

KANSAS STORMWATER 2021 ANNUAL REPORT FORM FOR MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4)

Please place an "X" in the left box if any information has changed from previous years

<input type="checkbox"/>	Permittee [Agency Name] Mailing Address 1:	City of Merriam, 9001 West 62 nd Street
<input type="checkbox"/>	Mailing Address 2:	
<input type="checkbox"/>	Municipality:	Merriam
	State:	Kansas
<input type="checkbox"/>	Zip Code:	66202
<input type="checkbox"/>	MS4 Program Contact - Person:	Bryan P. Dyer
<input type="checkbox"/>	Contact E-Mail Address:	bdyer@merriam.org
<input type="checkbox"/>	Contact Phone Number:	913-322-5527
<input type="checkbox"/>	MS4 Program Construction Contact - Person	Tony Adamson
<input type="checkbox"/>	Construction E-Mail Address:	tadamson@merriam.org
<input type="checkbox"/>	Contact Phone Number:	913-322-5528
<input type="checkbox"/>	Kansas Permit Number: — Ex. M-MC21-SU01	M-KS44-SU01

Reporting period covers activities from January 1, 2021 through December 31, 2021.

This annual report must be submitted to the Kansas Department of Health and Environment (KDHE) by February 28th, 2021. The annual report is to be submitted as PDF files to KDHE preferably on a standard compact disk (CD) or digital versatile disk (DVD). If the permittee does not have the ability to provide the files in a CD or DVD, a flash drive can be submitted. Some permittees provide additional hard copy submissions of the annual report or supplemental documents along with the electronic files. There is no requirement to provide hard copies of any documents other than a simple transmittal letter.

IN ADDITION, provide the following:

1. A current copy of the Stormwater Management Program (SMP) Document as a PDF file along with the Annual Report.

2. Include an executive summary to this report which briefly covers the major aspects of the MS4 stormwater management program enacted during the year. In completing the executive summary, the preparer should address the following questions:
 1. Were there any aspects of the program that appeared especially effective at reducing pollutants in your stormwater discharge?
 2. Were there any aspects of the program that provided unsatisfactory results?
 3. What was the most successful part of the program?
 4. What was the most challenging aspect of the program?
 5. Describe any City/County area MS4 clean-ups and the participation.
 6. Describe the elected officials' participation in the stormwater pollution elimination.
 7. Describe the collaboration with other organizations to eliminate stormwater pollution.
 8. If an audit/inspection of your MS4 program was conducted by EPA or KDHE during the year, list the items the audit/inspection report identified as required changes and provide a narrative explanation of how the changes were implemented or explain the plan to implement the changes and identify a target date for final implementation.

The executive summary does not need to be extensive and detailed. It is anticipated the executive summaries will range from one half of a page to two pages in length depending on the scope of the program.

3. Any new stormwater ordinances/resolutions or revised ordinances/resolutions which have not already been submitted to KDHE for review and retention.

This template annual report document (basic report) for the 2021 reporting period has changed from the annual report format used in previous years. This document focuses on the core aspects of permit requirements including the Stormwater Management Program, the Six Minimum Control Measures (Public Education and Outreach, Public Involvement and Participation, Illicit Discharge Detection and Elimination, Construction Site Stormwater Runoff Control, Post-Construction Stormwater Management in New Development and Redevelopment Projects, and Pollution Prevention/Good Housekeeping for Municipal Operations), Total Maximum Daily Load (TMDL) Best Management Practices and TMDL wet weather monitoring. Additionally, for Phase I permittees a program to monitor their listed industrial facilities is required. Although any failure to comply with a requirement of the MS4 National Pollutant Discharge Elimination System (NPDES) permit may expose the permittee to enforcement action by either the permitting authority (Kansas Department of Health and Environment) or by the Environmental Protection Agency, the failure to implement the core aspects of the permit likely increases the risk of not only enforcement but also of incurring a monetary penalty.

The permittee is well advised to accurately report the conditions and status of their stormwater program and give due consideration to improving or enhancing their program where it is weak, or deficient in any of the core aspects (stormwater management program, six minimum control measures and TMDL best management practices – if applicable – also for Phase I permittees monitoring industrial facilities).

**TOPICS REQUIRED TO BE ADDRESSED IN THIS REPORT AS IDENTIFIED
IN PART V OF THE PERMIT**

Within the next one or two pages, or perhaps more if so desired, provide comments addressing the following items:

1. Provide the status of compliance with permit conditions, an assessment of the appropriateness of the implemented Best Management Practices, progress towards achieving the statutory goal of reducing the discharge of pollutants to the maximum extent practicable (MEP), and the measurable goals with an indication of the progress toward meeting the goals for each of the six minimum control measures.

The city of Merriam is in compliance with the its permit conditions. The Best Management Practices implemented by the city are appropriate for reducing the discharge of pollutants into the city’s MS4 system. This report details the activities the city undertook to reach its goals for each of the six minimum control measures.

2. Provide results of information collected and analyzed, (for example test results, surveys, or public comments/input) during the annual reporting period. This may include monitoring data used to assess the success of best management practices with respect to reduction in pollutant discharge. Include an interpretation of the information which addresses success or failure of the portion of the program for which the information applies.

Attached are tables with the test samples of the water quality monitoring that was conducted on Turkey Creek in Merriam.

3. Provide results of information collected and analyzed, if any, during the annual reporting period, including monitoring data used to assess the success of the program at reducing the TMDL regulated pollutants.

See attached is the 2021 JCSMP MS4 Water Quality Monitoring table.

4. Provide a summary of the stormwater activities that were scheduled to be undertaken during the previous calendar year and the status of these activities.

The City of Merriam’s scheduled stormwater activities for the previous calendar year are detailed in Section D. TMDL BMP Table and the Six Minimum Control Measures tables. The attached Merriam Public Works Department’s Stormwater Management Program also details the city’s stormwater activities. Merriam completed the described activities on its own or in cooperation with Johnson County Stormwater Management Program.

5. Provide a summary of the stormwater activities which are scheduled to be undertaken during the next calendar year (including an implementation schedule).

For 2022, as outlined in the city's MS4 Permit dated September 10, 2019, Merriam will continue to perform those stormwater activities outlined in the city's current Stormwater Management Plan (SMP) (attached).

6. Provide a map showing changes in the permittee's Permit Area if the permit area has changed within the year.

There was no change to the City of Merriam's permit area.

7. Provide a description of significant changes in any of the BMPs.

Approval of Merriam Ord #1830 adopting BMPs and APWA 5100. (Attached)

8. Provide a list of any ordinances or resolutions which were updated in the last year and are associated with the SMP. Please note, page on of this report requires submission of any new stormwater related ordinances or resolutions or any such updated ordinances or resolution be submitted with this annual report.

Attached is a copy of Ordinance No. 1830

9. Provide a list of other parties (such as other municipalities or consultants), which are responsible for implementing any of the program areas of the Stormwater Management Program.

Johnson County Stormwater Management Program
Johnson County Stormwater Management Advisory Council (SMAC)

10. For Phase I permittees only, provide a summary of the inspection results, including the wet weather surface water quality monitoring test results, and information obtained under PART III Monitoring Industrial Stormwater Discharges section of this permit.

Not applicable

SIX MINIMUM CONTROL MEASURES FOR MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s) WITH NPDES PERMITS

The following outlines the NPDES permit requirements for implementation of the Six Minimum Control Measures as required under Kansas MS4 permits issued by the KDHE. The NPDES permit provided to the MS4 authority should be reviewed for additional requirements associated with implementation of the Six Minimum Control Measures such as deadlines for the implementation of the requirements or supplemental requirements associated with the individual measures. The general requirements are as follows:

A. Six Minimum Controls — The permittee shall develop and implement Best Management Practices (BMP's) with measurable goals for each of the six minimum control measures. The six minimum control measures and the associated requirements are listed and explained as follows:

1. Public Education and Outreach

The permittee shall implement a public education program which includes distribution of educational materials to the community or conducting equivalent outreach activities which address the impacts of stormwater discharges on water bodies and the steps the public can take to reduce pollutants in stormwater runoff.

2. Public Involvement and Participation

The permittee shall implement a public involvement and participation program to solicit public comment and recommendations regarding the BMP's and measurable goals utilized by the permittee to comply with the permit. The permittee shall comply with state and local public notice requirements when implementing a public involvement and participation program.

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3. Illicit Discharge Detection and Elimination

The permittee shall:

- a. develop, implement and enforce a program to detect and eliminate illicit discharges into the MS4;
- b. Develop a storm sewer system map of the permittee's MS4, showing the location of all outfalls, either pipes or open channel drainage, showing the names and location of all streams or lakes that receive discharges from those outfalls. A copy of the map shall be submitted to KDHE. This map may be submitted as a PDF file(s) on a CD or DVD.
- c. Enact ordinances or resolutions to prohibit non-stormwater discharges into the storm sewer system and implement appropriate enforcement procedures and actions if the permittee has such authority. A copy of the ordinances or resolutions shall be submitted to KDHE.
- d. Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste; and
- e. Develop and implement a plan to detect and address prohibited non-stormwater discharges, including but not limited to illegal dumping, to the storm sewer system. Unless identified by either the permittee or KDHE as a significant source of pollutants to waters of the state, the following examples of non-stormwater discharges are not prohibited from entering the MS4:

- | | |
|---|--|
| 1. Water line flushing | 16. Occasional not-for-profit car wash activities |
| 2. Diverted stream flow | 17. Flows from riparian habits and wetlands |
| 3. Rising groundwaters | 18. Dechlorinated swimming pool discharges excluding filter backwash |
| 4. Uncontaminated groundwater infiltration as defined under 40 CFR 35.2005(20) to separate storm sewers | 19. Street wash waters (excluding street sweepings which have been removed from the street) |
| 5. Uncontaminated pumped groundwater | 20. Discharges of flows from firefighting activities |
| 6. Contaminated groundwater if authorized by KDHE and approved by the municipality | 21. Heat pump discharge waters (residential only) |
| 7. Discharges from potable water sources | 22. Treated wastewater meeting requirements of a NPDES permit |
| 8. Foundation drains | 23. Sump pump drains |
| 9. Air conditioning condensate | 24. Other discharges determined not to be a significant source of pollutants to waters of the state, a public health hazard, or a nuisance |
| 10. Irrigation waters | |
| 11. Springs | |
| 12. Water from crawl space pumps | |
| 13. Footing drains | |
| 14. Lawn watering | |
| 15. Individual residential car washing | |

4. Construction Site Stormwater Runoff Control

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

- a. Permittees which have the authority to enact ordinances or resolutions shall enact such ordinances or resolutions to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State and Local law;
- b. Requirements for construction site owners or operators to implement appropriate erosion and sediment control best management practices;
- c. Requirements for construction site owners or operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that are likely to cause adverse impacts to water quality;
- d. Procedures for site plan review which incorporate consideration of potential water quality impacts;
- e. Procedures for receipt and consideration of information submitted by the public;
- f. Procedures for site inspection and enforcement of control measures.

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

The permittee shall develop, implement, and enforce a program to address post-construction stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development and implementation, at a minimum of the following:

- a. BMP's to prevent or minimize adverse water quality impacts;
- b. Strategies which include a combination of structural and/or non-structural BMP's appropriate for the municipality;
- c. For permittees which 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;
- d. Ensure adequate long-term operation and maintenance of BMP's

6. Pollution Prevention/Good Housekeeping for Municipal Operations

The permittee shall develop and implement an operation and maintenance program that includes employee training to prevent and reduce stormwater pollution from municipal operations activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.

B. Stormwater Management Program

Please place an “X” in the left boxes to complete the table below.

YES	NO	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has the Stormwater Management Program (SMP) been developed and implemented?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has the SMP been modified or updated during this reporting period?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If the answer to question 2 above was “yes,” has the modified SMP been submitted to KDHE for review?

If the answer to item 3 is a “NO,” a copy of the updated SMP must be submitted with this annual report. If it is anticipated a measurable goal cannot be met in the next year the SMP should be modified and submitted to KDHE for review. The modifications may include different BMP’s and/or revised goals to avoid being in a position of non-compliance. However; reasonable BMP’s with reasonable goals must be implemented or KDHE may require the permittee to modify the SMP to include additional or better BMP’s and/or more reasonable goals.

C. Total Maximum Daily Load (TMDL) Best Management Practices (BMP’s)

Some permittees are required to implement BMPs to reduce the discharge of listed TMDL regulated pollutants (potentially any or all of the following pollutants – bacteria, nutrients, and sediment)

Please place an “X” in the left boxes to complete the table below.

YES	NO	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Were any BMP’s intended to attenuate the discharge of TMDL regulated pollutants implemented? See your permit to determine if TMDL regulated pollutants are listed for the receiving stream affected by your stormwater system (TMDL Table).
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	List all of the BMP’s intended to attenuate the discharge of TMDL regulated pollutants as identified in the SMP and provide the requested information in the following table.

List all the TMDL BMPs as identified in the SMP and provide the requested information in the following table.

D. TMDL BMP Table — A minimum of 4 points required in 2021.

BMP ID NUMBER	BMP SUMMARY	MEASURABLE GOAL(S)	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)	POINTS EARNED
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.	Number of dispensers Number of bags used	4 12,000	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.	Documents posted to social media or the website shall have the page copied and printed to retain on file.	Information maintained on webpage and on file	1
TMDL – 06	Distribute "Only Rain Down the Drain" door hangers or similar document.	Documents posted to social media or the website shall have the page copied and printed to retain on file.	Information maintained on webpage and on file	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.	Complete inspection of all known MS4 outfalls annually 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.	During dry weather conditions the city inspected and documented 23 out of 200 outfalls known within the city. No illicit discharge was observed.	3
			TOTAL POINTS EARNED	7

E. Stormwater Management Program Requirements (Six Minimum Control Measures)

Public Education and Outreach (Table) - Please fill out accordingly

List all of the public education and outreach BMPs as identified in the SMP and provide the requested information in the following table. Minimum of 4 points required in 2021.

BMP ID NUMBER	BMP SUMMARY	MEASURABLE GOAL(S)	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)	POINTS EARNED
PEd & 0 - 01	Public Access: Maintain a stormwater webpage for the permittee	Stormwater information readily available to the general public	The city maintains a stormwater webpage on its municipal website and regularly updates the page.	3
PEd & 0 - 02	Print Media: 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	Four educational advertisements were published in the "Johnson County Magazine" featuring seasonal stormwater pollution prevention messages. The Johnson County magazine is distributed quarterly to all households and businesses in the County. 5,400 households in Merriam received all four publications. The city of Merriam through its social media outlets, quarterly publication – Merriam Highlights, and e-Merriam provided press releases, stormwater information and tips on how to avoid illegal discharges to Merriam residents and businesses.	2
PEd & 0 - 05	Post MS4 and SMP: City will post on its webpage its MS4 permit and SMP document	The city will post on its website its MS4 permit and SMP document for at least six months out of the year.	Merriam's MS4 Permit and SMP on posted on its municipal website, merriam.org year around.	1

P Ed & 0 - 06	Reporting: 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	An "Environmental Complaints" webform (https://www.jocogov.org/departments/environmental-complaints) is available on the Johnson County government website as well as a 24-hour response hotline at 913-715-6900. Residents are able to report pollution for any municipality in the County. Residents can report illegal discharges by contacting the city and/or submitting a complaint through the city's website.	2
P Ed & 0 - 08	In-School Education: 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. The training may be limited to the individual campus (local school buildings associated with a single address).	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.	Friends of the Kaw May 2021 – Hocker Grove Middle School – 439 students May 2021 – Hocker Grove Middle School – 508 students Stone Lion Puppet Theater October 2021 – Merriam Park – 80 students	3
P Ed & 0 - 10	Free Soil Testing For Residents: Educate residents that applying fertilizer without a current soil test can result in over application and excessive nutrient runoff.	Number of soil tests Education received with reports and through marketing efforts for free soil test opportunity.	827 soil tests county-wide-- Residential by City • Merriam- 7 Participants receive a custom report with recommended rates of application and proper timing. As well as a general stormwater quality awareness pamphlet educating homeowners on lawn and garden best management practices.	2
			TOTAL POINTS EARNED	13

E. Stormwater Management Program Requirements (Six Minimum Control Measures) (CONTINUED)

2. Public Involvement and Participation (Table) - Please fill out accordingly

List all of the public improvement and participation BMPs as identified in the SMP and provide the requested information in the following table. (List all associations and partnerships) Minimum of 3 points required in 2021.

BMP ID NUMBER	BMP SUMMARY	MEASURABLE GOAL(S)	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)	POINTS EARNED
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.	Clean an area which must be equal to or greater than one acre or alternately at least 200 yards of streambank.	Streamway clean up of Brown Park where volunteers assisted city employees and elected officials	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.	Streamway clean up along Turkey Trail by LDS Church volunteers Clean up of Chatlain Park, which is adjacent to Turkey Creek Trail, by Hickory Hill Ward Church	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, cisterns and vegetated swales. Record participation numbers annually.	Resident participation 1 household – rain barrel installation	2

P I/P - 08	Provide a monetary donation to a scholarship fund for students pursuing a degree in an environmental program which would qualify them to work in a field which can result in water pollution control.	A \$500 contribution in a year is the minimum acceptable amount to achieve this goal.	The JCSMP is sponsoring a graduate student in the University of Kansas Department of Civil, Environmental, and Architectural Engineering as a part of a Sediment Source study with Dr. Admin Husic, a professor in the department. The graduate student stipend is \$23,000 per year.	2
			TOTAL POINTS EARNED	10

D. SMP Requirements (Six Minimum Control Measures) (Continued)

a. Illicit Discharge Detection and Elimination

Please place an "X" in the left boxes to complete the table below.

YES	NO	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has a program/plan been developed and is it presently implemented to detect and address illicit/prohibited discharges into the MS4?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has a map of the MS4 been developed, showing the location of all outfalls, either pipes or open channel drainage, showing names and location of all streams or lakes receiving discharges from the outfalls?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The permit may require the permittee enact ordinances, or resolutions. Have ordinances, or resolutions, or regulations to prohibit non-stormwater discharges into the storm sewer system been enacted? Effective date: September 25, 2006
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Have the ordinances, resolutions, or regulations been modified? Effective date: No modification in 2021

List all the Illicit Discharge Detection and Elimination BMPs as identified in the SMP and provide the requested information in the following table

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E. Stormwater Management Program Requirements (Six Minimum Control Measures)

3. Illicit Discharge Detection and Elimination (Table) - Please fill out accordingly

List all of the illicit discharge detection and elimination BMPs as identified in the SMP and provide the requested information in the following table. Minimum of 5 points is required in 2021.

BMP ID NUMBER	BMP SUMMARY	MEASURABLE GOAL(S)	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)	POINTS EARNED
ID D & E -02	Implement a program to upgrade or replace failed on-site wastewater treatment systems.	Number of inspections Number of soil profile analysis Number of required repairs Number of permits issued for new construction Number of decommissions	4 residential inspections (required on resale of property) in Merriam 1 commercial inspections (conducted annually) in Merriam 0 soil profiles completed in Merriam 3 minor repairs completed in Merriam 0 major repair permits issued for systems that were replaced as a result of a failed inspection in Merriam 0 permits issued for new construction in Merriam 1 septic tank decommissioning in Merriam	2
ID D & E - 03	Develop a spill response plan and, if appropriate, coordinate emergency response with other agencies or organizations.	The plan includes an explanation of appropriate spill response activities for spills associated with vehicle accidents, at grade or above ground storage tanks, and vehicle fluids from mechanical equipment such as construction equipment, cars, or trucks. The written plan shall be maintained on file.	Merriam has partnered with Overland Park Fire Department, who provides fire services to Merriam, on a adopting and implementing a Hazmat Emergency Response Plan and Operating Guidelines	3

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	Inspect at least 5% of the known MS4 outfalls for illicit discharges.	During dry weather conditions the city inspected and documented 23 out of 200 outfalls known within the city. No illicit discharge was observed.	1
ID D & E - 05	Distribute a letter (or flier) and/or e--mail along with a press release from a municipal official with the intent of reaching every resident and business in the MS4 permit area.	Issue an e-mail with the press release highlighting 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.	Merriam issued a press release via its e-Merriam social media outlet. e-Merriam is utilized by the city to provide timely communication with residents about important matters. The press release stressed how to properly dispose of residential yard waste and directed residents to the city's website for more information.	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.	City of Merriam Resident Appointments by facility DHE 234 Olathe 0 Total 234	3
			TOTAL POINTS EARNED	11

E. SMP Requirements (Six Minimum Control Measures) (Continued)

b. Construction Site Stormwater Runoff Control

Please place an "X" in the left boxes to complete the table below.

YES	NO	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The permit requires the permittee, if they have such authority, to enact ordinances or resolutions. Have ordinances or resolutions to address construction site runoff from new development/redevelopment projects been enacted? Effective date: _ September 25, 2006
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has a copy of the ordinances or resolutions been submitted to KDHE as required by the permit?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has a procedure or program been developed requiring construction site owners and/or operators to implement appropriate erosion and sediment control best management practices?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has a procedure or program been developed requiring construction site owners and/or operators to control waste such as discarded building materials, concrete truck washout, chemicals, paint, litter, and sanitary waste at construction sites likely to cause adverse impacts to water quality?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has a procedure been developed and implemented requiring site plan review which includes consideration of potential water quality impacts?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has a procedure been developed for the receipt and consideration of information submitted by the public?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has a procedure been developed and implemented for construction site inspection and enforcement of the control measures?

List all the construction site stormwater runoff control BMP's as identified in the SMP and provide the requested information in the following table.

E. Stormwater Management Program Requirements (Six Minimum Control Measures)

4. Construction Site Stormwater Runoff Control (Table) - Please fill out accordingly

List all of the Site Stormwater Runoff Control BMPs as identified in the SMP and provide the requested information in the following table. Minimum of 4 points required in 2021.

BMP ID NUMBER	BMP SUMMARY	MEASURABLE GOAL(S)	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)	POINTS EARNED
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 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.	The city has adopted a APWA 5100 – Erosion and Sediment Control. No development plans which disturbed a one (1) acre or more were submitted	3

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.	Implement a BMPs design manual on all sites which meet the disturbed area standard as specified in the BMP Summary	Merriam has adopted the Johnson County Erosion Prevention and Sediment Control field guide as the manual for the erosion and sediment control on sites that are a one (1) acre or larger and will be disturbed	3
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.	Merriam works with the Johnson County Contractor Licensing provide education and informational resources for contractors licensed in Johnson County. On November 3, 2021, the Johnson County Contractors Licensing Program offered a 4-hour class that provided training for contractors on proper erosion and sediment control at construction sites. Attendees could opt to take an exam at the end of the class to become a “Johnson County Certified Inspector”.	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.	Written review process for the review of issuing a building permit to start construction. The site plan must successfully pass the review process Measures must be included to enforce the installation of water quality BMPs included in the site plan.	The city has adopted KC APWA and MARC Manual for Best Management Practices for Stormwater Quality (BMP Manual) and reviews applicable site plans for compliance said documents.	3
			TOTAL POINTS EARNED	12

E. SMP Requirements (Six Minimum Control Measures) (Continued)

c. Post-Construction Site Stormwater Management in New Development and Redevelopment

Please place an “X” in the left boxes to complete the table below.

YES	NO	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The permit requires the permittee, if they have such authority, to enact ordinances or resolutions. Have ordinances or resolutions to address construction site runoff from new development and redevelopment projects been enacted? Revised date: September 27, 2021 (Ordinance attached)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has a copy of the ordinances or resolutions been submitted to KDHE as required by the permit?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has a post-construction stormwater runoff program been implemented?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Have post-construction sites been inspected?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are BMP's specified to minimize adverse water quality impacts?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Have strategies been developed to include a combination of structural and/or non-structural BMP appropriate for the municipality?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Have measures been implemented to ensure adequate long-term operation and maintenance of structural BMP's?

List all the post-construction site stormwater management in new development and redevelopment BMPs as identified in the SMP and provide the requested information in the following table.

E. Stormwater Management Program Requirements (Six Minimum Control Measures)

5. Post - Construction Site Stormwater Runoff Control (Table) - Please fill out accordingly

List all of the post-construction site stormwater runoff BMPs as identified in the SMP's and provide the requested information in the following table. A minimum of 5 points required in 2021.

BMP ID NUMBER	BMP SUMMARY	MEASURABLE GOAL(S)	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)	POINTS EARNED
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.	Adopt the APWA 5100 Stormwater Design Criteria and the MARC/APWA BMP Manual may be adopted and implemented. Measures must be included to enforce the installation of the various structural BMPs required.	Merriam has adopted APWA 5100 and the MARC/APWA BMP Manual and enforcement measures.	6
P-C SM – 05	Long Term Maintenance: Implement an inspection and enforcement program to ensure adequate long-term maintenance of structural post-construction runoff controls.	Number of inspections	Merriam has adopted an inspection program for newly installed BMPs. No BMPs have been installed the require inspection.	3
			TOTAL POINTS EARNED	9

E. SMP Requirements (Six Minimum Control Measures) (Continued)

d. Municipal Pollution Prevention/Housekeeping

Please place an "X" in the left boxes to complete the table below.

YES	NO	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The permit requires the permittee to enact a program to address pollution prevention/good housekeeping for Municipal Operations. Has such a program been enacted?

List all the municipal pollution prevention/housekeeping BMP's as identified in the SMP and provide the requested information in the following table.

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E. Stormwater Management Program Requirements (Six Minimum Control Measures) (CONTINUED)

6. Municipal Pollution Prevention / Housekeeping (Table) - Please fill out accordingly

List all of the municipal pollution prevention / housekeeping BMPs as identified in the SMP's and provide the requested information in the following table. A minimum of 4 points required in 2021.

BMP ID NUMBER	BMP SUMMARY	MEASURABLE GOAL(S)	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)	POINTS EARNED
P P/G H- 04	<p>Reduce Pollutant Runoff from Municipal Operations: Required elements of this program include.</p> <p>Stormwater Management Audits: Periodically audit community-owned facility(s) and/or community operations that may potentially impact surface water through the MS4.</p> <p>Stormwater Pollution Prevention Plans: Develop SWPPP(s) for facility(s) and/or operation(s).</p>	<p>Facility Name/Operation Date of last audit</p> <p>SWPPP(s) completed and on file</p>	<p>Annually (report attached)</p> <p>Yes</p>	2
P P/G H- 05	<p>Staff Cleaning, Clearing, and Inspecting: Implement a program for street sweeping in which the street sweepings are collected and disposed of properly or recycled/reused if possible.</p>	<p>Staff hours</p> <p>a. Street sweeping b. Parking lot sweeping c. Storm sewer cleaning and inspection d. Post storm stream inspections e. Leaf removal</p>	<p>544 16 360 241 352</p>	3
P P/G H- 06	<p>Municipal Employee Training: Develop an employee training program to ensure permittee's staff understand what actions they can take in the workplace to minimize stormwater pollution.</p>	<p>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.</p>	<p>2 trainings held 15 employees/training</p>	1

Lbmp 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.	The Johnson County Automated Information Mapping System (https://aims.jocogov.org/) is a publicly available mapping system showing the MS4 lines and TMDL listed streams for all municipalities in Johnson County.	3
			TOTAL POINTS EARNED	9

E. SMP Requirements (Six Minimum Control Measures) (Continued)

e. PHASE ONE OPERATORS ONLY: Monitoring Industrial and High Risk Runoff

The permit requires the permittee to enact a program to address post-construction site stormwater runoff from new development and redevelopment.

Please place an “X” in the left boxes to complete the table below.

YES	NO	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Has the permittee developed and maintained a list of the municipal industrial facilities contributing to the pollutant loading to the MS4?
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Have at least two municipal industrial facilities on the list had inspection and sampling conducted?
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If the answer to items 1 and 2 is “No,” provide a statement.

F. Recordkeeping and Reporting

Some permittees are required to monitor surface waters if the permit includes TMDL monitoring requirements for Specific Impaired Streams to Target within Part II of the permit and surface water monitoring locations are identified in a subsequent table. Provide a current map of monitoring locations and site information data in the succeeding table (expand the table if necessary to address all sites).

Example map and table below—Please fill out map and table on page 26 and adjust as needed.

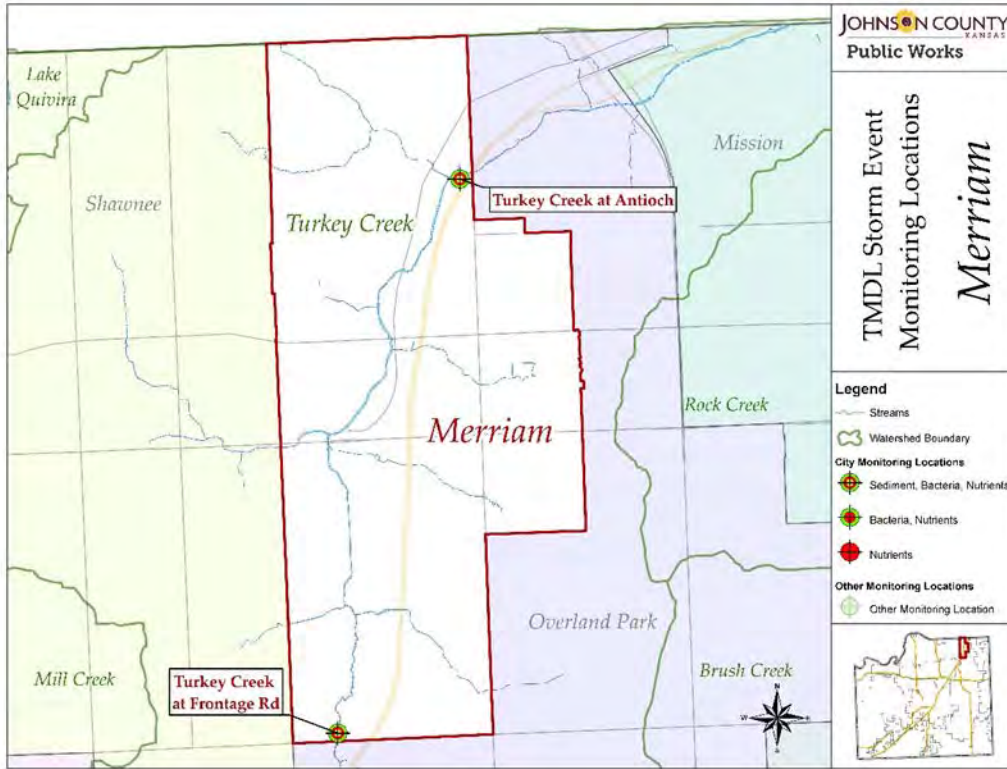


Upstream Site: Farwell Street Bridge over Charles River

Downstream Site: Arsenal Street Bridge over Charles River

<i>Local Site Name</i>	<i>Farwell</i>	<i>Arsenal</i>
<i>Local Site Identifier</i>	<i>C1</i>	<i>C2</i>
<i>Sample Location Description</i>	<i>On the east side of this bridge is a pedestrian walkway where a rope and bucket is lowered to the middle of the river to obtain a sample.</i>	<i>From the bike path on the southeast end of the bridge a path extends down to the bank of the river. A 10 foot long sample pole with bucket at the end is used to reach out past littoral vegetation and obtain a sample.</i>
<i>KDHE EDMR Code if Known</i>	<i>Far2002C5</i>	<i>Arse1001C6</i>
<i>Lat/Long Data Decimal & Degree Format</i>		
<i>Latitude</i>	<i>42.367056°</i>	<i>42358910°</i>
<i>Longitude</i>	<i>-71.218089°</i>	<i>-71161087°</i>

Map



Turkey Creek at Frontage Rd is upstream. Turkey Creek at Antioch is downstream.

Sample Site Information Tables

Local Site Name	<i>Turkey Creek at Lamar Ave</i>	<i>Turkey Creek at 67th St.</i>
Local Site Identifier	<i>0104TUR</i>	<i>0105TUR</i>
Sample Location Description	<i>Turkey01 – Upstream</i>	<i>Turkey02 – Downstream</i>
KDHE EDMR Code if Known	<i>SW023A6</i>	<i>SW024A6</i>
Lat/Long Data Decimal Degree Format (not degree-minutes-seconds)		
Latitude	<i>39.04397646</i>	<i>39.007491</i>
Longitude	<i>-94.6562111</i>	<i>-94.699066</i>

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 to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Permittee:  Date Signed 2/22/22
(Legally responsible person)

Name Printed: Christopher Engel Title City Administrator

40 CFR 122.22 Signatories to permit applications and reports.

(a) Application. All permit applications shall be signed by either a principal executive officer or ranking elected official.

All reports required by permits, and other information requested by the Director shall be signed by a person described in paragraph (a) of this section, or by a duly authorized representative of that person.

Please note the submission requirements on page 1. Submit this report to:

KANSAS DEPARTMENT OF HEALTH & ENVIRONMENT

Municipal Programs Section

1000 SW Jackson Street, Suite 420

Topeka, Kansas 66612

ATTACHMENTS

1. Executive Summary
2. City of Merriam Public Works Department's 2022 Stormwater Management Program on activities undertaken in 2021
3. City of Merriam Public Works Department's Report on Sweeping Drainbox Clearing, Inspection/Debris Removal from creeks, and Training
4. 2021 JCSMP MS4 Water Quality Monitoring
5. Merriam Ord #1830 adopting BMPs and APWA 5100
6. Merriam, Kansas Stormwater Management Plan January 1, 2021 through January 31, 2024 dated February 28, 2021

Attachment 1 – Executive Summary

Executive Summary

Append an executive summary to this report which briefly covers the major aspects of the MS4 stormwater management program enacted during the year. In completing the executive summary, the preparer should address the following questions:

1. Were there any aspects of the program that appeared especially effective at reducing pollutants in your stormwater discharge?
2. Were there any aspects of the program that provided unsatisfactory results?
3. What was the most successful part of the program?
4. What was the most challenging aspect of the program?
5. Describe any City/County area MS4 clean-ups and the participation.
6. Describe the elected officials' participation in the stormwater pollution elimination.
7. Describe the collaboration with other organizations to eliminate stormwater pollution.
8. If an audit/inspection of your MS4 program was conducted by EPA or KDHE during the year, list the items the audit/inspection report identified as required changes and provide a narrative explanation of how the changes were implemented or explain the plan to implement the changes and identify a target date for final implementation.

The executive summary does not need to be extensive and detailed. It is anticipated the executive summaries will range from one half of a page to two pages in length depending on the scope of the program.

- 1) We believe that our efforts under public education (MCM 1) and public participation (MCM 2) that were focused on responsible lawn care practices and anti-littering were very successful at reaching a broad number of residents with messaging that hopefully will encourage behavior change or, at the very least, increase awareness. The City's collaboration with Johnson County and our neighboring jurisdictions is an effective means to best utilize local tax dollars to reduce non-point source pollution.
- 2) None
- 3) Public education and outreach efforts through the multiple approaches from the city, county, and regional levels were successful. The ability to conduct outreach through multiple outlets will hopefully continue to increase the public's awareness of water quality issues and how they can help. Additionally, the partnership with K-State Extension promotes water quality messaging where surveys indicate the public seeks information regarding their lawn and garden care and therefore targeting a likely source for excess nutrients in urban streams.

Merriam staff finds that one-on-one conversations with property and business owners, residents, and contractors is the most effective means to educate people about the need to follow NPDES requirements.

- 4) Many planned outreach activities were cancelled or severely reduced due to COVID 19 restrictions.
- 5) Please refer to the attached Merriam Public Works' 2022 Sweeping and Drainbox Cleaning report and Stormwater Management Program detailing activities that occurred in 2021. The city also coordinated 3 volunteer Turkey Creek stream and streamway trail cleanup activities with approximately 60 volunteers, including staff and City Council Members, that donated their time.

- 6) City Officials participated in a volunteer streamway clean up event and approved an ordinance adopting BMPs and APWA 5100. Officials did receive updates on city cleanup initiatives and educational efforts such as door hangers and social media articles.
- 7) The city of Merriam partnered with the Johnson County Stormwater Management Program (JCSMP), who coordinated a cooperative approach for permitted Johnson County cities to help meet selected minimum control measures mandated in the NPDES Phase 2 MS4 permits. In particular, the JCSMP coordinates efforts for some of the best management practices (BMPs) for Minimum Control Measures (MCM) 1 and 2, but also assist with MCMs 3-6. The coordinated approach through this partnership has proved to be cost effective and reduces redundancy amongst the cities in Johnson County. Also, on the behalf of Johnson County cities, the JCSMP partners with Johnson County K-State Extension, Mid-America Regional Council Water Quality Education Committee, Bridging the Gap, Friends of the Kaw, Stone Lion Puppet Theater, the city of Olathe Public Works (for Household Hazardous Waste Collection), and the Johnson County Department of Health and Environment.
- 8) Merriam's MS4 program was not audited or inspected in 2021 by KDHE or the EPA.

Attachment 2 – City of Merriam Public Works Department's 2022 Stormwater Management Program (details 2021 activities)

2022 Stormwater Management Program



Table Of Contents

<i>Map</i>	3
<i>Overview of creeks</i>	4-5
<i>Antioch Park Creek</i>	6
<i>Brown Creek</i>	7
<i>Campbell Creek</i>	8
<i>Forest Park</i>	9
<i>Hickory Creek</i>	10
<i>Hocker Creek</i>	11
<i>Meyer Creek</i>	12
<i>Quail Creek</i>	13
<i>Quaker Creek</i>	14
<i>Shawnee Creek</i>	15
<i>Turkey Creek Tributary</i>	16
<i>Post Replace Sheet</i>	17
<i>Picture of Overview</i>	18



Merriam Creeks



**Stormwater Management Program
Regular Maintenance Inspection Report
January 2022**

Location	Date Inspected	Comments
Antioch Park Creek	1/18/2022	Brush needs to be removed from liner fence west side of Antioch across from park entrance. (fig. 1) Fence & posts need repair on west side of Antioch behind 6524 W 66 Terr.
Brown Creek	1/19/2022	There has been a moderate amount of sediment, plant, and tree growth in Brown Creek east of Merriam Drive at Waterfall Park (Fig. 2 & 3). Water is still moving around sediment but will be monitored. Brush needs removed at 10115 W 47 St (fig. 5), Perry Ln, 56 Terr. Fence repair at 10115 W 47 St (2 posts, 1 top rail), 5138 Merriam Dr (1 post & top rail needs reset)
Campbell Creek	1/19/2022	All items on inspection sheet are in compliance
Forest Park	1/19/2022	This is a SMAC storm water improvement project. At this time the creek is partially an above ground unimproved creek and an underground storm sewer draining directly to Turkey Creek. We remove debris from this box after every storm as it washes down the unimproved section of the creek
Hickory Creek	1/19/2022	All items on inspection sheet are in compliance
Hocker Creek	1/19/2022	Concrete liner is starting to deteriorate and should be monitored (Fig. 4) Brush needs to be removed several locations. Numerous fence repairs needed see list (pg. 17)

**Stormwater Management Program
Regular Maintenance Inspection Report
January 2022**

Location	Date Inspected	Comments
Meyer Creek	1/19/2022	Vines and brush needs removed at 70 th Terr - Switzer.
Quail Creek	1/19/2022	There has been a moderate amount of erosion at Quail Creek Park (Fig 6). Water is still moving through erosion area & will be monitored.
Quaker Creek	1/18/2022	Vines and small trees growing in fence between Antioch and Slater need to be removed.
Shawnee Creek	1/19/2022	Brush needs removed from fence on 51 St at Brown Park path entrance.
Turkey Creek Tributary	1/19/2022	Rock wall along drainage structure is deteriorating and should be monitored

**Stormwater Management Program
Regular Maintenance Requirement
Inspection Form**



Project Name:	Antioch Park Creek	Watershed Basin:	Turkey Creek
Description:	Storm Sewer and Channel Improvements		

Date of inspection: 1/18/2022
Inspected by: Covell / Jones

Regular Maintenance Procedure Requirements		Compliance/Sufficiency Comments
1.	<i>Clear sediment and debris from inlet boxes and openings annually or as needed.</i>	OK
2.	<i>Clear sediment and debris from inlet storm sewer pipes annually or as needed.</i>	OK
3.	<i>Monitor settlement around storm sewer pipes and structures to detect possible sediment transport of backfill material.</i>	OK
4.	<i>Clear sediment and debris from culvert entrances.</i>	OK
5.	<i>Clear sediment and debris from concrete lined channel, particularly around pedestrian bridges, annually or as needed.</i>	OK
6.	<i>Backfill eroded areas adjacent to channel walls after significant flood events or as needed.</i>	OK

Other Comments: Brush needs to be removed from liner fence west side of Antioch across from park entrance. (fig. 1)

Post Replacement: Rail, fence & 3 - posts need repair on west side of Antioch behind 6524 W 66 Terr.

**Stormwater Management Program
Regular Maintenance Requirement
Inspection Form**



Project Name:	Brown Park	Watershed Basin:	Turkey Creek
Description:	Storm Sewer and Channel Improvements		

Date of inspection: 1/19/2022
Inspected by: Fauser / Peterson

Regular Maintenance Procedure Requirements		Compliance/Sufficiency Comments
1.	<i>Clear sediment and debris from inlet boxes and openings annually or as needed.</i>	OK
2.	<i>Clear sediment and debris from inlet storm sewer pipes annually or as needed.</i>	OK
3.	<i>Monitor settlement around storm sewer pipes and structures to detect possible sediment transport of backfill material.</i>	OK
4.	<i>Clear sediment and debris from culvert entrances.</i>	OK
5.	<i>Clear sediment and debris from concrete lined channel, particularly around pedestrian bridges, annually or as needed.</i>	OK
6.	<i>Backfill eroded areas adjacent to channel walls after significant flood events or as needed.</i>	OK

Other Comments: There has been a moderate amount of sediment, plant, and tree growth in Brown Creek east of Merriam Drive at Waterfall Park. Water is still moving around sediment but should be monitored. (fig. 2 & 3).

Brush needs to be removed from fence 10115 W 47 St. (fig. 5)

Post Replacement: 10115 W 47 St. – 2 Posts & top rail repair, 5138 Merriam Dr. 1 post & rail needs reset.

**Stormwater Management Program
Regular Maintenance Requirement
Inspection Form**



Project Name:	Campbell Park	Watershed Basin:	Turkey Creek
Description:	Storm Sewer and Channel Improvements		

Date of inspection: 11/19/2020
Inspected by: Covell / Jones

Regular Maintenance Procedure Requirements		Compliance/Sufficiency Comments
1.	<i>Clear sediment and debris from inlet boxes and openings annually or as needed.</i>	OK
2.	<i>Clear sediment and debris from inlet storm sewer pipes annually or as needed.</i>	OK
3.	<i>Monitor settlement around storm sewer pipes and structures to detect possible sediment transport of backfill material.</i>	OK
4.	<i>Clear sediment and debris from culvert entrances.</i>	OK
5.	<i>Clear sediment and debris from concrete lined channel, particularly around pedestrian bridges, annually or as needed.</i>	OK
6.	<i>Backfill eroded areas adjacent to channel walls after significant flood events or as needed.</i>	OK

Other Comments:

Post Replacement:

**Stormwater Management Program
Regular Maintenance Requirement
Inspection Form**



Project Name:	Forest Park Drainage	Watershed Basin:	Turkey Creek
Description:	Storm Sewer and Channel Improvements		

Date of inspection: 1/19/2022
Inspected by: Covell / Jones

Regular Maintenance Procedure Requirements		Compliance/Sufficiency Comments
1.	<i>Clear sediment and debris from inlet boxes and openings annually or as needed.</i>	OK
2.	<i>Clear sediment and debris from inlet storm sewer pipes annually or as needed.</i>	OK
3.	<i>Monitor settlement around storm sewer pipes and structures to detect possible sediment transport of backfill material.</i>	OK
4.	<i>Clear sediment and debris from culvert entrances.</i>	OK
5.	<i>Clear sediment and debris from concrete lined channel, particularly around pedestrian bridges, annually or as needed.</i>	OK
6.	<i>Backfill eroded areas adjacent to channel walls after significant flood events or as needed.</i>	OK

Other Comments: This is a SMAC storm water improvement project. At this time the creek is partially an above ground unimproved creek and an underground storm sewer draining directly to Turkey Creek. We remove debris from this box after every storm as it washes down the unimproved section of the creek

Post Replacement:

**Stormwater Management Program
Regular Maintenance Requirement
Inspection Form**



Project Name:	Hickory Creek	Watershed Basin:	Turkey Creek
Description:	Storm Sewer and Channel Improvements		

Date of inspection: 1/19/2022
Inspected by: Fauser / Peterson

Regular Maintenance Procedure Requirements		Compliance/Sufficiency Comments
1.	<i>Clear sediment and debris from inlet boxes and openings annually or as needed.</i>	OK
2.	<i>Clear sediment and debris from inlet storm sewer pipes annually or as needed.</i>	OK
3.	<i>Monitor settlement around storm sewer pipes and structures to detect possible sediment transport of backfill material.</i>	OK
4.	<i>Clear sediment and debris from culvert entrances.</i>	OK
5.	<i>Clear sediment and debris from concrete lined channel, particularly around pedestrian bridges, annually or as needed.</i>	OK
6.	<i>Backfill eroded areas adjacent to channel walls after significant flood events or as needed.</i>	OK

Other Comments:

Post Replacement:

**Stormwater Management Program
Regular Maintenance Requirement
Inspection Form**



Project Name:	Hocker Creek	Watershed Basin:	Turkey Creek
Description:	Storm Sewer and Channel Improvements		

Date of inspection: 1/18/2022
Inspected by: Fausser / Peterson

Regular Maintenance Procedure Requirements		Compliance/Sufficiency Comments
1.	<i>Clear sediment and debris from inlet boxes and openings annually or as needed.</i>	OK
2.	<i>Clear sediment and debris from inlet storm sewer pipes annually or as needed.</i>	OK
3.	<i>Monitor settlement around storm sewer pipes and structures to detect possible sediment transport of backfill material.</i>	OK
4.	<i>Clear sediment and debris from culvert entrances.</i>	OK
5.	<i>Clear sediment and debris from concrete lined channel, particularly around pedestrian bridges, annually or as needed.</i>	OK
6.	<i>Backfill eroded areas adjacent to channel walls after significant flood events or as needed.</i>	OK

Other Comments: Concrete liner is starting to deteriorate and should be monitored (Fig. 4).
 Brush needs to be removed from fence at 10115 W 47 St. & 5521 Perry Ln

Post Replacement: Perry Ln, 5518 1-post, 5517 rail cap, 5516 3- posts, 5521 6-posts, 56 St, 9938 1 post, 9923 2 posts
 9931 1 post. 9918 56 Terr 1 post 1 rail cap, 5630 Farley 1 post, 5719 Knox 2 posts

**Stormwater Management Program
Regular Maintenance Requirement
Inspection Form**



Project Name:	Meyer Creek	Watershed Basin:	Turkey Creek
Description:	Storm Sewer and Channel Improvements		

Date of inspection: 1/19/2022
Inspected by: Covell / Jones

Regular Maintenance Procedure Requirements		Compliance/Sufficiency Comments
1.	<i>Clear sediment and debris from inlet boxes and openings annually or as needed.</i>	OK
2.	<i>Clear sediment and debris from inlet storm sewer pipes annually or as needed.</i>	OK
3.	<i>Monitor settlement around storm sewer pipes and structures to detect possible sediment transport of backfill material.</i>	OK
4.	<i>Clear sediment and debris from culvert entrances.</i>	OK
5.	<i>Clear sediment and debris from concrete lined channel, particularly around pedestrian bridges, annually or as needed.</i>	OK
6.	<i>Backfill eroded areas adjacent to channel walls after significant flood events or as needed.</i>	OK

Other Comments: Vines and brush needs removed from 70 Terr. to Switzer.

Post Replacement:

**Stormwater Management Program
Regular Maintenance Requirement
Inspection Form**



Project Name:	Quail Creek	Watershed Basin:	Turkey Creek
Description:	Storm Sewer and Channel Improvements		

Date of inspection: 1/19/2020
Inspected by: Covell / Jones

Regular Maintenance Procedure Requirements		Compliance/Sufficiency Comments
1.	<i>Clear sediment and debris from inlet boxes and openings annually or as needed.</i>	OK
2.	<i>Clear sediment and debris from inlet storm sewer pipes annually or as needed.</i>	OK
3.	<i>Monitor settlement around storm sewer pipes and structures to detect possible sediment transport of backfill material.</i>	OK
4.	<i>Clear sediment and debris from culvert entrances.</i>	OK
5.	<i>Clear sediment and debris from concrete lined channel, particularly around pedestrian bridges, annually or as needed.</i>	OK
6.	<i>Backfill eroded areas adjacent to channel walls after significant flood events or as needed.</i>	OK

Other Comments: There has been a moderate amount of erosion at Quail Creek Park (Fig 6). Water is still moving through erosion area & will be monitored.

Post Replacement:

**Stormwater Management Program
Regular Maintenance Requirement
Inspection Form**



Project Name:	Quaker Creek	Watershed Basin:	Turkey Creek
Description:	Storm Sewer and Channel Improvements		

Date of inspection: 12/14/2020
Inspected by: Mark Fauser

Regular Maintenance Procedure Requirements		Compliance/Sufficiency Comments
1.	<i>Clear sediment and debris from inlet boxes and openings annually or as needed.</i>	OK
2.	<i>Clear sediment and debris from inlet storm sewer pipes annually or as needed.</i>	OK
3.	<i>Monitor settlement around storm sewer pipes and structures to detect possible sediment transport of backfill material.</i>	OK
4.	<i>Clear sediment and debris from culvert entrances.</i>	OK
5.	<i>Clear sediment and debris from concrete lined channel, particularly around pedestrian bridges, annually or as needed.</i>	OK
6.	<i>Backfill eroded areas adjacent to channel walls after significant flood events or as needed.</i>	OK

Other Comments: Vines and small trees growing in fence between Antioch and Slater

Post Replacement: 6115 Terrydale – 1 post, 6125 Terrydale – 3 post, 6041 Slater – 2 post, 6045 Slater -3 post 1 rail

**Stormwater Management Program
Regular Maintenance Requirement
Inspection Form**



Project Name:	Shawnee Creek	Watershed Basin:	Turkey Creek
Description:	Storm Sewer and Channel Improvements		

Date of inspection: 1/19/2022
Inspected by: Mark Fauser

Regular Maintenance Procedure Requirements		Compliance/Sufficiency Comments
1.	<i>Clear sediment and debris from inlet boxes and openings annually or as needed.</i>	OK
2.	<i>Clear sediment and debris from inlet storm sewer pipes annually or as needed.</i>	OK
3.	<i>Monitor settlement around storm sewer pipes and structures to detect possible sediment transport of backfill material.</i>	OK
4.	<i>Clear sediment and debris from culvert entrances.</i>	OK
5.	<i>Clear sediment and debris from concrete lined channel, particularly around pedestrian bridges, annually or as needed.</i>	OK
6.	<i>Backfill eroded areas adjacent to channel walls after significant flood events or as needed.</i>	OK

Other Comments: Brush needs removed from fence on 51 St at Brown Park path entrance.

Post Replacement:

**Stormwater Management Program
Regular Maintenance Requirement
Inspection Form**



Project Name:	Turkey Creek Tributary	Watershed Basin:	Turkey Creek
Description:	Storm Sewer and Channel Improvements		

Date of inspection: 12/16/2020
Inspected by: Mark Fauser

Regular Maintenance Procedure Requirements		Compliance/Sufficiency Comments
1.	<i>Clear sediment and debris from inlet boxes and openings annually or as needed.</i>	OK
2.	<i>Clear sediment and debris from inlet storm sewer pipes annually or as needed.</i>	OK
3.	<i>Monitor settlement around storm sewer pipes and structures to detect possible sediment transport of backfill material.</i>	OK
4.	<i>Clear sediment and debris from culvert entrances.</i>	OK
5.	<i>Clear sediment and debris from concrete lined channel, particularly around pedestrian bridges, annually or as needed.</i>	OK
6.	<i>Backfill eroded areas adjacent to channel walls after significant flood events or as needed.</i>	OK

Other Comments: Rock wall along drainage structure is deteriorating and should be monitored.

Post Replacement:

**Chain Link Fence Posts
Needing Repair
Annual Creek Inspection
1/20/2022**

<u>Address</u>	<u>#of posts</u>
1. West side of Antioch 6524 W 66 Terr	3 post + rail & fence
2. 10115 W 47 St	2 post + top rail repair
3. 5138 Merriam Dr	1 post + top rail reset
4. 5518 Perry Ln	1 post
5. 5517 Perry Ln	1 rail cap
6. 5516 Perry Ln	3 posts
7. 5521 Perry Ln	6 posts
8. 9938 W 56 St	1 post
9. 9923 W 56 St	2 posts
10. 9931 W 56 St	1 post
11. 9918 W 56 Terr	1 post + 1 rail cap
12. 5630 Farley Ln	1 post
13. 5719 Knox	2 posts
14. 6041 Slater	2 posts
15. 6045 Slater	3 posts + top rail
16. 6115 Terrydale	1 post
17. 6125 Terrydale	3 posts

Total Posts 34



Fig. 1 – Brush needs to be removed from fence. Fence and posts need repair.



Fig. 2 – Moderate amount of sediment in Waterfall Park will be monitored.



Fig.3 – Sediment has been cleared from under Merriam Dr.



Fig. 4 – Concrete liner is starting to deteriorate and will be monitored.



Fig. 5 Brush needs to be removed from fence At 10115 W 47th St.



Fig. 6 – There has been a moderate amount of erosion in Quail Creek Park & will be monitored

Attachment 3 – City of Merriam Public Works Department's Report on Sweeping Drainbox Clearing, Inspection/Debris Removal from creeks and training

Report on Sweeping, Drainbox Clearing, Inspection/Debris Removal from creeks, and Training
2021

Description	Man Hours	Labor Cost	Vehicle Cost	Equipment Cost	Total Cost
Street Sweeping (1,700 lane miles)	544	\$12,111.12	\$47,341.92		\$59,453.04
Parking Lot Sweeping	8	\$192.24	\$816.24		\$1,008.48
Pk lot clean by hand - regularly throughout year	8	\$147.24	\$30.75		\$177.99
Drainbox Cleaning and inspections (Includes major projects October - December)					
Outfall inspections	360	\$6,092.56	\$23,328.80		\$29,421.36
Post storm Creek inspections	241	\$5,227.69	\$6,050.42		\$11,278.11

Training:

November 1st - Snow removal training day: All employees received a full day of training for the safe and efficient removal of snow and ice from roadways, parking lots and sidewalks

December 21st - Overview of Stormwater Best Practices, discussed some of the new items that were implemented in 2021.

\$101,338.98

* Leaf removal 352 man hours

Attachment 4 – 2020 JCSMP MS4 Water Quality Monitoring

Site ID	EDMR Code	Location	Date	Time	Sample Type	Air Temperature (F)	Weather Conditions	Rainfall, in	Discharge, Instantaneous (cfs)	Temperature (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm)	Stream Level (ft)	Stream Velocity (ft/s)	Stream Velocity (ft/s)	Stage (ft)	MPN/100 Turbidity (NTU)	Nitrate plus nitrite, mg/L as nitrogen	Nitrite as N, mg/L	Orthophosphate, water, filtered, mg/L as phosphorus	Ammonia, water, unfiltered, mg/L as nitrogen	Kjeldahl Nitrogen, mg/L as nitrogen	total Phosphorus, mg/L as phosphorus	total Phosphorus, mg/L as phosphorus, dissolved	Suspended Solids, mg/L		
0101BRU	SW020A6	Brush Creek at State Line Rd.	4/26/2021	10:45 AM	routine	75	Sunny	0.00	1.22	17.14	7.8	1177	1177	0.48	Normal	35.72	40.06	2.00	1.64	0.08	<0.05	0.05	0.60	0.22	0.50	0.10	4.00	
0101BRU	SW020A6	Brush Creek at State Line Rd.	5/25/2021	11:10 AM	routine	75	Cloudy	0.00	4.72	21.16	7.86	7.69	1079	Steady	1.11	Normal	35.72	40.06	2.00	1.64	0.08	<0.05	0.06	0.60	0.16	<0.5	0.14	3.00
0101BRU	SW020A6	Brush Creek at State Line Rd.	6/22/2021	12:45 PM	routine	84	Sunny	0.00	2.3	25.43	8.02	7.79	924	Steady	0.55	Normal	35.64	41.00	1.00	0.19	<0.02	0.07	0.06	0.50	0.12	<0.5	0.08	3.00
0101BRU	SW020A6	Brush Creek at State Line Rd.	7/27/2021	11:00 AM	routine	85	Sunny	0.00	1.88	27.53	7.87	5.36	751	Steady	0.45	Normal	35.63	63.00	1.00	0.19	0.09	0.05	<0.05	0.06	0.26	<0.5	0.15	<2
0101BRU	SW020A6	Brush Creek at State Line Rd.	8/25/2021	11:30 AM	routine	86	Sunny	0.00	2.08	27.90	8.17	7.82	775	Steady	0.43	Normal	35.64	79.00	1.00	0.22	0.03	0.12	0.06	<0.04	0.06	<0.5	0.14	<2
0104TUR	SW023A6	Turkey Creek at Lamar Ave.	4/26/2021	12:20 PM	routine	75	Sunny	0.00	32.65	19.72	8.19	10.69	1471	Steady	0.65	Normal	3.35	31.00	2.00	0.09	<0.02	<0.05	<0.04	0.50	0.07	<0.5	<0.05	3.00
0104TUR	SW023A6	Turkey Creek at Lamar Ave.	5/25/2021	10:45 AM	routine	76	Cloudy	0.00	39.69	20.77	8.14	7.88	1295	Steady	0.69	Normal	3.5	199.00	2.00	0.59	<0.02	<0.05	<0.04	0.50	<0.05	<0.5	<0.05	5.00
0104TUR	SW023A6	Turkey Creek at Lamar Ave.	6/22/2021	11:15 AM	routine	84	Sunny	0.00	26.91	24.94	8.07	6.56	1298	Steady	0.81	Normal	3.24	74.00	<1	<0.03	<0.02	<0.05	<0.04	0.50	0.21	<0.5	<0.5	<2
0104TUR	SW023A6	Turkey Creek at Lamar Ave.	7/27/2021	11:30 AM	routine	85	Sunny	0.00	26.91	29.54	8.1	7.22	1330	Steady	0.61	Normal	3.24	20.00	1.00	<0.3	<0.02	<0.05	<0.04	0.50	0.11	<0.5	0.07	2.00
0104TUR	SW023A6	Turkey Creek at Lamar Ave.	8/25/2021	12:00 PM	routine	86	Sunny	0.00	31.04	28.84	8.25	7.77	1082	Steady	0.64	Normal	3.32	110.00	1.00	<0.03	<0.02	<0.05	<0.04	0.50	<0.05	<0.5	<0.05	<2
0104TUR	SW023A6	Turkey Creek at Lamar Ave.	9/28/2021	11:35 AM	routine	75	Sunny	0.00	26.91	21.33	8.16	7.46	1152	Steady	0.61	Normal	3.24	118.00	2.00	0.03	<0.02	<0.05	<0.04	0.50	<0.05	<0.5	<0.05	<2
0201IND	SW037A6	Indian Creek at State Line Rd.	4/26/2021	10:15 AM	routine	70	Sunny	0.00	30.4	17.28	8.05	7.41	1237	Steady	0.57	Normal	10.26	52.00	3.00	2.65	0.05	0.54	<0.04	0.80	0.64	0.60	0.59	4.00
0201IND	SW037A6	Indian Creek at State Line Rd.	5/25/2021	11:45 AM	routine	75	Cloudy	0.00	58.5	21	8.02	8.32	1053	Steady	0.89	Normal	10.43	175.00	4.00	1.58	0.03	0.41	<0.04	0.60	0.47	0.50	0.46	7.00
0201IND	SW037A6	Indian Creek at State Line Rd.	6/22/2021	1:25 PM	routine	83	Sunny	0.00	15.4	26.32	8.12	8.78	1176	Steady	0.24	Normal	10.14	108.00	2.00	2.51	0.04	0.97	<0.04	0.90	0.10	0.70	0.13	4.00
0201IND	SW037A6	Indian Creek at State Line Rd.	7/27/2021	10:30 AM	routine	85	Sunny	0.00	17.8	27.17	7.94	5.3	1031	Steady	0.32	Normal	10.17	121.00	2.00	4.40	0.04	0.98	0.06	0.60	1.05	<0.5	1.02	3.00
0201IND	SW037A6	Indian Creek at State Line Rd.	8/25/2021	11:00 AM	routine	86	Sunny	0.00	29	27.6	8.41	6.13	957	Steady	0.54	Normal	10.26	63.00	3.00	2.26	0.02	0.36	<0.04	0.60	0.44	0.60	0.43	4.00
0201IND	SW037A6	Indian Creek at State Line Rd.	9/28/2021	10:15 AM	routine	75	Sunny	0.00	24.8	21.39	8.07	5.83	1035	Steady	0.5	Normal	10.23	134.00	3.00	6.37	0.03	1.22	0.08	0.70	1.33	0.50	1.24	2.00
0203IND	SW035A6	Indian Creek at Switzer Rd.	4/26/2021	9:30 AM	routine	68	Sunny	0.00	143.77	16.04	7.95	5.08	1133	Steady	1.15	Normal	3.27	175.00	3.00	0.32	0.03	<0.05	<0.04	0.50	<0.05	<0.5	<0.05	4.00
0203IND	SW035A6	Indian Creek at Switzer Rd.	5/25/2021	9:45 AM	routine	73	Cloudy	0.00	177.8	19.98	7.74	6.19	1009	Steady	1.24	Normal	3.41	155.00	4.00	0.96	0.04	<0.05	<0.04	0.50	0.09	<0.5	0.11	7.00
0203IND	SW035A6	Indian Creek at Switzer Rd.	6/22/2021	3:00 PM	routine	83	Sunny	0.00	116.32	26.24	8.14	8.44	1091	Steady	1.07	Normal	3.15	63.00	1.00	0.05	0.02	<0.05	<0.04	0.50	0.09	<0.5	0.09	<2
0203IND	SW035A6	Indian Creek at Switzer Rd.	7/27/2021	9:45 AM	routine	85	Sunny	0.00	110.77	26.27	7.6	4.4	848	Steady	1.07	Normal	3.11	187	2.00	0.08	<0.02	<0.05	0.05	0.10	<0.5	0.10	3.00	
0203IND	SW035A6	Indian Creek at Switzer Rd.	8/25/2021	10:00 AM	routine	86	Sunny	0.00	156.29	26.46	8.33	6.07	917	Steady	1.19	Normal	3.33	175.00	2.00	0.17	0.04	<0.05	<0.04	0.50	0.26	<0.5	0.08	<2
0203IND	SW035A6	Indian Creek at Switzer Rd.	9/28/2021	9:25 AM	routine	80	Sunny	0.00	116.32	20.43	7.62	4.48	643	Steady	1.07	Normal	3.15	305.00	2.00	5.57	0.04	1.19	<0.04	0.50	0.10	<0.5	0.08	3.00
0205TOM	SW038A6	Tomahawk Creek at Roe Ave.	4/26/2021	9:55 AM	routine	70	Sunny	0.00	6.51	16.46	7.93	5.34	1167	Steady	0.49	Normal	2.01	187.00	3.00	0.32	<0.02	<0.05	<0.04	0.50	<0.06	<0.5	0.06	4.00
0205TOM	SW038A6	Tomahawk Creek at Roe Ave.	5/25/2021	10:00 AM	routine	74	Cloudy	0.00	16.5	20.27	7.74	6.94	976	Steady	1.22	Normal	2.21	209.00	2.00	0.97	0.04	<0.05	<0.04	0.50	0.07	<0.5	<0.05	2.00
0205TOM	SW038A6	Tomahawk Creek at Roe Ave.	6/22/2021	2:10 PM	routine	84	Sunny	0.00	4.22	24.98	7.89	5.93	918	Steady	0.12	Normal	1.93	228.00	3.00	0.40	0.05	<0.05	0.09	0.70	0.10	<0.5	0.08	3.00
0205TOM	SW038A6	Tomahawk Creek at Roe Ave.	7/27/2021	10:30 AM	routine	86	Sunny	0.00	2.58	25.79	8.06	4.03	968	Steady	0.18	Normal	1.88	185.00	2.00	0.06	<0.02	<0.05	<0.04	0.50	0.26	<0.5	0.08	<2
0205TOM	SW038A6	Tomahawk Creek at Roe Ave.	8/25/2021	10:30 AM	routine	86	Sunny	0.00	9.69	26.77	8.23	5.75	854	Steady	0.58	Normal	2.11	246.00	2.00	0.90	<0.02	<0.05	<0.04	0.50	<0.05	<0.5	<0.05	2.00
0205TOM	SW038A6	Tomahawk Creek at Roe Ave.	9/28/2021	9:50 AM	routine	75	Sunny	0.00	1.62	19.86	7.83	5.67	931	Steady	0.3	Normal	1.93	109.00	1.00	0.30	<0.02	<0.05	<0.04	0.50	<0.05	<0.5	<0.05	<2
0301BLU	SW014A6	Blue river at Kenneth Rd.	4/27/2021	1:40 PM	routine	81	Cloudy	0.00	202.22	19.97	8.08	9.11	638	Steady	2.17	Normal	5.23	51.00	9.00	<0.03	<0.02	<0.05	<0.04	0.50	<0.10	<0.5	0.08	14.00
0301BLU	SW014A6	Blue river at Kenneth Rd.	5/26/2021	1:20 PM	routine	83	Sunny	0.00	276.73	22.37	7.94	7.88	608	Steady	2.43	Normal	5.54	121.00	20.00	0.66	<0.02	<0.05	<0.04	0.70	0.13	<0.5	0.09	31.00
0301BLU	SW014A6	Blue river at Kenneth Rd.	6/23/2021	2:15 PM	routine	86	Sunny	0.00	215.3	27.55	8.16	8.76	622	Steady	2.05	Normal	4.73	65.00	10.00	0.06	<0.02	<0.05	<0.04	0.70	0.26	<0.5	0.06	16.00
0301BLU	SW014A6	Blue river at Kenneth Rd.	7/28/2021	2:25 PM	routine	96	Sunny	0.00	113.85	31.22	7.98	7.38	548	Steady	1.75	Normal	4.79	75.00	6.00	0.05	<0.02	<0.05	<0.04	0.60	0.08	<0.5	0.02	8.00
0301BLU	SW014A6	Blue river at Kenneth Rd.	8/24/2021	2:00 PM	routine	93	Sunny	0.00	222.84	27.95	8.11	4.27	489	Steady	2.25	Normal	5.32	313.00	16.00	0.40	<0.02	<0.05	<0.04	0.70	0.10	0.60	0.07	23.00
0301BLU	SW014A6	Blue river at Kenneth Rd.	9/29/2021	1:35 PM	routine	78	Cloudy	0.00	113.85	21.49	8.22	6.79	655	Steady	1.75	Normal	4.79	161.00	6.00	0.12	<0.02	<0.05	<0.04	0.50	0.06	<0.5	0.05	8.00
0301BLU	SW014A6	Blue river at Kenneth Rd.	5/27/2021	10:00 AM	storm	65	Cloudy	0.54	302.84	26.61	7.54	6.7	588	Rising	2.51	Rapid	5.64	1380.00	23.00	0.88	<0.02	<0.05	<0.04	0.50	<0.10	<0.5	0.08	48.00
0301BLU	SW014A6	Blue river at Kenneth Rd.	6/28/2021	3:10 PM	storm	73	Cloudy	1.24	292.27	22.92	8.16	6.73	440	Rising	2.45	Rapid	5.6	5480.00	64.00	1.18	0.04	0.07	0.08	1.10	0.25	0.80	0.14	75.00
0301BLU	SW014A6	Blue river at Kenneth Rd.	9/3/2021	9:55 AM	storm	73	Raining	1.88	438.75	23.64	8	6.91	368	Rising	2.87	Rapid	6.11	5170.00	440.00	0.42	0.03	0.20	0.16	2.30	0.74	0.70	0.23	580.00
0302BLU	SW019A6	Blue River at Hwy 69	4/27/2021	11:10 AM	routine	75	Cloudy	0.00	15.7	18.83	8.03	7.37	612	Steady	0.8	Normal	4.04	299.00	6.00	<0.03	<0.02	<0.05	<0.04	0.50	<0.05	<0.5	<0.05	40.00
0302BLU	SW019A6	Blue River at Hwy 69	5/26/2021	11:40 AM	routine	79	Sunny	0.00	3																			

Attachment 5 – Merriam Ord #1830 adopting BMPs and APWA 5100

ORDINANCE NO. 1830

AN ORDINANCE RELATING TO IMPROVING THE QUALITY OF STORMWATER RUNOFF INTO THE CITY'S STORMWATER CONVEYANCE SYSTEM (MS4) AND MEETING NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS WITHIN THE CITY OF MERRIAM, KANSAS, AMENDING CHAPTER 26 - ENVIRONMENT OF THE CODE OF ORDINANCES OF THE CITY OF MERRIAM, KANSAS.

BE IT ORDAINED BY THE GOVERNING BODY OF THE CITY OF MERRIAM, KANSAS THAT:

SECTION 1. Sec. 26-201 the existing definition is hereby replaced with the following:

Best Management Practice (BMP) means a practice used to prevent or control the discharge of pollutants and minimize runoff to the surface waters of the U.S. BMPs may include structural or non-structural solutions, a schedule of activities, prohibition of practices, maintenance procedures, or other management practices.

SECTION 2. Sec. 26-201 the following definition is hereby added to the section:

Development means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, levees, levee systems, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials with the following possible exceptions:

- (1) Additions to, improvements, and repairs of existing single-family and duplex dwellings.
- (2) Construction of any buildings, structures, or appurtenant service roads, drives, and walks on a site having previously provided stormwater control as part of a larger unit of development.
- (3) Remodeling, repair, replacement, and improvements to any existing structure or facility and appurtenances that does not cause an increased area of impervious surface on the site in excess of ten percent of that previously existing.
- (4) Improvement on any site having a gross land area of one acre or less, regardless of land use.
- (5) Construction of any one new single-family or duplex dwelling unit, irrespective of the site area on which the same may be situated.

Based upon the proposed scope, location, and/or type of activity, the community development director can determine that said activity is not exempted from the definition of development.

SECTION 3. Chapter 26 - Environment of the Code of Ordinances of the City of Merriam, Kansas, is hereby amended to add the following:

Sec. 26-207. Manual of Best Management Practices for Stormwater Quality.

(a) The standards for the management and regulation of stormwater water quality for development are established by the Manual of Best Management Practices for Stormwater Quality including all appendices, amendments, and updates, herein referred to as the “BMP Manual”, as published by the Kansas City Chapter of the American Public Works Association and the Mid-America Regional Council.

(b) The community development director may waive or modify any of the BMP Manual standards to encourage the implementation of alternative or innovative practices that implement the intent of the modified standards and provide equivalent public benefits without significant adverse impacts on surrounding developments. Such modifications may be granted for issues including, but not limited to:

- (1) Development that is redevelopment or infill.
- (2) Approval of alternative materials, devices, techniques, details or specifications for individual treatment facilities that would be expected to provide similar or better performance.
- (3) Evaluations of credits, ratings or level of service calculations to account for unique or special technical considerations.
- (4) Corrections, clarifications or modifications to requirements which the community development director has found to give inadequate or undesirable performance.

Sec. 26-208. Maintenance of BMPs and associated facilities installed after January 1, 2022.

On or before January 1st of each year, owners of completed permanent BMPs and associated facilities shall furnish to the community development director a certification by a professional engineer licensed in Kansas that the BMPs and all associated facilities are fully functional and in good repair.

Sec. 26-209. Erosion and Sediment Control.

The standards for regulation of erosion and sediment controls for construction activities are established by the Standard Specifications and Design Criteria, Division V, Section 5100 – Erosion and Sediment Control including as adopted by the Kansas City Metropolitan Chapter of the American Public Works Association herein referred to as the “APWA 5100”.

SECTION 4. Existing Sections. Those sections of Chapter 26 of the Code of Ordinances of the City of Merriam, Kansas not heretofore repealed or not amended hereby shall remain in full force and effect.

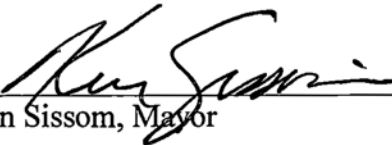
SECTION 5. Severability. If any section, subsection, sentence, clause or phrase of this Ordinance is, for any reason, held to be invalid, such invalidity shall not affect the validity of the remaining portions of this Ordinance and the Governing Body hereby declares that it would have passed the remaining portions of this Ordinance if it would have known that such part or parts thereof would be declared invalid.

SECTION 6. Take Effect. This ordinance shall be in full force and effect from and after its passage, approval, and publication in the official city newspaper, but not prior to January 1, 2022, all as provided by law.

PASSED BY THE City Council the 27th day of September, 2021.

APPROVED BY THE Mayor this 27th day of September, 2021.





Ken Sissom, Mayor

ATTEST:



Juliana Pinnick, City Clerk

APPROVED AS TO FORM:



Ryan Denk, City Attorney

Attachment 6 –

Merriam, Kansas Stormwater Management Plan January 1, 2021 through
January 31, 2024 dated February 28, 2021

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.....
3.2	Public Involvement and Participation.....
3.3	Illicit Discharge Detection and Elimination
3.4	Construction Site Stormwater Runoff Control
3.5	Post-Construction Stormwater Management in New Development and Redevelopment
3.6	Pollution Prevention/Good Housekeeping for Municipal Operations
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: February 1, 2019

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.

A short description of each planned BMP is included in the table below.

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	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	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	3
<i>Total points per year</i>		11	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.

A short description of each planned BMP is included in the table below.

Table 2. Planned BMPs to meet MCM 2 requirements

BMP ID	BMP Summary	Points per year			
		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	2
	<i>Total points per year</i>	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.

A short description of each planned BMP is included in the table below.

Table 3. Planned BMPs to meet MCM 3 requirements

BMP ID	BMP Summary	Points per year			
		2021	2022	2023	2024
ID D & E - 03	Develop a spill response plan and, if appropriate, coordinate emergency response with other agencies or organizations.	3	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 e--mail 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	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.	3	3	3	3
	<i>Total points per year</i>	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.

A short description of each planned BMP is included in the table below.

Table 4. Planned BMPs to meet MCM 4 requirements

BMP ID	BMP Summary	Points			
		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.	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.	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.	3	2	2	2
	<i>Total points per year</i>	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 permittees 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.

A short description of each planned BMP is included in the table below.

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.	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	3	2	2	2
	<i>Total points per year</i>	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.

A short description of each planned BMP is included in the table below.

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.	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.	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.	1	1	1	1
P P/G H - 08	Develop, implement and keep updated an online storm sewer map accessible to the public.	3	2	2	2
<i>Total points per year</i>		9	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:

Impaired Stream	TMDL Regulated Pollutant		
	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.

A short description of each planned BMP is included in the table below.

Table 7. Planned BMPs to meet TMDL requirements.

BMP ID	BMP Summary	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.	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	1
TMDL - 06	Distribute "Only Rain Down the Drain" door hangers or similar document or social media.	2	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	3
	<i>Total points per year</i>	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.

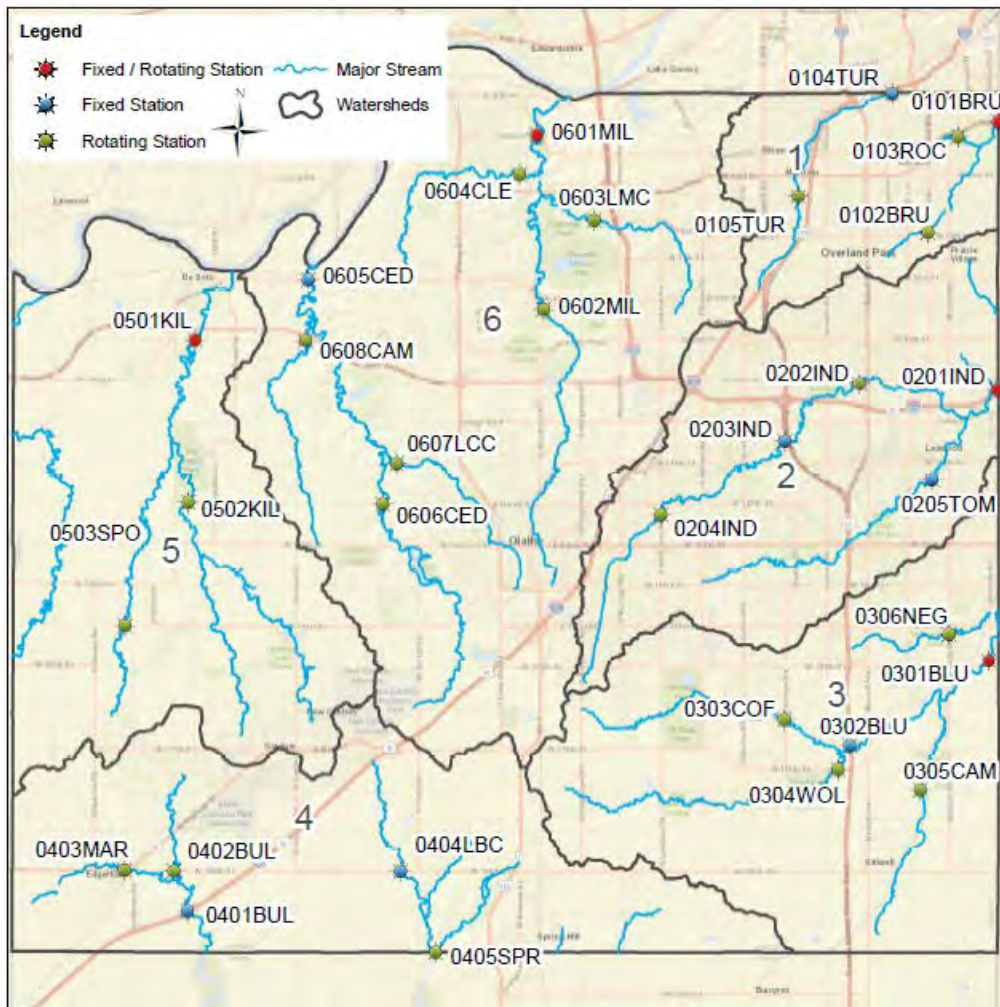
The monitoring program consists of both rotating and fixed monitoring stations (Table 8 and Figure 1). Rotating stations will be monitored within the rotational year. The rotational year occurs on a five-year recurrence interval and is basin specific. Fixed monitoring states will be monitored on an ongoing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

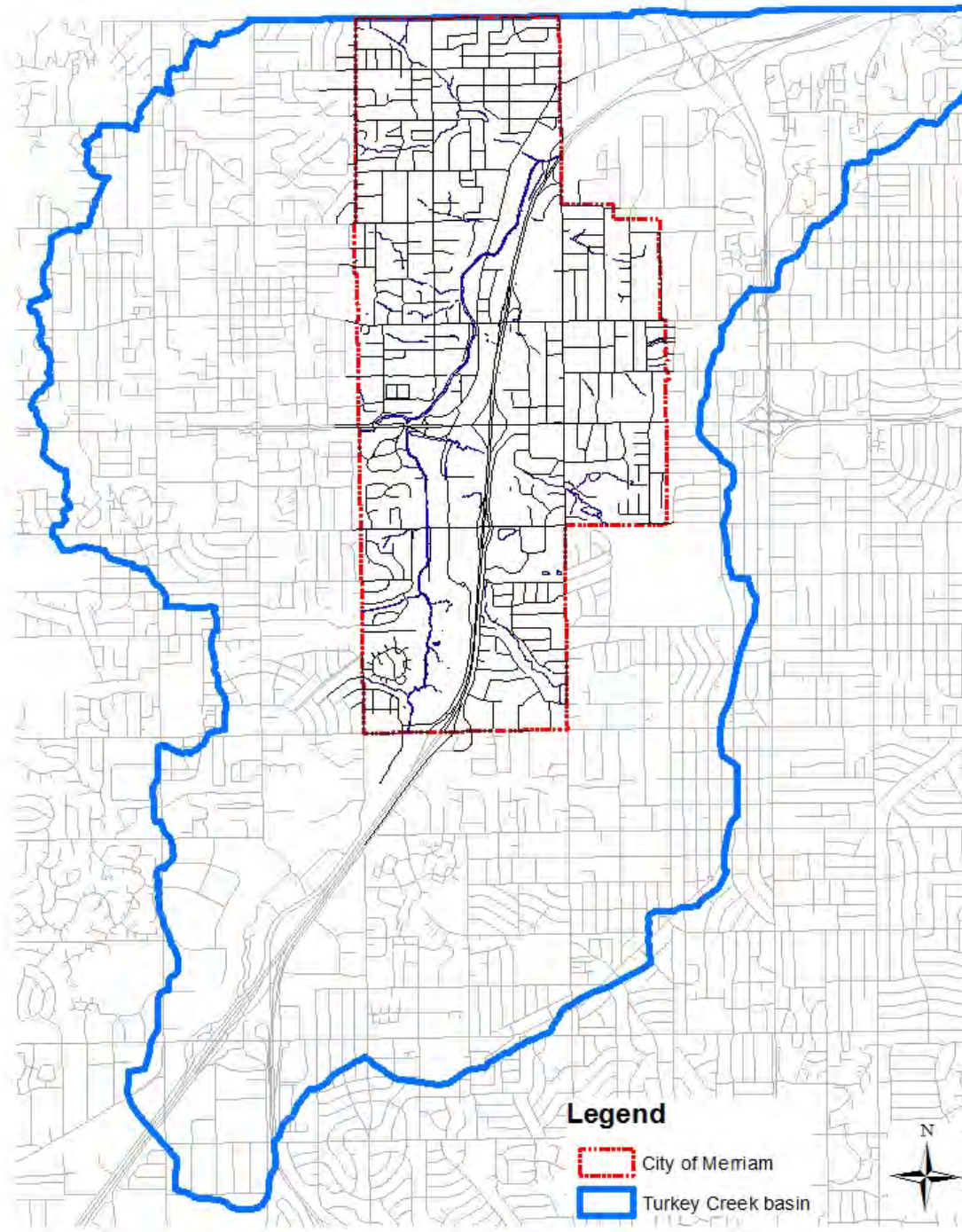
This SMP will be evaluated annually and modifications to the Plan, if any, will be submitted with the annual report.

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.

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 be 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; on-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 jurisdiction 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	All of the required students (5% minimum) in K-12 at the selected campus must be educated in a single year to qualify for the points in that year. Alternately, stormwater BMPs may be funded at a school campus where students may participate in installation or observe operation of BMPs. Any of the items listed under measureable goals qualify.	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.	Clean an area which must be equal to or greater than one acre or alternately at least 200 yards of streambank. Alternately, for municipalities with less than 500 population clean an area which must be equal to or greater than a quarter of an acre or alternately at least 100 feet of streambank.	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
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, cisterns 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
Minimum required points 3 3 6 6

Appendix A- Table 4. Planned BMPs for Construction Site Stormwater Runoff Control (MCM 4) compliance.					2021	2022	2023	2024
BMP ID	BMP Summary	Measurable Goal	Implementation Time Schedule, etc	Points				
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/enforceable requirement first becomes effective, and for each full calendar year thereafter for which the ordinance/enforceable 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 remains 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
Total points per year					12	9	9	9
Minimum required points					4	4	6	6

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	<p>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.</p>	<p>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/re-development 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 permittee'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 implemented. Measures must be included to enforce the installation of the various structural BMPs required.</p>	<p>Development of the design manual can occur in any year. Initial implementation can allow points to be claimed in that year and continued implementation can allow points to be claimed in subsequent years.</p>	<p>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/implemented. 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.</p>	6	5	5	5
P-C S M - 05	<p>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</p>	<p>The program shall require 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 inspection with the objective for completion of the maintenance activity within 18 months.</p>	<p>The program shall be developed and implemented within a single year.</p>	<p>3 points may be claimed in the year the program is initially developed and implemented, 2 points may be claimed for each successive year the program continues to be implemented.</p>	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 swept 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.	3 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. 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 publicland. 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	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	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. <i>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</i>	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	7
Minimum required points					4	4	6	6