Merriam, Kansas Stormwater Management Plan January 1, 2021 through January 31, 2024



Submitted in Compliance with Kansas Permit No. M-KS44-SU01

Date: February 28, 2021

Section 1	Introduction/Background			
Section 2	Six Minimum Controls			
	3.1 Public Education and Outreach			
Section 3	Total Maximum Daily Load (TMDL) Regulated Pollutants			
Section 4	Water Quality Monitoring for TMDL Assesments			
Section 5	Permit Compliance Schedule Activities and Schedules			
Section 6	Modifications to the Stormwater Management Plan			

Appendices

Appendix A – Map of Permitted Area

Appendix B - Tables 1-7 Planned BMPs for Permit Compliance

SECTION 1: INTRODUCTION

This document is a Stormwater Management Plan (SMP, or the "Plan") created to help reduce the discharge of pollutants in stormwater runoff from the Municipal Separate Storm Sewer System (MS4) within regulated areas of Merriam, Kansas (Map of permitted area included in Appendix A). It outlines stormwater program activities, monitoring requirements, reporting requirements, and responsible parties for implementing this work.

This plan was prepared in compliance with Kansas Permit Number M-KS44-SU01 (hereinafter "the permit") issued to the City by the Kansas Department of Health and Environment (KDHE) to fulfill requirements of the Clean Water Act.

Permit Effective Date: <u>February 1, 2019</u> Permit Expiration Date: January 31, 2024

The SMP is designed to:

- 1. Reduce the discharge of pollutants from the MS4 to the Maximum Extent Practicable (MEP).
- 2. Implement the Six (6) Minimum Control Measures as listed in Part I Section C of the permit,
 - a. The Six Minimum Control Measures are:
 - i. Public Education and Outreach.
 - ii. Public Participation and Involvement,
 - iii. Illicit Discharge Detection and Elimination,
 - iv. Construction Site Stormwater Runoff Control,
 - v. Post-Construction Stormwater Management in New Development and Redevelopment Projects, and,
 - vi. Pollution Prevention/Good Housekeeping for Municipal Operations.
- 3. Implement Best Management Practices (BMPs) to reduce to the MEP the discharge of the Total Maximum Daily Load (TMDL) regulated pollutants from the MS4 to the watershed of the impaired stream and/or lake as listed in the Permit.
- 4. And, satisfy the requirements of the permit, the Clean Water Act, and the Kansas surface water quality statutes and regulations.

Implementation of BMPs consistent with the provisions of the SMP document and this permit constitutes compliance with the standard of reducing pollutants to the Maximum Extent Practicable.

Overall responsibility for coordination of activities outlined in this Plan, and for reporting will be by the Merriam Community Development Department and submitting all documents (Stormwater Management Plan (and updates) and Annual Report) to KDHE.

SECTION 2: SIX MINIMUM CONTROL MEASURES

This section describes the six minimum water quality protection control measures that are required by all MS4 permits. They include the following:

- 1. Public Education and Outreach
- 2. Public Involvement and Participation
- 3. Illicit Discharge Detection and Elimination
- 4. Construction Site Stormwater Runoff Control
- 5. Post-Construction Stormwater Management in New Development and Redevelopment
- 6. Pollution Prevention/Good Housekeeping for Municipal Operations

2.1 MINIMUM CONTROL MEASURE 1 (MCM 1) - PUBLIC EDUCATION AND OUTREACH

Description

MCM 1 consists of implementing a public education program to inform individuals, businesses, and organizations about the impacts of stormwater discharges on surface water quality and how they can help reduce pollutants in stormwater runoff. This may include distribution of educational materials to the community and/or conducting outreach activities.

Benefit

An informed public increases awareness of water quality issues in both residents and businesses, creates opportunities for the public to take direct action to improve the health and sustainability of their community, and builds support for program goals making initiatives more effective.

Compliance

Compliance with the public education and outreach minimum control measure requires implementation of BMPs in Part I., Section C.1 of the Permit for a minimum of 4 points total on an annual basis for each calendar year 2021 and 2022. The minimum point total requirement increases to 7 points beginning in year 2023.

A table containing the BMP summary, the measurable goal, the implementation schedule, and points per activity is included in Appendix B: Table 1.

Table 1. Planned BMPs to meet MCM 1 requirements.

BMP ID	BMP Summary			Points per year				
		2021	2022	2023	2024			
P Ed & 0 - 01	Maintain a stormwater webpage for the permittee.	3	2	2	2			
P Ed & 0 - 02	Distribute educational materials (either flyers, brochures, catalog mailings, handouts, or e-mails) addressing various pertinent stormwater public education topics.		2	2	2			
P Ed & 0 - 05	Post the municipality's MS4 permit and SMP document on either the stormwater web page or the municipal webpage.		1	1	1			
P Ed & 0 - 06	Provide either a stormwater telephone hotline or web based or text message method for public reporting of illicit discharges.	2	2	2	2			
P Ed & 0 - 08	Provide stormwater education for students at a school campus within K-12 (those grades present at the campus) within the permittee's jurisdiction or within 30 miles from this permit area. Alternately, funding stormwater BMP installations and/or field trips at the school campus will qualify.		3	3	3			
	Total points per year		10	10	10			

2.2 MINIMUM CONTROL MEASURE 2 (MCM 2) - PUBLIC INVOLVEMENT AND PARTICIPATION

Description

This minimum control consists of creating opportunities for individuals and organizations to provide public comment and recommendations regarding BMPs and measurable goals and participate in the development and implementation of BMPs to reduce the contamination of stormwater. This program must also comply with state and local public notice requirements.

Benefit

The goal of the stormwater management plan is to improve water quality in local lakes and rivers, which provides benefits to the entire community. As such, the community deserves to have an opportunity to voice opinions on the content of the plan. Further, input into decisions builds support for and ownership in outcomes. MCM 2 also provides opportunity to the community to participate in activities, such as park or stream bank clean-up events, that help to remove pollutants from the MS4.

Compliance

Compliance with the public involvement and participation minimum control measure requires implementation of BMPs in Part I., Section C.2 of the Permit for a minimum of 3 points total on an annual basis for each calendar year 2021 and 2022. The minimum point total requirement increases to 6 points beginning in year 2023.

A table containing the BMP summary, the measurable goal, the implementation schedule, and points per activity is included in Appendix B: Table 2.

Table 2. Planned BMPs to meet MCM 2 requirements

BMP ID	BMP Summary	Points per year			ır
		2021	2022	2023	2024
P I/P - 03	Hold park or stream bank clean-up events for public volunteers to aid municipal staff in removing trash, debris, or pollutant sources from the selected clean-up area.	3	3	3	3
P I/P - 05	Provide at least two events for residents to engage in cleanup activities and improve water quality in the municipality.			3	3
P I/P - 06	Establish a program to encourage residents to install stormwater treatment best management practices on their property.		2	2	2
	Total points per year	5	5	8	8

2.3 MINIMUM CONTROL MEASURE 3 (MCM 3) - ILLICIT DISCHARGE DETECTION AND ELIMINATION

Description

This minimum control consists of developing, implementing, and enforcing a program to detect and eliminate illicit wastewater discharges or other non-stormwater discharges into the storm sewer system. KDHE requires this program to include, at a minimum:

- Developing a storm sewer system map of the permitted MS4 showing the location of all outfalls, either pipes or open channel drainage, and showing the names and locations of all streams or lakes that receive discharges from those outfalls.
- Enacting and enforcing an ordinance or resolutions to prohibit non-stormwater discharges into the storm sewer system. The City of Merriam passed pollution prevention regulations (Ordinance No. 1550) in September 25, 2006 to regulate unlawful discharges into streams and the storm drain system.
- Informing public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.
- Developing and implementing a plan to detect and address prohibited non-stormwater discharges.

Benefit

Direct discharges of waste streams can present significant localized impacts to both public health and the environment. Developing legal, technical, and educational means to eliminate illicit discharges provides direct benefits to water quality, the environment, and public health.

Compliance

Compliance with the illicit discharge detection and elimination minimum control measure requires implementation of BMPs in Part I., Section C.3 of the Permit for a minimum of 5 points total on an annual basis for each calendar year 2021 and 2022. The minimum point total requirement increases to 7 points beginning in year 2023.

A table containing the BMP summary, the measurable goal, the implementation schedule, and points per activity is included in Appendix B: Table 3.

Table 3. Planned BMPs to meet MCM 3 requirements

BMP ID	BMP Summary	Points per year			r
		2021	2022	2023	2024
ID D & E - 03	Develop a spill response plan and, if appropriate, coordinate emergency response with other agencies or organizations.		2	2	2
ID D & E - 04	Implement a program to evaluate MS4 outfalls to identify illicit discharges. Inspect at least 5% of the known MS4 outfalls during a calendar year and evaluate the ones which have dry weather discharges. Evaluate the water quality of the dry weather discharges to recognize non stormwater contributions and trace the source of any illicit discharge.	1	1	1	1
ID D & E - 05	Distribute a letter (or flier) and/or email along with a press release from a municipal official with the intent of reaching every resident and business in the MS4 permit area. The distributed documents shall provide information on how to avoid illicit discharges to the MS4, i.e., proper disposal methods for common substances or materials often discharged illicitly. Provide a link to the municipal website where applicable ordinances and disposal guidance are posted.		2	2	2
ID D & E - 07	Implement a Household Hazardous Waste Collection Program (HHWCP) or		3	3	3
	Total points per year	9	8	8	8

2.4 MINIMUM CONTROL MEASURE 4 (MCM 4) - CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Description

This minimum control includes developing, implementing, and enforcing a program to reduce pollutants in any stormwater runoff to the MS4 for construction sites disturbing one acre or more, including areas that are less than one acre but are part of a larger common plan for development that disturbs one or more acre. KDHE requires this program to include:

- Where permittees have the authority to do so, ordinances or resolutions shall be enacted to require erosion and sediment controls, as well as sanctions to ensure compliance. The City of Merriam passed erosion and sediment control regulations (Ordinance No. 1550) on September 25, 2006 to regulate runoff pollution from active construction sites disturbing more than one acre.
- Requirements for construction site owners or operators to implement erosion and sediment control BMPs.
- Requirements for construction site owners or operators to control waste at construction sites that are likely to cause adverse impacts to water quality.
- Procedures for site plan review which incorporate consideration of potential water quality impacts.
- Procedures for receipt and consideration of information submitted by the public.
- Procedures for site inspection and enforcement of control measures.

Benefit

If left uncontrolled, land disturbance activities can generate significant loads of sediment which can impact both adjoining properties and downstream water bodies. Fortunately, effective controls are easy and cost-effective to implement.

Compliance

Compliance with the construction site stormwater runoff control minimum control measure requires implementation of BMPs in Part I., Section C.4 of the Permit for a minimum of 4 points total on an annual basis for each calendar year 2021 and 2022. The minimum point total requirement increases to 6 points beginning in year 2023.

A table containing the BMP summary, the measurable goal, the implementation schedule, and points per activity is included in Appendix B: Table 4.

Table 4. Planned BMPs to meet MCM 4 requirements

BMP ID	BMP Summary				
		2021	2022	2023	2024
CS SR C - 01	Implement a requirement for a Soil Erosion and Sediment Control(SESC) Plan for any land Disturbance sites which are either equal to or greater than 1 acre or for which there is construction activity disturbing less than one acre which is part of a larger common plan of development or sale that in total disturbs one acre or more.	3	2	2	2
CS SR C - 02	Develop and adopt a design manual for erosion and sediment control BMPs which are required to be used on sites which will be disturbed and are either equal to or greater than 1 acre or for which there is construction activity disturbing less than one acre which is part of a larger common plan of development or sale that in total disturbs one acre or more.			2	2
CS SR C - 03	Provide access to at least one training class for contractors, developers or others involved with land disturbance projects which provides training on requirements for a Stormwater Pollution Prevention Plan (SWP2 Plan) and implementation of appropriate BMPs.		3	3	3
CS SR C - 04	Develop a site plan review process which considers potential water quality impacts which may occur during construction as well as post construction impacts.		2	2	2
	Total points per year	12	9	9	9

2.5 MINIMUM CONTROL MEASURE 5 (MCM 5) - POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

Description

This minimum control requires the development, implementation, and enforcement of a program to address post-construction stormwater runoff controls from both new development and redevelopment sites after development sites disturbing one acre or more, including projects that are less than one acre but are part of a larger common plan for development that disturbs one or more acre. KDHE requires the program to include:

- For permitees that have the authority, ordinances or resolutions to address post-construction runoff from new development and redevelopment projects to the extent allowable under state and local law.
- BMPs to prevent or minimize adverse water quality impacts.
- Strategies which include a combination of structural and/or non-structural BMPs appropriate for the municipality.
- Means to ensure adequate long-term operation and maintenance of BMPs.

Benefit

Conversion of native landscape to developed landscape increases both the volume of runoff and pollutant loads in stormwater. The consequences can include erosion, flooding, and pollution, impacting both downstream property owners and public infrastructure. Stormwater controls included in development sites can help reduce impacts and costs to both private property owners and the public.

Compliance

Compliance with the post-construction stormwater management in new development and redevelopment minimum control measure requires implementation of BMPs in Part I., Section C.5 of the Permit for a minimum of 4 points total on an annual basis for each calendar year 2021 and 2022. The minimum point total requirement increases to 6 points beginning in year 2023.

A table containing the BMP summary, the measurable goal, the implementation schedule, and points per activity is included in Appendix B: Table 5.

Table 5. Planned BMPs to meet MCM 5 requirements

BMP ID	BMP Summary	Points			
		2021	2022	2023	2024
P-C SM - 01	Develop and adopt a custom design manual for Post-Construction Stormwater Management which specifies various structural BMPs required for new development and re-development construction sites which are greater than 1 acre or for where there is construction activity disturbing less than one acre which is part of a larger common plan of development or sale that in total disturbs one acre or more. Alternatively, adopt and implement the APWA 5600 Stormwater Design Criteria and the MARC/APWA BMP Manual.		5	5	5
P-C S M - 05	Develop and implement a program for inspection of permittee owned structural BMPs which includes implementation of needed maintenance to ensure long-term operation of the BMPs		2	2	2
	Total points per year	9	7	7	7

2.6 MINIMUM CONTROL MEASURE 6 (MCM 6) - POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

Description

MCM 6 requires the development and implementation of an operation and maintenance and training program to reduce and prevent stormwater pollution from public facility operations such as park and open space maintenance, fleet and building maintenance, new construction and land disturbance, and stormwater system maintenance.

Benefit

Leading by example on public facilities and projects provides an opportunity to demonstrate and teach proper techniques to other landowners, and it is available on a routine and ongoing basis.

Compliance

Compliance with the post-construction stormwater management in new development and redevelopment minimum control measure requires implementation of BMPs in Part I., Section C.5 of the Permit for a minimum of 4 points total on an annual basis for each calendar year 2021 and 2022. The minimum point total requirement increases to 6 points beginning in year 2023.

A table containing the BMP summary, the measurable goal, the implementation schedule, and points per activity is included in Appendix B: Table 6.

Table 6. Planned BMPs to meet MCM 6 requirements.

BMP ID	BMP Summary	Points			
		2021	2022	2023	2024
P P/G H - 04	Implement a program, with guidance to municipal staff or third-party contractors, to ensure any municipal vehicle or other mechanical equipment washing is conducted in a manner which ensures the wash water is disposed of in the sanitary sewer or otherwise receives proper treatment prior to discharge to the environment.		1	1	1
P P/G H - 05	Implement a program for street sweeping in which the street sweepings are collected and disposed of properly or recycled/reused if possible.		2	2	2
P P/G H - 06	Develop an employee training program to ensure permittee's staff understand what actions they can take in the workplace to minimize stormwater pollution.		1	1	1
P P/G H - 08	Develop, implement and keep updated an online storm sewer map accessible to the public.		2	2	2
	Total points per year		6	6	6

SECTION 3: Total Maximum Daily Load (TMDL) Regulated Pollutants

The City of Merriam will continue to review, update, implement, and develop, when necessary, structural and non-structural BMPs which will reduce the discharge of TMDL regulated pollutants from the MS4 to the Maximum Extent Practicable.

The effort to reduce the discharge of TMDL regulated pollutants is anticipated to be an iterative process with changes in the SMP periodically. This "adaptive management" type process, informed by monitoring data and other information collected during the term of this permit is recommended to attenuate the discharge of TMDL regulated pollutants listed in the TMDL table below.

TMDL regulated pollutants and impaired streams identified in the City of Merriam's 2014-2019 permit are listed below:

	TMDL Regulated Pollutant			
Impaired Stream	Bacteria	Nutrients	Sediment	
Turkey Creek	X	X	X	

TMDL Best Management Practices (BMPs)

Compliance with Total Maximum Daily Load (TMDL) Best Management Practices and Surface Water Monitoring requires implementation of BMPs in Part II., Section A of the Permit for a minimum of 4 points total on an annual basis for each calendar year 2021 and 2022. The minimum point total requirement increases to 6 points beginning in year 2023.

A table containing the BMP summary, the measurable goal, the implementation schedule, and points per activity is included in Appendix B: Table 7.

Table 7. Planned BMPs to meet TMDL requirements.

		Points			
BMP ID	BMP Summary				2024
TMDL -01	Install pet waste stations which include a glove/bag dispenser with signage and waste can to encourage pet waste disposal at either parks, trails, rest areas or other public lands owned by the permittee.	1	1	1	1
TMDL - 05	Develop a pet waste brochure or flyer document to educate the public about animal waste contamination of stormwater. The document encourages pet owners to pick up their pet's waste. Alternately, post the document on social media or the municipal website.		1	1	1
TMDL - 06	Distribute "Only Rain Down the Drain" door hangers or similar document or social media.		2	2	2
TMDL - 07	Inspect 10% of all known MS4 outfalls for dry weather discharges either annually or twice per year to identify potential illicit discharges.		3	3	3
	Total points per year	7	7	7	7

SECTION 4: Water Quality Monitoring for TMDL assessments

Success in achieving reductions in bacteria, nutrients, and sediment will be assessed by directly monitoring in-stream concentrations and evaluating pollutant concentration trends across the permit period. The monitoring program is conducted by the Johnson County Stormwater Management Program on behalf of the cities within Johnson County.

Beginning in 2019, the Johnson County Stormwater Management Program implemented a rotational monitoring approach for all watersheds within the County with the objectives of:

- 1. Measuring effectiveness of BMPs implemented through the City's Permit and Stormwater Management Plan;
- 2. Evaluating MS4 discharge impacts to receiving waters;
- 3. Investigating relative contribution of sources of specific pollutants causing designated use impairment, including nutrients, pathogens, sediment or other applicable parameters related to stormwater from areas serviced by the MS4; and
- 4. Gather data to inform future program decisions and prioritization of activities related to the protection of water quality.

The monitoring program consists of both rotating and fixed monitoring stations (Table 8 and Figure 1). Rotating stations will be monitored within the rotational year. The rotational year occurs on a five-year recurrence interval and is basin specific. Fixed monitoring states will be monitored on an ongoing basis independent of the rotational year.

Table 8. Monitoring station locations and rotational monitoring year.

Watershed Organization Grouping (Basin)	EDMR_Code	Monitoring Location	Site ID	Site Type	Rotational Monitoring Year
2	SW034A6	Indian Creek at Marty St.	0202IND	rotating	2019
2	SW035A6	Indian Creek at Switzer Rd.	0203IND	fixed	2019
2	SW036A6	Indian Creek at Blackbob Rd.	0204IND	rotating	2019
2	SW037A6	Indian Creek at State Line Rd.	0201IND	fixed	2019
2	SW038A6	Tomahawk Creek at Roe Ave.	0205TOM	fixed	2019
6	SW002A6	Camp Creek at 95th St.	0608CAM	rotating	2020
6	SW007C6	Cedar Creek at 127th St.	0606CED	rotating	2020
6	SW008A6	Cedar Creek at 83rd St.	0605CED	fixed	2020
6	SW009A6	Clear Creek at Woodland Dr.	0604CLE	rotating	2020
6	SW010A6	Little Cedar Creek at 119th St.	0607LCC	rotating	2020
6	SW011A6	Little Mill Creek at Tomahawk Golf Course	0603LMC	rotating	2020
6	SW012A6	Mill Creek at Johnson Dr.	0601MIL	fixed	2020
6	SW007A6	Mill Creek at 87th Ln.	0602MIL	rotating	2020

_					
3	SW014A6	Blue River at Kenneth Rd.	0301BLU	fixed	2021
3	SW015A6	Camp Branch at 183rd St.	0305CAM	rotating	2021
3	SW016A6	Coffee Creek at Switzer Rd.	0303COF	rotating	2021
3	SW017A6	Negro Creek at Mission Rd.	0306NEG	rotating	2021
3	SW018A6	Wolf Creek at 179th St.	0304WOL	rotating	2021
3	SW019A6	Blue River at Hwy 69	0302BLU	fixed	2021
1	SW020A6	Brush Creek at State Line Rd.	0101BRU	fixed	2022
1	SW021A6	Brush Creek at Roe Ave.	0102BRU	rotating	2022
1	SW022A6	Rock Creek at Mission Rd.	0103ROC	rotating	2022
1	SW023A6	Turkey Creek at Lamar Ave.	0104TUR	fixed	2022
1	SW024A6	Turkey Creek at 67th St.	0105TUR	rotating	2022
4	SW025A6	Bull Creek at 199th St.	0402BUL	rotating	2023
4	SW005B6	Bull Creek at Interstate 35	0401BUL	fixed	2023
4	SW027A6	Little Bull Creek at 199th St.	0404LBC	fixed	2023
4	SW028A6	Martin Creek at Hwy 56	0403MAR	rotating	2023
4	SW029A6	Spring Creek at 215th St.	0405SPR	rotating	2023
5	SW030A6	Captain Creek at 103rd St.	0504CAP	rotating	2023
5	SW001A6	Kill Creek at 95th St.	0501KIL	fixed	2023
5	SW032A6	Kill Creek at 127th St.	0502KIL	rotating	2023
5	SW033A6	Spoon Creek at 151st St.	0503SPO	rotating	2023



Figure 1. Locations of Fixed and Rotating Monitoring Stations

Water Quality Monitoring Protocol

Water quality samples will be collected from all fixed monitoring stations, as well as monitoring stations in the rotational basin, a minimum of six times per year between April and September regardless of streamflow conditions (Table 9). Additionally, water quality samples will be collected from rotational basins (fixed and rotational monitoring sites) during a minimum of three storm events per year between April and September. Storm events are defined as the streamflow conditions that generally correspond to a rainfall event that is greater than or equal 0.25 inches.

Water quality samples are collected as grab samples and pH, Dissolved Oxygen, Temperature, and Specific Conductance measurements are collected in the field at the time of sampling. Other information that is collected in the field at the time of sample collection includes rainfall, streamflow, stream level, and stream velocity.

Samples are analyzed at the Johnson County Wastewater Laboratory. Samples are analyzed for Total Phosphorus as P (mg/L), Ortho-Phosphorus as P (mg/L), Total Kjeldahl Nitrogen (mg/L), Nitrate plus Nitrite as N (mg/L), Total Suspended Solids (mg/L), Turbidity (NTU), and E. Coli bacteria (MPN).

Johnson County shall report data for water quality monitoring annually to KDHE and an annual report describing water quality conditions and including all data collected will be provided to the City.

SECTION 5: Permit Compliance Activities and Schedules

Year 2019:

- Annual report for 2018 submitted to KDHE by February 28, 2019
- Permittee must submit required information for water quality monitoring locations (Johnson County Stormwater Management Program is responsible for the City's monitoring program)
- Storm event monitoring data for 2019 entered into eDMR database by January 28, 2020 (Johnson County Stormwater Management Program is responsible data entry for the City's monitoring program).

Year 2020:

- Annual report for 2019 submitted to KDHE by February 28, 2020
- Storm event monitoring data for 2020 entered into eDMR database by January 28, 2021 (Johnson County Stormwater Management Program is responsible data entry for the City's monitoring program).

Year 2021:

- Updated Stormwater Management Plan submitted to KDHE by February 28, 2021
- Annual report for 2020 submitted to KDHE by February 28, 2021
- The City must implement sufficient listed BMPs to achieve minimum point requirements for 2021.
- Storm event monitoring data for 2021 entered into eDMR database by January 28, 2022 (Johnson County Stormwater Management Program is responsible data entry for the City's monitoring program).

Year 2022:

- Annual report for 2021 submitted to KDHE by February 28, 2022
- The City must implement sufficient listed BMPs to achieve minimum point requirements for 2022.

 Storm event monitoring data for 2022 entered into eDMR database by January 28, 2023 (Johnson County Stormwater Management Program is responsible data entry for the City's monitoring program).

Year 2023:

- Annual report for 2022 submitted to KDHE by February 28, 2023
- Provide report (in PDF format) on effectiveness of source controls and structural BMPs to attenuate pollutant discharge and achieve the measurable goals as well as a summary of water quality data from stream monitoring sites. The report must be submitted to KDHE with the 2022 Annual Report by February 28, 2023.
- The City must implement sufficient listed BMPs to achieve minimum point requirements for 2023.
- Storm event monitoring data for 2023 entered into eDMR database by January 28, 2024 (Johnson County Stormwater Management Program is responsible data entry for the City's monitoring program).

Year 2024:

- Annual report for 2023 submitted to KDHE by February 28, 2024
- The City must implement sufficient listed BMPs to achieve minimum point requirements for 2023.
- Storm event monitoring data for 2024 entered into eDMR database by January 28, 2025 (Johnson County Stormwater Management Program is responsible data entry for the City's monitoring program).

SECTION 6: Modifications to the Stormwater Management Plan

This SMP will be evaluated annually and modifications to the Plan, if any, will be submitted with the annual report.

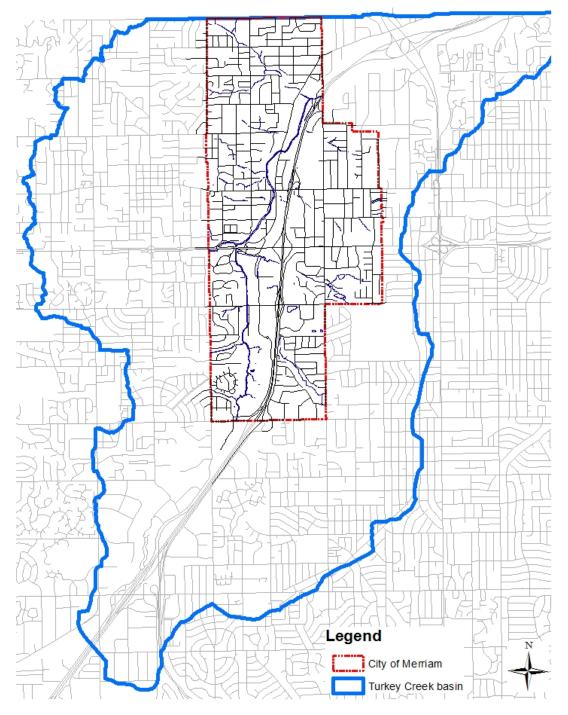
For minor BMPs modifications/replacement: Within 60 days of a determination by the permittee or date of written notification from KDHE, the permittee shall modify the BMP if modifications are needed to maintain a program in compliance with this permit.

For major BMP modifications/replacement: These major modifications are defined as ones which normally take more than 60 days to construct and/or implement. Within 60 days of a determination by the permittee or date of notification from KDHE, the permittee shall provide a plan and schedule for the update/replacement of the BMP. The plan and schedule are subject to KDHE approval.

Appendix A

Map 1

City of Merriam Boundaries and Turkey Creek Basin



Appendix B

Appendix A- Table 1. Planned BMPs for Public Education and Outreach (MCM 1) compliance.

BMP ID	BMP Summary	Measurable Goal	Implementation Time Schedule etc.	Points	2021	2022	2023	2024
P Ed & 0 - 01	Maintain a stormwater webpage for the permittee.	Maintain the webpage with up to date information with all links effective and valid information. Check all links and update website as necessary on a minimum monthly basis. Document monthly checks in log book and indicate changes with logged summaries.	The webpage must be available throughout the year once it is posted and initially made available. In the initial year posted it must be available for a minimum of 3 months to qualify for the points. In subsequent calendar years the points may claimed if the webpage has been maintained throughout the twelve months.	3 points may be claimed in the first year implemented, and 2 points may be claimed for each successive year the webpage is maintained available.	3	2	2	2
P Ed & 0 - 02	Distribute educational materials (either flyers, brochures, catalog mailings, handouts, or e-mails) addressing various pertinent stormwater public education topics.	Number of all flyers, brochures, catalog mailings, handouts, or e-mails distributed in a year shall equal or exceed the most recent U.S. Census Bureau decennial housing units value for the permit area. The applicable U.S. Census housing units value shall be documented, and the number of flyers, brochures, or e-mails distributed shall also be documented. This information and copies of the flyers, brochures, or e-mails shall be retained on file.	Either flyers, brochures, catalog mailings, handouts, or e-mails are to be distributed in at least two separate batches, ideally in separate seasons (either winter, spring, summer or fall). However, the required number of flyers, brochures, or e-mails must be distributed in a single calendar year and the points can be claimed for that year.	2 points may be claimed in a year in which the required number of flyers, brochures, catalog mailings, handouts , or e-mails are distributed.	2	2	2	2
P Ed & 0 - 05	Post the municipality's MS4 permit and SMP document on either the stormwater web page or the municipal webpage.	The two documents must be posted for at least six months of the year to claim one point.	Months for which the posting occurs must be within the year for which points are claimed. No "carryover" of months from one year to the next.	1 point may be claimed for posting each year (minimum of at least six months).	1	1	1	1
P Ed & 0 - 06	Provide either a stormwater telephone hotline or web based or text message method for public reporting of illicit discharges.	Respond to all reported complaints within 10 days and, if found valid, resolve or establish a schedule for resolution within 20 days. Actual resolution may take more than 20 days, but the schedule for resolution must be finalized and the efforts to implement resolution must begin within 20 days following receipt of complaint. Document complaints and response/resolution process for all complaints received in the year. Resolution of an illicit discharge can include, but is not limited to; elimination of the discharge; or site treatment to allow discharge to the MS4 (normally requires an NPDES permit); redirecting the discharge to a location that the discharge is not considered illicit, i.e., sanitary sewer or to holding tanks to allow the waste to be hauled off for appropriate treatment, reuse/recycle or disposal.	The hotline/reporting system must be available to the public for at least six months in the year to claim the points.	2 points may be claimed for each year the hotline/ reporting system is maintained and available. An additional point may be claimed for each illicit discharge resolved in the year up to a limit of 2 additional points per year. One point allowed per illicit discharge resolved.	2	2	2	2
P Ed & 0 - 08	Provide stormwater education for students at a school campus within K+12 (those grades present at the campus) within the permittee's plurisdiction or within 30 miles from this permit area. The training may be limited to the individual campus (local school buildings associated with a single address.) This training does not need to be provided to the entire school system, e.g., USD. Alternately, funding stormwater BMP installations and/or field trips at the school campus will qualify.	Provide or fund an educator or speaker that will reach at least 5% of the K-12 students as normally attend school in the selected school campus. Alternately, the funding of BMPs at the school campus may provide for any of the following: > Installation of BMPs at the school > Stormwater related field trips - Water quality stream sampling activities - Rain gardens on school property > Rain barrel workshops - Rain garden workshops		3 points may be claimed each year this BMP is implemented in compliance with the specified requirements (provide education and/or fund stormwater BMP installations at the school campus).	3	3	3	3

 Total points per year
 11
 10
 10
 10

 Minimum required points
 4
 4
 7
 7

Appendix A- Table 2. Planned BMPs for Public Participation and Involvement (MCM 2) compliance.

BMP ID	BMP Summary	Measurable Goal	Implementation Time Schedule, etc	Points	2021	2022	2023	2024
P I/P - 03	Hold park or stream bank clean-up events for public volunteers to aid municipal staff in removing trash, debris, or pollutant sources from the selected clean-up area.		At least one such clean-up activity must occur in the year for which points are claimed.	3 points may be claimed each year this BMP is implemented in compliance with the specified requirements .	3	3	3 3	3
P I/P - 05	Provide at least two events for residents to engage in cleanup activities and improve water quality in the municipality.	Provide at least two events in streams, streamside parks, areas adjacent to public waterways, and/or other green infrastructure/water resources. These events can be any of the following: Environmental restoration events, stream cleanups, tree plantings, or stream monitoring.	At least two events in compliance with the stated goals must be conducted within the year for which points are claimed.	3 points may be claimed each year this BMP is implemented in compliance with the specified requirements.			3	3
P I/P - 06	Establish a program to encourage residents to install stormwater treatment best management practices on their property.	Encouragement can include funding, grants, and other financial incentives, trainings and or giveaways. Stormwater treatment BMPs can include: rain barrels, rain gardens, native plantings, native trees, disterns and vegetated swales. Record participation numbers annually.	One or more of the listed methods of encouragement must be implemented in the year for which points are claimed.	2 points may be claimed each year this BMP is implemented in compliance with the specified requirements, with the addition of 1 additional point (for a total of 3 points in the year) each year that participation increases 10% from the previous year.		. 2	2 2	2

Total points per year 5 5 8 8 8 Minimum required points 3 3 6 6

Appendix A- Table3. Planned B	MPs for Illicit Discharge Detection and Elimination (MCM 3) compliance.							
BMP ID	BMP Summary	Measurable Goal	Implementation Time Schedule, etc	Points	2021	2022	2023	2024
ID D & E - 03	Develop a spill response plan and, if appropriate, coordinate emergency response with other agencies or organizations.	The plan shall include, at a minimum, explanation of appropriate spill response activities for spills associated with wehicle accidents, at grade or above ground storage tanks, and wehicle fluids from mechanical equipment such as construction equipment, cars, or trucks. The written plan shall be maintained on file.	The plan may be implemented in any year and points claimed for the initial implementation or for each year the plan remains effective.	3 points may be claimed in the year initially implemented, and 2 points may be claimed for each successive year the plan remains effective.	3	2		2
ID D & E - 04	Implement a program to evaluate MS4 outfalls to identify illicit discharges. Inspect at least 5% of the known MS4 outfalls during a calendar year and evaluate the ones which have dry weather discharges. Evaluate the water quality of the dry weather discharges to recognize non-stormwater contributions and trace the source of any illicit discharge.	When at least 5% of the known MS4 outfalls are inspected and for which at least one outfall was identified as discharging (entirely or partially) floor from an illicit discharge, the allotted points may be daimed in the year when the illicit discharge is eliminated. Document the MS4 outfalls inspected, the outfalls with of weather discharges and the MS4 outfalls associated with illicit discharges.	The evaluation of a group of at least 5% of the known MS4 outfalls may be completed all in one year or may occur in up to two consecutive years and a point can be claimed. The larger number of points may be claimed only for the year in which the illicit discharge(s), associated with this group of evaluated outfalls is/are eliminated.	1 point may be claimed in the year when a total of at least 5% of the known MS4 outfalls are finally inspected, and 2 additional points may be claimed in which the illicit discharge(s), associated with this group of evaluated outfalls is/are eliminated.	1	1	1	1
Lbmp ID D & E - 05		The letter (or flier) and/or e-mail along with the press release shall highlight the requirements for proper disposal of wastes and disposal methods. Copies of these documents shall be retained on file along with the distribution/mailing lists to document distribution to the target area (minimum MS4 permit area) to avoid illicit discharges to the MS4. Provide a link to the municipal website where applicable ordinances and disposal guidance are posted.	The distribution of these various documents, letter (or filier) and/or e-mail along with the press release, shall all occur in the same month. Permittee may claim these points in the year these documents are distributed.	2 points			2	2
ID D & E - 07	Implement a Household Hazardous Waste Collection Program (HHWCP) or document others have implemented such a program to provide such service to all property owners or residents located within the permit area.	Document the residents and property owners within the MS4 permit area were able to dispose of such wastes at the HHWCP during a calendar year. Retain this documentation on file.	The property owners or residents located within the permit area must be able to dispose of waste accepted by the HHWCP throughout a calendar year. Points may be claimed for any such year.	3 points may be claimed for any year in which this BMP was implemented in compliance with the requirements.	3	3	3	3
				Total points per year	7	6	7 8	3
				Minimum required points	5	5	7	/

Appendix A- Table 4			Т	\top			
BMP ID	BMP Summary	Measurable Goal	Implementation Time Schedule, etc	Points	2021	2022	2023
CS SR C - 01	Implement a requirement for a Soil Erosion and Sediment Control (SESC) Plan for any land Disturbance sites which are either equal to or greater than 1 acre or for which there is construction activity disturbing less than one acre which is part of a larger common plan of development or sale that in total disturbs one acre or more.	Enact a regulatory ordinance, or other enforceable measure that requires an SESC Plan for all developments disturbing sites which are either equal to or greater than 1 acre or for which there is construction activity disturbing less than one acre which is part of a larger common plan of development or sale that in total disturbs one acre or more.	Points may be claimed in the year the ordinance/enforceab le requirement first becomes effective, and for each full calendar year thereafter for which the ordinance/enforceab le requirement remains effective.	3 points may be claimed in the year the ordinance initially becomes effective, and 2 points may be claimed for each successive year thereafter for which the ordinance remians effective.	3	2	2 2
CS SR C - 02	Develop and adopt a design manual for erosion and sediment control BMPs which are required to be used on sites which will be disturbed and are either equal to or greater than 1 acre or for which there is construction activity disturbing less than one acre which is part of a larger common plan of development or sale that in total disturbs one acre or more.	Require implementation of BMPs in compliance with the design manual on all sites which meet the disturbed area standard as specified in the BMP Summary.	Points may be claimed for the year which the manual is initially adopted and implemented, and a reduced number of points may be claimed for subsequent years in which the manual remains implemented.	3 points may be claimed in the year the manual is initially implemented, and 2 points may be claimed for each successive year the manual remains effective.	3	2	2 2
CS SR C - 03	Provide access to at least one training class for contractors, developers or others involved with land disturbance projects which provides training on requirements for a Stormwater Pollution Prevention Plan (SWP2 Plan) and implementation of appropriate BMPs.	This training class must address all local requirements for a SWP2 Plan, requirements for implementation of BMPs and address the requirements for permits.	Points may be claimed for the year in which the training class is held.	3 points	3	3	3 3
CS SR C - 04	Develop a site plan review process which considers potential water quality impacts which may occur during construction as well as post construction impacts.	Review process must have written guidance for the reviewer. Issuance of a building permit or approval to start construction may not be provided until the site plan has successfully passed the review process either based on the initial site plan submittal or has been modified to comply with requirements identified during the review process. Measures must be included to enforce the installation of water quality BMPs included in the site plan.	Points may be claimed in the year the review process is initially developed and implemented. Also points may be claimed in each subsequent year the review process continues to be implemented.	3 points may be claimed in the year the review process is initially developed and implemented, 2 points may be claimed for each successive year the review process continues to be implemented.	3	2	2 2
				T-1-1	12	0	
				Total points per year Minimum required points		9	9

Appendix A- Table 5. Planned BMPs for Post-Construction Stormwater Management for New Development and Re-development (MCM 5) compliance.

BMP ID	BMP Summary	Measurable Goal	Implementation Time Schedule, etc	Points	2021	2022	2023	2024
P-C SM - 01	Develop and adopt a custom design manual for Post-Construction Stormwater Management which specifies various structural BMPs which are required for new development and re-development construction sites which are greater than 1 acre for which there is construction activity disturbing less than one acre which is part of a larger common plan of development or sale that in total disturbs one acre or more. Alternatively, adopt and implement the APWA 5600 Stormwater Design Criteria and the MARC/APWA BMP Manual.	The custom design manual shall impose requirements to achieve at least one of the following standards: -> Capture, at least, the first 0.5 inches of precipitation on the development/redevelopment site and utilize methods to prevent discharge off-site, including but not limited to: Retain on-site Infiltrate Evaporate Transpire Or beneficially reuse -> Through implementation of appropriate BMP(s) reduce the peak stormwater flow rate to a value equal to or less than the rate which would be experienced on the site prior to the development/re-development project based upon modeling a standard storm event, e.g. 1.0 inch-6-hour event assuming saturated soil conditions> Other sizing or detention standards generally accepted by design engineers as adequate for the permitee's local. As an alternative to a custom design manual the APWA 5600 Stormwater Design Criteria and the MARC/APWA BMP Manual may be adopted and implememted. Measures must be included to enforce the installation of the various structural BMPs required.	· ·	4 points may be claimed in the year of initial implementation of a custom design manual alternately 6 points may be claimed in the year of initial implementation of the APWA 5600 stormwater design criteria and the MARC/APWA BMP Manual, 3 points may be claimed for each successive year compliance with the custom design manual is required/imple-mented. Alternately, 5 points may be claimed in each successive year the implementation of the APWA 5600 stormwater design criteria and the MARC/APWA BMP Manual is required/implemented.	6	5	5	5
P-C S M - 05	Develop and implement a program for inspection of permittee owned structural BMPs which includes implementation of needed maintenance to ensure long-term operation of the BMPs	The program shall requrie inspection of at least 10% of the structural BMPs on an annual basis. Identified maintenance activities shall be completed: 1. In the same year of inspection or 2. completed as dictated by the permittee's maintenance/O&M plan 3. or a written plan for completion of the necessary maintenance shall be completed in the same year of insepction with the objective for completion of the maintenance activity within 18 months.	The program shall be developed and implemented within a single year.	3 points my be claimed in the year the program is initially developed ad implemented, 2 points my be claimed for each successive year the program continues to be implemented.	3	2	2	2

Total points per year 9 7 7 7 Minimum required points 5 5 7 7 Appendix A- Table 6. Planned BMPs for Pollution Prevention/Good Housekeeping For Municipal Operations (MCM 6) compliance.

BMP ID	BMP Summary	Measurable Goal	Implementation Time Schedule, etc	Points	2021	2022	2023	2024
P P/G H - 04	Implement a program, with guidance to municipal staff or third-party contractors, to ensure any municipal vehicle or other mechanical equipment washing is conducted in a manner which ensures the wash water is disposed of in the sanitary sewer or otherwise receives proper treatment prior to discharge to the environment.	Maintain proper wash facilities for municipal staff to wash vehicles and/or equipment or implement a program which includes guidance to municipal staff to take vehicles and/or equipment to commercial wash facilities, either of which ensures the wash water is conveyed to the sanitary sewer, or otherwise receives proper treatment prior to discharge to the environment, and not discharged untreated to the MS4 or directly to the environment.	The guidance document must be finalized and implemented in the year which points are initially claimed.	2 points may be claimed in the year the guidance document is finalized and implemented, 1 point may be claimed for each successive year the guidance document continues to be implemented. 1 point may be claimed for each successive year the guidance document continues to be implemented.	2	1	1	1
P P/G H - 05	Implement a program for street sweeping in which the street sweepings are collected and disposed of properly or recycled/reused if possible.	All paved streets which can be swept shall be listed in the schedule for street sweeping. A log shall be maintained listing the street segments which are sweept and, dates of sweeping and where the street sweepings are disposed or where the material was sent to be recycled and/or reused. Alternatively, for municipalities with less than 500 population street sweeping can be limited to sweeping the gutters. The log which must be maintained need only indicate the street segments which were swept in the year and confirm the sweepings were properly disposed or recycled and/or reused	At least 10% of the streets which are listed in the street sweeping schedule must be swept at least once in a year to claim points for the year. In years when street sweeping equipment is purchased for use by the permittee additional points may be claimed. Alternately, for municipalities with less than 500 population at least 5% of the street gutters which can be swept must be swept in a year to claim points for the year.	3 points may be claimed in the year at least 10% of the listed streets are swept and street sweeping equipment is purchased, 2 points may be claimed for each year at least 10% of the listed streets are swept or alternately for municipalities with less than 500 population if at least 5% of the street gutters which can be swept are swept in a year 2 points may be claimed.	3	2	2	2
P P/G H - 06	Develop an employee training program to ensure permittee's staff understand what actions they can take in the workplace to minimize stormwater pollution.	Provide guidance documents in the form of either fact sheets, flyers or e-mails to staff to coach them in appropriate actions they can take while working to minimize stormwater pollution. Alternately, provide in-person training or videos with sign-in-sheets for signature documentation of personal or video training. Retain copies of the guidance documents and/or sign-in-sheets. A log of when the guidance was distributed, or training was provided to staff should be maintained. Provide appropriate guidance and/or training to staff a minimum of twice per year.	For each year in which staff receive guidance documents or in-person training or video training on two separate dates, points may be claimed for the year.	In years when guidance documents or training (in- person or video) are provided on two separate dates 1 point may be claimed.	1	1	1	1
P P/G H - 08	Develop, implement and keep updated an online storm sewer map accessible to the public.	Map shall cover the entire MS4 within the permit area and include all the MS4 lines both pipe and open drainage (i.e. ditches) and shall also illustrate all impaired waterways (i.e. 303(d) listed and TMDL listed streams/rivers) with an indication of the listed impairment.	For each year in which the map is posted online points may be claimed. In the first year the map is posted it must be posted for at least six months for points to be claimed.	points may be claimed in the first year, 2 points may be claimed for each year thereafter for which the map remains posted.	3	2	2	2

Total points per year 9 6 6 6

Minimum required points 4 4 6 6

Appendix A- Table 7. Plann	pendix A- Table 7. Planned BMPs for Total Maximum Daily Load (TMDL) compliance.								
BMP ID	BMP Summary	Measurable Goal	Implementation Time Schedule, etc	Points	2021	2022	2023	2024	
TMDL -01	Install pet waste stations which include a glove/bag dispenser with signage and waste can to encourage pet waste disposal at either parks, trails, rest areas or other public lands owned by the permittee.	At least one pet waste station shall be installed at the selected park, trail, rest area or other public land. The station(s) shall include signage which encourages proper pet waste disposal/cleanup and a waste can.	In the year the Measurable Goal requirement is implemented the point may be claimed and for each year thereafter the pet waste stations remain in use.	1 point may be claimed for the year in which the Measurable Goal requirements are enacted, and 1 point may be claimed for each subsequent year the Measurable Goal requirements remain in effect.		1	1	1	
TMDL - 05	Develop a pet waste brochure or flyer document to educate the public about animal waste contamination of stormwater. The document encourages pet owners to pick up their pet's waste. Alternately, post the document on social media or the municipal website.	The brochures or flyers are to be posted in various public buildings and distributed to the public throughout the year. In the year the number of documents shall equal or exceed the most recent U.S. Census Bureau decennial housing units value for the permit area. The applicable U.S. Census housing units value shall be documented, and the number of documents distributed shall also be documented. This information and copies of the documents shall be retained on file. Documents posted to social media or the website shall have the page copied and printed to retain on file.	The documents may be distributed in any fashion and at any time throughout the year. Documents posted on website(s) shall be posted for at least six months in the year. Documents posted on social media shall be posted six times within the year points are claimed.	1 point may be claimed in a year in which the required number of brochures and/or flyers are distributed, documents posted on social media or the website must be posted for at least as specified.		1	1	1	
TMDL - 06	Distribute "Only Rain Down the Drain" door hangers or similar document.	Provide in portions of the permit area with suspected illicit discharges. In the year the number of documents distributed shall equal or exceed 10% of the most recent U.S. Census Bureau decennial housing units value for the permit area. The applicable U.S. Census housing units value shall be documented, and the number of documents distributed shall also be documented. This information and copies of the documents shall be retained on file.	The documents may be distributed in any fashion and at any time throughout the year. Alternately, the document may be posted to social media (at least three times in the year) or posted on the municipal website for a minimum of three months in the year to qualify for points	2 points may be claimed in a year in which the required number of hangers or similar documents are distributed or alternately posted to social media or the municipal website for the required time.	2	2	2	2	
Lbmp TMDL - 07	Inspect 10% of all known MS4 outfalls for dry weather discharges either annually or twice per year to identify potential illicit discharges.	Complete inspection of all known MS4 outfalls either annually or twice per year during dry weather periods. If dry weather discharge is found follow-up with investigation to determine if a portion or all the discharge is illicit. Document the findings and initiate efforts to eliminate any identified illicit discharges.	The inspections must be conducted either annually or if twice per year they must be seasonal within the same calendar year (winter, spring, summer, and fall). Points can be claimed for that year. In addition, if an illicit discharge is detected and eliminated in association with this inspection program additional points may be claimed in the year detected or in the year the discharge is eliminated.	3 points may be claimed for annual inspection as required by this BMP, 5 points may be claimed for these inspections completed twice in a year, and if an illicit discharge is detected and eliminated. The 2 additional points may be claimed, only once, either in the year detected or in the year the illicit discharge is eliminated.	3	3	3	3	
				Total points per year	_	7	7	7	
				Minimum required points	4	4	6	6	