenance Storage Yard	WPC	S Powell Rd and M-78 Hwy	Outdoor Operations ⁽¹⁾
WPC Rock Creek Wastewater Treatment Plant	WPC	9600 Norledge	Outdoor Operations ⁽¹⁾
Courtney Bend Water Plant (does not discharge to MS4)	Water Department	14700 N. Cement City Rd.	Outdoor Operations ⁽¹⁾
Power & Light Service Center – IPL Garage	Power & Light	21500 E. Truman Rd	Fleet Maintenance/Outdoor Operations ⁽¹⁾ /Fuel
Fire Training Center	Fire Department	S Powell Rd and M-78 Hwy	Outdoor Operations ⁽¹⁾

(1) Per Missouri Department of Natural Resources' Guidance for No Exposure Certification for Exclusion from Stormwater Permit Requirements, "outdoor operations" include, but are not limited to, material handling activities, industrial machinery, vehicle maintenance, raw materials, intermediate products, by-products, final products not designed to be outdoors or waste products. Materials stored in drums, barrels, tanks, and similar containers that are tightly sealed, provided those containers are not deteriorated and do not leak are not considered exposed to stormwater. Sealed means banded or otherwise secured and without operational taps or valves.

Table 7-2 MCM6 Target Pollutants and BMPs

Target Pollutant	BMP
Oil and Grease	<ul style="list-style-type: none"> • Proper storage of used oil • Spill kits located near fueling islands • Spill kits located near fleet maintenance operations • Site inspections
Floatables	<ul style="list-style-type: none"> • Good housekeeping • Site inspections • Stormwater inlet protection
Sediment	<ul style="list-style-type: none"> • Stormwater inlet protection • Site inspections

7.2 Best Management Practices

The purpose of the BMPs listed in this section is to support the City’s pollution prevention/good housekeeping program in accordance with MCM6. BMPs to address MCM6 include the following:

- Municipal facility inventory – The City maintains an up-to-date list and map of all municipal facilities and stormwater detention basins. The list and map are stored electronically on the City’s current software of Cityworks and are available for review by the permitting authority. Priority facilities will be updated in the annual report.
- Good housekeeping practices – The City follows good housekeeping practices at each facility. Proper storage of deicing chemicals is included in good housekeeping practices. Housekeeping practices and standard operating procedures (SOPs) are the responsibility of each department.
- Routine inspections, operations, and maintenance (O&M)– The City conducts the following inspections and O&M activities:
 - routine inspections and maintenance of structural BMPs, including City-owned detention basins and surface drainage structures (City staff document catch basin cleanings in a log)
 - O&M procedures for dewatering and disposal of waste materials, fueling facilities (includes inspections), and pollutant elimination from municipal roads and service areas
 - routine street sweeping and proper disposal of sweeper waste materials (street sweeper operators are properly trained on pollution prevention and good housekeeping practices)
- Spill prevention and response procedures - The City follows a spill prevention and response procedure to reduce and respond to spills or releases from vehicle maintenance. The Fire Department is the primary responder to significant spills. Spills are handled following individual site plans, such as EPA-required Spill Prevention Control and Countermeasures (SPCC) plans.

- PHF reduction plan - The City follows state and federal requirements for the application of PHFs. This includes the use of certified employees or hiring certified contractors for the application of controlled PHFs. The City typically refrains from conducting broad use of PHFs and most applications are point usages.

The following BMP will be designed, developed, or further developed in year two of the permit and implemented in year three regarding MCM6:

- Employee training program - The City will develop a comprehensive employee training program regarding stormwater pollution from municipal operations. Materials used for the training program will be described in this SWMP.

7.3 Measurable Goals

Table 7-3 provides City’s measurable goals for the BMPs designated for MCM6. The intent of the measurable goals is to provide quantifiable milestones to determine the appropriateness of identified BMPs and document progress toward the MCMs through the BMPs.

Table 7-3 MCM6 Measurable Goals

BMP	Measurable Goal Tracking Mechanism	Interim Milestone Date	Completion Milestone Date	Measurement Frequency
Municipal facility inventory	Review list and map on an annual basis	Ongoing	Ongoing	Annually
Good housekeeping practices	Document routine inspections at facilities, including dates, findings, and corrective actions, as necessary.	Ongoing	Ongoing	N/A
Stormwater catch basin inspections and O&M	<ul style="list-style-type: none"> • Annual inspections • Mowing monthly or as needed • Annual mowing of entire basin 	Ongoing	Ongoing	Annually
Stormwater structure inspections	Inspect 50% of storm structures (inlets and outlets) per year	Ongoing	Ongoing	Annually
Street sweeping	<ul style="list-style-type: none"> • Document number of lane miles • Document amount of debris disposed of 	Ongoing	Ongoing	Annually
Spill prevention and response procedures	As needed	Ongoing	Ongoing	N/A
PHF reduction plan	Review state and federal requirements on annual basis	N/A	N/A	Annually
Employee training	<ul style="list-style-type: none"> • For each training, document training records, including the contractor trained, date of training, instructor(s), and topics included • Review training procedures for applicability annually 	Develop year two	Year three; Ongoing	Annually

8.0 MCM7: Industrial and High Risk Runoff

8.1 Purpose and Scope

This section of the SWMP was developed in accordance with MS4 Permit Section E.7. The purpose of MCM7 is to prevent and reduce stormwater concerns due to runoff from industrial use and other high-risk facilities.

The City has implemented an inspection and oversight program to monitor and control pollutants in stormwater discharges to the MS4 from industrial and high-risk runoff facilities. The program includes the following requirements of the MS4 Permit for this SWMP:

- an inventory of industrial sites/sources of stormwater discharges to the municipal separate stormwater system;
- inspection of industrial and commercial facilities characterized as high risk for discharging pollutants into the MS4
- enforcement of the Municipal Separate Storm Sewer System Regulations (Chapter 7, Article 8 of the City Code)
- methods to identify priorities and procedures for inspections and establish and enforce control measures for discharges

The City's WPC Environmental Compliance Manager will serve as the responsible person for MCM7.

8.2 Best Management Practices

The purpose of the BMPs listed in this section is to support the industrial and high-risk runoff program in accordance with MCM7. Monitoring, inspection, and enforcement BMPs to address MCM7 include the following:

- High risk and priority facility inventory - The City updates a tracking list of high risk and priority facilities that discharge into the MS4 in annual reports. These facilities include the following:
 - hazardous waste, treatment, storage, and disposal facilities
 - industries subject to reporting requirements pursuant to Title III Section 313 of the Superfund Amendments and Reauthorization Act of 1986
 - businesses that may have industrial activities that contribute a substantial pollutant load to the MS4 (evaluated based on Standard Industrial Classification code, outdoor operations, and MDNR no exposure criteria)
 - municipal landfills (the City does not have an active landfill but monitors the inactive Glendale Garden Sanitary Landfill)

- Permit and no exposure certification tracking – The City provides copies of MDNR permit applications or guidance documents to unpermitted facilities with industrial activities that would require state operating permits or no exposure certification. The City also provides technical assistance to facilities during the application process.
- Inspection program – Facilities that are determined to contribute a substantial loading of pollutants are added to the inspection program. The inspection program for stormwater discharges associated with high-risk and industrial facilities includes an inspection standard operating procedure (SOP), which includes an inspection checklist. If violations are identified, WPC conducts a follow-up inspection. Enforcement actions include, but are not limited to, a Notice of Violations, municipal court summons, and administrative fines. Priority facilities are inspected annually. Nonpriority facilities are addressed based on their last inspection date and potential for stormwater pollution.
- Monitoring program – The monitoring program includes high-risk and priority facilities that discharge into the MS4. The City monitors stormwater discharges as needed in response to spills, dumping, and disposal of materials other than stormwater, based on noncompliance or in response to investigations. The City defers to state requirements in the case that an industrial facility is required to have a NPDES state operating permit. If a stormwater sample exceeds a pollutant benchmark, the facility must comply with requirements in their state operating permit, which includes, at a minimum, a review of their SWPPP and BMPs to determine what improvements or additional controls are needed to reduce the pollutant in the stormwater discharge(s).
- Staff training - The City trains stormwater inspectors to ensure they are knowledgeable and proficient in the most effective approaches to minimizing stormwater pollution from industrial/commercial facilities.

The following BMP will be designed, developed, or further developed in year two of the permit and implemented in year three regarding MCM7:

- Enforcement - The City will develop an enforcement response plan in year two of the permit that will describe stormwater enforcement procedures regarding discharges from industrial and high-risk facilities.

8.3 Measurable Goals

Table 8-1 provides City's measurable goals for the BMPs designated for MCM7. The intent of the measurable goals is to provide quantifiable milestones to determine the appropriateness of identified BMPs and document progress toward the MCMs through the BMPs.

Table 8-1 MCM7 Measurable Goals

BMP	Measurable Goal Tracking Mechanism	Interim Milestone Date	Completion Milestone Date	Measurement Frequency
Facility inventory	<ul style="list-style-type: none"> • Document inventory updates • Evaluate criteria used to identify listed facilities; document updates to criteria 	Ongoing	Ongoing	As needed
Permit and no exposure certification tracking	<ul style="list-style-type: none"> • Document permitted and unpermitted facilities • Document communication with unpermitted facilities • Track progress of unpermitted facilities toward permit coverage or certification 	Ongoing	Ongoing	As needed
Inspection program	<ul style="list-style-type: none"> • Document facility inspections • Evaluate overall program progress annually • Inspection of all priority facilities annually 	Ongoing	Ongoing	Annually
Monitoring program	<ul style="list-style-type: none"> • Document monitoring efforts • Track recommended corrective actions and progress 	Ongoing	Ongoing	As needed
Staff Training	Document training records, including the staff trained, date of training, instructor(s), and topics included	Ongoing	Ongoing	Annually

9.0 MCM8: Flood Control Projects

9.1 Purpose and Scope

This section of the SWMP was developed in accordance with MS4 Permit Section E.8. The purpose of MCM8 is to consider the impacts of water quality in the design of all flood control projects that are associated with the MS4. Special consideration should be taken when involving any flood control project that receives stormwater from the MS4 prior to discharging to waters of the state.

The City has currently enacted the following policies and procedures regarding flood control projects:

- an evaluation of existing flood control devices
- procedures to consider impacts on water quality
- controls to minimize impacts of water quality on waterbodies receiving stormwater discharges

The City's WPC Stormwater Manager will serve as the responsible person for MCM8.

9.2 Best Management Practices

The purpose of the BMPs listed in this section is to reduce the impacts of flooding and improve the water quality discharged from the City's MS4. The City has many ongoing BMPs to address MCM8, including:

- Flood control project planning and prioritization – The City plans flood control projects using a five-year outlook and uses a cost/benefit analysis to prioritize project implementation.
- Water quality considerations – Evaluations of water quality impacts from flood control projects include the following:
 - The City conducts watershed studies to consider various control measures to minimize impacts of water quality on waterbodies receiving stormwater discharge.
 - The City considers water quality impacts for all new flood control projects in the cost/benefit analysis. Parameters included in this analysis include adverse upstream and downstream effects to waterbodies, the risk of sanitary sewer overflows due to flooding, and other regulatory implications that may result from a project.
 - The City requires applicants to submit water quality considerations, a hydrologic analysis, and any regulatory limitations that would affect the project proposal for projects during the "Request for Proposal" process.
- Retrofit evaluations - The City has evaluated many of the existing flood control devices to determine retrofitting needs. Many of the existing flood control devices have been retrofitted with native plantings. Native plants reduce maintenance requirements and allow for improved water

quality by reducing sediment and promoting biologic uptake of pollutants such as nutrients, metals, and oil and grease.

- Flood control project questionnaire – The City distributes a questionnaire to collect input from residents and businesses located in the drainage area of a flood control project. The results of the questionnaire are used in the cost/benefit analysis for project planning and prioritization.

The following BMPs will be designed, developed, or further developed regarding MCM8:

- Target pollutants - The City will develop a list of target pollutants for reduction considerations in flood control projects.
- Project implementation – The City will establish a timeline and measurable goals related to the implementation of flood control projects.
- Evaluation timeline - The City will establish a schedule for routine evaluations of City-owned existing flood control devices. The evaluations will include water quality sampling from the devices.

9.3 Measurable Goals

Table 9-1 provides City’s measurable goals for the BMPs designated for MCM8. The intent of the measurable goals is to provide quantifiable milestones to determine the appropriateness of identified BMPs and document progress toward the MCMs through the BMPs.

Table 9-1 MCM8 Measurable Goals

BMP	Measurable Goal	Interim Milestone Date	Completion Milestone Date	Measurement Frequency
Flood control project planning and prioritization	Develop target pollutants	Year three	Year five	Ongoing
	Document water quality evaluations	Ongoing	Ongoing	Ongoing
Water quality considerations	<ul style="list-style-type: none"> • Document water quality findings of watershed studies to evaluate trends • Document water quality considerations in cost/benefit analysis 	Ongoing	Ongoing	Ongoing
Retrofit evaluations	<ul style="list-style-type: none"> • Develop an evaluation schedule • Once developed, review and update schedule as necessary 	Year three	Year five	Ongoing
Flood control project questionnaire	Document questionnaire findings to evaluate trends	Ongoing	Ongoing	Ongoing

10.0 MCM9: Monitoring

10.1 Purpose and Scope

This section of the SWMP was developed in accordance with MS4 Permit Section E.9. The purpose of MCM9 is to conduct monitoring at representative outfalls or field screening points to characterize the quality of stormwater discharging from the MS4.

The City has maintained an urban stream monitoring program with USGS since 2007. The current USGS cooperative agreement expires at the end of 2019 and is in the process of being renewed. The agreement with amendments was represented in the 2017 Stormwater Monitoring Plan. The new 2020-2024 USGS cooperative agreement will include the following MCM9 requirements:

- Representative monitoring - Representative monitoring on select field screening points for the following parameters, at a minimum:
 - total suspended solids
 - specific conductivity
 - chemical oxygen demand
 - e. coli
 - pH
 - total Kjeldahl nitrogen
 - nitrate + nitrite
 - dissolved phosphorus
 - total phosphorus
 - additional parameters as recommended by MDNR
- Storm event sampling – Storm event sampling will include the following:
 - stormwater samples collected from stormwater discharges from three storm events annually occurring at least one month apart
 - representative storm event sampling at a minimum of six locations
- Data record maintenance - Maintenance of storm event data records will include the following:
 - all analytical results
 - date and duration (in hours) of the storm event(s) samples

- rainfall measurements or estimates (in inches) of the storm event which generated the runoff that was sampled
- duration (in hours) between the storm event sampled and the end of the previous measurable (greater than 0.1-inch rainfall) storm event
- Biological assessments - Biological assessments of macroinvertebrates as described in the 2007 approved sampling plan will continue through the spring of 2020. A new biological assessment plan implementing microbial source tracking will be developed and submitted to MDNR for approval by the spring of 2020.
- Analysis and collection of samples conducted with methods specified in 40 CFR 136 - Where an approved 40 CFR 136 method does not exist, any available method may be used unless a particular method or criteria for method sections (such as sensitivity) has been specified in the MS4 Permit.
- Routine monthly sampling - In addition to the storm event sampling based on the agreement between USGS and the City, routine monthly sampling is conducted at predetermined sites irrespective of streamflow conditions.
- Continuous water quality monitoring at four locations - Reference (3) provides the results of water quality monitoring data.

The City's WPC Environmental Compliance Manager will serve as the responsible person for MCM9.

10.2 Best Management Practices

WPC's monitoring program will be conducted in accordance with the requirements of MCM9 and the 2020-2024 USGS cooperative agreement to achieve BMPs. Measurable goals for components of the monitoring program are discussed in the following section.

10.3 Measurable Goals

Table 10-1 provides the City's measurable goals for WPC's monitoring program. Table 10-2 provides the location of the City's stream monitoring location.

Table 10-1 MCM9 Measurable Goals

Monitoring Requirement	Measurable Goal/Tracking Mechanism	Interim Milestone Date	Completion Milestone Date	Measurement Frequency
Storm event sampling	<ul style="list-style-type: none"> Document 3 storm events at 6 locations Evaluate analytical data for water quality trends 	Year 2	Ongoing	Annually
Biological Assessment	<ul style="list-style-type: none"> Document the sampling locations and dates Evaluate analytical data for water quality trends 	Year 2	TBD	As defined in approved sampling plan
Continuous water quality monitoring	<ul style="list-style-type: none"> 4 continuous water quality monitoring stations Data published on USGS website (reference (3)) Evaluate analytical data for water quality trends 	Ongoing	Ongoing	Ongoing
Routine monthly water quality monitoring	<ul style="list-style-type: none"> 9 monitoring locations Monthly sampling during recreation season Evaluate analytical data for water quality trends 	Ongoing	Ongoing	Annually

Table 10-2 MCM9 Stream Monitoring Locations

Site Number	Site Name	Continuous Water Quality Monitoring	USGS Site Number
1	Rock Creek	Yes	06893620
2	Little Blue River at Lee's Summit Road	Yes	06893820
3	Adair Creek	No	06893830
4	East Fork Little Blue River	No	06893890
5	Crackerneck Creek	No	06893940
6	Spring Branch at Highway 78	Yes	06893970
7	Burr Oak Creek	No	06893990
8	Little Blue River at Highway 78	Yes	06894000
9	Bundschu Creek	No	390617094190201

11.0 Reporting and Recordkeeping

11.1 Reporting

In accordance with the MS4 Permit (Section F.1), the City will submit an annual SWMP report to MDNR by January 28 of each year. The report will cover the permittee's previous fiscal year (July 1 – June 30). The report will include the following to meet the requirements of the MS4 Permit:

- a list of names and contact information for staff who ensure the successful implementation for each MCM
- a general summary of each MCM that includes the following information:
 - overall compliance with permit conditions and the SWMP
 - a list of BMPs used to implement the MCM
 - a description of the assessment used to determine the appropriateness of the BMPs
 - a description of the iterative process used to replace or modify any BMP or measurable goal, if applicable
 - a list of the measurable goals for each BMP, and, if applicable, the completion date for any measurable goal completed during the reporting period
 - an explanation for any measurable goal scheduled for completion during the reporting period that was not completed and list any modified goals or deadlines
 - a brief summary of stormwater activities planned for the next reporting cycle and implementation schedule, if feasible
 - any planned changes to the SWMP, which may include any changes to the MCMs including changes to BMPs, measurable goals, or the iterative process
 - a summary of monitoring required by this permit by their specific MCM, including a justification for any required monitoring that was not completed, monitoring results in a table format, and a general discussion of the results with respect to the MEP and, if applicable, TMDL parameters
- a summary of the permittee's TMLD ARAP, if applicable

11.2 Recordkeeping

In accordance with the MS4 Permit (Section F.2-4), the City will retain the most recent version of this SWMP to be made available upon request. In addition, the City will maintain the following records for a minimum of three years from the date of application for coverage under the MS4 Permit:

-
- activities requiring recordkeeping by this SWMP
 - a copy of the MS4 Permit, ordinances, policies, and formal procedures for all nine MCMs
 - records of the data used to complete the application for the MS4 Permit
 - monitoring information used for the renewal application, implementation of any part of this permit, or implementation of any part of the SWMP, which will include the following monitoring data, when applicable:
 - the date, location, and time of sampling or measurement
 - the individual(s) who performed the sampling or measurement
 - the date(s) analyses were performed
 - the individual(s) who performed the analyses
 - the analytical technique or method used
 - analytical results

12.0 References

1. **Environmental Systems Resource Institute (ESRI)**. Independence Sewer Map. *ArcGIS*. [Online]
<http://www.arcgis.com/home/webmap/viewer.html?webmap=7a8a97ebc3e7483dab0c48e8bc9e8c2f>.
2. **Independence, Missouri**. City Code. *City of Independence, Missouri*. [Online]
<http://www.ci.independence.mo.us/CityCode>.
3. **U.S. Geological Survey**. USGS Water Resources: Current Conditions for Missouri. *National Water Information System: Web Interface*. [Online] [Cited: December 3, 2019.]
https://nwis.waterdata.usgs.gov/mo/nwis/current/?type=intro&group_key=NONE.

Attachments

Attachment A

State of Missouri, Department of Natural Resources Operating Permit

MO-0130401

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-0130401

Owner: City of Independence
Address: 111 East Maple, Independence, MO 64051-0519

Continuing Authority: City of Independence
Address: 111 East Maple, Independence, MO 64051-0519

Facility Name: Independence Municipal Separate Storm Sewer System
Facility Address: 17221 E. 23rd Street, Independence, MO 64057

Legal Description: See Pages 2 - 3
UTM Coordinates: See Pages 2 - 3

Receiving Stream: See Pages 2 - 3
First Classified Stream and ID: See Pages 2 - 3
USGS Basin & Sub-watershed No.: See Pages 2 - 3

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

FACILITY DESCRIPTION


The City of Independence is the fifth largest city in the State of Missouri with a population of 116,830 according to the 2010 U.S. Census with an approximate area of 78.25 mi², and population density of 1,500 population/mi². The permittee owns and operates their Phase I Medium (based on the 1990 U.S. Census) Municipal Separate Storm Sewer System (MS4). The MS4 is comprised of man-made engineered components that are designed or developed to reduce the runoff of pollutants from stormwater to the Maximum Extent Practicable within the permittee's jurisdiction.

This permit authorizes only stormwater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 621.250 RSMo, Section 640.013 RSMo and Section 644.051.6 of the Law.

September 1, 2018
Effective Date


Edward B. Galbraith, Director, Division of Environmental Quality

August 31, 2023
Expiration Date


Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

The following is a listing of representative major stormwater outfalls with the stormwater outfall's majority land use designation that discharge stormwater from the permittee's MS4 to waters of the state. For UTM Coordinates, X = easting coordinates and Y = northing coordinates, within Zone 15. This NPDES permit covers all discharges from the permittee's outfalls for both major and non-major outfalls, unless regulated under a separate NPDES permit.

OUTFALL 001

Legal Description: Sec. 13, T49N, R31W, Jackson County
 UTM Coordinates: X = 388985.91, Y = 4324046.52
 Receiving Stream: Tributary to Burr Oak Creek (C)
 First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
 USGS Basin & Sub-watershed: 103001010207

OUTFALL 002

Legal Description: Sec. 22, T49N, R32W, Jackson County
 UTM Coordinates: X = 376246.48, Y = 4324104.95
 Receiving Stream: Tributary to Rock Creek
 First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
 USGS Basin & Sub-watershed: 103001010305

OUTFALL 003

Legal Description: Sec. 17, T49N, R31W, Jackson County
 UTM Coordinates: X = 382672.15, Y = 4325138.71
 Receiving Stream: Tributary to Little Blue River
 First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
 USGS Basin & Sub-watershed: 103001010207

OUTFALL 004

Legal Description: Sec. 06, T49N, R31W, Jackson County
 UTM Coordinates: X = 381437.00, Y = 4327871.30
 Receiving Stream: Spring Branch (C)
 First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
 USGS Basin & Sub-watershed: 103001010207

OUTFALL 005

Legal Description: Sec. 28, T49N, R31W, Jackson County
 UTM Coordinates: X = 384183.35, Y = 4321201.62
 Receiving Stream: East Fork Little Blue River (C)
 First Classified Stream and ID: East Fork Little Blue River (C) (0428)
 USGS Basin & Sub-watershed: 103001010205

OUTFALL 006

Legal Description: Sec. 36, T50N, R31W, Jackson County
 UTM Coordinates: X = 389162.65, Y = 4329168.22
 Receiving Stream: West Fire Prairie Creek (C)
 First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
 USGS Basin & Sub-watershed: 103001010208

OUTFALL 007

Legal Description: Sec. 28, T50N, R31W, Jackson County
 UTM Coordinates: X = 383851.08, Y = 4331518.71
 Receiving Stream: Tributary to Little Blue River
 First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
 USGS Basin & Sub-watershed: 103001010208

OUTFALL 008

Legal Description: Sec. 25, T49N, R32W, Jackson County
 UTM Coordinates: X = 379243.77, Y = 4321934.46
 Receiving Stream: Tributary to Camp Creek (C)
 First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
 USGS Basin & Sub-watershed: 103001010206

OUTFALL 009

Legal Description Sec. 29, T49N, R31W, Jackson County
UTM Coordinates: X = 382348.934, Y = 4320841.907
Receiving Stream: Little Blue River (P)
First Classified Stream and ID: Little Blue River (P) (0422) 303(d) Metro No-Discharge
USGS Basin & Sub-watershed: 103001010206

OUTFALL 010

Legal Description Sec. 02, T49N, R32W, Jackson County
UTM Coordinates: X = 377136.589, Y = 4328664.202
Receiving Stream: Tributary to Mill Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed: 103001010306

OUTFALL 011

Legal Description Sec. 04, T49N, R32W, Jackson County
UTM Coordinates: X = 374803.93, Y = 4328357.18
Receiving Stream: Sugar Creek (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed: 103001010305

A. COVERAGE, AUTHORIZATION AND RESTRICTIONS

1. This National Pollution Discharge Elimination System (NPDES) permit authorizes stormwater discharge from the Phase I Municipal Separate Storm Sewer System (MS4) owned or operated by the City of Independence (permittee) to waters of the state.
2. The following non-stormwater discharges are authorized by this permit provided they are not identified by either the permittee or the Missouri Department of Natural Resources (Department) as contributing significant amounts of pollutants to waters of the state. The permittee shall incorporate appropriate control measures in the Stormwater Management Program (SWMP) if any of the non-stormwater discharges listed below are identified as significant sources of pollutants:
 - a. Water line and fire hydrant flushing;
 - b. Landscape irrigation;
 - c. Diverted stream flows;
 - d. Rising ground water;
 - e. Uncontaminated ground water infiltration;
 - f. Uncontaminated pumped ground water;
 - g. Potable water sources;
 - h. Foundation drains;
 - i. Air conditioning condensate;
 - j. Irrigation water;
 - k. Springs;
 - l. Water from crawl space pumps;
 - m. Footing drains;
 - n. Lawn watering;
 - o. Flows from riparian habitats and wetlands;
 - p. Street wash water;
 - q. Discharges or flows from fire-fighting activities;
 - r. Individual residential car washing;
 - s. Dechlorinated swimming pools.
3. This permit does not authorize non-stormwater discharges except where such discharges are:
 - a. In compliance with a separate NPDES permit, or
 - b. Identified by and in compliance with Part A.2. of this permit.
4. This permit does not serve as coverage for facilities or activities that require a separate NPDES permit.
5. This 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.
6. This permit does not transfer liability for a spill from the entity or entities responsible for the spill to the permittee or relieve the entity or entities responsible for a spill from applicable federal, state, or local requirements.

B. SPECIAL CONDITIONS

1. The permittee shall implement control measures and other management practices to reduce pollutants in stormwater discharge to the Maximum Extent Practicable (MEP) from the MS4 to waters of the state for the goal of attainment with Missouri's water quality standards. Specific requirements are listed in **Part D. – STORMWATER MANAGEMENT PROGRAM** and **Part E. – MINIMUM CONTROL MEASURES**.
2. The permittee shall implement and enforce a comprehensive Stormwater Management Program (SWMP) per the requirements listed in this operating permit in accordance with the federal Clean Water Act (CWA) §402(p)(3)(B)(iii), appropriate federal regulations under 40 CFR 122.26, and with the Missouri Clean Water Law §644, RSMo, and its implementing regulations under 10 CSR 20-6.200.

3. The permittee shall ensure they have adequate legal authority via established or subsequently established ordinance, contract(s), or other regulatory mechanisms consistent with federal and state regulations to provide full implementation of their SWMP per **Part D. – STORMWATER MANAGEMENT PROGRAM**, and other terms and conditions of this operating permit.
4. The full implementation of this operating permit and the Department approved SWMP, which includes implementation of any applicable schedules developed by the permittee, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the CWA section 402(k). However, this permit may be reopened and modified, or alternatively revoked and reissued to:
 - a. Ensure corrective action(s) are being implemented to reduce the discharge of pollutants to the MEP if the Department determines that the permittee is causing or creating significant impacts on Missouri's Water Quality. If such action is determined appropriate by the Department, a notification will be given to the permittee at a minimum of 30 days prior to the action being conducted; and
 - b. Comply with any applicable effluent standard or limitation issued or approved under CWA sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2), if the effluent standard or limitation so issued or approved:
 - i. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - ii. Controls any pollutant not limited in the permit.
5. Integrated Planning: It is the intent of both the permittee and the Department that in the event the permittee utilizes Integrated Planning that this permit does not constrain the permittee's efforts on identifying affordable and cost-effective solutions to address the most significant sources of pollution in the implementation of the permittee's Integrated Plan.

C. TOTAL MAXIMUM DAILY LOAD

1. The permittee shall develop a Total Maximum Daily Load (TMDL) Assumptions and Requirements Attainment Plan (ARAP) if any area of the MS4 is identified in an EPA approved or established TMDL with an applicable Wasteload Allocation (WLA). The permittee shall implement steps toward attainment of applicable WLA in accordance with 40 CFR 122.44(k)(2) and (3) as implemented through this permit. The TMDL ARAP shall be incorporated into the SWMP and include, at a minimum, the following:
 - a. A process to identify potential sources of the pollutant(s), actions to be taken to address those sources within the permittee's MS4 discharging to the waterbody of concern, a prioritization of those actions, and a schedule including beginning and ending annual milestones by permit 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. Best Management Practices (BMPs) developed or designed with a purpose of reducing the pollutant(s) of concern. Each BMP shall contain a description of the BMP purpose and expected result of the BMP.
 - c. Measurable goals shall be established for each BMP or group of BMPs. Each measurable goal shall contain a statement clearly indicating how it will determine the appropriateness of identified BMPs and progress toward the expected results of the BMP. Measureable goals should 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 include 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.
 - d. An iterative process to be utilized by the permittee that determines if the BMP is ineffective, the plan to address ineffective BMPs, and the general process used to replace or revise ineffective BMPs.
2. If the permittee is subject to Part C.1. of this permit, then the permittee shall draft and submit the TMDL ARAP to the Department as soon as practicable; but no later than 30 months after the date EPA approves or establishes the TMDL or 30 months after the effective date of this operating permit, whichever is later. The initial TMDL ARAP is to be submitted to the Department's Water Protection Program, MS4 Coordinator at P.O. Box 176, Jefferson City, MO 65102. All other revisions are to be included in the permittee's Annual Report.
3. 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 TMDL ARAP and requires any additional or different controls or expenses, the Department will conduct an affordability analysis in support of the disapproval unless waived by the permittee.
4. The deadline for the TMDL ARAP may be extended by request of the permittee and with written approval by the Department.
5. If the TMDL ARAP has been submitted to the Department but has not received approval, then the permittee is not required to implement any action listed in their TMDL ARAP and shall notify the Department of this in their Annual Report.

6. If the permittee has received Department approval, the permittee shall implement their TMDL ARAP in accordance to schedules established in the TMDL ARAP. Implementation of all TMDL ARAP control measures shall be documented and retained by the permittee with the permittee's SWMP, and made available to the Department or EPA upon request.
7. If the permittee has an approved TMDL ARAP, then the permittee shall provide a summary of the controls that list the BMPs, the expected result of the BMPs, how the measurable goals are utilized to document the effectiveness of the BMPs, and the status of the measurable goals in the permittee's Annual Report.
8. The permittee may demonstrate that no additional controls are needed beyond the successful implementation of the minimum control measures (MCMs) listed in **Part E. – MINIMUM CONTROL MEASURES** of this permit, which includes modifications to 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 permittee is to provide a demonstration that no additional controls are needed, they shall contact the Water Protection Program's MS4 Coordinator to begin the process.
9. The permittee may submit an Integrated Plan as an approach for the implementation of the TMDL's assumptions and requirements. Review and rating of the portion of an Integrated Plan specific to the TMDL's assumptions and requirements is subject to the same requirements as the TMDL ARAP.
10. The permittee may revise their approved TMDL ARAP, and if revised, the permittee shall provide written notification to the Department for substantive revisions. Substantive revisions are as follows:
 - a. Addition of new components, controls, or requirements to the TMDL ARAP;
 - b. Replacing or modifying ineffective or unfeasible BMPs or measurable goals in accordance to the permittee's iterative process;
 - c. Replacing or modifying time schedules;
 - d. Modifying the iterative process; and
 - e. Other rationales as determined appropriate by the permittee.
11. If the TMDL ARAP is revised in accordance with Part C.10. of this permit, then the Department shall review and rate the revised TMDL ARAP in accordance with Part C.3. of this permit.
12. Exemptions to Part C:
 - a. If the EPA approved or established TMDL indicates that this permittee does not cause or contribute to the impairment addressed by the TMDL, then the permittee is not required to develop and implement any action contained in Part C of this permit.
 - b. If the permittee is already subject to an existing TMDL and is under an existing agreement (e.g., Settlement Agreement, Abatement Order, etc.) with the Department to address the TMDL's assumption and requirements, then the permittee is not required to develop and implement any action contain in Part C of this permit.
 - i. If such an agreement exists, then the permittee shall submit the status of implementation to the Department with the Annual Report.

D. STORMWATER MANAGEMENT PROGRAM

1. The permittee shall implement and document the following terms and conditions in their Stormwater Management Program (SWMP) for each of the Minimum Control Measures located in **Part E. – MINIMUM CONTROL MEASURES**:
 - a. BMPs developed or designed with a purpose of reducing pollutant discharges. Each BMP shall contain a description of the BMP and the purpose or expected result of the BMP;
 - b. Measurable goals shall be established for each BMP or in conjunction of 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. Measurable goals should be quantifiable unless it is not feasible to quantify. If the measurable goal is not to be quantifiable, then the permittee shall provide justification why it is not feasible to have a quantifiable measurable goal. 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;
 - c. The position(s) primarily responsible for the SWMP or for each minimum control measure;
 - 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.
2. The permittee's SWMP shall be reviewed and rated by the Department to ensure that the SWMP is implementing the terms and conditions of this permit, the applicable federal and state stormwater regulations, and Section §402(p)(3)(B)(iii) of the Clean Water Act. If the SWMP is approved by the Department, it will be presumed affordable by the permittee. If the SWMP is found unsatisfactory by the Department and requires any additional or different controls or expenses, the Department shall conduct an affordability analysis in support of the unsatisfactory rating unless waived by the permittee.
3. If the permittee determines that their existing SWMP needs to be updated to comply with the terms and conditions of this operating permit, then the permittee shall revise and submit their SWMP within one (1) year of the Effective Date of this permit. The Department shall then conduct a review and rating of the SWMP in accordance with Part D.2. of this permit.
4. The permittee shall continue implementing their existing SWMP until the permittee's revised SWMP is approved by the Department.
5. The permittee may revise their SWMP during the life of this permit. All substantive revisions shall require written notification by the permittee to the Department's MS4 Program Coordinator as a stand-alone notification or included in the permittee's Annual Report. Substantive revisions are as follows:
 - a. Addition of new components, controls, or requirements to the SWMP;
 - b. Replacing or modifying ineffective or unfeasible BMPs or measurable goals in accordance to the permittee's iterative process;
 - c. Replacing or modifying time schedules;
 - d. Modifying the iterative process;
 - e. The addition or removal of jurisdictional areas;
 - f. Position titles per Part D.1.c. of this permit; and
 - g. Other rationales as determined appropriate by the permittee.
6. If the SWMP is revised in accordance with Part D.5. of this permit, then the Department may review and rate the revised SWMP in accordance with Part D.2. of this permit.
7. The permittee shall implement the SWMP on all areas added to their jurisdiction as expeditiously as practicable, but no later than three (3) years from the addition of the new areas. If the implementation of the SWMP will not be completed within one (1) year, then the permittee is required to submit status reports with their MS4 Annual Report.

E. MINIMUM CONTROL MEASURES (MCMs)

1. *Public Education and Outreach of Stormwater Impacts*

- a. The permittee shall 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. As part of the SWMP, the program shall include the following, at a minimum:
 - i. A description of how the public is targeted based on the group's potential to have significant stormwater impacts;
 - ii. A list of pollutants the program is developed to address, including at a minimum:
 1. Pollutants associated with the application of pesticides, herbicides, and fertilizers; and
 2. Pollutants associated with the management and disposal of used oil and toxic materials.
 - iii. A description of education and outreach activities and materials specific to targeted audiences and pollutants;
 - iv. A description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from the MS4.

2. *Public Involvement and Participation*

- a. The permittee shall implement a public involvement/participation program, and provide in the SWMP:
 - i. How the public is involved; and
 - ii. Opportunities provided to be involved with the permittee's MS4 program.

3. *Illicit Discharge Detection and Elimination*

- a. The permittee shall continue to implement and enforce a program to detect and eliminate illicit discharges, as defined in 10 CSR 20-6.200(1)(C)7, into the permittee's MS4. As part of the SWMP, the permittee's illicit discharge detection and elimination program shall include the following at a minimum to the extent allowable under state or local law:
 - i. A storm sewer map showing the locations of all known constructed outfalls and the names and locations of all receiving waters of the state that receive discharges from the permittee's MS4. The permittee shall describe the source of information they used for the map(s), and how the permittee plans to verify the outfall locations with field survey or field screening points. If already completed, the permittee shall describe how the map was developed and how the map will be regularly updated. The permittee shall make the map and map information available to the Department upon request;
 - ii. A plan to prohibit through ordinance, orders, or similar means illicit discharges into the permittee's MS4, and implement appropriate enforcement procedures and actions.
 - iii. Inspection and investigation procedures for detecting and eliminating illicit discharges;
 - iv. A program to conduct field screening at field screening points or major outfalls with the purpose of finding and eliminating illicit discharges and illegal dumping. The program shall include the following:
 1. A description of field screening procedures, including recording of visual observations and testing or sampling if flow is observed;
 2. A summary of areas or locations evaluated by field screening and how they were selected with be included in the MS4 Annual Report.
 - v. Procedures to reduce, contain and respond to spills that discharge or have potential to discharge into the MS4; and
 - vi. A description of controls to limit infiltration of seepage from municipal sanitary sewers to the permittee's MS4.

4. *Construction Site Stormwater Runoff Control*

- a. The permittee shall continue to implement and enforce a program to reduce pollutants in stormwater runoff to their MS4 from construction activities on land disturbances sites that disturb one or more acres or disturb less than one acre when part of a larger common plan of development or sale that will disturb a cumulative total of one or more acres over the life of the project. As part of the SWMP, this program shall continue implementation of the following:
 - i. Ordinances, orders, or similar means to require entities conducting land disturbance activities, in accordance with section a of this part to implement and maintain erosion and sediment control BMPs at construction sites including sanctions designed to ensure compliance, to the extent allowable under state or local law;
 - ii. Requirements for construction site operators to control construction site waste that may cause adverse impacts to water quality, such as discarded building material, concrete truck washout, chemicals, litter and sanitary waste;
 - iii. Procedures for the permittee to review construction site stormwater pollution prevention plans for potential water quality impacts;

- iv. Procedures for the permittee to receive and respond to public reporting of the discharge of pollutants from construction sites in coordination with the permittee's public education and outreach program;
- v. Procedures for the permittee to inspect construction sites and enforce control measures, including prioritization of site inspections;
- vi. A plan designed to ensure compliance with the permittee's erosion and sediment control ordinances, orders or similar means including sanctions and enforcement mechanisms the permittee will use to ensure compliance and procedures for when certain sanctions will be used; and
- vii. A description of appropriate educational and training measures for construction site operators.

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

- a. The permittee shall continue to implement and enforce a program to address the quality of long-term stormwater runoff from new development and redevelopment projects that disturb one or more acres or disturb less than one acre when part of a larger common plan of development or sale that will disturb a cumulative total of one or more acres over the life of the project. This program shall ensure that stormwater controls are in place that have been designed and implemented to prevent or minimize water quality impacts. This program, at a minimum, shall include:
 - i. Ordinances or other regulatory mechanisms to address post-construction runoff from new development and redevelopment projects to the extent allowable under state or local law. The permittee shall include a copy of the relevant sections within the SWMP;
 - ii. A plan to ensure adequate long-term operation and maintenance of selected BMPs, including types of agreements between the permittee and other parties (e.g., post-development landowners, regional authorities, etc.);
 - iii. Strategies developed with the purpose to minimize water quality impacts, minimize the creation of stormwater pollution, and/or utilize BMPs that remove or reduce stormwater pollution that include a combination of structural and/or non-structural BMPs appropriate for the permittee's community. In developing these strategies, the permittee shall consider:
 1. The assessment of site characteristics at the beginning of the development design phase to ensure adequate planning for stormwater program compliance;
 2. The continued implementation of a stormwater design criteria manual to contain standard sustainable site design criteria and BMP selection and design criteria to reduce water quality impacts;
 3. Buffer criteria for streams and other environmentally sensitive areas (e.g., wetlands, floodplains, etc.);
 4. Provisions for preservation of undisturbed natural areas, trees, and steep slopes, when feasible;
 5. The development of floodplain management controls to minimize pollution; and
 6. Inspect or require the inspection of post-construction BMPs that functions to remove or reduce pollution of stormwater and ensure that BMPs are implemented and effective.

6. *Pollution Prevention and Good Housekeeping for Municipal Operations*

- a. The permittee shall continue to implement an operation and maintenance program for municipal operations owned or operated by the permittee. This program shall, at a minimum, include the following:
 - i. An employee training program 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. The permittee shall describe any existing, available material the permittee plans to use such as those available from EPA, the state, or other organizations;
 - ii. A list of all municipal operations that are impacted by this operation and maintenance program;
 - iii. Maintenance BMPs, maintenance schedules, and long-term inspection procedures for structural controls to reduce floatables and other pollutants in discharges from the MS4;
 - iv. Controls for reducing or eliminating the discharge of pollutants from the following activities that the permittee operates: street, roads, highways, municipal parking lots, maintenance and storage yards, waste transfer station, fleet or maintenance shops with outdoor storage areas, and salt/sand storage locations and snow disposal areas the permittee operates. The permittee shall, at a minimum, conduct the following:
 1. Store and cover deicing chemicals and implement deicing practices to reduce the discharge of pollutants to the MS4;
 2. Street sweepings or similar activities on curb and gutter streets, and ensure the proper disposal of the street sweepings;
 3. Street design, construction, and maintenance practices that reduce the discharge of pollutants to the MS4; and

4. Clean grated inlets, roadway stormwater inlets, and catch basins as needed;
- v. Storage of all paints, solvents, petroleum products and petroleum waste products (except fuels) under the control of the permittee shall not be exposed to stormwater. Sufficient practices of spill prevention, control, and/or management shall be implemented to minimize the risk of such pollutants entering the permittee's regulated MS4 or waters of the state.
- vi. A plan to reduce pollutants in discharges from the permittee's MS4 associated with the application of pesticides, herbicides, and fertilizers. The plan shall include controls such as educational activities, permits, certifications and other measures determined appropriate by the permittee for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities.

7. Industrial and High Risk Runoff

- a. The permittee shall continue to implement a program to monitor and control pollutants in stormwater discharges to the MS4 from industrial and high risk runoff facilities. The program shall include, at a minimum, the following:
 - i. Identify all of the activities below that discharge into the MS4:
 1. Municipal landfills;
 2. Hazardous waste treatment, storage, and disposal facilities;
 3. Industries subject to reporting requirements pursuant to Title III Section 313 of the Superfund Amendments and Reauthorization Act of 1986; and
 4. Industrial facilities that the permittee determines are contributing a substantial loading of pollutants to the MS4.
 - ii. Identify priorities and procedures for inspections and establishing and enforcing control measures for such discharges; and
 - iii. A monitoring program for stormwater discharges associated with the facilities listed under Part E.7.a.i.1-4. of this permit.
 - iv. Alternative Certifications: In lieu of monitoring, the permittee may accept a certification from a facility that raw and waste materials, final and intermediate products, by-products, material handling equipment or activities, industrial machinery or operations, or significant materials from past industrial activity are not presently exposed to stormwater and are not expected to be exposed to stormwater for the certification period. Where the permittee accepts "no exposure" certification, the permittee shall conduct at least one site inspection of the facility every five years to verify the facility's "no exposure" exemption.

8. Flood Control Projects

- a. The permittee shall consider the impacts on the water quality in the design of all new flood control projects that will be associated with the permittee's MS4, including any flood control project that receives stormwater from the permittee's MS4 prior to discharging to waters of the state or discharges from the permittee's MS4. The process shall include considerations of controls that can be used to minimize the impacts of water quality, including adverse physical and hydrological changes, on the water bodies receiving stormwater discharges from the permittee's MS4;
- b. The permittee shall evaluate existing flood control devices to determine if retrofitting the control devices to provide additional pollutant reduction from stormwater is needed or feasible. When the need for a retrofit is identified;
 - i. The permittee shall prioritize identified flood control devices and establish a schedule for implementing the retrofits; and
 - ii. The evaluation, at a minimum, is to be conducted on flood control devices owned or operated by the permittee.
- c. The permittee shall include their procedure or provide means to access their procedure in their SWMP document.

9. Monitoring

- a. Representative monitoring shall be conducted by the permittee on representative outfalls or field screening points with the purpose of characterizing the quality of stormwater discharging from the permittee's MS4. The monitoring program shall include the following:
 - i. Stormwater samples shall be collected from stormwater discharges from three (3) storm events annually occurring at least one (1) month apart;
 - ii. The permittee shall conduct storm event representative sampling at a minimum of six separate locations to be described in the permittee's SWMP. The Department may allow changes to the monitoring locations upon notification to the Department by the permittee in accordance with Part D.5. of this permit;

- iii. Parameters to be sampled and analyzed or calculated shall include the following at a minimum. The Department may allow changes to the parameters upon notification by the permittee in accordance with Part D.5. of this permit:
 1. Total Suspended Solids;
 2. Specific conductivity;
 3. Chemical Oxygen Demand;
 4. E. coli;
 5. pH;
 6. Total Kjeldahl Nitrogen;
 7. Nitrate + Nitrite;
 8. Dissolved Phosphorus;
 9. Total Phosphorus; and
 10. The Department may also request additional parameters along with sampling conditions such as locations, season of sample collection, form of precipitation, and other parameters to ensure representativeness. If the Department requires additional parameters to be sampled, then the Department will submit an official written request at least one calendar year prior to the expiration date of this permit.
 11. Storm event data records shall be maintained of all analytical results, the date and duration (in hours) of the storm event(s) samples, rainfall measurements or estimates (in inches) of the storm event which generated the runoff that was sampled, and the duration (in hours) between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event.
- b. Biological Assessments as described in the approved sampling plan which includes Fall 2019 and Spring 2020 Macroinvertebrate Assessment, will be completed allowing the permittee to implement Microbial Source Tracking (MST). Before implementing MST as a biological assessment, the permittee shall submit a sampling plan to the Department for approval.
 - c. Analysis and collection of samples shall be conducted in accordance with methods specified in 40 CFR 136. Where an approved 40 CFR 136 method does not exist, any available method may be used unless a particular method or criteria for method sections (such as sensitivity) has been specified in this permit.

F. REPORTING AND RECORDKEEPING

1. The permittee shall submit an annual report to the Department by January 28th of each year. The report shall cover the permittee's previous fiscal year (July 1 – June 30). Depending on permit issuance, the first report required by this permit may be partial. The report shall:
 - a. Provide a list of names and contact information for staff who ensure the successful implementation for each Minimum Control Measure;
 - b. Provide a general summary of each Minimum Control Measure. The summary shall include:
 - i. Overall compliance with permit conditions and SWMP;
 - ii. List of BMPs used to implement the Minimum Control Measure;
 - iii. A description of assessment used to determine the appropriateness of the BMPs;
 - iv. A description of the iterative process used to replace or modify any BMP or measurable goal, if applicable;
 - v. Status of the Measurable Goals for each BMP or the completion date for any measurable goal completed during the reporting period;
 - vi. An explanation for any measurable goal scheduled for completion during the reporting period that was not completed. Any modified goals or deadlines shall be listed;
 - vii. A brief summary of stormwater activities planned for the next reporting cycle and implementation schedule, if feasible;
 - viii. Any planned changes to the SWMP, which may include any changes to the minimum control measures including changes to BMPs, measurable goals, or the iterative process;
 - ix. Summary of monitoring required by this permit by their specific Minimum Control Measure, which shall include a justification for any required monitoring that was not completed. The monitoring results shall be reported in a table format with the analytical result. The summary shall also include a general discussion of the results with respect to MEP and, if applicable, TMDL parameters; and
 - x. A summary of the permittee's TMDL ARAP, if applicable.
2. The permittee shall retain records of any monitoring information used to complete their renewal application for this operating permit, implementation of any part of this operating permit, and implementation of any part of the permittee's SWMP for a period of at least three (3) years from the date of the sample, measurement, or analysis. This period may be extended by official request from the Department at any time. Monitoring data shall include, if applicable, the below information:
 - a. All calibrations and maintenance records;

- b. The date, location, and time of sampling or measurement;
 - c. The individual(s) who performed the sampling or measurement;
 - d. The date(s) analyses were performed;
 - e. The individual(s) who performed the analyses;
 - f. The analytical technique or method used; and
 - g. The results of such analyses.
3. The permittee shall retain records of all activities requiring recordkeeping by the SWMP, a copy of the NPDES permit, a copy of all ordinances, policies, and formal procedures for all MCMs and records of all data used to complete the renewal application for this period for a period of at least three (3) years from the date of the report or renewal application. This period may be extended by official request of the Department at any time.
 4. The permittee shall retain the most recent version of their SWMP at a reasonable location accessible to the Department.

G. APPLICATION REQUIREMENTS FOR RENEWAL OF OPERATING PERMIT

1. The permittee shall submit an application for renewal of permit at least 180 days prior to the expiration date of this permit to the Department's MS4 coordinator, unless permission for a later date has been granted by the Department; however, the Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit. The permittee shall provide the following information, at a minimum, in their application for renewal:
 - a. Name and mailing address of the permittee;
 - b. Name(s), address, telephone number, and email address of the permittee's main contact for their MS4 program, or for each MCM;
 - c. General description of the permittee's activities that subject the permittee to MS4 requirements;
 - d. Proposed, if any, program modifications and justification for changes to BMPs, measurable goals, or the iterative process required under the SWMP or MCMs;
 - e. Proposed, if any, modification and justification for changes to activities the permittee is conducting toward attainment of applicable WLA under EPA established or approved TMDLs;
 - f. Map(s) and locational data for all known stormwater outfalls from the permittee's MS4 to waters of the state. Maps and locational data shall be divided into new stormwater outfalls, if applicable, and existing stormwater outfalls, and list the receiving stream;
 - i. It is requested that coordinates reported in Universal Transverse Mercator (UTM) format for Zone 15.
 - g. Map(s) documenting service or jurisdictional boundary of the MS4, projected changes in land use, population densities, or projected future growth;
 - h. If any entity, which includes co-permittees or other governmental agencies, are implementing or conducting activities to satisfy the terms and conditions of the permit or SWMP. If applicable, the permittee shall submit:
 - i. Name and mailing address of the outside entity;
 - ii. Name(s), address, telephone number and email address of the person(s) conducting the activities for the outside entity or co-permittee; and
 - iii. Description of what the outside entity or co-permittee is conducting in satisfaction of the permit or SWMP;
 - i. The permittee proposed SWMP including TMDL implementation; and
 - j. A description of any service or jurisdictional area expansion subject to the permittee's SWMP. The change in area can be documented via the map under Part G.1.g. of this permit, but must be clearly labeled.
2. If the Department creates and approves an application form for renewal for Phase I MS4s, then the permittee will complete and submit the renewal application form in satisfaction of Part G.1. of this permit. If the renewal application form for Phase I MS4s permits is not completed and approved by the Department within four years of the effective date of this permit, then the permittee is not required to use the renewal application form; however, the permittee may volunteer to use the renewal application, which will suffice for Part G of this operating permit.

H. CERTIFICATIONS OF APPLICATIONS AND ANNUAL REPORTS

1. Renewal applications, applications to modify this operating permit, and annual reports shall be signed and certified with the following 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 fines and imprisonment for knowing violations."

I. STANDARD PERMIT CONDITIONS

1. *Duty to Comply*: The permittee 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 for denial of a permit renewal.
 - a. It is a violation of the Missouri Clean Water Law for failure to pay fees associated with this permit, [§644.055, RSMo].
2. *Duty to Mitigate*: The permit holder 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 permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This condition 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 permit holder 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 permit holder shall allow the Department or an authorized representative (including an authorized contractor as a representative to EPA or the Department) upon the presentation of credentials and other documents as may be required by law to:
 - a. Enter the permit holder's 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 specified in this permit or an approved Quality Assurance Project Plan.
7. *Need to Halt or Reduce Activity Not a Defense*: 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.
10. *Administrative Continuation of the Permit*: If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with 10 CSR 20-6.010(10)(E) and remain in force and effect. If the permittee applies for renewal at least 180 days prior to the expiration date will automatically remain covered by the continued permit until the earlier of:
 - a. Reissuance or replacement of this permit, at which time the permittee shall comply with the application conditions of the new permit to maintain authorization to discharge;

- b. Notice of termination;
 - c. Issuance of an alternative site-specific permit or alternative general permit for MS4 discharge; or
 - d. A permit decision by the Director not to reissue this permit, at which time the permittee shall seek coverage under an alternative general or site-specific permit.
11. *Procedures for Modification or Revocation:* If at any time the Department determines that the quality of waters of the state may be better protected by reopening this permit, or revoking this permit and requiring the owner/operator of the permitted site to apply for an alternative site-specific permit or alternative general permit, the Department may revoke a permit and require any person to obtain such an operating permit, including general permit, as authorized by 10 CSR 20-6.010(13), 10 CSR 20-6.200(1)(B) or 10 CSR 20-6.200(6);
- a. If this permit is reopened, modified or revoked pursuant to this section, the permittee retains all rights under Chapters 536 and 644 Revised Statutes of Missouri upon the Department's reissuance of the permit as well as all other forms of administrative, judicial and equitable relief available under law;
 - b. The Department may require the permittee to apply for and obtain a site-specific or alternative general permit if:
 - i. The permittee is not in compliance with the conditions of this permit; or
 - ii. The discharge no longer qualifies for this permit due to change in site conditions and regulations; and
 - c. The permittee will be notified in writing of the need to apply for an alternative site-specific or general permit. In the event an alternative site-specific or alternative general permit is issued to the permittee under this section, the applicability of this permit to the permittee will be terminated upon the effective date of the new alternative site-specific or alternative general permit, whichever the case may be.
12. *Property Rights:* This permit does not convey any property rights of any sort, or any exclusive privilege;
13. *Duty to Provide Information:* The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking, and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request copies of records required to be kept by this permit;
14. *Falsification Penalties:* Any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both. Second and successive convictions for violations under this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two years, or both;
15. *Reopener Clause:* Nothing in this permit shall prevent the Department from re-opening, modifying, or revoking this permit as authorized by law.
16. *Signatory Requirements:* All permit applications shall be signed and certified in accordance with 40 CFR 122.22 and 10 CSR 20-6.010(2)(B) by either a principal executive officer or by an individual having overall responsibility for environmental matters for the permittee. All reports required by this permit, and other information requested by the Department shall be signed by a person described in Part I.16. of this permit, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- a. The authorization is made in writing by a person designated in Part I.16. of this permit;
 - b. The authorization specifies an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the permittee. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - c. The written authorization is submitted to the Director.

**MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0130401
CITY OF INDEPENDENCE PHASE I MEDIUM
MUNICIPAL SEPARATE STORM SEWER SYSTEM**

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of stormwater from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "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 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" § 644, RSMO, as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per 40 CFR 124.8(a) and 10 CSR 20-6.020(1)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 listed below.

A Factsheet is not an enforceable part of an operating permit.

This Factsheet is for a Phase I Municipal Separate Storm Sewer System (MS4).

Part I – Facility Information

Facility Type: MS4 - SIC #9511

Facility Description:

The City of Independence (permittee) is the 5th largest city in the State of Missouri with a population of 116,830 according to the 2010 U.S. Census with an approximate area of 78.25 mi², and a population density of 1,500 population/mi². The permittee owns and operates their medium MS4. The permittee, per the permittee's 2012 Stormwater Management Plan, has an estimated 200 miles of storm sewers and over 13,000 stormwater structures (street curb inlets, concrete swales, crossroad pipes, and storm sewer inlets and outlets).

Medium MS4s are MS4s located in an incorporated place with a population of one hundred thousand (100,000) or more but less than two hundred fifty thousand (250,000) based on the 1990 United States census. Additionally, a 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.

Stormwater Outfalls:

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 major stormwater outfalls. Listing all major 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. Alternatively, the permittee is required by the operating permit to maintain a list of all known stormwater outfalls that discharge to waters of the state as a part of their SWMP. A copy of the SWMP is then provided to the Department. As a result, if a change occurs to any stormwater outfall listed in the SWMP that is not a representative outfall; the permittee is only responsible for updating the SWMP. However, a change to a representative outfall listed in the permit would require a permit modification.

Facility Performance History:

The Department's Clean Water Information System (MoCWIS) indicates that the Department has not conducted a MS4 Phase I Audit (records back to 2010). Department records; however, do document that EPA sent the permittee a Letter of Warning on September 7, 2010 with a list of deficiencies, which have been addressed.

Additional Comments:

The renewal application was received on February 9, 2009.

Part II – Receiving Stream Information

The permittee’s Phase I MS4 discharges stormwater into Missouri waterbodies that have designated uses in accordance with 10 CSR 20-7.031(1)(P); and since November 6, 2013, the Missouri Use Designated Dataset (MUDD). Below is the list of waterbodies with designated uses that receive stormwater runoff from the permittee’s Phase I MS4. The waterbodies listed below may have multiple stormwater discharges or only one stormwater outfall discharging to it.

Waterbody Name	DESIGNATED USES*									
	WBID	AQL	CLF	DWS	IRR	LWW	SCR	WBCA	WBCB	HHP
Little Blue River	422	X			X	X	X		X	X
East Fork Little Blue River	428	X			X	X	X		X	X
8-20-13 MUDD V1.0	3960	X			X	X	X		X	X

* Uses are as follows (all waterbodies in list have General Criteria Designated Uses):

10 CSR 20-7.031(1)(C)1.:

AQL = Protection of aquatic life (Current narrative use(s) are defined to ensure the protection and propagation of fish shellfish and wildlife, which is further subcategorized as: **WWH** = Warm Water Habitat; **CDF** = Cold-water fishery (Current language uses cold-water habitat.); **CLF** = Cool-water fishery (Current language uses cool-water habitat); **EAH** = Ephemeral Aquatic Habitat; **MAH** = Modified Aquatic Habitat; **LAH** = Limited Aquatic Habitat. This permit uses AQL effluent limitations in 10 CSR 20-7.031 Table A for all habitat designations unless otherwise specified.)

10 CSR 20-7.031(1)(C)2.: Recreation in and on the water

WBC = Whole Body Contact recreation where the entire body is capable of being submerged;

WBC-A = Whole body contact recreation that supports swimming uses and has public access;

WBC-B = Whole body contact recreation that supports swimming; and

SCR = Secondary Contact Recreation (like fishing, wading, and boating).

10 CSR 20-7.031(1)(C)3 to 7.:

HHP (formerly HHP) = Human Health Protection as it relates to the consumption of fish;

IRR = Irrigation for use on crops utilized for human or livestock consumption;

LWW = Livestock and wildlife watering (Current language uses LWP = Livestock and Wildlife Protection);

DWS = Drinking Water Supply; and

IND = Industrial water supply

10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Table A currently does not have corresponding habitat use criteria for these defined uses)

WSA = Storm- and flood-water storage and attenuation; **WHP** = Habitat for resident and migratory wildlife species;

WRC = Recreational, cultural, educational, scientific, and natural aesthetic values and uses; **WHC** = Hydrologic cycle maintenance.

10 CSR 20-7.031(6): **GRW** = Groundwater

Part III – Rationale for General 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 of these acts. 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 (FWS) Endangered Species webpage, which is located at: <http://www.fws.gov/endangered/>. Additionally, the FWS Information for Planning and Conservation (IPaC) web-based project planning tool that streamlines the environmental review process is highly recommended and is located at: <http://ecos.fws.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 is regulated by federal law under the Resource Conservation and Recovery Act or the Comprehensive Environmental Response, Compensation, and Liability Act.

However, the permittee is required to implement a program to identify and control pollutants in stormwater discharges to the MS4 from any municipal or industrial facility that the permittee has determined is contributing a substantial pollutant load into their MS4, which includes industries subject to reporting requirements under the Superfund Amendments and Reauthorization Act (SARA). Please see the section on SARA below for justification.

ANTI-BACKSLIDING:

Anti-backsliding is a provision in federal statute and 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.

ANTI-DEGRADATION:

Anti-degradation 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.

As per 10 CSR 20-7.031(3), the three levels of protection provided by the anti-degradation policy in subsections (A), (B) and (C) of this section shall be implemented according to procedures developed by the Department. On April 20, 2007, the Missouri Clean Water Commission approved “Missouri Anti-degradation Rule and Implementation Procedure” (Anti-degradation Rule), which is applicable to new or upgraded/expanded facilities.

The Department has determined that the appropriate avenue forward for implementing the Anti-degradation requirements for the permittee is requiring the successful implementation of the permittee’s SWMP. The permit directs the permittees to develop and implement effective 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 approach is applicable to newly added jurisdictional areas of the permittee. This process ensures that the permittee applies 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) and 10 CSR 20-7.015(9)(A)5.

The permit requires any expansion to the permittee’s boundary served by their MS4 to be updated in their SWMP and is subject to the terms and conditions of the SWMP and permit. Renewal of coverage for a facility requires a review of the SWMP by the Department to assure that the selected BMPs continue to be appropriate.

APPLICATION REQUIREMENTS:

Federal regulations under 40 CFR 122.26(d) and state regulations under 10 CSR 20-6.200(5) establish application requirements for Phase I MS4s; however, these regulations were not to be required for each round of renewals – rather for the initial application to receive a Phase I MS4 operating permit. This is supported in the August 9, 1996, Federal Register Volume 61, No. 155 – Interpretative Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems (Phase I Reapplication), which states, “The scope of the initial permit application requirement was comprehensive and regulated MS4s invested considerable resources to develop these applications. The initial applications have laid the foundation for the long-term implementation of MS4 stormwater management programs. EPA believes reapplications should focus on maintenance and improvement of these programs.” In addition, Phase I Reapplication states, “The MS4 application requirements at 40 CFR 122.26(d)(1) and (2) apply to the first round permit application required of large and medium MS4s. The permit application deadlines in 40 CFR 122.26(e)(3) and (4) clearly reflect the “one time” nature of the Part I and II application requirements for large and medium MS4s. EPA has not promulgated regulations applicable to reapplication for MS4s. Requirements to demonstrate adequate legal authority, perform source identification (e.g., identify major outfalls and facility inventory), characterize data, and develop a stormwater management program should have been addressed in the initial application phase. Therefore, to request the same information again, where it has already been provided and has not changed, would be needlessly redundant. Thus, as a practical matter, most first-time permit application requirements are unnecessary for purposes of second round MS4 permit applications.”

In the absence of regulations that are specific to reapplications requirements for Phase I Applications, EPA gives some suggested requirements based on 40 CFR 122.21(f) as well as the allowance of flexibility of the NPDES authority to require conditions the NPDES authority deems appropriate.

BEST PROFESSIONAL JUDGEMENT (BPJ):

BPJs are technology-based limits derived on a case-by-case basis. BPJ limits are established in cases where Effluent Limit Guidelines (ELGs) are not available for, or do not regulate, a particular pollutant of concern. BPJ is defined as the highest quality technical

opinion developed by a permit writer after considerations of all reasonably available and pertinent data or information that forms the basis for the terms and conditions of a NPDES permit.

The authority for BPJ is contained in Section 402(a)(1) of the Clean Water Act (CWA), which authorizes the NPDES authority to issue a permit containing “such conditions as the Administrator determines necessary to carry out the provisions of this Act” prior to taking the necessary implementing actions, such as the establishment of ELGs. ELGs are national regulatory standards for wastewater discharged to surface waters and municipal sewage treatment plants. EPA issues these regulations for industrial categories, based on the performance of treatment and control technology.

Previous iterations of operating permits for the permittee followed the typical layout of Phase I operating permits based on the application requirements of 40 CFR 122.26(d) with the direction that the NPDES authority (i.e., the Department) was to draft an operating permit based on information received in the permittee’s application, which as noted above was incorrectly applied as a majority of the regulations specific to Phase I MS4s in 40 CFR 122.26(d) were to be only applied on the initial application. In contrast, when Phase II was promulgated, EPA established BMPs applicable to Phase II MS4s via the Minimum Control Measures (MCMs) under 40 CFR 122.34(b). BMPs are Technology-based Effluent Limits (TBELs), which then subjects the BMPs to BPJ case-by-case determinations.

As an act of convenience with the understanding to provide consistency between Phase I and Phase II MS4s in the State of Missouri, this permit follows the MCMs of Phase II format; however, due to requirements under 40 CFR 122.26(d) and how the permittee implements them, there are additional MCMs for Phase I. Thus, the Phase I and II MCMs are consistently named, but not all of the conditions between Phase I and II MCMs are the same. This is due to the fact that Phase II regulations establish MCMs with some specific requirements. Phase I requirements require the permittee to create and build upon a stormwater program based on the application requirements, which can cause a Phase I to implement conditions not are not similar to the requirements under Phase II.

However, the approach of having Phase I MCMs appear as Phase II MCMs allows the permit writer to provide more clear requirements, which is beneficial to the permittee, and allows the permit writer to define portions of 40 CFR 122.26(d) as truly being that of an application vs. a term and condition of the permit. This approach subsequently allows both the permittee and the Department to understand the difference between the MCMs, and how compliance and non-compliance are determined.

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.

COVERAGE:

In accordance with 40 CFR 122.26(a)(1)(iv) and 40 CFR 122.26(a)(3)(i), the permittee is required to obtain a NPDES operating permit for the discharge of stormwater from their MS4. The permit was drafted to provide coverage for all of the permittee’s stormwater discharges from their regulated MS4 into waters of the state.

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.

Therefore, MEP for the purposes of MS4 permitting is defined as, “an iterative approach whereby the permittee will implement management measures, including structural and non-structural BMPs. MEP is a permittee-specific determination guided by the following factors: community financial capability and the need for reasonable rate/funding increases, weighing program-wide requirements against site-specific MS4 improvements, MS4 impacts to receiving waters, local priorities, watershed and/or integrated planning, MS4 size, climate, implementation schedules, hydrology, topography, geology, and MS4 capacity to perform operation and maintenance.”

Compliance with the requirements of the applicable permit and any enforceable document developed to implement the applicable permit (such as the permittee's Stormwater Management Plan) will satisfy the MEP standard.

METROPOLITAN NO-DISCHARGE STREAM:

Metropolitan No-Discharge Streams, per 10 CSR 20-7.031, establishes, "No water contaminant except uncontaminated cooling water, permitted stormwater discharges in compliance with permit conditions and excess wet-weather bypass discharges no interfering with beneficial uses may be allowed until interceptors are available within two thousand feet (2,000') or a distance deemed feasible by the department, or unless construction of outfalls to alternative receiving waters not listed in Table F is deemed feasible by the department. Existing discharges include wastewater volumes up to the design capacity of existing permitted feature treatment facilities, including phased increases in design capacity approved by the department prior to the effective date of this rule. Additional facilities may be constructed to discharge to these waters only if they are intended to be interim facilities in accordance with a regional wastewater treatment plan approved by the department."

The permittee discharges stormwater from their MS4 in accordance with their MS4 Phase I site-specific permit directly to Little Blue River, WBID 422, which is listed as a Metropolitan No-Discharge Stream.

NON-STORMWATER DISCHARGES:

This operating permit allows for non-stormwater discharges from the permittee's MS4 if the permittee or Department determined these sources are not substantial contributors of pollutants. In accordance with 40 CFR 122.26(d)(2)(iv)(B)(1) and 10 CSR 20-6.200(4)(B)4.B.(I) the following category of non-stormwater discharges or flows are to be addressed by the permittee where such discharges are identified by the permittee as sources of pollutants to waters of the state. Thus, the permittee is the primary source of determination regarding if the below category of non-stormwater discharges or flows are sources of pollutants. The Department may make such determinations in the future if it is believed the permittee is not conducting serious determinations. The categories of non-stormwater discharges are as follows: Water line and fire hydrant flushing; landscape irrigation; rising groundwater; uncontaminated groundwater; infiltration; uncontaminated pumped ground water; potable water sources; foundation drains; air conditioning condensate; springs; water from crawl space pumps; footing drains; lawn watering; flows from riparian habitats and wetlands; street wash water; emergency fire-fighting activities; individual residential car washing; and dechlorinated residential swimming pools.

PERMIT SHIELD

Missouri statute, §644.051.16, RSMo, states "The Department shall implement permit shield provisions equivalent to the permit shield provisions implemented by the U.S. Environmental Protection Agency pursuant to the Clean Water Act, Section 402(k), 33 U.S.C. Section 1342(k), and its implementing regulations, for permits issued pursuant to chapter 644."

CWA section 402(k) states "Compliance with a permit issued pursuant to this section shall be deemed compliance, for purposes of sections 1319 and 1365 of this title, with sections 1311, 1312, 1316, 1317, and 1343 of this title, except any standard imposed under section 1317 of this title for a toxic pollutant injurious to human health. Until December 31, 1974, in any case where a permit for discharge has been applied for pursuant to this section, but final administrative disposition of such application has not been made, such discharge shall not be a violation of (1) section 1311, 1316, or 1342 of this title, or (2) section 407 of this title, unless the Administrator or other plaintiff proves that final administrative disposition of such application has not been made because of the failure of the applicant to furnish information reasonably required or requested in order to process the application. For the 180-day period beginning on October 18, 1972, in the case of any point source discharging any pollutant or combination of pollutants immediately prior to such date which source is not subject to section 407 of this title, the discharge by such source shall not be a violation of this chapter if such a source applies for a permit for discharge pursuant to this section within such 180-day period."

PESTICIDE RULE:

The Department has developed a Pesticide General Permit #MO-G870000 for point source discharges resulting from the application of pesticides to waters of the state. This permit has been developed as a result of federal requirements under NPDES.

The general permit authorizes the discharge of pesticides that leave a residue in water when such applications are made into, over or near waters of the United States. The Department has determined that entities most likely affected by this permit include public health entities, including mosquito or other vector control districts and commercial applicators that service this sector. Others potentially affected by this permit include resource and land management entities such as public and private entities managing public land, park areas and university campuses, as 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 United States.

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

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.

STANDARD CONDITIONS:

The Standard Permit Conditions contained in Part I. of the operating permit are in accordance with 40 CFR 122.41.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA):

In accordance with 40 CFR 122.26(d)(2)(iv)(C) and 10 CSR 20-6.200(4)(B)4.C., the permittee is required to provide a description of a program to monitor and control pollutants in stormwater discharges to the MS4 from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to Section 313 of Title III of SARA.

WATER QUALITY STANDARDS:

Under the CWA section 402(p), the U.S. Congress established two different standards for the regulation of stormwater discharges, which one was for industrial activities and the other for municipal stormwater discharges from MS4s. Stormwater discharges associated with industrial activities are required to comply with NPDES permits containing technology-based effluent limitations or more stringent water quality based effluent limitations as set forth in CWA section 301. However, in contrast, stormwater discharges from MS4s are to be regulated by permit that require controls to reduce the discharge of pollutants to the maximum extent practicable (MEP).

The MEP language contained in the CWA section 402(p)(3)(B)(iii) represents a different technology-based standard which requires a governmental entity (e.g., municipality) to pursue sound pollutant control techniques that are both technically and economically feasible. More importantly, MEP and the CWA do not prescribe water quality-based requirements for municipal stormwater. Water quality-based requirements differ from technology-based requirements, in that water quality-based requirements are set on ambient water quality of receiving water body and applicable water quality standards; however, technology-based standards focus upon the water quality achievable by a particular or comprehensive plan of pollution control measures or technologies.

303(d) LIST AND TOTAL MAXIMUM DAILY LOAD (TMDL):

Section 303(d) of the CWA requires that each state identify waters that are not meeting water quality standards. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) List helps state and federal agencies keep track of waters that are impaired but not addressed by typical water pollution control programs. Federal regulations require permitting authorities to develop TMDLs to address impaired waters listed per Section 303(d) of the CWA. A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is impaired.

Stream Name	Pollutant(s)	Corresponding Outfall(s)*	Source (DNR records)
Little Blue River 303(d)	Escherichia coli	003, 004, 005, 006, 007, 008, and 009	Urban runoff, storm sewers
Missouri River 303(d)	Escherichia coli	011. Outfall is 2.75 miles from Missouri River	Municipal Point Source Discharge, Nonpoint Source

* If the outfall is located 5 miles above stream, it was listed in the table above. It is believed that there are more outfalls from the permittee that discharge to the above listed waterbodies, but are not listed.

The operating permit only requires action from the permittee when the receiving stream has an approved or established TMDL. However, the operating permit does not remove any agreement, consent decree, or other legally binding documents that may have been required upon the permittee.

PART IV – STORMWATER MANAGEMENT PLAN

The SWMP 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.

This permit in accordance with 10 CSR 20-6.200 and 40 CFR Parts 9, 122, 123 and 124 requires the permittee to develop and implement a SWMP. The SWMP also includes, but is not limited to, BMPs, pertinent local regulations, policies, procedures, interim milestones, measurable goals, measures of success, responsible persons/positions for each of the measurable goals, and any applicable TMDL assumptions and requirements.

BEST MANAGEMENT PRACTICES (BMPs):

BMPs are a schedule of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. Additionally and for the purpose of MS4s, BMPs are those activities, including structural stormwater measures, that the permittee develops or designs, and implements with the purpose of reduction stormwater pollution. The permit establishes that the permittee is to not only develop or design and implement BMPs, but that the permittee is also required to establish the BMPs they have determined are appropriate for the implementation of the specific condition or conditions under each Minimum Control Measure. The permit requires the permittee to provide a description of the BMP as well as the purpose or expected result of the BMP.

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 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, the operating permit requires that BMPs be evaluated every 5 years (i.e., the life of the permit) at a minimum.

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.
- **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).
- **Tracking program/BMP effectiveness** – Measurable goals can be developed to evaluate BMP effectiveness, for example, by evaluating a structural BMP's effectiveness at reducing pollutant loading, or evaluating a public education campaign's effectiveness at reaching and informing the target audience to determine whether it reduces pollutants to the MEP. A measurable goal can also be a BMP design objective or performance standard.
- **Tracking environmental improvement** – The ultimate goal of the NPDES stormwater program is environmental improvement, which can be a measurable goal. Achievement of environmental improvement can be assessed and documented by ascertaining whether state water quality standards are being attained, or by tracking trends or improvements in water quality (chemical, physical, and biological) and other indicators, such as the hydraulic or habitat condition of the waterbody or watershed.

Additionally, well established/successful 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. In order to help in the selection of measurable goals that will work for the co-permittee, it is recommended that the below criteria be used in selecting measurable goals:

- **Consider the objective for each minimum measure** – BMPs 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** – 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, it is beneficial to 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** – It is also beneficial 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 permittee 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 SWMP in reducing pollutants to the MEP.

MINIMUM CONTROL MEASURES (MCMs):

In accordance with 40 CFR 122.26(d)(2)(iv) and 10 CSR 20-6.200(4)(B)4, the permittee is to implement a set of programs and plans for the duration of the permit that reduces pollutants to the MEP. As noted above under Part III of this factsheet, the rational for BPJ via the management program under 40 CFR 122.26(d)(2)(iv) and 10 CSR 20-6.200(4)(B)4 have been established with the approach and format of 40 CFR 122.34(b). Additionally, the below MCMs are implemented and built upon through the permittee's stormwater program. Below is a description of each of the MCMs:

The terms and conditions of the permit were determined appropriate in accordance with 40 CFR 122.26(d)(2)(iv) and 10 CSR 20-6.200(4)(B)4, and via BPJ from 40 CFR 122.34(b)(1) for Public Education and Outreach; 40 CFR 122.34(b)(2) for Public Participation and Involvement; 40 CFR 122.34(b)(3) for Illicit Discharge Detection and Elimination; 40 CFR 122.34(b)(4) for Construction Site Stormwater Runoff Control; 40 CFR 122.34(b)(5) for Post-Construction Stormwater Management in New Development and Redevelopment; and 40 CFR 122.34(b)(6) for Pollution Prevention and Good Housekeeping for Municipal Operations.

In addition, to the listed six common MCMs typically reserved for Phase II, the permittee implements three additional MCMs. MCM #7 – Industrial and High Risk Runoff is in accordance with 40 CFR 122.26(d)(2)(iv)(C)(1) and (2). MCM #8 – Flood Control Projects is in accordance with 40 CFR 122.26(d)(2)(A)(4). MCM #9 – Monitoring is in accordance with 40 CFR 122.26(d)(2)(iii)(A) and the Biological Assessment is based on the previous operating permit and BPJ.

The state regulations were not included above as they are identical to federal regulations. Please contact the Department for a complete listing of state regulations based on the discussion under this portion of the factsheet.

For MCMs 1 – 6, there has been significant guidance or similar document written to assist regulated MS4s (Phase II) on the successful implementation of the programs; however, for the MCMs 7, 8, and 9 there is very little guidance or documentation.

MCM 1 – PUBLIC EDUCATION AND OUTREACH OF STORMWATER IMPACTS:

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 SWMP 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. For more information on MCM 1, please visit: <https://www3.epa.gov/npdes/pubs/fact2-3.pdf>

MCM 2 – PUBLIC INVOLVEMENT AND PARTICIPATION:

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. For more information on MCM 2, please visit: <https://www3.epa.gov/npdes/pubs/fact2-4.pdf>

MCM 3 – ILLICIT DISCHARGE DETECTION AND ELIMINATION:

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 provide data that support there is real potential for almost ½ of the discharge from a MS4 is not directly attributable to precipitation runoff with a significant percentage of the discharge coming from illicit discharges. For more information on MCM 3, please visit: <https://www3.epa.gov/npdes/pubs/fact2-5.pdf>

MCM 4 – CONSTRUCTION SITE STORMWATER RUNOFF CONTROL:

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. This is important due to polluted stormwater runoff from construction sites often flows to a MS4 and then discharges into a local body of water. One of the major pollutants of construction site stormwater is sediment, which is one of the most widespread pollutants affecting assessed rivers and streams, second only to pathogens (i.e., bacteria). Sedimentation (as of 2005) impairs over 85,000 river and streams. To learn more about MCM 4, please visit: <https://www3.epa.gov/npdes/pubs/fact2-6.pdf>

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

The permit requires the permittee to implement and enforce their program to reduce pollutants in stormwater runoff from new development and redevelopment projects. This MCM is important because runoff from areas subject to new development or redevelopment has been shown to significantly affect receiving bodies of water. There are generally two forms of impacts from post-construction runoff. The first is caused by an increase in the type and quantity of pollutants in stormwater. As runoff flows over areas altered by development, it will pick up sediment and chemicals, which become suspended in the runoff and are carried to the receiving water. The second kind of post-construction runoff impacts occur by the increase of water delivered to receiving water bodies from storm events via increased impervious surfaces, which affects the natural cycle of the stream, ecology of the stream, streambank scouring and downstream flooding. To learn more about MCM 5, please visit: <https://www3.epa.gov/npdes/pubs/fact2-7.pdf>

MCM 6 – POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS:

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. To learn more about MCM 6, please visit: <https://www3.epa.gov/npdes/pubs/fact2-8.pdf>

MCM 7 – INDUSTRIAL AND HIGH RISK RUNOFF:

The permit requires the permittee to implement a program to monitor and control pollutants in stormwater discharges to the MS4 from industrial and high risk runoff facilities regardless of ownership. The purpose of this MCM is to identify and control pollutants that are most at risk of discharging significant amounts of pollutants to the permittee's MS4. This program can complement the permittee's Illicit Discharge Detection and Elimination program (i.e., MCM #4).

The permittee's SWMP, for the successful implementation of this program, needs to include or provide directions/links on how to obtain the list or inventory of industries that have been determined to be high-risk industrial sources. Additionally, the SWMP needs to include (or how to obtain) the criteria the permittee uses to identify high-risk industries and include their specific criteria for condition 7.a.i.4. under this MCM.

The SWMP needs to also include the scheduled/frequency at which inspections of these industries occur as well as how they prioritize the inspections. The SWMP should also include the procedures the permittee uses during the inspection, which can be easily supplied with the inspection form used by the permittee (or how to obtain the inspection form).

Finally, the permittee's SWMP should also include the monitoring program, what is being monitored, and why it is being monitored.

For more information on the Industrial and High Risk program, please use the link below for the MS4 Improvement Guide, Chapter 7, page 85: https://www3.epa.gov/npdes/pubs/ms4permit_improvement_guide.pdf

MCM 8 – FLOOD CONTROL PROJECTS AND DEVICES:

Stormwater management, as the permittee is well aware of, is a multi-objective approach dealing with the changes in stormwater characteristics, which accompany urbanization. Citizens, local officials, and other persons are most concerned about whether stormwater is in their yard, home, or businesses (i.e., loss of life and property) and not whether the stormwater is polluted. Therefore, the conditions under MCM 8 are not to impede flood control as it is in the best interest of the permittee to ensure that flood controls (new and retrofits) operate as designed, but to ensure that while the permittee's flood control management program is functioning as designed, that the permittee consider impacts on water quality in the design of all new flood control projects and to evaluate the existing flood control devices. For this condition, flood control refers to all methods used to reduce or prevent the detrimental effects of flood waters.

The permittee's SWMP will need to describe how the permittee takes water quality impacts into considerations for new and retrofit flood control projects. The considerations will also need to discuss how the permittee minimizes adverse physical and hydrological changes of the receiving water body.

For more information on the Flood Control Projects and Devices program, please use the link below for the MS4 Improvement Guide, Chapter 6, page 81: https://www3.epa.gov/npdes/pubs/ms4permit_improvement_guide.pdf

MCM 9 – MONITORING:

The permit requires the permittee to implement a monitoring program for representative outfalls or field screening points. The purpose of this program is to characterize the quality of stormwater discharging from the permittee's MS4; however, not to determine if the permittee is in compliance with Missouri's WQS. Rather, the monitoring program will assist the permittee in the evaluation of the overall effectiveness of their SWMP along with progress and meeting their measurable goals and the iterative process. Without the assessment of their SWMP, which includes monitoring, the permittee will not have a clear picture if their SWMP is removing stormwater pollutants; thus, the permittee will not know with any clarity if any part of their SWMP needs to be modified outside of the self-evaluation and iterative process. Thus, establishing a comprehensive monitoring program will enable the permittee to better track the progress of their SWMP and reduction of stormwater pollution.

A variety of ambient monitoring programs can be used to evaluate the impacts of stormwater discharges. This can include water column monitoring, biological monitoring, sediment monitoring, or Microbial Source Tracking. As recognized in 40 CFR Parts 122, 123, and 124, Supplemental Information, Part VI.H.2.b.6.c.; stormwater discharges are intermittent and represent relatively short-term, shock loadings to receiving waters. Pollutants associated with stormwater discharge become associated with bottom sediments, may persist for long periods of time, and exert adverse impacts on benthic organisms. Therefore, sediment and biological community assessment techniques are appropriate methods to assess cumulative environmental effects of stormwater discharges to receiving waters. In particular, sediment and biological assessment techniques are excellent tools to help determine "hot spots" where stormwater BMP projects could be designed and implemented or locations where evaluation of the effectiveness of BMPs could be conducted. The overall strategy should prioritize stormwater pollution reduction and the documentation of reasonable further progress towards improvement of the MS4 system.

Biological stream monitoring is supported in 40 CFR Parts 122, 123, and 124, Supplemental Information, Part VI.H.2.b.6.b. The Environmental Protection Agency states: "Given the complex, variable nature of storm water discharges from municipal systems, EPA favors a permit scheme where the collection of representative data is primarily a task that will be accomplished through monitoring programs during the term of the permit. Permit writers have the necessary flexibility to develop monitoring requirements that more accurately reflect the true nature of highly variable and complex discharges." In fact, biological monitoring has been incorporated for this purpose in the City of Kansas City Phase I MS4 permit since 1998.

In accordance with capturing the details of the SWMP (per 40 CFR 122.48), the permittee shall consult with the Department during the SWMP plan development concerning the rationale for stream selection, sampling location placement, and biological methods to assess water quality improvements. Annual reports for Phase I MS4 SWMPs are required in 40 CFR 122.42(c)(7). These annual reports shall include identification of water quality impacts, improvements, or degradation attributed to the MS4 system. If the nature of urban streams do not allow for effective biological assessment concerning MEP water quality improvements as the result of MS4 BMPs; future annual reports should provide data analysis as documentation for future modifications or adjustments to assessment methods.

The parameters of Oil and Grease and BOD have been removed from the permittee's Monitoring MCM based on sample results. Please see Appendix B for the justification and results supplied by the permittee to have this parameter removed.

SWMP ORDINANCES:

In accordance with 40 CFR 122.26(d)(2)(i) and 10 CSR 20-6.200(4)(B)1., the permittee is required to have legal authority established by statute, ordinance, or series of contracts to control the contribution of pollutants to their MS4 from stormwater discharges associated with industrial activity and the quality of stormwater discharged from industrial sites, prohibit illicit discharges to the MS4, control the discharge of storm sewer spills, dumping or disposal of materials other than stormwater, require compliance with conditions of their ordinances, permits, contracts or orders, and carry out all inspections, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the MS4. Additionally, if applicable, the permittee is to control through interagency agreements among co-applicants the contribution of pollutants from one portion of the MS4 to another portion of the municipal system.

SWMP REPORTING & REPORT FREQUENCY:

In accordance with 10 CSR 20-6.200(4)(B)10, large and medium MS4s are to submit an annual report by the anniversary of the date of the issuance of the permit for the system. In agreement with the permittee, the permit establishes that the annual report shall be due January 28th of each year. The reporting period to be covered under each annual report is determined by the permittee.

Part V – Administrative Requirements

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

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, then 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 permit was placed on public notice from June 22, 2018, to July 23, 2018. The following comments were received and the responses to comments have been included below for the record.

Comment #1: The city request that Total Maximum Daily Load reporting be modified to require reporting by annual milestones by permit year. Additionally, the city requests changing that Measureable Goals “shall be quantifiable” to “should be quantifiable.”

Response: The Department has revised the operating permit as requested.

Comment #2: The city request under Good Housekeeping, Minimum Control Measure (MCM) #6, changing “...to prevent and reduce stormwater pollution” to “...to prevent or reduction stormwater pollution.”

Response: The Department has revised the operating permit as requested.

Comment #3: The city request that spill prevention requirements be modified to include only the first sentence under part 6.a.v as the additional verbiage is not within the scope of a MS4 permit.

Response: The permit was revised to remove the last sentence of MCM #6; however, the second sentence was revised to indicate that practices are to be taken to minimize these pollutants from entering the regulated MS4 or waters of the state.

Comment #4: The city request deleting “internal sampling stations” and “instream monitoring locations” from monitoring requirements.

Response: The Department has revised the operating permit as requested.

Comment #5: The city request removal of Total Kjeldahl Nitrogen (TKN) from the sampling parameters. The city’s approved sampling plan specifies analysis of Total Ammonia, Organic Nitrogen, Dissolved Ammonia, Total Nitrogen, Nitrate, and Nitrite. TKN is a calculated value and not a direct analysis.

Response: MCM #9 Monitoring, part a.iii establishes that the parameters in the list are to be sampled and analyzed or calculated. Thus, the permit is not requiring sampling and analysis for TKN, rather the permit takes into account that TKN is a parameter that requires calculations. The permit will retain the parameter TKN as a calculated parameter.

Comment #6: The city request biological monitoring “as described in the approved sampling plan.” This will allow the city to complete the study with the United States Geological Survey using the scheduled Fall 2019 and Spring 2020 Macroinvertebrate assessment and move to concentrate on Microbial Source Tracking. .

Response: The Department has revised the operating permit as requested

Comment #7: The city request removal of Part F, section 5 as MS4 permit related documents are available to the public like any other public document in accordance with state and local law.

Response: The Department has revised the operating permit as requested.

Comment #8: The city request modification of the language to Part G Application Requirements for Renewal of Operating Permit with the addition of “unless the Department allows a later deadline not to exceed the expiration date.”

Response: The Department has revised the operating permit as requested.

Comment #9: The city request modification under facility description be consistent with the federal definition, change “paved or unpaved channels” to “man-made channels.”

Response: The Department has revised the operating permit as requested.

Comment #10: The city request removal of the final paragraph under Water Quality Standards portion of the fact sheet to be replaced with the following: “If an MS4 is subject to a TMDL because it has been identified as a source of the pollutant of concern through the establishment of a Wasteload Allocation (WLA), the MS4 will be required through its permit to address the WLA using an MEP level of effort. Numeric limitation(s) based on a WLA are not applicable to a MS4 permittee upon subjection to a TMDL.

Independence Phase I MS4
Page Three

Response: The final paragraph was removed from the fact sheet.

Comment #11: The city request that the fact sheet MCM 9 Monitoring be updated to reflect the changes under comment #6.

Response: The Department has revised the operating permit as requested.

DATE OF FACT SHEET: MARCH 7, 2018;

REVISED: AUGUST 17, 2018

COMPLETED BY:

RANDY SARVER, ENVIRONMENTAL SCIENTIST - MS4 COORDINATOR
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION – STORMWATER AND CERTIFICATION UNIT
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REVISED BY:

MICHAEL ABBOTT, CHIEF
OPERATING PERMIT SECTION
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
(573) 526-5781
michael.abbott@dnr.mo.gov

Appendices

APPENDIX A – COST ANALYSIS FOR COMPLIANCE:

The operating permit for the permittee establishes the minimum requirements to ensure compliance with applicable federal and state rules and regulations for their regulated Phase I MS4. The operating permit requires the permittee to successfully implement their SWMP based on minimum control measures to ensure for MEP. The permit requires the permittee to submit their BMPs, measurable goals, and iterative process for implementation of the minimum control measures, which will be deemed affordable by the Department unless the permittee indicates that the terms and conditions of the operating permit are not affordable. Upon notification of that the terms and conditions of the operating permit are not affordable, the Department will conduct an official Cost Analysis.

If the Department requires changes to the SWMP for any situation, the Department will conduct a Cost Analysis unless waived by the permittee.

APPENDIX B – REMOVAL OF OIL AND GREASE FROM MONITORING REQUIREMENTS:

The 1987 amendments to the CWA, captured in section 402 to the CWA, 40 CFR 122.26(d), and 10 CSR 20-6.200(4) establish first round permit application requirements for large and medium MS4s. The permit application deadline in 40 CFR 122.26(e) (3) and (4) clearly reflect the “one time” nature of the Part I and II application requirements for large and medium MS4s. In accordance with 10 CSR 20-6.200(4)(B)3.A(III) large and medium MS4s were to characterize data. The permittee was required to collect a sample of effluent in accordance with 40 CFR 122.21(g)(7) and analyze it for the pollutants listed in 10 CSR 20-6.200(4)(B)3.A.(III) in accordance with analytical methods approved under 40 CFR 136.

Quantitative data from samples collected from representative outfalls or field screening points was provided and included the parameters: Total Suspended Solids; Total dissolved solids; Chemical Oxygen Demand; Biochemical Oxygen Demand – 5day; Oil and Grease; Fecal Coliform; Fecal streptococcus; pH; Total Kjeldahl Nitrogen; Nitrate plus Nitrite; Dissolved Phosphorus; Total Ammonia plus Organic Nitrogen; and Total Phosphorus. The Department is unsure if staff drafting the initial permit used sample data to determine if the previously mentioned parameters were appropriate to continue monitoring or not. However, the permittee has supplied the Department with sample data from 2011 to present to document the removal of the parameters of Oil and Grease and Biochemical Oxygen Demand (permittee samples Chemical Oxygen Demand) from their sampling requirement.

However, the parameter of Oil and Grease will be part of the permittee’s MCM 3 – Illicit Discharge Detection and Elimination program as an indicator/trace parameter in the event that a sheen, odor, or similar indicators are observed by permittee staff, which will trigger samples to be taken and analyzed for Oil and Grease.

Missouri’s Water Quality Standard for Oil and Grease is 10 mg/L (AQL – Table A – Criteria for Designated Uses in 10 CSR 20-7.031 revised January 29, 2014). Based on the permittee’s sampling results for Oil and Grease, this parameter is being removed from their Monitoring MCM as the results do not show potential to violate Missouri’s Water Quality Standard.

Oil & Grease

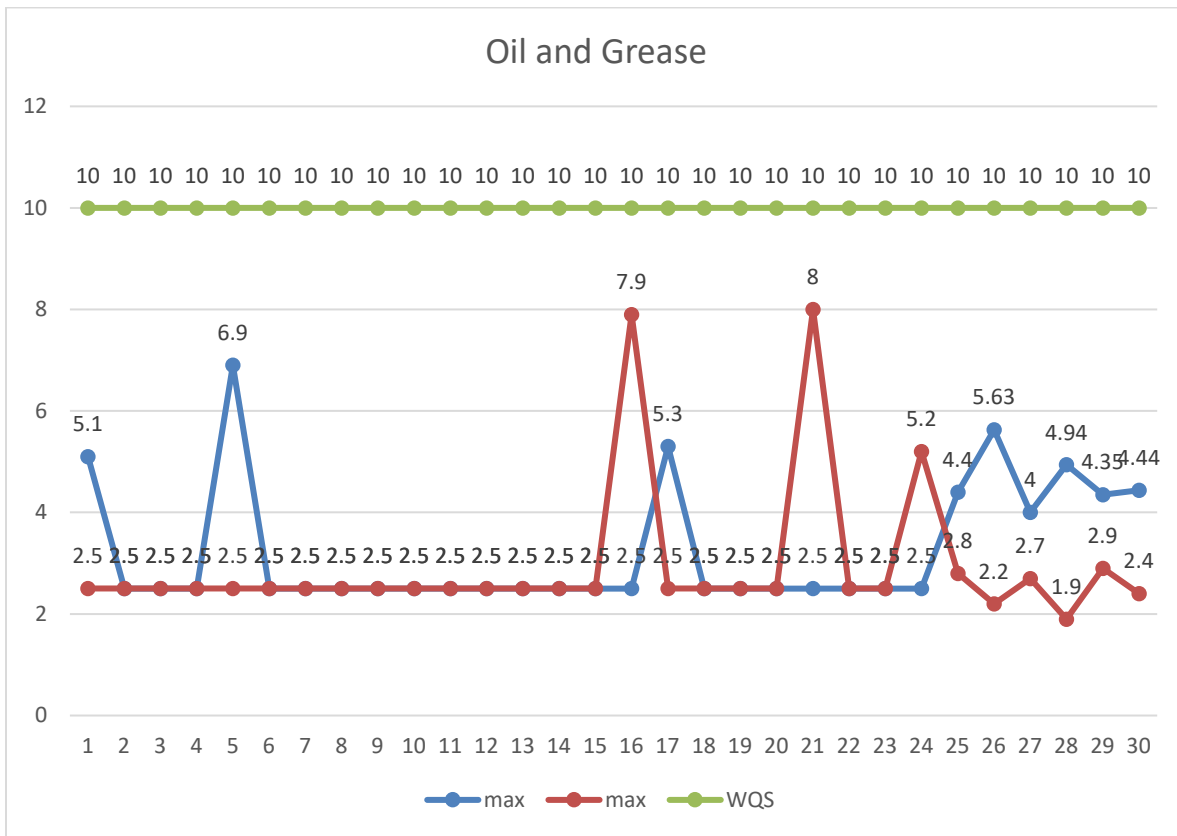
2015-2016 Storm Event					2015-2016 Base Flow			
MP#	# > mdl	mean > mdl	min	max	# > mdl	mean > mdl	min	max
101	8	4.4	2.0	5.1	5	<5.0	<5.0	<5.0
102	4	<5.0	<5.0	<5.0	4	<5.0	<5.0	<5.0
103	7	3.76	0	<5.0	6	<5.0	<5.0	<5.0
104	8	3.84	1.6	<5.0	5	<5.0	<5.0	<5.0
105A	8	4.2	1.8	6.9	5	<5.0	<5.0	<5.0
106	5	<5.0	<5.0	<5.0	5	<5.0	<5.0	<5.0

2014-2015 Storm Event					2014-2015 Base Flow			
MP#	# > mdl	mean > mdl	min	max	# > mdl	mean > mdl	min	max
101	0	<5.0	<5.0	<5.0	0	<5.0	<5.0	<5.0
102	0	<5.0	<5.0	<5.0	0	<5.0	<5.0	<5.0
103	0	<5.0	<5.0	<5.0	0	<5.0	<5.0	<5.0
104	0	<5.0	<5.0	<5.0	0	<5.0	<5.0	<5.0
105A	0	<5.0	<5.0	<5.0	0	<5.0	<5.0	<5.0
106	0	<5.0	<5.0	<5.0	0	<5.0	<5.0	<5.0

2013-2014 Storm Event					2013-2014 Base Flow			
MP#	# > mdl	mean > mdl	min	max	# > mdl	mean > mdl	min	max
101	0	<5.0	<5.0	<5.0	0	<5.0	<5.0	<5.0
102	0	<5.0	<5.0	<5.0	0	<5.0	<5.0	<5.0
103	0	<5.0	<5.0	<5.0	0	<5.0	<5.0	<5.0
104	0	<5.0	<5.0	<5.0	1	7.9	7.9	7.9
105A	1	5.3	5.3	5.3	0	<5.0	<5.0	<5.0
106	0	<5.0	<5.0	<5.0	0	<5.0	<5.0	<5.0

2012-2013 Storm Event					2012-2013 Base Flow			
MP#	# > mdl	mean > mdl	min	max	# > mdl	mean > mdl	min	max
101	0	<5.0	<5.0	<5.0	0	<5.0	<5.0	<5.0
102	0	<5.0	<5.0	<5.0	0	<5.0	<5.0	<5.0
103	0	<5.0	<5.0	<5.0	1	8	8	8
104	0	<5.0	<5.0	<5.0	0	<5.0	<5.0	<5.0
105A	0	<5.0	<5.0	<5.0	0	<5.0	<5.0	<5.0
106	0	<5.0	<5.0	<5.0	1	5.2	<5.0	5.2

2011-2012 Storm Event					2011-2012 Base Flow			
MP#	# > mdl	mean > mdl	min	max	# > mdl	mean > mdl	min	max
101	4	2.6	1.6	4.4	3	1.33	0.6	2.8
102	4	2.6	1.1	5.63	3	1.8	1.6	2.2
103	5	2.2	0.7	4	3	1.6	0.7	2.7
104	5	2.4	1.5	4.94	3	1.6	1.2	1.9
105A	5	2.97	1.6	4.35	4	1.8	0.7	2.9
106	4	2.9	1.6	4.44	3	1.4	0.9	2.4



The value of 2.5 is ½ of the detection level of 5.0.

BOD

The parameter BOD typically has a daily max of 45 mg/L and a monthly average of 30 mg/L for most treatment facilities, and limits for BOD are typically higher for stormwater discharging facilities. The BOD max taken during storm events was 16.2 mg/L and the max for base flow was 3.6 mg/L from 2011 to 2015. The permittee will have determined that COD is more appropriate to sample vs. BOD (5-day). Therefore, this parameter is being removed from the permittee's sampling requirement under their Monitoring MCM.

MP#	2014-2015 Storm Event				2014-2015 Base Flow			
	# > mdl	mean > mdl	min	max	# > mdl	mean > mdl	min	max
101	2	7.2	6.4	7.9	2	0.6	0.5	0.7
102	1	6.4	6.4	6.4	2	0.9	0.6	1.1
103	2	5.8	4.3	7.3	2	1.1	0.9	1.2
104	2	6.0	5.8	6.2	2	1.1	0.9	1.2
105A	2	3.8	3.6	3.9	2	1.7	0.9	2.4
106	2	3.2	3.1	3.2	2	1.5	1.1	1.8

2013-2014 Storm Event

MP#	# > mdl	mean > mdl	min	max
101	4	5.5	4.3	7.9
102	1	12.3	12.3	12.3
103	4	7.9	4.0	13.4
104	3	5.1	1.8	10.5
105A	3	5.2	2.3	9.2
106	4	3.8	1.3	5.8

2013-2014 Base Flow

MP#	# > mdl	mean > mdl	min	max
101	4	1.2	0.7	1.7
102	4	1.6	0.9	2.2
103	4	1.1	0.5	1.7
104	4	1.6	1.0	2.3
105A	4	1.1	0.3	2.2
106	3	2.1	1	3.1

2012-2013 Storm Event

MP#	# > mdl	mean > mdl	min	max
101	2	3.4	0.5	6.3
102				
103	2	0.7	0.4	1.0
104	2	0.9	0.7	1.0
105A	2	0.7	0.6	0.7
106	2	3.3	2.9	3.6

2012-2013 Base Flow

MP#	# > mdl	mean > mdl	min	max
101	3	0.3	0.2	0.5
102	3	0.7	0.5	0.9
103	3	0.6	0.5	0.7
104	4	0.9	0.2	1.3
105A	4	0.2	0.1	0.4
106	3	2.1	0.5	3.2

2011-2012 Storm Event

MP#	# > mdl	mean > mdl	min	max
101	5	9.2	6.0	12
102	4	8.4	3.1	14.7
103	5	10.9	7.7	16.2
104	5	5.3	2.4	8.8
105A	5	7.3	4.1	14.3
106	5	5.1	3.5	6.7

2011-2012 Base Flow

MP#	# > mdl	mean > mdl	min	max
101	4	0.8	0.6	0.9
102	4	1.0	0.7	1.4
103	4	0.8	0.7	0.9
104	4	1.1	1	1.4
105A	4	0.9	0.5	1.7
106	4	1.6	0.7	3.4

2010-2011 Storm Event

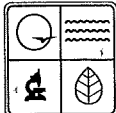
MP#	# > mdl	mean > mdl	min	max
101	4	5.2	2.6	9
102	2	6.4	5.5	7.2
103	4	5.6	3.3	8.4
104	4	4.7	1.3	8.6
105A	4	2.8	1.9	3.5
106	4	3.0	2.3	4.1

2010-2011 Base Flow

MP#	# > mdl	mean > mdl	min	max
101	4	1.1	0.7	1.7
102	4	1.1	0.8	1.5
103	4	0.8	0.2	1.2
104	4	1.1	0.8	1.4
105A	4	1	0.7	1.4
106	4	2.1	0.8	3.9

RECEIVED

FEB 02 2009



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
FORM A - APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT
UNDER MISSOURI CLEAN WATER LAW

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED

Note ▶ PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1. This application is for:

- An operating permit and antidegradation review public notice
- A construction permit following an appropriate operating permit and antidegradation review public notice
- A construction permit and concurrent operating permit and antidegradation review public notice
- A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required)
- An operating permit for a new or unpermitted facility Construction Permit # _____
- An operating permit renewal: permit # MO- 0130401 Expiration Date 08/19/2009
- An operating permit modification: permit # MO- _____ Reason: _____

1.1 Is the appropriate fee included with the application? (See instructions for appropriate fee) YES NO

2. FACILITY

NAME INDEPENDENCE MUNICIPAL SEPARATE STORM SEWER SYSTEM		TELEPHONE WITH AREA CODE NA	
		FAX NA	
ADDRESS (PHYSICAL)	CITY INDEPENDENCE	STATE MO	ZIP CODE 64051-0519

3. OWNER

NAME CITY OF INDEPENDENCE		E-MAIL ADDRESS NA	TELEPHONE WITH AREA CODE 816-325-7000	
			FAX 816-325-7012	
ADDRESS (MAILING) P. O. BOX 1019, 111 EAST MAPLE	CITY INDEPENDENCE	STATE MO	ZIP CODE 64051-0519	

3.1 Request review of draft permit prior to public notice? YES NO

4. CONTINUING AUTHORITY

NAME CITY OF INDEPENDENCE		TELEPHONE WITH AREA CODE 816-325-7000	
		FAX 816-325-7012	
ADDRESS (MAILING) P. O. BOX 1019, 111 EAST MAPLE	CITY INDEPENDENCE	STATE MO	ZIP CODE 64051-0519

5. OPERATOR

NAME CITY OF INDEPENDENCE		CERTIFICATE NUMBER NA	TELEPHONE WITH AREA CODE 816-325-7000	
			FAX 816-325-7012	
ADDRESS (MAILING) P. O. BOX 1019, 111 EAST MAPLE	CITY INDEPENDENCE	STATE MO	ZIP CODE 64051-0519	

6. FACILITY CONTACT

NAME DICK CHAMPION, JR.		TITLE DIRECTOR, WATER POLLUTION CONTROL	TELEPHONE WITH AREA CODE 816-325-7711	
			FAX 816-325-7722	

7. ADDITIONAL FACILITY INFORMATION

7.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)

001 _____ 1/4 _____ 1/4 Sec _____ T _____ R _____ County
 UTM Coordinates Easting (X): _____ Northing (Y): _____
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

002 _____ 1/4 _____ 1/4 Sec _____ T _____ R _____ County
 UTM Coordinates Easting (X): _____ Northing (Y): _____

003 _____ 1/4 _____ 1/4 Sec _____ T _____ R _____ County
 UTM Coordinates Easting (X): _____ Northing (Y): _____

004 _____ 1/4 _____ 1/4 Sec _____ T _____ R _____ County
 UTM Coordinates Easting (X): _____ Northing (Y): _____

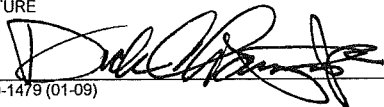
7.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.

001 - SIC 9111 _____ and NAICS 921110 _____ 002 - SIC _____ and NAICS _____
 003 - SIC _____ and NAICS _____ 004 - SIC _____ and NAICS _____

8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION (Complete all forms that are applicable.)			
A.	Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility? If yes, complete Form C (unless storm water only, then complete U.S. Environmental Protection Agency Form 2F per Item C below).	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
B.	Is your facility considered a "Primary Industry" under EPA guidelines: If yes, complete Forms C and D.	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
C.	Is application for storm water discharges only? If yes, complete EPA Form 2F.	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
D.	Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.		
E.	Is wastewater land applied? If yes, complete Form I.	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
F.	Is sludge, biosolids, ash or residuals generated, treated, stored or land applied? If yes, complete Form R.	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

9. DOWNSTREAM LANDOWNER(S) Attach additional sheets as necessary. See Instructions. (PLEASE SHOW LOCATION ON MAP. SEE 8.D ABOVE).			
NAME			
ADDRESS	CITY	STATE	ZIP CODE

10. I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law to the Missouri Clean Water Commission.

NAME AND OFFICIAL TITLE (TYPE OR PRINT) DICK CHAMPION, JR., DIRECTOR, WATER POLLUTION CONTROL	TELEPHONE WITH AREA CODE 816-325-7711
SIGNATURE 	DATE SIGNED Jan 28, 2009

MO 780-1479 (01-09)

BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETED AND ADDITIONAL FORMS, IF APPLICABLE, ARE INCLUDED.

Submittal of an incomplete application may result in the application being returned.

HAVE YOU INCLUDED:

- Appropriate Fees?
- Map at 1" = 2000' scale?
- Signature?
- Form C, if applicable?
- Form D, if applicable?
- Form 2F, if applicable?
- Form I (Irrigation), if applicable?
- Form R (Sludge), if applicable?

7. ADDITIONAL FACILITY INFORMATION

For outfall information, please refer to the 241 maps submitted in May, 1993, with Part 2 of the NPDES application for the Independence Municipal Separate Storm Sewer System (MS4).

8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION

- C. This application is for storm water discharges only, but the application is not for storm water associated with industrial activity; therefore, EPA Form 2F is not applicable.
- D. Please refer to the 241 maps submitted in May, 1993, with Part 2 of the NPDES application for the Independence MS4.

9. DOWNSTREAM LANDOWNER(S)

The Independence MS4 has numerous outfalls; it would not be practicable to provide downstream landowner information for the entire MS4.

Attachment B

Stormwater Management Plan Contacts and Responsibilities

Attachment B

Stormwater Management Plan Contacts and Responsibilities

Department	Name and Title	MCM Responsibilities
Water Pollution Control	Lisa Phelps, Director	<ul style="list-style-type: none"> • MCM1: Public Education and Outreach (Implementation) • MCM2: Public Involvement and Participation (Public notices)
	Mike Jackson, Assistant Director	<ul style="list-style-type: none"> • MCM1: Public Education and Outreach (Implementation)
	Diane Egger, Environmental Compliance Manager	<ul style="list-style-type: none"> • MCM1: Public Education and Outreach (Reporting) • MCM2: Public Involvement and Participation (Public participation programs) • MCM3: Illicit Discharge Detection and Elimination • MCM5: Post-Construction Stormwater Management (Stream buffer setback, on-site stormwater maintenance) • MCM6: Pollution Prevention / Good Housekeeping • MCM7: Industrial and High Risk Runoff • MCM9: Monitoring
	Josh Eis, Environmental Compliance Supervisor	<ul style="list-style-type: none"> • MCM1: Public Education and Outreach (Implementation) • MCM8: Flood Control Projects
	Ted Martin, Stormwater Manager	<ul style="list-style-type: none"> • MCM8: Flood Control Projects
Public Works	Kati Horner Gonzalez, Assistant Director of Public Works and City Engineer	<ul style="list-style-type: none"> • MCM1: Public Education and Outreach (Implementation) • MCM4: Construction Stormwater Runoff Control • MCM5: Post-Construction Stormwater Management (Flood plan management, on-site stormwater management, land disturbances)
Parks and Recreation	Morris Heide, Assistant Director	<ul style="list-style-type: none"> • MCM1: Public Education and Outreach (Implementation) • MCM6: Pollution Prevention / Good Housekeeping (PHFs Reduction Plan)
	Mike Hicks, Parks and Grounds Manager	<ul style="list-style-type: none"> • MCM1: Public Education and Outreach (Implementation) • MCM6: Pollution Prevention / Good Housekeeping (PHFs Reduction Plan)
	Jeff Umbreit, Recreation Program and Facility Supervisor	<ul style="list-style-type: none"> • MCM1: Public Education and Outreach (Implementation)
Community Development	Tom Scannel, Director	<ul style="list-style-type: none"> • MCM5: Post-Construction Stormwater Management (Tree preservation plans)